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BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF THE REQUEST OF DOMINION ENERGY UTAH FOR APPROVAL OF A VOLUNTARY RESOURCE DECISION TO CONSTRUCT AN LNG FACILITY	Docket No. 18-057-03

Redacted/Public Version

Prefiled Direct Testimony and Exhibits of Kevin B. Holder of Magnum Energy Midstream Holdings, LLC

Magnum Energy Midstream Holdings, LLC hereby files the Prefiled Direct Testimony and Exhibit of Kevin B. Holder in this docket.

DATED this 16th day of August 2018.

/s/ *Kevin B. Holder*

Kevin B. Holder
Executive Vice President
Magnum Energy Midstream Holdings, LLC

Q. Please state your name and business address.

A. My name is Kevin Holder. My business address is 3165 East Millrock Drive, Suite 330, Holladay, Utah 84121.

Q. By whom are you employed and in what capacity?

A. I am the Executive Vice President of Magnum Energy Midstream Holdings, LLC, a subsidiary of Magnum Development, LLC ("Magnum").

Q. Please describe your educational background.

A. I hold a Master of Business Administration degree from the Meinders School of Business at Oklahoma City University and a Bachelor of Science in Business Administration degree from Louisiana State University.

Q. Please describe your professional experience and background.

A More than 30 years of my professional career has been in the gas midstream space. Prior to joining Magnum in 2015, I was Principal and General Manager of SRV Energy Advisors LLC, an advisory, research and consulting firm focused primarily on investment opportunities in the energy space. Before that, I was Senior Vice President and Chief Commercial Officer of Cardinal Gas Storage Partners, where I headed all commercial activities including marketing, business development, asset optimization, contract administration, commercial regulatory affairs and more. I served in various senior management roles with Enable Midstream Partners (f.k.a. CenterPoint Energy Pipelines and Field Services) and CenterPoint Energy from 1992 – 2008, including accounting, rate and regulatory affairs, operations and marketing/business development

for gas gathering, processing, transportation and storage of natural gas and natural gas liquids.

From 1986 – 1991, I was a senior rate and regulatory analyst for CenterPoint Energy, Inc., a multi-state electric and natural gas utility. I have extensive experience in new business development and marketing of new products and services, revenue generation and sales growth, marketing to many of the top energy companies in the world, including end-user, power generators, utilities and municipalities. I have been involved with start-up entities and successful launching of new companies as well as working with leading private equity, investment banks and other lenders in areas of M&A, bank financings, auditing and SEC reporting. A copy of my curriculum vitae is attached as Magnum Exhibit 1.1.

Background Information

Q. Can you please provide some background information on Magnum?

A. Certainly. Magnum owns and controls the only known "Gulf Coast" style domal-quality salt formation in the western United States, located near Delta, Utah. Magnum was originally funded by Haddington Energy Partners III, LP in 2008 to support a variety of projects centered around this large salt body. With capital and support from Haddington Ventures LLC, Magnum has defined the salt dome extent and key characteristics and has secured key assets for multiple projects (land, minerals, water, etc.). Magnum refers to the site as the Western Energy Hub. Resources committed to date have significantly de-risked both site development and the creation of salt storage

caverns – thus expediting and de-risking future business development.

Site viability and profitability has been proven with one business, Magnum NGLs, LLC, which was successfully developed, brought to commercialization, and sold in 2015 to NGL Energy Partners (NYSE:NGL). To date, five caverns have been developed at the Western Energy Hub with approximately 6.1 million barrels of combined storage capacity, and significant access to available rail and truck transportation. In March 2018, Magnum entered into a new joint venture (JV) with NGL Energy Partners[1]. Magnum is focused on developing multiple portfolio companies, which are in various stages of development: natural gas, compressed air energy storage (CAES), refined products, and industrial gases (hydrogen and helium). The company is actively engaged in commercial discussions with significant customers for several of its business verticals.

Attached as Magnum Exhibit 1.2 is an aerial picture of the Western Energy Hub with depictions of the various Magnum projects under development.

Q. Please provide more detail on Magnum's natural gas storage project.

A. Magnum's natural gas storage project is certificated to provide up to a combined 40,000,000 Dth of working gas capacity in four caverns. The project is designed to allow multiple turns or cycles per cavern each year. Magnum's project represents the only

[1] On March 1, 2018, NGL Energy Partners LP (NYSE:NGL) and Magnum Liquids, LLC, a portfolio company of Haddington Ventures LLC ("Haddington"), along with Magnum Development, LLC and other Haddington sponsored investment entities (collectively "Magnum") announced the formation of a joint venture to focus on the storage of natural gas liquids and refined products by combining NGL's Sawtooth Storage Facility ("Sawtooth", a natural gas liquids storage facility with 6.1 million barrels of capacity in five existing salt caverns, including rail and truck access to Western U.S. markets located southwest of Salt Lake City, Utah) with Magnum's refined products rights and adjacent leasehold. NGL will own approximately 67.6% of the joint venture and Magnum will own the remaining 32.4% at closing. Magnum will have an option to acquire an additional 21.6% interest from NGL under similar terms with an additional option to acquire NGL's remaining 46.0% interest within three years of closing.

known large, domal-style salt structure in the western United States suitable for natural gas storage and high turn capability. Its close proximity to critical gas and power infrastructure will allow natural gas to be delivered by pipe or wire.

An approximately 60-mile natural gas header connecting the Western Energy Hub to the interstate pipelines of Kern River Gas Transmission and/or Dominion Energy Questar Pipeline is fully permitted and shovel-ready. Magnum holds a FERC Section 7(c) certificate and all necessary BLM permits and rights of way to construct a header up to 36" in diameter, which will support potential interconnections at the Goshen Hub, Magnum's proposed WEST Header Project[2], the Kern River Gas Transmission pipeline, Dominion Energy Questar Pipeline, Dominion Energy Utah (LDC), and the IPP Power Plant, among others.

The high-turn capability of the Magnum project provides system supply reliability services as well as peak day services for pipelines, producers, local distribution companies, LNG exporters and power generators. A recent failure of a large gas storage reservoir in California illuminates the potential for large-scale power outages and demonstrates a need for high-deliverability, multi-cycle services like those offered by Magnum, and the increasing penetration of renewable electric generation resources increases the need for flexible gas storage options like those offered by Magnum.[3]

[2] On June 27, 2018, Magnum announced an open season for the Western Energy Storage and Transportation Header Project (WEST Header), a new ~650-mile large diameter interstate pipeline running from the Salt Lake City Valley and Goshen Hub in Utah to Las Vegas, Nevada, and along the California/Arizona border south to Yuma, Arizona. By connecting the Magnum Gas Storage Project with various production sources throughout the Rocky Mountain region and the Permian Basin, the WEST Header will enable Magnum to supply highly flexible, intra-day storage and transportation services to markets throughout the Western United States, including Southern California. For more information about the WEST Header, please visit www.westhp.com.

[3] See the Western Electricity Coordinating Council Wood Mackenzie Study, available at https://westhp.com/wp-content/uploads/2018/06/Western-Interconnect-Gas-Electric-Interface-Study.pdf

Q. Why is Magnum filing testimony in this docket?

A. Magnum agrees that DEU must address both natural gas supply reliability risks, as well as intra-day, peak hour supply risks. Increasing demands on natural gas resources and infrastructure require utilities to confront these concerns and risks. Magnum is filing testimony because its natural gas storage project was among the options considered by DEU for responding to those risks and needs, and Magnum's project was addressed at some length in testimony and exhibits in this docket. Magnum has a good relationship with DEU and it hopes and expects that to continue. Indeed, Magnum believes that Magnum and DEU will have a long and mutually-beneficial business relationship. Magnum is filing testimony in this docket because its project offers numerous benefits and opportunities for DEU and its customers, and Magnum is anxious to ensure that DEU, interested parties, and the Commission all clearly understand the nature, flexibility, benefits and costs of its gas storage project.

Furthermore, after reviewing testimony in this docket, Magnum felt it necessary to clarify the record with respect to risks, costs and benefits relating to its project. Magnum is very proud of its salt storage project and is passionate to explain the many benefits that its facilities offer. In particular, Magnum is concerned that the public record in this docket presents an "apples to oranges" comparison of the Magnum project in comparison to other options. My testimony is intended to clarify the public record and to present clear "apples to apples" comparisons between Magnum's storage project and comparable LNG options.

Executive Summary

Q. Can you provide a brief summary of your testimony?

A. Magnum operates the only proven or developed salt cavern storage resource in the western United States. This remarkable domal salt resource—rare outside the Gulf Coast—offers high-deliverability, multi cycle storage with proven reliability. Its flexibility, including the number of available "turns," far exceeds that of traditional storage reservoirs. It will be available year-round, offering multiple days of supply reliability and/or peaking, as needed, as well as expeditious injectability for recharging of caverns.

Magnum offers economical, all-inclusive, safe, reliable "bolt on" options that will resolve both supply reliability and peak-hour concerns. Magnum's proposal to DEU would allow up to 3 billion cubic feet of natural gas storage (more if needed) and would deliver the quantities of gas needed for supply reliability and/or peaking hour demands at a cost that will save ratepayers approximately [redacted] compared to LNG options. Natural gas stored in Magnum caverns can be delivered to any of several strategic points of receipt and delivery, including Goshen or [redacted], or DEU's current preferred receipt point, [redacted].[4]

[4] In March 2018, DEU requested that Magnum provide a proposal for system supply reliability and peaking gas delivered at or near [redacted], Utah. At the June 19, 2018, Technical Conference in this docket, DEU employee Michael Platt confirmed that [redacted] was an optimal "null point" location for system supply deliveries due to its central location and DEU's ability to distribute supply in multiple directions. Magnum Exhibit 1.7 illustrates the location of a pipeline header that will be built to connect the Magnum storage facilities to the [redacted] interconnection point.

The Magnum facilities will allow DEU to adjust deliverability and peak hour requirements as needed for day-to-day operational needs and in response to supply reliability and peak hour demands. Magnum offers significant flexibility in terms of the scope and design of the facilities, including options for DEU to participate as an equity partner. Magnum's project is shovel ready, with all necessary regulatory approvals in hand,[5] and could be operational within 24-36 months following execution of definitive agreements. Moreover, Magnum's strategic location offers access to significant utility infrastructure, as well as protections against force majeure disruptions such as earthquakes.

Magnum's Discussions With and Proposals to DEU

Q. You mentioned that certain Magnum options are discussed in testimony in this docket. Can you provide some background on Magnum's discussions with and its proposals to DEU?

A. Yes. Magnum has had many discussions with DEU over the past several years dating back to the inception of the Western Energy Hub. Those discussions have addressed several topics, but more recently have focused primarily on DEU's growing concern about addressing natural gas supply reliability issues, peak-hour deliverability, long-term firm storage, optionality for multiple receipt and delivery points, and potential equity participation. At DEU's request, Magnum has responded to several specific

[5] Extending Magnum's header beyond the Goshen Hub to [redacted] and/or [redacted] will require additional FERC regulatory approval, which may be accomplished via either Magnum's FERC Blanket Certificate, an amendment to its existing FERC 7(c) certificate, a new FERC filing or other regulatory options.

Requests For Proposals (RFPs), and has had numerous other follow-up discussions. Magnum offers DEU significant optionality, given the flexibility of its high-deliverability, multi-cycle salt cavern storage. In response to specific requests from DEU, Magnum's specific RFP proposals addressed ***both*** DEU's system supply reliability concerns and its peak-hour concerns.

In general, DEU's testimony in this docket compares Magnum's proposals for addressing both supply reliability and peak-hour issues with an LNG proposal that is ***designed to address only supply reliability concerns***. When properly compared on an apples-to-apples basis, the options offered by Magnum compare very favorably to any LNG option.

Comparison of Magnum and LNG Options

Q. Please explain how the Magnum projects compare to the LNG options.

A. I have prepared three exhibits to help provide meaningful apples-to-apples comparisons of the costs, risks and capabilities of Magnum storage options compared to LNG options:

- Magnum Exhibit 1.3 is a chart that compares the costs and capabilities of Magnum's proposal for addressing both supply reliability and peak-hour needs (which I will refer to as Magnum's "Comprehensive Option"), in comparison to an LNG project that is "scaled-up" to also address both such needs.[6]

[6] During the June 19, 2018 Technical Conference in this docket, DEU Representatives stated that in order for the proposed LNG facility to provide peak-day deliverability in addition to supply reliability, the cost would be approximately 30% higher than the cost of the LNG facility as proposed.

- Magnum Exhibit 1.4 is a chart that compares the costs and capabilities of a scaled-down Magnum option for addressing only supply reliability in comparison to the LNG project proposed in this docket, which similarly addresses only supply reliability. I will address this option as Magnum's "Scaled-Down Option."[7]
- Magnum Exhibit 1.5 compares various other issues of relevance between either or both of Magnum's high-deliverability, multi-cycle domal salt storage options in comparison to either or both LNG options.

Q. Please elaborate on your comparison of Magnum's Comprehensive Option and an LNG option that addresses both supply reliability and peak-hour needs.

A. As illustrated in Magnum Exhibit 1.3 and summarized in Magnum Exhibit 1.6, Magnum's Comprehensive Option would satisfy both supply reliability and peak-hour needs at nearly [redacted] per year less than a comparable LNG option. Over a 30-year period, the cumulative total savings would amount to over [redacted]. Both options could offer comparable storage capacity. However, the Magnum storage reservoir can be filled much more quickly, would offer much greater flexibility with respect to both injection and withdrawal, and can provide for both supply reliability and peaking needs.

Q. How does Magnum's Scaled-Down Option compare to the LNG proposal that addresses only supply reliability?

A. As illustrated in Magnum Exhibit 1.4 and summarized in Magnum Exhibit 1.6, Magnum's Scaled-Down Option, designed to meet supply reliability needs like the

[7] Because pricing for this Scaled-Down Option was never formally requested by DEU, it was not formally proposed. Magnum proposals formally requested by DEU were to focus on a solution for both peak-day and supply reliability. Magnum, subject to a definitive agreement between Magnum and DEU, is willing to construct the Scaled-Down Option at the prices and with the capabilities described herein.

proposed LNG facility, would save an estimated [redacted] per year, totaling more than [redacted] over 30 years. Again, while both options could offer similar storage capacity, the Magnum reservoir can be filled much more quickly and can offer significantly more injection and withdrawal flexibility.

Q. Please discuss the comparison of other relevant factors summarized in Magnum Exhibit 1.5.

A. The Magnum options can be brought on line sooner than an LNG option. Permitting for the Magnum project is complete and certain,[8] while permitting is just getting underway for the LNG project. A Magnum Firm Storage Service (FSS) agreement entails no risk of cost overruns. Fixed price FSS over a term of [redacted] years would require Magnum to bear [redacted].

The Magnum options also present lower safety risks—the storage facilities are located in a remote area away from population centers and west of the Wasatch Fault. LNG facilities built in densely-populated Salt Lake County would present much higher safety risks, and are also more vulnerable to earthquakes. Operation of the Magnum facilities is inexpensive and simple—involving standard compression and pipeline equipment—compared to complex LNG operations, which involve front-end scrubbing, equipment rotation, refrigeration compression, pumps, cooling, vaporization, and tail gas treatment. The Magnum options are easily expandable at low cost, whereas expansion of an LNG option is much more expensive.

[8] As explained in footnote 5, additional authorization will be required to extend the pipeline header beyond Goshen.

Q. Please summarize the advantages of a Magnum FSS.

A. Either of the Magnum options would save DEU and its ratepayers many millions of dollars every year for many decades. Magnum offers numerous available strategic points of receipt and delivery for DEU, including Goshen for Dominion Energy Questar Pipeline and Kern River Gas Transmission, and [redacted] or [redacted]. The Magnum facilities will be available year-round, with resources that provide multiple days of supply reliability and peaking, flexible nominations that can be adjusted as needed to address peak hour deliverability requirements and day-to-day operational needs, and supply reliability during shortfalls or curtailments of upstream pipelines. The location of the Magnum caverns ensures safety and protection against earthquakes and other force majeure disruptions. High-deliverability, multi-cycle salt cavern storage is a proven, reliable and desirable natural gas storage option that offers flexibility and multiple turns compared to traditional reservoir storage. Expeditious injectability allows a quick recharge of caverns. Additionally, the Magnum project provides funding for Utah schools through partnership with SITLA, is permitted and "shovel ready." All-in-all, Magnum offers multiple options that would represent a win-win for DEU and its ratepayers, Utah residents, and Magnum.

Clarification of Public Record Relating to Magnum Project

Q. You mentioned that you wish to clarify certain testimony and exhibits in the public record relating to the Magnum projects. To which public records are you referring?

A. I am referring to the direct testimony in this docket of DEU witnesses Tina Faust, Michael Platt and Kelly Mendenhall on issues relating to Magnum's ability to meet supply reliability and peak hour needs on a reliable, cost-effective basis.

Supply Reliability

Q. The Direct Testimony of Tina M. Faust (DEU Exhibit 2.0, page 12, lines 306-313) states that, in order to avoid a "potentially catastrophic" gas supply disruption, "DEU has determined that it would need a solution that would provide 150,000 Dth/day for at least 8 days." Can the Magnum project meet these minimum requirements?

A. Yes. Not only can Magnum meet the minimum requirement of 150,000 Dth per day for 8 consecutive days, it can provide more days than that and at a much lower cost. Magnum proposed to allow DEU to draw down 150,000 Dth per day for [redacted], and at a much lower cost than an LNG facility.

Q. Ms. Faust's testimony introduces Confidential DEU Exhibit 2.11, which contains a "Supply Reliability Evaluation" by DEU of the LNG facility, various Magnum options, and other options. I will refer to DEU Exhibit 2.11 as the "Confidential Evaluation." Pages 13, 15, and 19 of the Confidential Evaluation include statements to the effect that "The Company also has concerns regarding the fact that this [Magnum] service is only available for [redacted] contiguous days during the heating season." Is that a reasonable concern?

A. No. The reference to [redacted] contiguous days in this context is misleading, at best. Magnum's Comprehensive Option, to which this refers, was designed at DEU's request to respond to *both* supply reliability and peak-hour needs simultaneously. When available supplies must be preserved for both reliability and peak-hour needs, the Magnum project would support withdrawals of [redacted]. The LNG facility, as proposed, would not address peak-hour needs. To address only the supply reliability concern addressed by the proposed LNG facility, the Magnum Scaled-Down Option supports withdrawal for several additional days more than the proposed LNG plant would support, as discussed in my response to the prior question. The Magnum facility can be designed to customize any reasonable withdrawal requirements and at a lower cost than LNG facilities.

Q. The Direct Testimony of DEU witness Kelly Mendenhall (DEU Exhibit 1.0, page 8, lines 191-199) acknowledges that the cost of the proposed LNG facility is higher than other options, but claims that when "all other factors are weighed and analyzed," LNG is "by far the best option in terms of reliability, system flexibility, and risk-minimization" and that other options are "short-term options" that "don't solve the problem in the long term." Similarly, page 9, lines 220-223 claim that the "on demand availability" of an LNG plant makes it "the most reasonable and prudent option." What is your response to these claims?

A. I can't speak to other options analyzed by DEU, but the Magnum options are not "short-term" options and they are more than adequate to address supply reliability

concerns, while also addressing peaking concerns on a long-term basis, and at levels and with prices superior to those offered by an LNG facility. Magnum has proposed FSS terms [redacted]. Moreover, Magnum is amendable to DEU [redacted]. Magnum is offering system reliability, operating flexibility and "on demand availability" equal or superior to an LNG option, and at a much lower cost.

Peak-Hour

Q. The Confidential Evaluation acknowledges that, unlike the LNG proposal, Magnum's Comprehensive Option "may be able to serve a portion of peak-hour demand" (pages 14 and 20). Is that accurate?

A. Yes, although that acknowledgment is a severe understatement. Magnum offers multiple options for peaking services and/or supply reliability. The Magnum project can be customized to meet any reasonable need, including firm storage, no-notice storage, supply reliability, interruptible storage, firm and interruptible park and loan, firm and interruptible wheeling, load following, short-term cycling, risk management, system balancing, and other ancillary services—all at a much lower cost. Magnum is willing to discuss how the facilities can be managed/operated by the parties on an as needed basis.

Testimony filed by DEU in other dockets underscore DEU's need to resolve not only the supply reliability risk addressed by the LNG plant, but also the peak-hour risk that its interstate pipelines can no longer manage.[9] The Magnum options resolve both concerns on a long-term, low-cost basis.

Reliability of Magnum Facilities

Q. The Confidential Evaluation acknowledge that "salt cavern storage is a proven reliable method of storing natural gas." However, it raises a concern that the reliability of Magnum's facility is unknown because Magnum "is not currently serving any natural gas storage customers," and "has not yet constructed or operated a natural gas storage facility or FERC regulated pipeline" (Pages 13, 15, 17 and 19). Is that a reasonable concern?

A. No, and Magnum is very troubled by any such suggestion. Magnum has developed the only proven, commercially viable salt storage reservoirs in the western United States, with caverns already in service. Caverns for natural gas storage are very similar to the NGL caverns that have already been constructed. Magnum's ability to design, construct, own and operate salt storage energy infrastructure cannot reasonably be questioned. Moreover, construction and operation of the other equipment required for gas storage is relatively simple—compression equipment and a pipeline header about 60 to 90 miles in length, both of which utilize standard, well-understood, and easily-operated

[9] For example, see DEU Exhibit 3.0, Docket 17-057-20, Direct Testimony of William F. Schwarzenbach III, at pages 5-9.

equipment. Magnum employees and consultants have more than adequate experience and expertise to construct and operate storage and pipeline facilities. In contrast, construction and operation of an LNG facility are much more complicated and pose a significantly higher safety risk.

It is true that Magnum has not yet constructed or operated the pipeline header for which it holds a FERC certificate, or a *natural gas* storage cavern. It is equally true, however, that DEU has never constructed or operated an LNG facility. Fixed-price FSS prices offered by Magnum will insulate DEU and its customers from risk associated with Magnum facilities, unlike utility-owned LNG facilities.

Delivery Pressure; Interconnection; Location

Q. The Direct Testimony of DEU Witness Michael Platt (DEU Exhibit 3.0, page 11, lines 275-276) states: "Gas distribution systems perform better when gas is sourced as close as possible to the demand centers at high pressures." Lines 289-290 state: "During the Peak Hour, on-system storage provides much higher pressures generally throughout the system than other off-system options would." Page 12, lines 295-313, states that it is beneficial for gas to flow through a "shorter length of pipe before reaching customers' meters" and that DEU "control" of the LNG plant would provide benefits, as gas could flow "immediately without reliance on third parties or any additional process" and without any nominations. Are these fair distinctions between Magnum and LNG options?

A. No. There is no legitimate distinction as to the source of gas between a Magnum facility and an LNG facility that both deliver to the same location and at similar pressures. Magnum's facilities can deliver gas to any desired delivery point at DEU's required pressure. Gas from Magnum storage can thus be "sourced" on a no-notice basis[10] on the DEU system at [redacted] (and/or [redacted]) and at the necessary pressure. Both the LNG facility and the Magnum facility thus offers "on-system" storage; either would be tied directly into the DEU system at a location selected by DEU, and either would deliver "on-system gas from storage" at a similar pressure.

Delivery pressure is a function of many variables, including compression, pipeline size, pipeline pressure at the delivery point, and the ability to vary pressure at the delivery point. It has less to do with where the physical storage supply is located. Magnum's facilities will maintain the required pressure to [redacted], or other previously mentioned DEU locations. Indeed, the pressure requirements referenced by DEU engineers are *lower* than the expected operating pressure of Magnum's facilities. Magnum will thus include pressure reduction equipment at or near the interconnect point. This is standard

[10] Magnum's FERC-approved pro forma tariff provides:

> 2.1 No-notice storage service rendered to Customer under this Rate Schedule shall allow Customer to alter its injections or withdrawals, at points specified in Customer's Rate schedule NNSS Storage Service Agreement, of Gas from levels nominated by Customer pursuant to Section 6.7 of the General Terms and Conditions, including a nomination of zero, by an amount, plus or minus, up to Customer's No-Notice Maximum Daily Quantity without complying with the deadlines for revised nominations under Section 7 of the General Terms and Conditions; provided: (a) Customer's rights at primary Point(s) of Receipt shall at all times be subject to the Maximum Daily Receipt Quantity(ies) set forth in Customer's Firm Storage Service Agreement;
>
> Thus, DEU can control when and how much gas will be received at the [redacted] interconnect without providing any advance notice to Magnum. This is the true definition of no-notice service.

practice across the United States: natural gas pipelines deliver into many different city gate stations at varying pressures. DEU gas control personnel can directly control the facilities at the delivery point, and the no-notice service offered by Magnum will allow DEU to maintain required pressure without nominations.

Q. The Direct Testimony of Tina M. Faust (DEU Exhibit 2.0, page 18, lines 461-464) states that DEU would need to construct a new interconnect facility to receive gas from the Magnum project, and refers to the Confidential Evaluation. In discussing the Magnum project, page 12 of the Confidential Evaluation states that "DEU would have to build an interconnect" at [redacted] to accommodate the Magnum project. Page 13 states "the Company would need to construct an interconnect on its system, at a cost of approximately [redacted]. The levelized revenue requirement of this facility is [redacted]." Later, in discussing another Magnum option, page 19 states "the Company would need to construct an interconnect facility on its system, at a cost of [redacted]. The levelized revenue requirement of this facility is [redacted]." How do you respond to these statements?

A. All storage facilities require pipeline interconnectivity in order to receive and deliver gas, whether the storage is in a salt cavern or LNG storage. Magnum has significant flexibility, is able and has offered to deliver gas to [redacted] (at the request of DEU's engineers) and/or at Goshen or [redacted], as reflected on the schematic in Magnum Exhibit 1.7. Any of these options would provide supply reliability and/or peak-day services at a much lower cost than an LNG option.

Q. Are DEU's cost estimates for the interconnect reasonable?

A. The estimates seem high, although not necessarily inaccurate. In any event, Magnum is confident that it could construct the interconnection facilities at a lower cost than these estimates and is willing to do so.

Q. Mr Platt seems to disagree that storage and no-notice service is equivalent to "on-system storage," claiming that "replacement supply from another distant location may not adequately address the resulting supply shortfall" (page 13, lines 338-349). Is this a valid basis for distinction between the reliability of an LNG plant and by the Magnum project?

A. Again, no. Magnum offers world-class, high-deliverability, multi-cycle salt cavern storage, which provides expeditious injectability and withdraw capability directly to and from DEU's distribution system. No third-party upstream pipelines will be involved. Magnum will be an "on-system" storage facility tied directly into the distribution system that can deliver at the required pressure. Using firm storage and no-notice service, DEU will have instantaneous flows, no different than flow received from an LNG facility. Under Magnum's tariff, a no-notice customer can "alter its injections or withdrawals" at any time "without complying with the deadlines for revised nominations."[11] DEU can thus directly control when and how much gas will be received at [redacted] without any advance notice or revised nomination.

[11] See footnote 11.

Risk

Q. The Confidential Evaluation includes statements to the effect that "The pipeline associated with [a Magnum] option could be subject to the same risks outlined in DEU Exhibit 2.12, including third-party tear outs, equipment failures and force majeure events." (Pages 13, 15, 17 and 19). Do you agree?

A. Yes, but the same is true of an LNG option. Any pipeline, including the pipeline header that would need to be built to interconnect an LNG facility, could be subject to similar risks. As mentioned above, however, the strategic location of the Magnum facilities makes it less vulnerable to most risks, including the risk of damage to persons or property, and the risk of natural disasters such as earthquakes.

Q. The Confidential Evaluation references cost concerns of a Magnum FSS, such as rate increases after the initial term. (pages 13, 15, 17 and 19). Is that a legitimate concern?

A. It is not a legitimate concern. Magnum has offered significant flexibility in terms of contract length, roll-over and evergreen options, DEU ownership, etc. So long as Magnum understands DEU's long-term contractual and service objectives, Magnum can develop an appropriate contract structure, including any reasonable options, at a reasonable cost.

Q. The Confidential Evaluation states that the location of Magnum's facilities would require "approximately 80 miles of pipeline to be constructed" to [redacted] (page 13) or "approximately 100 miles" to [redacted] (page 19). Are those estimates accurate?

A. They are close. Magnum will construct a pipeline header from its storage facilities near Delta, Utah, to the ultimate delivery point on the DEU system, whether at [redacted], [redacted] and/or Goshen. These distances vary from approximately 60 to 90 miles. Of course, a pipeline header will also need to be built for an LNG project, even if it may be shorter. The length of the required pipeline will vary by project and delivery location, but the distance will have little or no effect on the quality or quantity of services that can be provided by either project at the desired delivery point.

The Magnum facility is accessible to and supported by significant existing and planned utility infrastructure, including interstate natural gas pipelines owned by Kern River Gas Transmission and Dominion Energy Questar Pipeline, DEU pipes, IPP, major western markets, existing and proposed combined cycle natural gas generating facilities and Magnum's own proposed WEST Header Project. Magnum's strategic location is a strength of its gas storage project.

Q. A map included on page 12 of the Confidential Evaluation shows Magnum Option 3A delivering to Goshen and Options 3B and 3C delivering to [redacted]. Is the map correct?

A. No. The descriptions and economic evaluations of Option 3A in the Confidential Evaluation are for deliveries to [redacted], but the map shows that option ending at Goshen. Similarly, the map shows Options 3B and 3C as extending to [redacted], whereas the description is for deliveries to [redacted]. More importantly, however, as noted above, Magnum can and has offered to deliver gas to [redacted], Goshen, and/or [redacted].

Moreover, Magnum is willing to allow DEU to own certain facilities and pipeline segments that DEU deems important to its operations.

Q. The Confidential Evaluation (pages 15, 17) suggests that additional risks will be caused by the location of the Magnum project, in that it "requires the gas to be transported from the storage to the DEU system which gives rise to the risks more fully discussed in DEU Exhibit 2.12. These risks raise reliability concerns." Do you wish to comment?

A. Any project involves risk, but risks associated with the Magnum project are limited, understood and controllable. The Magnum project has very little execution risk, as the project is fully permitted[12] and shovel ready. The location of Magnum's facility will avoid risks associated with construction and operation of dangerous, high-pressure equipment within a large population center. Magnum's facility will also have a much lower risk of disruption by natural disaster such as an earthquake.

Q. Do you have any other comments?

A. Magnum would love an opportunity to work with DEU and its customers and regulators to develop a timely, cost-effective, safe and reliable high-deliverability, multi-cycle salt cavern storage facility and associated storage and no-notice services to resolve DEU's supply reliability and/or peak-hour requirements. We appreciate this opportunity to better explain the nature and cost of the services that Magnum can provide.

[12] As explained in footnote 5, the existing permit includes authorization for a pipeline approximately 60 miles in length to Goshen.

Q. Does this conclude your testimony?

A. Yes.

MAGNUM EXHIBITS 1.1 -1.7
Redacted / Public Versions

Kevin B. Holder (214) 300-1876 kevinbholder@verizon.net

Experienced Energy Executive | Midstream & Utilities

Cross-functional experience in High-Volume Operations Management, New Business Development, Infrastructure Development, Asset Optimization, P&L Responsibility, Strategic Analysis, Risk Management, Acquisitions & Divestitures, Project Design & Management, Contract Negotiations & Administration and Regulatory & Environmental Affairs. Well-versed in Financial Analysis, Budget Preparation and Board/Investor/Client Relations.

SUMMARY STATEMENT:

I am an experienced energy executive with over thirty years in the midstream space. I am currently Executive Vice President – Natural Gas Midstream for Magnum Energy Midstream Holdings, LLC. I currently lead all development efforts for Magnum Energy's WEST Header Project, a ~650 mile large diameter natural gas pipeline and a 42 BCF natural gas salt cavern storage project, targeting end-users, marketers, pipelines, power generation companies and LDCs in the Western US energy markets. Prior to my role at Magnum, I served as Principal and General Manager of SRV Energy Advisors LLC, an advisory, research and consulting firm focused primarily on investment opportunities in the energy space. Prior to SRV Energy Advisors, I served as Senior Vice President and Chief Commercial Officer of Cardinal Gas Storage Partners (sold in 3Q14 to Martin Midstream Partners (NASDAQ: MMLP)), where I headed all commercial activities including marketing, business development, asset optimization, contract administration, commercial regulatory affairs and more. Prior to Cardinal, I served in various senior management roles with Enable Midstream Partners (f.k.a. CenterPoint Energy Pipelines and Field Services (NYSE: ENBL)) and CenterPoint Energy (NYSE:CNP), including accounting, rate & regulatory affairs, operations and marketing/business development for gas gathering, processing, transportation and storage of natural gas and NGLs. I have experience in new business development and marketing of new products and services, revenue generation and sales growth, marketing to many of the top energy companies in the world, including end-user, power generators, utilities and municipalities. I have been involved with start-up entities and successful launching of new companies as well as working with leading private equity, investment banks and other lenders in areas of M&A, bank financings, auditing and SEC reporting.

EMPLOYMENT EXPERIENCE:

Executive Vice President – Natural Gas Midstream
Magnum Energy Midstream Holdings, LLC
December 2015 - Present

Principal & General Manager
SRV Energy Advisors LLC
November 2014 to November 2015

Senior Vice President & Chief Commercial Officer
Cardinal Gas Storage Partners – (JV - Energy Capital Partners & Martin Midstream Partners)
January 2008 to October 2014

Sr. Director Business Development – Interstate/Intrastate Pipeline and Storage
Enable Midstream Partners (f.k.a CenterPoint Energy Pipelines)
March 2006 to November 2008

Sr. Marketing Manager *(and various other marketing roles)* – Field Services (Gas Gathering/Processing/Marketing of NGLs)
Enable Midstream Partners (f.k.a CenterPoint Energy Field Services)
January 1992 to February 2006

Sr. Rate & Regulatory Analyst *(and various other accounting/administrative roles)* – Interstate Pipelines and Field Services
CenterPoint Energy, Inc.
January 1986 to December 1991

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KEY ACHIEVEMENTS:

- Generated over $200 million of EBITDA through the negotiation of various midstream energy related contracts with multiple producers, marketers, utilities, IPPs and pipelines including Shell, ExxonMobil (XTO), Anadarko, Encana, Chesapeake Energy, EOG Resources, Florida Power & Light, Laclede Energy, Tenaska, Koch Energy Services, DCP Midstream, Kinder Morgan, Boardwalk Pipeline Partners, Energy Transfer Partners, among others.
- Managed all commercial aspects for capital projects with expenditures ranging between $5 million and $500 million, including gathering, processing, NGL and large 36" & 42" intrastate/interstate pipeline & storage development projects, targeting the Barnett, Haynesville, Woodford, Fayetteville, Marcellus and Utica shales, while working with operations to maintain construction schedules and on-time, on-budget initiatives.
- Directed the identification, evaluation, development, repurposing and acquisition of strategic midstream facilities in excess of $1 billion, resulting in initial and incremental sources of revenue while meeting corporate hurdle and IRR requirements.
- Worked with public companies, private equity partners and investors to provide commercial support for the debt financing for $240 million construction and term loan agreements for greenfield projects, supported by long-term, fee-based agreements with credit worthy counterparties.
- Opened and established operations and business development offices in Houston (1992 & 2008), Tulsa (1996), Dallas (2003 & 2008) and Midland (2005) for Enable Midstream Partners and Cardinal Gas Storage Partners, developing and maintaining long-term relationships with key clients.

EDUCATION:

Master of Business Administration (Corporate Finance - Distinguished Graduate with High Honors)
Meinders School of Business - Oklahoma City University

Bachelor of Science in Business Administration (Accounting & Finance Major)
School of Business Administration - Louisiana State University

Additional Graduate-Level Studies (Corporate Finance)
Oklahoma State University - Graduate School of Business

PROFESSIONAL AFFLIATIONS:

Past Member, East Texas Natural Gas Society
Past Member, National Energy Services Association
Leadership Tulsa Graduate Class of XXVIII (2001) - CenterPoint Energy Representative
Past Board Member (Interim) – Tulsa Air & Space Museum
Past Pipeline Sponsoring Member – Oklahoma Independent Petroleum Association (OIPA)
Former Pipeline Committee Member, Mid-Continent Oil & Gas Association
Child Advocates of Houston – Long-time Supporter

REFERENCES:

Excellent Professional References Provided Upon Request

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SPECIFIC COMPETENCIES AND ACHIEVEMENTS:

Direct Oversight for:

• Profit and Loss	Generated over $200 million of EBITDA
• Gas Purchases and Sales	Responsible for purchase/sale of over 10 BCF of Natural Gas
• Gas and Volume Control	Balanced Daily up to 1 BCF of pipeline flows
• Gas Nominations and Balancing	Handled multiple noms on up to 8 intra/interstate pipes daily
• Contract Negotiation and Administration	Negotiated multiple long-term, fee based agreements
• Commercial Regulatory Affairs	Developed/received approval on multiple FERC/State tariffs
• Project Design and Management	Managed over $1 billion of gas and NGL projects
• Day to Day Operations of Assets	Ensured optimal operation/execution of company assets
• Credit Evaluations of Shippers	Secured credit worthy customers that met all financial and tariff requirements

Marketing and BD Responsibilities

• Establish/leverage business relationships	Outstanding relationships in the E&P and midstream space
• Contract Negotiations	
○ Long Term	Secured multiple long-term, fee based agreements
○ Short Term	Secured multiple day to day, month to month and swing contracts needed to optimize assets
• Pipeline Interconnects	Negotiated over 20 large pipeline interconnects providing substantial liquidity for company assets
• Well Connects	Negotiated numerous well connects securing adequate supply to meet system needs
• Contract Administration	Developed/maintained contract admin system necessary for proper execution
• Gas and Volume Control	Directed daily balancing, flows and optimization of assets
• Nominations/Confirmations	Maintained noms/confirms for downstream pipelines
• System Balancing	Maintained systems within tolerance levels
• Accurate Accounting	Oversight for rev/exp associated with short/long term business
• Annual Capital and Operating Budgets	Prepared & tracked monthly all capital/operating budgets
• Financial Reporting	Provided commercial support for financial reporting needs
• Risk Management	Maintain a weekly risk management program to assure lenders and stakeholders of policy compliance

Midstream Responsibilities

• Project Manager	Managed multiple projects: 4" to 42" pipelines, gas gathering, processing, transportation & storage
• Project Development	Negotiated, managed and supported JVs with midstream companies, including NGL processors in NLA and ETX
• Asset Optimization	Daily monitoring of market conditions seizing on opportunities to maximize efficient operations of assets
• Project Design	Designed assets with ability to optimize on opportunities that arise from time to time
• System Flows and Allocations	Maintained knowledge of system capabilities, flow hydraulics and fuel usage to maximize efficiencies
• Support ES&H	Developed, managed and supported ES&H initiatives associated with company assets

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SPECIFIC PROJECTS:

- Currently lead all development efforts for Magnum Energy's WEST Header Project, a ~650 mile large diameter natural gas pipeline and a 42 BCF natural gas salt cavern storage project, targeting end-users, marketers, pipelines, power generation companies and LDCs in the Western US energy markets.
- Led the commercial and business development team for Cardinal Gas Storage Partners, resulting in the identification, construction and operation of $600 million of strategically located high deliverability multi-cycle salt dome and reservoir storage projects in the US Gulf Coast.
- Negotiated multiple Enable Midstream (CenterPoint) supply acquisition contracts with producers and marketers, resulting in long-term access to supply from strategic producing basins and assuring adequate sources of gas for meeting on-system demands.
- Negotiated and managed the portfolio of over 2 Bcf/d of multiple short-term and long-term transportation agreements with LDCs, producers, marketers, power companies, utilities and pipeline companies, optimizing company assets while meeting short/long-term revenue goals and objectives.
- Led the development to enhance North Louisiana's Perryville/Delhi Hub, including firm wheeling capabilities, hub services, park and loan activities as well as direct experience in negotiating multiple pipeline interconnect agreements, resulting in increased liquidity and optionality for all shippers.
- Developed 24" and 36" Header Pipelines with multiple pipeline interconnects (250,000 mmbtu/d capacity of each interconnect) for Arcadia Gas Storage, Cadeville Gas Storage and Perryville Gas Storage, including responsibility for negotiation of interconnect agreements.
- Project Manager for Enable's 42" Carthage to Perryville Pipeline Project, approximately 240 miles with multiple compressor stations and multiple pipeline interconnects (capacity of 1.8 mmbtu/d).
- Worked with and supported the conversation of Enable's 300,000 mmbtu/d Waskom processing plant to full cryogenic capabilities as a joint venture with Amoco and Dynegy, including on-site fractionation and local marketing of NGLs.
- Developed numerous greenfield and brownfield gas gathering and processing opportunities in the Ark-La-Tx, Arkoma and Anadarko basins for producers, providing central point compression, JT processing plants and dehydration/separation facilities, resulting in increased throughput to over 1.0 Bcf/d.
- Contributed to all aspects of the initial start-up of ServiceStar, CenterPoint Energy's remote monitoring and automation initiative, leading to the deployment of over 10,000 RTUs for wellhead measurement, compressor monitoring and artificial lift applications, resulting in annual revenues of $13.5 million in 2005.
- Worked with numerous producers/processors in ETX and NLA in providing access to key markets, including the Carthage Hub and Perryville Hub, by providing outlets on CenterPoint's 42" pipeline project (Including DCP's 600,000 mcf/d Carthage plant, Penn Virginia's 100,000 mcf/d ETX plant, Marlin Midstream's 100,000 mcf/d ETX plant and CenterPoint's 300,000 mcf/d Waskom (ETX) plant).

OTHER RESPONSIBILITIES:

- Managed a staff of marketing, engineering and administrative personnel on a wide-variety of projects involving clients' needs for new products and services, pricing, business strategies, and economic risk allocation for project bids and negotiations.
- Key member of the Risk Management team, establishing guidelines for employees to follow and utilize in the day to day business activities.
- Analyzed investment potential of capital projects; prepare feasibility and profitability projections along with market and competitive analysis studies.
- Recruited new and expanded existing business through preparation of proposals, creation of business development plans and use of physical and financial products and services, including hedging activities.
- Identified, defined, developed and implemented techniques to improve productivity, increase efficiencies, mitigate risks, resolve issues and optimize cost savings for both internal and external applications.
- Participated in preparation of annual operating plan, as well as the five-year strategic plan.
- Contributed to overall corporate strategy and operations as key member of total management, including presentations at quarterly board meetings for Cardinal.

Magnum Exhibit 1.2
Magnum Development – Western Energy Hub

Developing projects to serve the natural gas, natural gas liquids (NGLs), crude oil, refined products, industrial gas, and power markets in the Western US

Commercialized

MAGNUM NGLs | MAGNUM Refined Products | MAGNUM CAES | MAGNUM Gas Midstream | MAGNUM Generation | MAGNUM Crude | MAGNUM SALT | MAGNUM Industrial Gases

Key Site Attributes

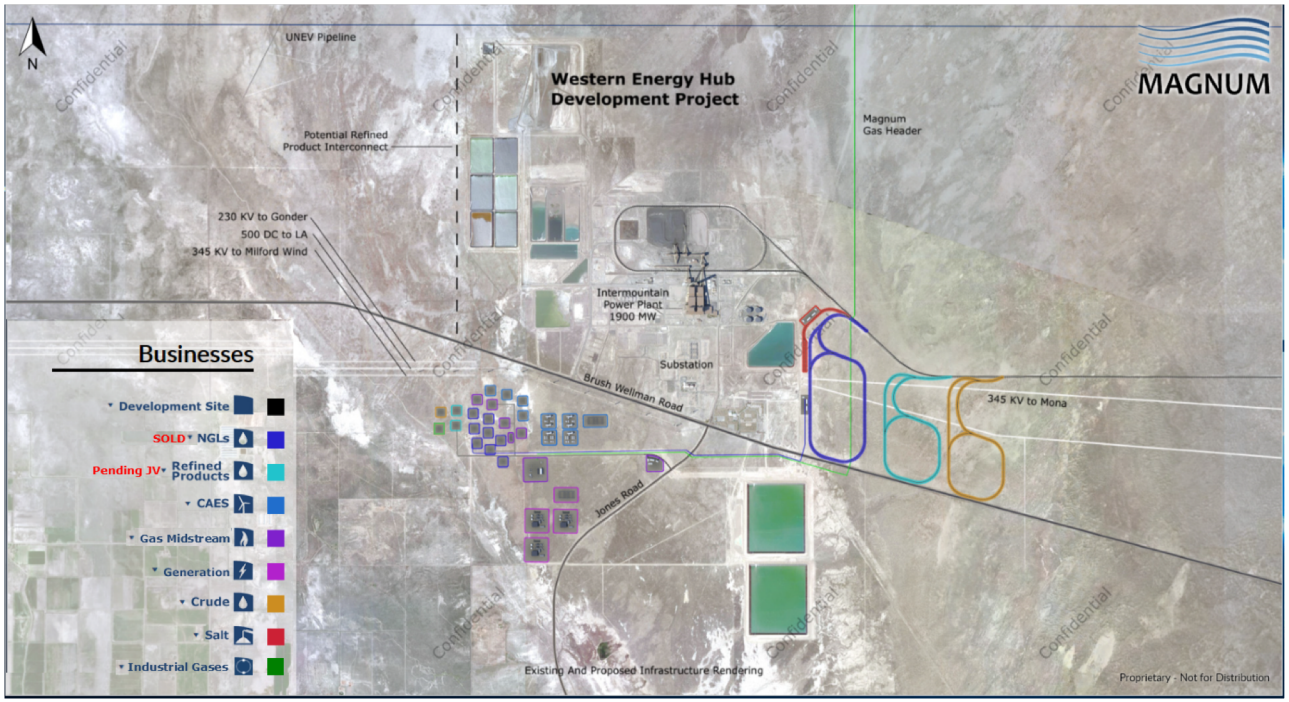
- Location: Delta, UT
- Acres under control: ~11,000: (surface & minerals)
- Magnum Controls entirety of developable salt; ~1,000 acres allowing for up to 100 caverns

Magnum NGLs: Commercialized

- Developed the largest NGL storage business in the Western US

Magnum Development Prospects

- Currently under development: Refined Products Storage, The WEST Header Project & Natural Gas Storage, Compressed Air Energy Storage (CAES), Industrial Gases, Salt Production



Magnum Exhibit 1.3
Comparison of Magnum Comprehensive Option to LNG Scaled-Up Project

	Magnum Comprehensive Option (responsive to DEU's request to resolve supply reliability and peak hour needs) (1)	LNG Scaled-Up project designed to address supply reliability and peak hour needs
Storage Capacity: Working Gas	**3 BCF**	**1 - 2 BCF (2&3)**
Max Deliverability	[redacted] **MMCFD (1)**	**100 – 300 MMCFD (2&3)**
First Year Revenue Requirement (based on 30-years)	[redacted] DEU estimate for interconnect)	**~ $40 plus million (3&4)**
Levelized Revenue Requirement (based on 30-years)	~ [redacted] DEU estimate for interconnect)	**~ $31.6 million (3&4)**
Injection Rate	~ 48 days to fill	Liquefaction rate of 10 MMCFD – 30 MMCFD (2&5) 1 BCF working gas: 10 MMCFD injection + electric compression fuel loss ~120 days to fill 2 BCF working gas: 30 MMCFD injection + electric compression fuel loss ~ 80 days to fill
Withdrawal Capability	Supply Reliability & Peaking: [redacted] Dth/d reliability for minimum [redacted] days and [redacted] days of peaking [redacted] Dth/d over [redacted] hours. (6) Supply Reliability: [redacted] Dth/d for [redacted] days and then [redacted] Dth/d for [redacted] days.	2 BCF working gas and 300,000 Dth/d withdrawal capability: On an apples to apples comparison with the Magnum Comprehensive Option, DEU would not be able to withdraw as much volume on a supply reliability basis or on a peaking basis.

(1) The maximum withdrawal rate (on full day basis) for this option is based on DEU's request for withdrawal capabilities of [redacted] MMCFD over 24 hours (supply reliability service) plus [redacted] MMCFD over [redacted] hours (firm-peaking service).

(2) Estimate based on Questar Gas Company Liquefied Natural Gas (LNG) Peak Shaving Facility Evaluation Request for Proposal February 26, 2016.

(3) DEU Representatives stated at a June 19, 2018 Technical Conference that the cost of an LNG facility designed to meet both supply reliability and peak hour demands would be approximately 30% higher, resulting in approximately $40.3 million in first year revenue requirement and about $31.6 million in levelized revenue requirement.

(4) Estimate based on publicly stated cost of capital of approximately 7.64% based on filed Dominion Energy Utah financial documents.

(5) Estimate based on ratio used for DEU LNG Proposal (supply reliability).

(6) The Magnum facility can be designed to meet any reasonable withdrawal scenario.

Magnum Exhibit 1.4
Comparison of Magnum Scaled Down Option to LNG project as proposed

	Magnum Scaled-Down Option (to provide only supply reliability needs)	DEU Proposal- LNG Storage Facility[1]
Storage Capacity: Working Gas	**~ 1.5 to 3 BCF**	**1.2 BCF**
Max Deliverability	**150 MMCFD**	**150 MMCFD**
First Year Revenue Requirement (based on 30-years)	[redacted] **Million** [redacted] DEU represents for [redacted] interconnect)	**~ $31 + million** [2]
Levelized Revenue Requirement (based on 30-years)	**~** [redacted] **million** [redacted] DEU represents for [redacted] interconnect)	**$24.3 million**
Injection Rate	~ 30 to 48 days to fill depending on cavern size	liquefaction rate of 8.2MMcfd – 180 days to fill [3]
Withdrawal Capability	[redacted] Dth/d for a minimum of [redacted] days and maintain pressure in the event of supply shortfalls or other system emergencies [4]	150,000 Dth/day for at least 8 days and be able to maintain pressure for firm customers in the event of supply shortfalls or other system emergencies [3]

(1) The capabilities of the proposed LNG Storage Facility provide significantly less deliverability than that requested from Magnum. The LNG facility is designed for supply reliability and does not provide for peaking capability at the same time.

(2) Estimate based on publicly stated cost of capital of approximately 7.64% based on filed Dominion Energy Utah financial documents.

(3) High Deliverable Multi Cycle (HDMC) salt cavern storage provides much more flexibility of injection and withdrawal than an LNG facility.

(4) The Magnum facility can be designed to meet any reasonable withdrawal scenario.

Magnum Exhibit 1.5 (page 1 of 2)
Comparison of Magnum Salt Storage vs LNG

	Both Magnum Salt Storage Options	Both LNG Storage Options
Timing to Commercial Operation ("CO")	~ 24-36 months following execution of Definitive Agreements	CO: Winter 2022 Bid Project: 2nd or 3rd Quarter 2019 Award Project: 1st or 2nd Quarter 2020 Finalize Property Purchase: 1st Quarter 2020 Construct Project: 2nd/3rd Quarter 2020
Permitting	• **Complete** - Magnum's Natural Gas Midstream project is certificated, having received its FERC 7(c) Permit to place the facility into service. Additionally, Magnum has permitted the right-of-way for its pipeline header system to Goshen, including satisfying all BLM and FERC requirements. Additional authorization will be required to extend pipeline header beyond Goshen. • Magnum tariff can be located at: https://westhp.com/wp-content/uploads/2018/07/Magnum-complete-pro-forma-tariff-8-5-16.pdf	• Completed FEED study • Preliminary permitting complete • Discussions with the Salt Lake County Planning Department for conditional use requirements for the site, and with the Utah State Department of Environmental Quality for permitting for air emissions
Cost Risk	**Low** • Magnum offers a fixed price contract service. • Multiple businesses have already been commercialized by Magnum, including several underground salt storage caverns. • Magnum has a proven track record of developing underground salt caverns under budget and ahead of schedule. • Risk associated with further development has been greatly reduced. • Magnum bears cost risks.	**High** • Projected LNG facility cost is greater than Mangum options. • Actual costs will not be known until project is complete. • DEU and its customers bear cost risks. • Safety concerns exist with respect to a single LNG containment facility as proposed.
Reliability	• Relative to LNG, Magnum's design requires only compression in and free flow plus compression out. • No-notice service allows DEU control and deliveries outside of NAESB cycles. • Satisfies all supply reliability and peak hour needs. • Can be delivered directly into demand center. • Storage located further from population centers, known fault lines and seismic activity. • Can be designed to meet any reasonable withdrawal scenario.	• Complicated Equipment. • Not subject to NAESB cycles. Directly controlled by DEU Gas Control. • Does not need to be purchased or nominated at the time of need, and is delivered directly. • Vaporize 150,000 Dth/day, all day, for eight consecutive days and maintain pressure for firm customers in the event of supply shortfalls or other system emergencies. • Located near demand center.

Magnum Exhibit 1.5 (page 2 of 2)
Comparison of Magnum Salt Storage vs LNG Facility

	Both Magnum Salt Storage Options	Both LNG Storage Options
Operations	• Simple operations – compression, pipeline. • Ability to deliver to multiple pipelines of which DEU is a customer. • Ability to perform multiple withdrawal and injection cycles each year. • Salt storage facilities are capable of withdrawing natural gas quickly, sometimes within an hour, and they are also able to pivot more readily between injections and withdrawals.**(1)**	• Complex operations - front end scrubbing, rotating equipment, refrigeration compressor, pumps, cooling, vaporization, tail gas treatment • Complex, high cost capital and operations, significant environmental consequences with breach of tank.
Future Issues	• Remote to urban encroachment. • Term and options can be tailored as required. • Costs roll off ratepayers when term ends and facilities are no longer needed.	• Urban encroachment around LNG facility. • Increasing O&M as the plant matures will be a burden on ratepayers.
Expandability	Low cost to double capacity.	• High cost to double capacity • Additional cost to include peak day optionality**(2)** • Most LNG facilities that have gone out of service have done so because of escalating O&M costs or changes in daily load requirements that cause the facility to become obsolete.

(1) https://www.eia.gov/naturalgas/storagecapacity/

(2) DEU Representatives estimated increased costs of approximately 30% to meet peak day needs.

Magnum Exhibit 1.6 (page 1 of 2)
Summary - Magnum HDMC Salt Storage Options vs LNG Options

Conclusions

- Magnum Scaled-Down Option is significantly less expensive than proposed LNG Option for ***supply reliability only***

Magnum Scaled-Down Option-supply reliability → ~ [redacted] Million/yr. Levelized Revenue Requirement

LNG Option - supply reliability → ~ [redacted] Million/yr. Levelized Revenue Requirement

Magnum provides ~ XXXXX **Million in annual savings** on an apples to apples comparison, equating to a savings of XXXXXX **Million over 30 years**

- Magnum Comprehensive Option is significantly less expensive than a scaled-up LNG Option for both ***supply reliability and peaking***

Magnum Comprehensive Option - supply reliability & peaking → ~ [redacted] Million/yr. in Levelized Revenue Requirement

LNG Option - supply reliability & peaking → ~ [redacted] Million/yr. in Levelized Revenue Requirement

Magnum provides ~ XXXXXX **Million in annual savings** on an apples to apples comparison, equating to a **savings of** XXXXX **Million over 30 years**

Based on an Apples to Apples Comparison, Magnum Options provide significant cost savings for DEU and its Ratepayers

Exhibit MEM 1.6 (page 2 of 2)
Summary - Magnum HDMC Salt Storage Options vs LNG Options

- ***Magnum offers the most economical, all-inclusive, safe, reliable, "on-system"*** options for addressing peaking and/or supply reliability concerns:
  - Magnum Comprehensive Option saves about [redacted] Million per year on an apples to apples comparison, equating to **savings of [redacted] Million over 30 years;**
  - Magnum Scaled-Down Option saves about [redacted] million per year on an apples to apples comparison, equating to **savings of [redacted] Million over 30 years.**

- ***Multiple strategic points of receipt and delivery are available;*** at DEQP Goshen, KRGT Goshen, DEU [redacted] or DEU [redacted].
- ***Ease of nomination changes*** and flexibility to adjust peak hour requirements/deliverability and meet day to day operational needs.
- ***Flexibility in scope and design*** with option to participate as an equity partner.
- High deliverability multi cycle (HDMC) salt cavern storage is a proven, reliable, desirable, widely-accepted natural gas storage option.
- Offers flexibility and multiple turns compared to available reservoir storage.
- Provides for ***protection against force majeure*** disruptions (i.e. pipeline disruptions, freeze offs).
- Only proven and developed salt storage project/resource in the Western US.
- ***Available year-round,*** allowing multiple days of peaking/supply reliability and expeditious injectability to recharge cavern.
- Magnum/SITLA Partnership provides funding for Utah county school districts.
- ***"Shovel ready"*** with regulatory approvals in hand.
- Provides supply during periods of shortfalls or curtailments on upstream pipelines.
- Positioned away from population centers and west of Wasatch Front fault lines, minimizing potential impacts of earthquakes.

Exhibit MEM 1.7
Deliveries at [redacted]

- Magnum responded to a March 2018 DEU request for a proposal to delivery system supply reliability and peaking gas at or near [redacted], Utah. Magnum can deliver to [redacted] through a relatively short extension to its permitted pipeline header.
- During the June 19, 2018, Technical Conference, DEU confirmed that [redacted] ***is an optimal "null point" location*** for system supply deliveries due to its central location and DEU's ability to distribute supply in multiple directions.

[Confidential Schematic Redacted]

Certificate of Service

Docket No. 18-057-03

A true and correct copy of the foregoing was served by email this day 16th day of August 2018 on the following:

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/s/ *Sara Turner*