

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LIBERTY ENERGY INC. AND LIBERTY ENERGY SERVICES LLC
Petitioners,

v.

U.S. WELL SERVICES, LLC
Patent Owner.

Case No. IPR2025-01445
Patent 11,009,162

**PETITIONERS' OPPOSITION TO PATENT OWNER'S
DISCRETIONARY DENIAL BRIEF**

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UPDATED LIST OF EXHIBITS

Ex. No. ¹	Description
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1002	Declaration of Dr. Robert Durham
1003	File History for U.S. Patent No. 11,009,162 (“File History”)
1004	U.S. Patent No. 11,549,348 to Cicci <i>et al.</i> (“Cicci”)
1005	U.S. Provisional Application No. 62/941,459 (“Cicci Provisional”)
1006	U.S. Patent Publication No. 2012/0255734 to Coli <i>et al.</i> (“Coli”)
1007	Henry Liu, <i>Pipeline Engineering</i> , CRC Press, 2003 (“Liu”)
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1009	2018 Australia Dixon Product Catalog, available at https://australia.dixonvalve.com/sites/default/files/downloadable_resources/product_literature/ADPL718%20Catalog_optimized_0.pdf
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1015	Michael Morton, “Unlocking the Earth: A Short History of Hydraulic Fracturing,” GEO ExPro, Vol. 10, No. 6, December 2013 https://geoexpro.com/unlocking-the-earth-a-short-history-of-hydraulic-fracturing/ (last accessed November 30, 2023)
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I. INTRODUCTION

Petitioners file this response to Patent Owner's Discretionary Denial Brief (Paper 9, the "Brief") and respectfully request that the Director deny Patent Owner's request for discretionary denial and institute this IPR.

First, Patent Owner has not developed settled expectations for the '162 Patent, as it issued four years ago on May 18, 2021. Instead, this IPR constitutes an early challenge that favors robust, predictable patent rights. Settled expectations considerations favor Petitioners, rather than Patent Owner, as Petitioners expected that Patent Owner would *not* assert the '162 Patent against them when Patent Owner failed to do so in its original lawsuit.

Second, discretionary denial under 35 U.S.C. § 325(d) is not warranted. Indeed, the Examiner materially erred during prosecution of the '162 Patent in failing to consider the teachings of *Coli* in combination with the other references relied on in the Petition.

Third, the *Fintiv* factors favor institution. There has been little investment at the district court. Further, Petitioners filed a broad *Sotera-Plus* stipulation, mischaracterized by Patent Owner, that significantly reduces concerns of inconsistent outcomes and duplication of efforts. Despite the trial in the parallel proceeding being currently scheduled before the final written decision date, time-to-trial statistics suggest that trial will occur three to four months after the final written

decision date. Additionally, the merits of the Petition are particularly strong.

Fourth, the Petition satisfies the particularity requirement under 35 U.S.C. § 312(a)(3). The Petition does not raise voluminous and excessive grounds nor any “catch-all” grounds that were the concern in *Adaptics*. Instead, the Petition’s clear and concise use of multiple references to disclose the claim elements shows the strength of the Petition.

Finally, Patent Owner’s extraordinarily high invalidation rate before the PTAB suggests a practice of obtaining invalid patents that merit review. Petitioners’ use of product literature to render obvious the claim features that appear to have led to allowance further suggests that the ’162 Patent is another instance of this practice that is worthy of review.

II. SETTLED EXPECTATIONS FAVOR INSTITUTION

The Petition is an early challenge to the ’162 Patent that favors institution. For example, the Director has repeatedly and often stated that patent owners have not developed settled expectations for patents issued less than six years ago and that “early challenges to patents favor robust, predictable patent rights and weigh against discretionary denial.” *See, e.g., Geotab Inc. v. Fractus, S.A.*, IPR2025-01026, Paper 14 at 2 (Director Oct. 17, 2025) (patent issued 2021); *Zhuhai Cosmx Battery Co. v. Ningde Amperex Tech. Ltd.*, IPR2025-00385, Paper 14 at 2 (Director July 2, 2025) (patent issued 2021); *Google LLC v. Withrow Networks Inc.*, IPR2025-00775, Paper

10 at 2 (Director Aug. 14, 2025) (patent issued 2020); *OnePlus Tech. (Shenzhen) Co. v. Pantech Corp.*, IPR2025-00756, Paper 11 at 2 (Director Oct. 3, 2025) (patent issued 2020).

Here, the '162 Patent issued approximately four years ago in May 2021. EX1001, (45). In *Zhuhai Cosmx Battery*, the Deputy Director referred a challenge to a patent issued *before* the '162 Patent, even when trial in the parallel proceeding would likely occur before the final written decision would issue. *Zhuhai Cosmx Battery*, IPR2025-00385, Paper 14 at 2; EX1060, (45).

Further, Petitioners had no actual notice of the '162 Patent, nor does Patent Owner assert otherwise. Thus, Patent Owner has not developed settled expectations for the '162 Patent, and Petitioners seeking early review of the '162 Patent favors institution.

Moreover, Petitioners developed settled expectations that Patent Owner would not assert the '162 Patent in view of the ongoing Southern District of Texas litigation between Petitioners and Patent Owner, entitled *U.S. Well Services, LLC et al. v. Liberty Energy, Inc. et al.*, case No. 4:24-CV-00839-KPE (S.D. Tex.) (“SDTX Litigation”). Specifically, in March 2024—11 months before Patent Owner asserted the '162 Patent—Patent Owner sued Petitioner Liberty Energy, Inc. asserting infringement of five other patents allegedly related to Patent Owner’s “E-Frac technology.” EX1064, 1–2, 5–6; EX2002. Patent Owner has since filed three

amended complaints in the SDTX Litigation but never asserted the '162 Patent despite alleging that the '162 Patent is E-Frac related. EX1065, 1–2, 5–6; EX1066, 1–2, 5–6; EX1067, 1, 5–6; EX2002, 20–22. Patent Owner had the opportunity to assert the '162 Patent when it initiated the original litigation between the parties and alleged infringement of its E-Frac Patents, but it chose not to do so. Petitioners therefore developed settled expectations that Patent Owner would not assert the '162 E-Frac Patent against them. Thus, Petitioners early challenge to the '162 Patent after assertion, when Petitioners expected non-assertion, further favors institution.

III. DENIAL UNDER 35 U.S.C. § 325(d) IS NOT WARRANTED

Discretionary denial is only warranted under § 325(d) when “the same or substantially the same prior art or arguments” were previously considered by the Office. 35 U.S.C. § 325(d); *see also* 37 C.F.R. § 42.4(a). Recognizing that discretionary denial under § 325 is not appropriate here, Patent Owner made no argument otherwise. Indeed, both the *Advanced Bionics* framework and *Becton Dickinson* (“*BD*”) factors support institution here.

A. *Advanced Bionics* Step 1 (*BD* Factors (a), (b), and (d))

The Examiner did not consider the same or substantially the same art during prosecution. There is no dispute that *Cicci*, *Dixon*, *Liu*, *Gardner-Denver*, and *Kemper*, which are used to challenge the independent claims, were not considered during prosecution. Nor does Patent Owner allege that *Cicci*, *Dixon*, *Liu*, *Gardner-*

Denver, and *Kemper* are substantially the same as or cumulative of the prior art considered during prosecution.

Additionally, although *Coli* is listed on the face of the '162 Patent, the Examiner did not rely on, cite to, or demonstrate any substantive consideration of *Coli*. *Amgen Inc. v. Alexion Pharms., Inc.*, IPR2019-00740, Paper 15 at 65–66 (P.T.A.B. Aug. 30, 2019) (“The Board has consistently declined exercising its discretion under Section 325(d) when the only fact a Patent Owner can point to is that a reference was disclosed to the Examiner during the prosecution.”) (citation omitted).

During prosecution, the Examiner issued one Restriction Requirement and one Office Action, which did not rely on *Coli*. EX1003, 2142–45, 480–85. Claims 9–14 (originally claims 21–26 and renumbered after allowance) were added in the response to the Office Action and received no rejections. *Id.* 429–30, 285. Patent Owner filed 8 IDSs during prosecution. *Id.* 42–46, 191–92, 322–26, 437–42, 565–67, 590–98, 710–16, 791–824. *Coli* is cited on the face of the '162 Patent because it was one of **over 660** references cited by the Patent Owner. *Id.* Indeed, *Coli* was cited in an IDS that included 358 references—more than fourteen times the average IDS size, per *Ecto World*. EX1003, 791–824; *Ecto World, LLC v. RAI Strategic Holdings, Inc.*, IPR2024-01280, Paper 13 at 7 n.3 (Director May 19, 2025). Although the Examiner initialed the IDS that included *Coli*, there is no indication that the

Examiner substantively considered *Coli*. EX1003 519–552; *see Amneal Pharms. LLC v. Alkermes Pharma Ireland Ltd.*, IPR2018-00943, Paper 8 at 40 (P.T.A.B. Nov. 7, 2018) (declining to deny institution based on Section 325(d) where the reference was listed on the face of the patent, but Patent Owner provided no evidence “about the extent to which the Examiner evaluated” the reference during prosecution); *Digital Check Corp. v. E-Imagedata Corp.*, IPR2017-00178, Paper 6 at 12–13 (P.T.A.B. Apr. 25, 2017) (acknowledging that a prior art reference was cited in an IDS, but granting institution because there was no indication that the claims were rejected based on those references or that the Examiner substantively discussed those references during prosecution); *Fox Factory, Inc. v. SRAM, LLC*, IPR2016-01876, Paper 8 at 7–9 (P.T.A.B. Apr. 3, 2017) (refusing to deny institution under 325(d) in view of grounds based on a prior art reference that was simply cited in an IDS and not considered at any length); *Praxair Distrib., Inc. v. INO Therapeutics LLC*, IPR2015-00893, Paper 14 at 8 (P.T.A.B. Sep. 22, 2015) (granting institution even though the references were previously cited in an IDS because patent owner failed to identify with specificity where the references were considered).

Additionally, as noted above, none of *Cicci*, *Dixon*, *Liu*, *Gardner-Denver*, or *Kemper* was cited or considered during prosecution. Thus, even if the Office could be said to have considered *Coli*, the Office has not previously considered the combinations of *Coli*’s teachings with *Cicci*, *Dixon*, *Liu*, *Gardner-Denver*, and

Kemper discussed in the Petition. See *HyperBranch Med. Tech., Inc. v. Confluent Surgical, Inc.*, IPR2018-01099, Paper 14 at 16–17 (P.T.A.B. Nov. 27, 2018) (refusing to deny under 325(d) because the Examiner did not consider the combined teachings of a first reference cited on the face of the challenged patent and a second reference not considered during examination of the challenged patent).

B. *Advanced Bionics* Step 2 (BD Factors (c), (e), and (f))

The Director need not continue to *Advanced Bionics* Step 2 as Step 1 is not satisfied for the reasons discussed above. *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8–9 (P.T.A.B. Feb. 13, 2020). But discretionary denial is still inappropriate even considering Step 2 because the Office committed material error in issuing the '162 Patent. For example, *Coli* discloses and renders obvious claim features that appear to have been considered allowable by the Examiner. *Freightcar Am., Inc. v. Nat'l Steel Car Ltd.*, IPR2025-01046, Paper 20 at 2–3 (Director Oct. 10, 2025) (finding material error because the Examiner overlooked teachings of a reference cited in an IDS that appeared to disclose the allowable claim features); see *Ecto World.*, IPR2024-01280, Paper 13 at 5–6 (“[E]ven though the asserted prior art is listed on an IDS, the Examiner did not issue any prior art rejections during examination, so the Examiner materially erred by overlooking certain teachings in the prior art on the IDS). The Examiner also materially erred in not considering the relevant teachings of *Coli* in

the combinations with *Cicci*, *Dixon*, *Liu*, *Gardner-Denver*, and *Kemper*. See *Microsoft Corp. v. Partec Cluster Competence Ctr. GmbH*, IPR2025-00318, Paper 9 at 2–3 (Director June 12, 2025) (finding material error because the Examiner overlooked teachings of two references not cited during prosecution alone and in combination with a reference cited during prosecution).

During prosecution, the Examiner allowed the claims without commenting on the alleged points of novelty. EX1003, 280–85. The Examiner, however, did allow the claims in response to Applicant’s amendments to claim 1 (reproduced below) and three specific arguments: the cited references (1) do not teach an *electric* hydraulic fracturing pump; (2) do not teach a fitting for use with a *slurry*; and (3) fail to recognize the unsolved problem or solution. *Id.*, 427, 432–34.

1. (Currently Amended) A hydraulic fracturing system for fracturing a subterranean formation, comprising:

- an electric powered, multi-plunger hydraulic fracturing pump having an inlet and an outlet, the outlet coupled to a well associated with the subterranean formation and powered by at least one electric motor; ~~the electric powered pump configured to pump fluid into a wellbore associated with the well at a high pressure so that the fluid passes from the wellbore into the subterranean formation and fractures the subterranean formation;~~
- a fluid source, coupled to the inlet of the electric powered pump, the fluid source providing a slurry for injection into the subterranean formation;
- a hose extending between the fluid source and the electric powered pump, the hose being flexible and having a first diameter;
- a fitting between the hose and the electric powered pump, the fitting having a first end for receiving the hose at the first diameter and a second end for coupling to the electric powered pump at a second diameter, the second diameter being larger than the first diameter; and
- a distribution system, positioned between the wellbore and the electric powered pump, the distribution system collecting the slurry from electric powered pumps for injection into the subterranean formation.

But the Petition identifies critical teachings of *Coli* that, in combination with *Cicci*, *Dixon*, *Liu*, *Gardner-Denver*, and *Kemper*, disclose the claim features that appear to have led to allowance—*Coli*’s disclosure of a fracturing module that includes an *electric* motor and fluid pump and utilizes *electric* power to pump fracturing fluid directly to a wellbore in a fracturing operation where “a ‘*slurry*’ of fluids and additives is injected into a hydrocarbon bearing rock formation at a wellbore to propagate fracturing.” Pet., 22–23 (citing EX1006 ¶¶[0040], [0035], [0003], [0009]) (emphasis added).

Additionally, regarding Applicant’s “unsolved problem or solution” argument, Applicant admitted that “[t]raditional fracturing systems typically use 6” connections for equipment and 4” hoses for fluid flow.” EX1003, 433 (citing Specification ¶¶[17], [18]). Applicant instead argued that the disclosure’s identification of “a potential substitution for a 5” hose along with a fitting that enables quick coupling to the existing 6” standard connections” shows “how factors such [as] a pump’s operations thresholds along with drop out rates should be combined in order to determine that the traditional hoses may be replaced for larger hoses without sacrificing other characteristics of the fracturing operation.” *Id.*, 433–34.

But claims 1 and 9 do not restrict the fitting to having 5” and 6” diameters, nor do they discuss diameter selection based on operational thresholds or drop out

rates. Instead, such restrictions are reserved for dependent claims 2, 5–7, and 10–13. Under the doctrine of claim differentiation, the independent claims are necessarily broader than the dependent claims 2 and 5–7 such that they cover the traditional 4” and 6” arrangement. *See GE Lighting Sols., LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1310 (Fed. Cir. 2014). Thus, claims 1 and 9 are not limited to the specific solution to the specific problem identified by the Applicant and relied upon to argue for allowance. And even if claims 1 and 9 were restricted in this way, the Petition shows that *Coli* in the combinations with *Cicci*, *Dixon*, *Liu*, *Gardner-Denver*, *Kemper*, and *ANSI/HI 6.1* discloses and renders obvious these features. Pet., 32–34, 57–63, 69–70, 71–75, 79–81, 84–87.

Accordingly, even if *Coli* were to have been considered during prosecution, the Examiner materially erred in not considering the identified teachings of *Coli* in the combinations with *Cicci*, *Dixon*, *Liu*, *Gardner-Denver*, *Kemper*, and *ANSI/HI 6.1* and to the extent that the claims were allowed based on Applicant’s “unsolved problem or solution” argument.

IV. THE *FINTIV* FACTORS FAVOR INSTITUTION

Fintiv factors 3, 4, and 6 favor institution in view of the little investment in the parallel proceeding, Petitioners’ broad *Sotera-Plus* stipulation, and the compelling merits of the Petition. EX1059. To the extent that factors 1, 2, and 5 favor denial, they are outweighed by the considerations favoring institution.

A. Factor 3 (Investment in Parallel Proceeding) favors institution because there has been little investment at the district court.

The parties will not have invested significant resources in the parallel case by the March 10, 2026, institution deadline. Neither party filed a motion to dismiss. The opening claim construction brief is not due until March 18, 2026. EX2004, 4. The claim construction hearing is not scheduled until April 29, 2026. *Id.*, 3. Fact discovery does not close until June 10, 2026, and expert discovery does not close until July 15, 2026. *Id.* Thus, at the time of institution, the district court will have issued no substantive orders nor a claim construction order related to the '162 Patent and discovery will still be months away from closing. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 9–10 (P.T.A.B. Mar. 20, 2020) (precedential).

B. Factor 4 (Overlap of Issues) strongly favors institution because Petitioners' broad *Sotera-Plus* stipulation significantly reduces concerns of inconsistent outcomes or duplication of efforts.

Contrary to Patent Owner's assertion, Petitioners filed a *Sotera-Plus* stipulation tailored specifically to address the concerns raised in *Motorola Sols., Inc. v. Stellar, LLC*, IPR2024-01205, Paper 19 (Director Mar. 28, 2025). The concern in *Motorola* was that the *Sotera* stipulation was not likely to moot expansive district court invalidity contentions that included combinations of prior art. *Id.*, 3–4. In addition to the standard *Sotera* stipulation, Petitioners stipulated that they will not pursue “combinations of the prior art asserted in the IPR *with unpublished system prior art (or any other type of prior art)*.” EX1059 (emphases added). Petitioners'

stipulation therefore ensures that the IPR “would be a ‘true alternative’ to the district court proceeding” regarding invalidity of the ’162 Patent under 35 U.S.C. §§ 102 and 103. *Motorola*, IPR2024-01205, Paper 19 at 3–4.

Indeed, the Director has previously found that similar stipulations strongly favor institution. *Samsung Elecs. Co., v. Wilus Institute of Standards & Tech. Inc.*, IPR2025-00933, Paper 11 at 3 (Director Oct. 10, 2025) (noting for a nearly identical stipulation that “Petitioner has filed a broad stipulation that reduces the concern of inconsistent outcomes or significant duplication of efforts[.]”); *Tesla, Inc. v. Intellectual Ventures II LLC*, IPR2025-00217, Paper 9 at 2 (Director June 13, 2025); *Shenzhen Tuozhu Tech. Co. v. Stratasys, Inc.*, IPR2025-00438, Paper 10 at 3 (Director July 17, 2025).

Additionally, Patent Owner’s argument that Petitioners’ stipulation will not mitigate duplicative work in addressing Petitioners’ invalidity arguments because the parties will have completed claim construction discovery with opening claim construction briefing close behind is unfounded. Brief, 12–13. Invalidity arguments under §§ 102 and 103 are not addressed as part of claim construction. Further, fact discovery and expert discovery are not scheduled to be completed until three and four months after the March 10, 2026, institution deadline. EX2004, 3. Thus, Petitioners’ broad stipulation significantly reduces concerns of inconsistent outcomes and duplication of efforts.

C. Factor 6 (Other Circumstances) favors institution because the merits of the Petition are particularly strong.

The merits are particularly strong because, as noted above, the Petition identifies critical teachings of *Coli* in the combinations with *Cicci*, *Dixon*, *Liu*, *Gardner-Denver*, and *Kemper* that disclose and render obvious the claim features that appear to have led to allowance. *See supra* § III.B. Moreover, *Dixon*, *Gardner-Denver*, and *Kemper* are product literature of well-known, commercially available products. Dixon Valve & Coupling Company was founded in 1916 and has global reach with its fittings. EX1068. Gardner Denver, Inc. was founded over 160 years ago and is considered a leading global provider of pumps and other industrial equipment. EX1069; EX1070. Kemper Valve & Fittings Corp. was founded in 1965 and acquired by Caterpillar Oil & Gas (a world leading manufacturer of construction and mining equipment) in 2016, further expanding Kemper's reach and recognition. EX1071; EX1072; EX1073. Use of literature from such well-known, commercially available products to render obvious the claim features that appear to have led to allowance further emphasizes the strength of the Petition and the obviousness of the '162 Patent claims.

Patent Owner's argument that the merits of the Petition are weak because Petitioners include additional references in their invalidity contentions is meritless. Including additional grounds in invalidity contentions relative to an IPR petition has no bearing on whether the grounds *in the IPR petition* are weak. District court

invalidity contentions are routinely broader than IPR petitions and do not reflect the merits of the Petition. That is, just because Petitioners identified additional reasons for invalidating the '162 Patent in their invalidity contentions in no way suggests that the reasons identified in the Petition are weak. Indeed, Patent Owner does not—and cannot—cite to any case that supports this meritless contention. Petitioners did not state in their invalidity contentions that the additional references are needed to invalidate the '162 Patent nor implied that the grounds in the IPR petition are weak in any way. EX2005, 21.

D. Factors 1 (Stay of Litigation), 2 (Proximity of Trial Date), and 5 (Identity of Parties) are outweighed by the considerations favoring institution.

Factor 1: This factor is neutral. Petitioners have not moved to stay the parallel proceeding. But any suggestion on how Magistrate Judge Payne will rule on a stay post-institution is entirely speculative, and the Board has historically declined to engage in such speculation. *E.g., Shenzhen Tuozhu Tech. Co. v. Stratasys, Inc.*, IPR2025-00311, Paper 9 at 10–11 (P.T.A.B. June 18, 2025) (“As a general matter, we decline to infer, based on actions taken *in different cases with different facts*, how a district court would rule should a stay be requested by the parties in a parallel case. [] Thus, this factor is neutral, or at most, only slightly favors discretionary denial.”) (emphases added) (citations omitted).

Additionally, even if a stay is not granted, concerns of inconsistent outcomes

or duplication of efforts are mitigated in view of Petitioners’ broad *Sotera-Plus* stipulation. *See supra* § IV.B. Indeed, instituting this IPR would simplify the issues before the district court in the parallel proceeding in view of the stipulation.

Factor 2: On May 13, 2025, Magistrate Judge Payne severed the original district court litigation to create the current parallel proceeding and ordered Patent Owner to “promptly file” a complaint including the severed counterclaims. EX2003, 1–2. Patent Owner then waited almost a month to file the complaint on June 5, 2025. EX1063, 28. Thus, although the trial in the parallel proceeding is scheduled to begin October 5, 2026, the 25.1-month time-to-trial statistics period (EX2006, 35) would place trial in either June 2027 (based on the May 2025 severance order) or July 2027 (based on the June 2025 complaint)—respectively *three and four months after* the March 2027 final written decision date—which favors institution.

And like with Factor 1, even if the October 2026 trial date is maintained, concerns of inconsistent outcomes or duplication of efforts are mitigated in view of Petitioners’ broad *Sotera-Plus* stipulation. *See supra* § IV.B.

Factor 5: Petitioners do not dispute they are the Defendants in the parallel district court litigation. But Petitioners do note that this factor has historically only “slightly” favored denying institution, not “strongly” as Patent Owner argues. *E.g.*, *Liberty Energy Servs. LLC v. U.S. Well Servs., LLC*, IPR2025-00139, Paper 14 at 14 (P.T.A.B. June 11, 2025).

Thus, only *Fintiv* factor 5 favors discretionary denial, and only slightly. And even if *Fintiv* factor 2 were found to favor discretionary denial, the Director has routinely refused to exercise discretion to deny institution despite even “unfavorable” trial timing where other factors, like those present here, make Board review an appropriate use of resources. *See, e.g., Samsung Elecs.*, IPR2025-00933, Paper 11 at 2–4 (referral despite insufficient evidence that a stay was likely, earlier trial, and same parties in part because of an early challenge, a broad Petitioner stipulation, and material error); *Shenzhen Tuozhu Tech.*, IPR2025-00438, Paper 10 at 3 (referral despite an earlier trial and same parties in part because of an early challenge and a broad Petitioner stipulation); *Zhuhai Cosmox Battery*, IPR2025-00385, Paper 14 at 2 (referral despite earlier trial and same parties because of an early challenge); *Taiwan Semiconductor Mfg. Co. v. Marlin Semiconductor Ltd.*, IPR2025-00847, Paper 11 at 2–4 (Director Sep. 3, 2025) (referral despite earlier ITC and same parties because of material error).

As in these prior proceedings, other considerations—namely, Petitioners’ early challenge (§ II) coupled with the Office’s material error during prosecution (§ III.B), *Fintiv* factors 3, 4, and 6 (§ IV.A–C), the Petition’s satisfaction of 35 U.S.C. § 312(a)(3) (§ V), and Patent Owner’s practice of obtaining invalid patents (§ VI.A) and attempt to do the same with the ’162 Patent (§ VI.B)—make review of the ’162 Patent an appropriate use of Board resources, despite trial currently being

scheduled before when the final written decision would issue.

V. THE PETITION SATISFIES THE PARTICULARITY REQUIREMENT UNDER 35 U.S.C. § 312(A)(3)

Patent Owner’s argument that the Petition raises voluminous and excessive grounds based on the *Adaptics* decision is unfounded. Brief, 16–19. Patent Owner states the mere number of grounds and references is sufficient to justify denying institution. *Id.*, 16. But the “concern in *Adaptics* was not the number of grounds, references, or asserted claims, but that the Petition suffer[ed] from a lack of particularity” by raising “catch-all” grounds. *Samsung Electronics Co., Ltd. v. Resonant Sys., Inc.*, IPR2023-00993, Paper 17 at 24 (PTAB Jan. 10, 2024). As long as the Petition is pled with particularity, the number of grounds and references alone does not bar institution. *See id.*, 5–6, 29 (declining to follow *Adaptics* for 30 grounds applying 11 references); *see also Google LLC, v. Nobots LLC*, IPR2022-00941, Paper 11 at 6, 27–28 (P.T.A.B. Dec. 1, 2022) (declining to follow *Adaptics* for 14 grounds applying 8 references); *see also Freewheel Media, Inc. v. Intent IQ, LLC*, IPR2024-00422, Paper 10 at 17–18, 27–28 (P.T.A.B. Oct. 2, 2022) (declining to follow *Adaptics* for 11 alleged grounds applying 9 references).

Institution is merited here because the Petition is pled with particularity. Patent Owner’s only argument for a lack of particularity is that Petitioner relies on three to seven references in its Grounds. Brief, 18. But Patent Owner does not—and cannot—identify *any* portion of the Petition that does not include “concise, well-

organized, easy-to-follow arguments supported by readily identifiable evidence of record.” *Id.*, 19 (quoting Office Patent Trial Practice Guide, 77 Fed. Reg. 48756, 48763 (Aug. 14, 2012)). Indeed, Ground 5B (labeled the “[m]ost egregious” by Patent Owner, *id.*, 18) describes how specific teachings in *ANSI/HI 6.1* would be combined with specific teachings in *Liu* and *Gardner-Denver* in the system (with or without *Kemper*) to render claim 7 obvious. Pet., 84–87. The fact that multiple references disclose a claim element does not show a lack of particularity; it shows **the strength** of the Petition. See *Advanced Micro Devices Inc. v. Realtek Semiconductor Corp.*, IPR2023-00920, Paper 10 at 42 (P.T.A.B. Nov. 28, 2023) (“A petitioner may rely upon additional references for teaching a claim element . . .”).

Further, Patent Owner’s argument that Ground 5B is akin to the “catch-all” ground in *Adaptics* is wrong. Brief, 18. The catch-all ground in *Adaptics* connected ten references using “**and/or**” language that yielded “**hundreds** of possible combinations.” *Adaptics Ltd. v. Perfect Co.*, IPR2018-01596, Paper 20 at 18–19 (P.T.A.B. Mar. 6, 2019) (emphasis added). Conversely, Ground 5B connects seven references in a **single** combination using “and” language. Pet., 13.

Patent Owner offers no other reason for a lack of particularity. Brief, 16–19. The Board should “decline to perform analysis that is missing” from the Brief and decline to follow *Adaptics*. See *Freewheel Media*, IPR2024-00422, Paper 10 at 18.

VI. OTHER CONSIDERATIONS SUPPORT INSTITUTION

Other “fact[s] [and] circumstance[s]” exist that Petitioners believe “bear[] on the Director’s discretion.” Interim Director Discretionary Process I.B.

A. Prior PTAB procedures demonstrate Patent Owner’s practice of obtaining invalid patents that merit review.

The PTAB has found 411 claims across 16 of Patent Owner’s patents unpatentable. EX1061. This constitutes over 90% of the 455 claims for which the PTAB has issued a final written decision or an institution decision on the merits. EX1061. *All* original and amended claims in 14 of those 16 patents were found unpatentable. EX1061. The Federal Circuit affirmed the PTAB decisions in each of the 6 times they were appealed. EX1061. IPRs challenging an additional 49 claims across 3 of Patent Owner’s other patents have been instituted. EX1061. Such a high invalidation rate before the PTAB strongly suggests a history and trend of Patent Owner obtaining bad patents that are worthy of review by the Board. This is particularly true given the importance of the hydraulic fracturing industry (the industry to which the ’162 Patent pertains) to the United States’ economy; the hydraulic fracturing industry was valued at \$47.9 billion in 2024 and is estimated to grow to \$69.6 billion by 2030. EX1062.

B. The Petition’s use of product literature further evidences Patent Owner’s practice of obtaining invalid patents.

As discussed above, the Petition shows how product literature, including *Dixon*, *Gardner-Denver*, and *Kemper*, discloses and renders obvious the claim

features that appear to have led to the '162 Patent's allowance. *See supra* § III.B; Pet., 36–40. The *Dixon* product catalogs and *Kemper* product page disclose well-known, commercially available fittings used in hydraulic fracturing operations. Pet., 8–11; *see supra* § IV.C. *Gardner-Denver* is an operating and service manual for a well-known, commercially available fracturing pump with various diameter connections. Pet., 11–12, 68–74; *see supra* § IV.C. This product literature demonstrates that the '162 Patent merely claims others' already commercially available products, not any purported inventive contribution of Patent Owners, furthering Patent Owner's practice of obtaining invalid patents. The '162 Patent merits the Board's review.

VII. CONCLUSION

For the above reasons, Petitioners respectfully request that the Director deny Patent Owner's request for discretionary denial and institute this IPR.

Respectfully submitted,

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**CERTIFICATE OF COMPLIANCE WITH PAGE LIMITATION,
TYPEFACE REQUIREMENTS, AND TYPE STYLE REQUIREMENTS**

1. This Brief complies with the 20-page limit, excluding the parts exempted by 37 C.F.R. § 42.24(a).
2. This Petition complies with the general format requirements of 37 C.F.R. § 42.6(a) and has been prepared using Microsoft® Word in 14-point Times New Roman.

Respectfully submitted,

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CERTIFICATE OF SERVICE

In accordance with 37 CFR § 42.6(e), the undersigned certifies that on December 9, 2025, a complete and entire copy of PETITIONERS' OPPOSITION TO PATENT OWNER'S DISCRETIONARY DENIAL BRIEF and EXHIBITS 1060-1073 were served on Patent Owner via email to counsel for the Patent Owner at the following addresses:

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