

**Statement of
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Bureau of Land Management
U.S. Department of the Interior**

**House Natural Resources
Subcommittee on Energy and Mineral Resources
H.R. 5350, Enhancing Geothermal Production on Federal Lands Act**

July 19, 2022

Thank you for the opportunity to provide testimony on H.R. 5350, Enhancing Geothermal Production on Federal Lands Act. The bill amends the Geothermal Steam Act of 1970 ([30 U.S.C. §§ 1001-1028](#)) by creating a new categorical exclusion for “geothermal test projects” on Federal geothermal leases. The bill would also create new geothermal leasing priority areas where the production of geothermal energy has been determined to be economically viable.

The efficient deployment of renewable energy from our nation’s public lands is crucial in achieving the Biden Administration’s goal of a carbon pollution-free power sector by 2035, as outlined in Executive Order (EO) 14008; as well as Congress’ direction in the Energy Act of 2020 (P.L. 116-260) to permit 25 gigawatts (GW) of solar, wind, and geothermal production on public lands by 2025. In following this direction, the Bureau of Land Management (BLM) is engaging our tribal partners, industry, stakeholders, and the states to increase opportunities for renewable energy development on public lands. Geothermal energy production is an important component of this strategy, with 67 percent of the nation’s geothermal electricity generation capacity coming from BLM-managed public lands.

H.R. 5350 aligns with the Administration’s goal to promote and expedite the responsible development of geothermal energy projects. We support the goals of the bill and would like to work with the sponsors on a number of technical modifications.

Increasing Renewable Energy Development on Public Lands

Executive Order 14008 and Congressional direction provide the BLM a clear mandate to support and prioritize expanding renewable energy development on public lands. To further these priorities and to implement the Energy Act of 2020, in May 2022, the BLM established Renewable Energy Coordination Offices (RECOs) to facilitate improved permitting coordination for renewable energy projects and issued interim guidance that reduced rents and fees to incentivize responsible wind and solar energy development on public lands. Additionally, the BLM and its Federal agency partners entered into a Memorandum of Understanding to enhance interagency coordination and prioritization for renewable energy-related activities. The BLM is also working on updating the land use plans for the “West-wide” or “Section 368” Energy Corridors. This update will maintain key energy pathways in environmentally preferable locations and unlock new opportunities for solar, wind, and geothermal energy development.

While undertaking this effort, the BLM continues to permit renewable energy projects. In FY 2021, the BLM permitted 12 wind, solar, and geothermal energy and associated transmission projects that once constructed will support a generation capacity of 2,890 MW, a 35 percent increase from FY 2020. The BLM has prioritized the processing and permitting of 64 proposed renewable energy projects on Federal and non-Federal land by FY 2025, which have a potential cumulative capacity of nearly 41,000 MW. The BLM is advancing three transmission projects in Arizona, New Mexico, Nevada, and Utah that have the potential to deliver roughly 10,000 MW of renewable energy and help build a reliable, resilient electric grid. In April 2022, BLM held its first competitive solar lease sales in the Milford Flats South Solar Energy Zone in Utah, and in the Dry Lake East Designated Leasing Area in Nevada. So far this Fiscal Year, the BLM has held competitive geothermal lease sales in three states (NV, NM, and UT) that brought in over \$2.4 million in bonus bids and rentals. These significant efforts underscore the Administration's commitment to expand and modernize our energy infrastructure, decarbonize our energy grid, and transition to a clean energy future.

Existing Geothermal Regulatory Framework

Replenished by heat sources deep within the Earth, geothermal energy is an important energy resource that generates baseload electricity with minimal carbon emissions. In addition, geothermal energy is used to heat buildings, operate greenhouses, and to support aquaculture operations. It is an abundant resource, especially in the western United States.

Until the passage of the Geothermal Steam Act of 1970 (30 U.S.C. 1001), geothermal energy was regarded legally as a groundwater resource. The law defined geothermal resources as steam, hot water, and hot brines, indigenous to the geology or generated from introduced fluids, associated heat energy, and any byproducts. It also authorized the Secretary of the Interior to issue leases for the development and utilization of geothermal resources on lands managed by the Department and U.S. Forest Service.

The Geothermal Steam Act directed the Secretary to perform an assessment and establish areas known to have geothermal resource potential as "Known Geothermal Resource Areas (KGRAs)." The law established two types of leasing: 1) competitive leasing in the KGRAs, and 2) noncompetitive leasing for lands outside of the KGRAs. This placed geothermal in the context of Federal mineral leasing, like oil and gas. Amendments to this regulatory system were made in the 1980s and the 2000s. Of particular note, the Energy Policy Act of 2005 made all geothermal leasing competitive with few exceptions, did away with the KGRAs, and directed those revenues from geothermal production on Federal public lands be shared, with 50 percent going to the State, 25 percent going to the county, and the remainder to the U.S. Treasury.

Geothermal Operations on Public Lands

The BLM has the authority for leasing geothermal resources on 245 million acres of public lands and 700 million acres of subsurface mineral estate, making up nearly a third of the nation's mineral estate. This includes 104 million acres of National Forest System Lands managed by the U.S. Forest Service, U.S. Department of Agriculture. As of FY 2020, there are nine BLM State offices administering 388 geothermal leases encompassing approximately 710,000 acres. Currently, there are 47 operating geothermal electrical generation facilities (e.g., power plants) operating on 84 leases in four states: Nevada (46), California (29), Utah (7), and New Mexico

(2). Together these power plants have a gross installed capacity of approximately 2,500 MW. In 2020, these power plants generated 9.75 million megawatt hours of electricity, enough to power 1.3 million homes. In FY 2021, the geothermal program generated \$18.5 million dollars in revenue from rents, bonus bids, and royalties. In FY 2019, the Federal geothermal program contributed 6,900 jobs and \$2.05 billion in total economic contributions to the US economy.

The BLM maintains a program for leasing these lands for geothermal development and regulates geothermal operations on Federal leases. Geothermal energy projects are authorized as leases rather than rights-of-way and as such differ from most solar and wind energy projects on public lands. Nearly all the potential for development of Federal geothermal energy is located in 11 western States and Alaska. California leads the nation in geothermal energy production. Most notable is the Geysers, located in northwestern California, which is the largest geothermal field in the world, with a complex of 16 power plants that have a gross installed capacity of more than 1,500 MW. In recent years, Nevada has led the nation in geothermal leasing and development on public lands. Currently, the BLM administers 21 geothermal power plants in Nevada with Federal interest, totaling approximately 700 MW of installed capacity.

Technologies currently being researched and developed include Enhanced Geothermal Systems and Advanced Geothermal Systems (also known as "closed-loop deep geothermal"), which would allow for the responsible development of geothermal almost anywhere, as opposed to specific areas where there are easily accessible, naturally occurring hydrothermal resources as is currently the situation.

H.R. 5350, Enhancing Geothermal Production on Federal Lands Act

H.R. 5350 would amend the Geothermal Steam Act of 1970 by creating a new category for "geothermal exploration test projects" on existing geothermal leases and by creating a new categorical exclusion (CX) for reviewing these projects under the National Environmental Policy Act. This new CX would allow the drilling of a well with a diameter of less than 12 inches for test projects with less than 5 acres of soil and vegetation disruption for each "geothermal exploration well" and no more than 5 additional acres of soil and vegetation disruption to access the test site. Under the bill, the CX would not allow new road building activities, but would allow for "upgrading of existing drainage crossings for safety purposes." H.R. 5350 requires that leaseholders give the Secretary only 30 days of notice prior to conducting a test project and specifies that the Secretary must review and determine within 10 days after receipt of the notice if the project meets the criteria of the CX provided under this bill. Finally, the bill allows the Secretary to consider whether a programmatic environmental impact statement for geothermal leasing would be sufficient to authorize geothermal lease sales without additional analysis under NEPA.

The bill would also require the Secretary to designate new geothermal leasing priority areas on public lands. Within five years of the bill's enactment, the Secretary would be required to designate these new geothermal leasing priority areas on public lands that are determined to be economically viable for geothermal production and have access to energy transmission infrastructure. The Secretary would then be required to complete a programmatic environmental impact statement to cover all leasing activity within these priority areas within a year after they are designated.

The BLM supports the goals of H.R. 5350 to enhance and expedite the permitting for geothermal energy production, such as developing a new CX where appropriate. However, the Department believes that new categorical exclusions are better developed through the traditional agency process than through legislation. We would appreciate the ability to provide technical assistance on the scope of the CX in the legislation, such as the amount of surface disturbance allowed and diameter size of the test wells, to ensure any geothermal activities authorized under this bill will yield the necessary information to determine whether there is a viable geothermal resource that can be developed. Additionally, we would like to work with the sponsors to clarify their intent for the application of extraordinary circumstances to the CX.

We would also like to work with the sponsors to clarify a number of terms used in the bill to ensure they are consistent with BLM's geothermal resource program. For example, the Department notes the activities intended to be categorically excluded involve the confirmation of a commercial geothermal resource by a leaseholder. The BLM recommends replacing the term "exploration test" with "resource confirmation" throughout the bill for consistency with BLM regulations.

The BLM also has concerns with the provisions requiring the review and determination of a request for a CX within 10 days after receipt of a notice of intent from the leaseholder. We would like to work with the sponsors to develop more achievable timeframes to accomplish their goal and ensure the Secretary maintains discretion to ensure geothermal operations are conducted safely and follow all applicable environmental laws.

Further, the BLM appreciates the sponsor's efforts aimed at expediting geothermal leasing by creating "geothermal leasing priority areas" as outlined in section 3. For geothermal leasing, challenges exist in determining what areas to prioritize, and therefore designating priority areas may not result in the intended goal of expediting geothermal development on public lands. The BLM notes that, as required by the Energy Policy Act of 2005, and in accordance with the 2008 Programmatic Environmental Impact Statement for geothermal leasing, the BLM and U.S. Forest Service are continuing to analyze geothermal resources as land use plans are amended by the agencies. We have also announced our intention in the Spring 2022 Unified Agenda to update our geothermal regulations to leasing and operations. The BLM recognizes that as technology advances within the geothermal industry, new opportunities to identify focused development areas may occur in the future, and we look forward to working with the sponsors and the Committee on opportunities to maximize agency resources to provide efficiencies in geothermal development.

Conclusion

The Department and the BLM are committed to responsibly mobilizing the tremendous renewable energy resources of our nation's public lands, and we share the Committee's interest in identifying efficiencies in the development of those resources. The BLM looks forward to continuing to work with the sponsors and the Committee on our shared goals to enhance geothermal exploration and development on public lands. Thank you for the opportunity to testify today and I would be happy to answer any questions.

Statement for the Record

**U.S. Geological Survey
U.S. Department of the Interior**

**House Committee on Natural Resources
Subcommittee on Energy and Mineral Resources**

Legislative Hearing

July 19, 2022

Chair Lowenthal and Ranking Member Stauber, thank you for this opportunity to provide the views of the U.S. Geological Survey (USGS) on H.R. 3681, the Sinkhole Mapping Act. The USGS has previously conducted sinkhole research via several projects, drawing on expertise from variety of programs within our Natural Hazards, Water, and Core Science Systems mission areas. For example, in 2020 at the Sinkhole Conference at the University of South Florida, the USGS announced the publication of a comprehensive map of the karst topography of the conterminous United States, which are geologic regions that feature limestone and can be susceptible to sinkhole formation.¹ This was a first-of-its-kind effort to map these structures at a nationwide scale. The USGS is undertaking limited research and mapping activities on sinkhole processes and hazards and the requirements of this bill are much more expansive. Development of reliable and routinely updated sinkhole hazard maps and assessments at the scales required in this bill to inform hazard avoidance and risk reduction would require the USGS to undertake a more expanded and sustained effort and would need to be achieved using existing resources that are currently committed for other purposes.

H.R. 3681, Sinkhole Mapping Act

H.R. 3681 directs the USGS to study the short- and long-term mechanisms of sinkholes and develop maps of sinkhole risk. These maps would be published online and updated at least once every five years.

As noted above, the USGS does have the expertise required to conduct this analysis related to sinkhole processes and hazards. For instance, the USGS is establishing Integrated Water Availability Assessments in select basins, which could contribute to improved understanding of sinkhole formation. However, the ability to develop maps, especially on five-year schedules, at the scales required to inform hazard avoidance and risk reduction would require a substantially expanded and sustained effort. Furthermore, unlike the national scale karst topography map produced in 2020, an operational program assessing hazards across the country would require many local scale efforts. Sinkholes are highly localized geologic processes, meaning that, while they can happen in many places, the triggers and dynamics in a particular area depend very much on aspects of the local geology. State geologists provide this local expertise. Some of this local scale work is already undertaken by state geologists, but the maps contemplated by H.R. 3681 would require substantial additional work.

The USGS appreciates the intent of the bill and recognizes the need to address sinkhole hazards. The program as envisioned in H.R. 3681 would, however, impact other priorities, including those authorized by the Energy of Act of 2020 and the Infrastructure Investment and Jobs Act of 2021. We would like to work with the bill's sponsors to address these priorities without impacting other critical USGS work.

¹ Daniel H. Doctor et. al, *Progress Toward a Preliminary Karst Depression Density Map for the Conterminous United States*, 16TH SINKHOLE CONFERENCE, UNIV. OF S. FLA., (May 2020), <https://doi.org/10.5038/9781733375313.1003>.

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**House Natural Resources Committee
Subcommittee on Energy and Mineral Resources
H.R. 5522, Federal Land Asset Inventory Reform Act**

July 19, 2022

Thank you for the opportunity to testify on H.R. 5522, the Federal Land Asset Inventory Reform Act. The bill directs the Department of the Interior (Department) to develop and maintain a current multipurpose cadastre of Federal real property and provide a report to Congress on such property. The Department supports the goals of H.R. 5522 to modernize and make publicly available the nation's inventory of Federal real property assets and would welcome the opportunity to work with its sponsors on a number of issues discussed below.

Background

Cadastral surveys create, restore, mark, and define boundaries and subdivisions of land. First proposed by Thomas Jefferson and enacted into law by the Land Ordinance of 1785, cadastral surveys provide the public and public land managers with the essential information needed to correctly determine ownership rights and privileges and facilitate good land management decisions.

As our nation grew, Congress created the General Land Office in 1812 to handle the rapidly increasing number of surveys, public land sales, patents, and land entries. The Bureau of Land Management (BLM) assumed responsibility for cadastral surveys in 1946, when the merger of the General Land Office and the Grazing Service created the BLM. Today, the BLM's Cadastral Survey Program maintains the official records of more than 200 years' worth of title and cadastral survey records, 12 million of which have been scanned, indexed, and published online by the BLM for use by the public and Federal land managers since 1992.

In 1994, an executive order established the interagency Federal Geographic Data Committee (FGDC), which provides managerial and advisory direction for geospatial initiatives across the Federal government. The FGDC is tasked with promoting the coordination and dissemination of geospatial data nationwide and was codified under the Geospatial Data Act of 2018. The Secretary of the Interior serves as the Chair of the FGDC and the BLM leads the FGDC Cadastral Subcommittee, which coordinates cadastral data-related activities among Federal, state, Tribal, and local governments, and the private sector. The BLM publishes two key datasets through the FGDC: 1) the Public Land Survey System, which is a coordinated dataset based on cadastral survey information used for parcel level mapping; and 2) the Surface Management Agency dataset, which captures the best available Federal ownership information. Both of these datasets support large scale depiction of Federal ownership information. The

FGDC was also tasked to develop and manage the National Spatial Data Infrastructure, which is comprised of the technology, policies, and resources necessary to improve utilization of geospatial data.

As part of these efforts, the BLM is responsible for the surveying of Federal lands and maintaining the associated land title records. In total, the Federal government manages approximately 640 million surface acres of the nearly 2.3 billion acres of land that constitute the United States. In addition to these surface lands, the Federal government also manages subsurface estate and hundreds of thousands of buildings, structures, and other properties. Of all the Federal agencies, the BLM administers the largest portfolio of land and interests, with 245 million surface acres and approximately 700 million acres of onshore Federal mineral estate.

Modernizing Record Systems

The Department is committed to the continued development of geospatial data and technology as critical investments for our nation and is involved in many efforts to modernize cadastral and geographic data to better serve a variety of users. In 2019, the BLM initiated an effort to consolidate and modernize its land status records systems through the development of the Mineral and Land Records System (MLRS). The MLRS will replace the current systems used by the BLM, including the Legacy Rehost 2000 case management system, the Alaska Land Information System, and the older status records, such as master title plats, historical indexes, and tract books. The MLRS will be a customer-centric, geospatially-enabled land information system that employs standardized business practices. The new system will help ensure the quality and accuracy of land and mineral records, while securely making them available to the public and land managers.

H.R. 5522, the Federal Land Asset Inventory Reform Act

H.R. 5522 directs the Department to develop and maintain a multipurpose cadastre of all Federal real property, including land, buildings, crops, forests, and other resources, as well as information about the use, assets, and infrastructure of all parcels. Under the bill, the cadastre must be made publicly available on the internet in a graphically geo-enabled and searchable format.

The Department notes that the scope of the cadastre in H.R. 5522 – which would span across every Federal landholding agency – extends beyond the current resources of the Department, and would require extensive new resources to fulfil the bill’s objectives.

Development of Cadastre

The Department supports the goal of modernizing inventory and cadastre systems and is currently in the process of developing a new records system with capabilities that align with some of the requirements of the bill. The Department welcomes the opportunity to work with the sponsors of H.R. 5522 to determine the necessary authority and capacity to consolidate Federal real property inventories of cadastre data across all landholding agencies, consistent with applicable laws. Although the Department oversees roughly 420 million acres of Federal lands, many agencies manage hundreds of thousands of acres of real property assets which are outside of the Department’s jurisdiction. While there may be some advantages in designating the Department as the lead under the bill, we would like to work with the sponsors to adequately

address the extensive interagency coordination, and assignment of roles and responsibilities, necessary to develop and maintain the cadastre.

We would also like to work with the sponsors to refine a number of the bill's definitions, including those for real property and assets, as well as to clarify the role of the Department and the BLM in engaging with other agencies to ensure alignment with the requirements of the Geospatial Data Act and compatibility with their respective FGDC responsibilities. Finally, we would like to work with the sponsors to ensure requirements for contracting services for the development of the cadastre, as directed in the bill, are consistent with the Department of the Interior's procurement and contracting practices and include opportunities for small and disadvantaged business communities.

Implementation Timeframe

Section 2 provides 18 months to develop interagency standards to ensure compatibility among all Federal databases relating to Federal real property. Additionally, Section 2 requires the development of the cadastre to be completed in less than 2 years. We would also like to work with the sponsors to develop more achievable deadlines.

Report to Congress

The bill also requires the Department to submit a report to Congress, within 180 days of enactment, that describes the existing Federal real property inventory and cadastre and recommends whether these existing inventories should be eliminated or consolidated into the new multipurpose cadastre required under H.R. 5522. The bill specifies that the report should include all real property owned or maintained by the entire Federal government, including land; resources such as crops or forests associated with the land; buildings or structures; and any interest or rights in these properties. Furthermore, under the bill, the Department must include the anticipated cost savings that will be achieved as part of the creation of the new multipurpose cadastre, as well as a plan for the implementation of the new multipurpose cadastre. Finally, as part of the requirements of the report, the Department would need to provide legislative recommendations to increase the cost savings and enhance the effectiveness of consolidating Federal real property inventories into one multipurpose cadastre.

The Department is cognizant of its duty to be responsive and accountable to Congress. Given the magnitude of real Federal property and records that must be identified in the report required by H.R. 5522, which includes real Federal property maintained by Federal agencies outside of the Interior Department, the Department would like to work with the sponsors to narrow the scope of the report to DOI jurisdiction to help ensure successful completion.

Conclusion

The Department and the BLM are proud of its involvement with the nation's cadastre and appreciates the Committee's interest in this important topic. The Department looks forward to working further with the sponsors of H.R. 5522 to achieve the bill's objectives.

**Statement of
Michael Nedd
Deputy Director, Operations
Bureau of Land Management
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**House Committee on Natural Resources
Subcommittee on Energy and Mineral Resources
H.R. 5805, Buffalo Tract Protection Act**

July 19, 2022

Thank you for the opportunity to testify on H.R. 5805, the Buffalo Tract Protection Act. The bill would withdraw about 4,200 acres contained in four parcels of public land managed by the Bureau of Land Management (BLM) near Placitas, New Mexico, from location, entry, and patent under the mining laws; and disposition under all laws pertaining to mineral and geothermal leasing or mineral materials. H.R. 5805 aligns with the Administration's conservation goals, and the BLM supports the bill.

Background

The lands proposed for withdrawal are located in close proximity to Placitas, New Mexico, which is an unincorporated area of Sandoval County, just north of Albuquerque. The population of the region has grown significantly in recent years, raising community concerns about the potential impacts of additional gravel mining in the area. The area is used for a variety of recreation activities.

H.R. 5805 identifies the four parcels for withdrawal as tracts A (3,127 acres), B (903 acres), C (201 acres), and D (57 acres). Tract A is referred to as the "Buffalo Tract" and is used for hiking, off-highway vehicles (OHVs), and recreational shooting. The Buffalo Tract contains sand and gravel ridges and arroyos with juniper trees, shrubs, and grasses. Approximately 25 percent of tract A has been mined and reclaimed to date. Tract B is known as the "Crest of Montezuma" and is characterized by moderately steep slopes with pinyon and juniper trees intermixed with shrubs and sparse grasses. Tract C, which does not have a specific name, is similar in topography to the Buffalo Tract and is a common hiking area for local community members. Tract D, referred to as "San Francisco," is named after the arroyo that runs through it, and has terrain similar to that of the Buffalo Tract.

H.R. 5805, Buffalo Tract Protection Act

H.R. 5805, the Buffalo Tract Protection Act, would, subject to valid existing rights, withdraw four tracts totaling approximately 4,200 acres of Federal mineral estate near Placitas, New Mexico, from all forms of mineral development under all laws pertaining to locatable minerals, mineral leasing, or mineral materials. The bill specifies that nothing in the act would prevent future conveyance of the surface of the withdrawn lands, although the mineral estate would be retained by the Federal government.

The BLM recognizes the importance of locally crafted recreation and conservation areas on public lands and waters and believes they can yield immense economic benefits. The BLM believes the most effective and enduring conservation strategies are those reflecting the priorities, needs, and perspectives of the families and communities that know, live, work, and care for the lands and waters. The BLM is aware that local communities, including a Pueblo and residents from Placitas and unincorporated Sandoval County, support protection of these tracts from future mineral development. The BLM is in the process of updating the Rio Puerco Proposed Resource Management Plan that has jurisdiction over these covered lands, and is committed to ensuring Native American and Hispanic community voices are represented in the process.

Conclusion

The BLM appreciates the efforts of the sponsor and the Subcommittee in advancing this important conservation initiative. Thank you again for the opportunity to provide testimony in support of H.R. 5805.