UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of	)	Docket No. 40-9091-MLA
	)	
STRATA ENERGY, INC.,	)	ASLBP No. 12-915-01-MLA-BD01
	)	
(Ross In Situ Recovery Uranium Project)	)	February 17, 2015

NATURAL RESOURCES DEFENSE COUNCIL'S & POWDER RIVER BASIN RESOURCE COUNCIL'S PETITION FOR REVIEW OF ATOMIC SAFETY AND LICENSING BOARD'S JANUARY 23, 2015 INITIAL DECISION DENYING ENVIRONMENTAL CONTENTIONS 1 THROUGH 3, AND INTERLOCUTORY DECISIONS DENYING ENVIRONMENTAL CONTENTIONS 4/5A AND 6/7

Howard M. Crystal
Meyer Glitzenstein & Crystal
1601 Conn. Ave., NW, #700
Washington, D.C. 20009
(202) 588-5206
hcrystal@meyerglitz.com

Counsel for Natural Resources Defense Council, Inc.

Geoffrey H. Fettus,
Senior Attorney
Natural Resources Defense Council, Inc.
1152 15th St., NW, # 300
Washington, D.C. 20005
Tel: (202) 289-6868
Fax: (202) 289-1060
Email: gfettus@nrdc.org

Counsel for Natural Resources Defense Council, Inc.

Shannon Anderson,
Staff Attorney
Powder River Basin Resource Council
934 N. Main St.
Sheridan, WY 82801
Tel: (307) 672-5809
Fax: (307) 672-5800
Email: sanderson@powderriverbasin.org

Counsel for Powder River Basin Resource Council

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GLOSSARY

ACL	Alternative Concentration Limit
ASLB	Atomic Safety and Licensing Board Or Board
CAB	Commission Approved Background
CEQ	Council on Environmental Quality
DSEIS	Draft Supplemental Environmental Impact Statement
EC	Environmental Contention
EIS	Environmental Impact Statement
FSEIS	Final Supplemental Environmental Impact Statement
ID	Initial Decision
ISL	In-situ leach
ISR	In-situ recovery
NEPA	National Environmental Policy Act
NRC	Nuclear Regulatory Commission
PEL	Peninsula Energy, Ltd.
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
SDWA	Safe Drinking Water Act
SEI	Strata Energy, Inc.
SER	SEI's Environmental Report
SEIS	Supplemental Environmental Impact Statement
SM	Shallow Monitoring Aquifer
UMTRCA	Uranium Mill Tailings Radiation Control Act

Pursuant to 10 C.F.R. § 2.341, Intervenors[1] hereby seek review of the Atomic Safety and Licensing Board's (ASLB or Board) January 23, 2015 Initial Decision (I.D.), and earlier disposition of two contentions, concerning the Ross uranium mining project.[2]

I. Introduction

In January, 2011 Strata Energy, Inc. (SEI) applied for a Materials License for an in-situ leach (ISL or ISR) uranium mining project in Crook County, Wyoming (Ross Project). In ISL mining, an oxidizing solution (lixiviant) is inserted into an aquifer containing naturally occurring uranium. The lixiviant contains chemicals and a complexing agent which dissolve the uranium from the rock, allowing a recovery well to pump up the groundwater, now containing uranium. *See* I.D. 2.1-2.2. The Ross Project will use 1,400 to 2,200 injection/recovery wells, and a ring of separate monitoring wells "to provide warning if lixiviant is migrating outside the" ore zone. *Id.*

A basic premise of ISL mining is that it occurs within a "confined" aquifer – *i.e.*, an aquifer overlain by an impervious confining geological unit limiting vertical transmission of the water. JTI003-R A.69 (Testimony of Dr. Lance Larson) (Exhibit (Ex.) 1); Final Supplemental Environmental Impact Statement (FSEIS) (SEI009) 3-30 to 3-32 (Ex. 2).[3] In analyzing the Ross Project's impacts, Staff purported to find the ore zone aquifer to be "confined." FSEIS 3-35.[4]

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[1] Intervenors are Natural Resources Defense Council and Powder River Basin Resource Council.

[2] *In the Matter of Strata Energy, Inc.* (Ross ISR Uranium Project), LBP-15-13 (Jan. 23, 2015); *In the Matter of Strata Energy, Inc.*, LBP-13-10 (July 26, 2013) (Denying Contentions); *In the Matter of Strata Energy, Inc.*, Mem. Order of Aug. 27, 2013 (Denying Reconsideration); *In the Matter of Strata Energy, Inc.*, Mem. Order of May 23, 2014 (Denying Contentions).

[3] For convenience Intervenors are attaching as exhibits here the most relevant citations to the Record.

[4] Portions of the aquifer are exempt from protection under the Safe Drinking Water Act (SDWA) under a regulation exempting an aquifer not currently used as a drinking water source and containing "minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible." 40 C.F.R. § 146.4(b)(1). However, as the Environmental Protection Agency (EPA) emphasized in a recently issued Proposed Rule, the fact that an aquifer is "exempt" does not reflect the actual *quality* of the water, which should be left, post-remediation, "in no worse condition than pre-ISR operational status." *See* 80 Fed. Reg. 4156, 4171 (Jan. 26, 2015).

Intervenors filed a timely hearing request over SEI's Environmental Report (SER) (SEI016) (Ex. 3), and the Board admitted several contentions. While some were later rejected (as to two of which we seek review here), three contentions proceeded to a hearing over the February, 2014 FSEIS, issued under the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321, *et seq.*, along with the Record of Decision (ROD). NRC009 (Ex. 4). On April 25, 2014 the Commission Staff granted SEI a Source Materials License. SEI015 (Ex. 5).

On January 23, 2015, the Board resolved against Intervenors the three contentions subject to an evidentiary hearing, *i.e.* the failure to: (1) collect and disclose adequate baseline water quality data; (2) evaluate and disclose the degradation of water quality likely to remain at the conclusion of the project; and (3) consider and disclose the likelihood that groundwater contamination will move beyond project boundaries. *See* LBP-15-13. As discussed below, the Board also erred in resolving these Contentions.

II. Summary of Decisions At Issue

A. Legal Framework

Intervenors' Contentions arise under NEPA, the nation's "basic national charter for protection of the environment," 40 C.F.R. § 1500.1(a), which requires agencies to "base decisions on *detailed information* regarding significant environmental impacts and [make] that information [ ] available to a wide variety of concerned public and private actors." *Mississippi River Basin Alliance v. Westphal*, 230 F.3d 170 (5th Cir. 2000) (emphasis added); *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). An EIS must take a "hard look" at environmental consequences, *Marsh v. Oregon Natural Resources Council,* 490 U.S. 360, 374 (1989), considering "every significant aspect of the environmental impact of a proposed action."

See also id. at 4,168 ("[A]n aquifer exemption under the SDWA does not relieve the licensee of the obligation to remediate environmental contamination resulting from activities regulated under UMTRCA").

Baltimore Gas & Elec. Co. v. NRDC, 462 U.S. 87, 97 (1983). Similarly, NRC regulations require an EIS "describe the environment to be affected by the proposed action," 10 C.F.R. Pt. 51, Subpt. A, App. A, § 6, and, as relevant here, require an applicant to provide "complete baseline data on a milling site and its environs." *Id.* Pt. 40, App. A, Criterion 7 (hereafter "Criterion 7").

Contrary to the Board's assertion (I.D. 3.1), the NRC must also comply with the Council on Environmental Quality's (CEQ) implementing regulations for NEPA,[5] requiring an EIS address, *inter alia*, (a) "the environment of the area(s) to be affected" by the project, 40 C.F.R. § 1502.15(b) "the environmental impacts of the . . . proposed action," *id.* § 1502.16 – including the "effects on air and water and other natural systems, including ecosystems," *id.* § 1508.8(b) – and (c) "any adverse environmental effects which cannot be avoided should the proposal be implemented." *Id.* § 1502.16. Environmental effects include "effects on air and water and other natural systems, including ecosystems." *Id.* § 1508.8(b). The regulations mandate "professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements," *id*. § 1502.24, which must be "accurate," "of high quality" and include all "essential" information. *Id.* § 1500.1(b); § 1502.22(a); *see also, e.g., Ocean Mammal Inst. v. Cohen*, No. 98-CV-160, 1998 WL 2017631, at *5 (D. Haw. Mar. 9, 1998).[6] Finally, CEQ regulations mandate agencies properly define the project scope, 40 C.F.R. §§ 1502.4(a) and 1508.25, and meaningfully analyze cumulative impacts. *Id.* §§ 1508.25(c) and 1508.7.

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[5] *Brodsky v. NRC*, 704 F.3d 113, 120 n.3 (2d Cir. 2013); *Piedmont Envtl. Council v. FERC*, 558 F.3d 304, 318-19 (4th Cir. 2009); *San Luis Obispo Mothers for Peace v. NRC*, 449 F.3d 1016, 1032-34 (9th Cir. 2006); 40 C.F.R. § 1500.3. As discussed below, the Board's dismissal of the CEQ requirements for accurate scientific analysis in an FSEIS is irreconcilable with both NEPA's dictates and prevailing case law.

[6] *E.g. Or. Envtl Council v. Kunzman*, 817 F.2d 484, 495 (9th Cir. 1987) (agencies must "do independent research when missing information is important, significant, or essential") (citations omitted).

B. Contentions Dismissed Prior To The Hearing

1. The SER described the Ross Project as encompassing approximately 1,721 acres. SER 1-5. The Draft SEIS (DSEIS), however, revealed the Ross Project is only a small part of a *much larger area in which SEI intends to conduct ISL mining*. Draft SEIS (DSEIS) 5-3 to 5-5 (NRC006) (Ex. 6). Accordingly, pursuant to 10 C.F.R. § 2.309(c), Intervenors submitted a Contention against the DSEIS concerning the scope of the proposed action. *See* Intervenors' DSEIS Contentions (DSEIS Cont.) 19-23 (May 6, 2013) (MLA3126A398) (Ex. 7).

The Board found the Contention inadmissible and untimely, concluding Intervenors had not alleged a genuine dispute regarding whether plans to engage in a much larger uranium mining project should be addressed in a single SEIS, and should have raised these concerns when the SER was issued.[7]

2. The SER did not address cumulative impacts, and the Board admitted Intervenors' original cumulative impacts Contention. LBP-12-3 at 37-44. Although the DSEIS added *some* discussion of cumulative impacts, Intervenors' alleged the short discussion to be deficient. DSEIS Cont. 15-18; *see also* Decl. of Christopher Paine ("Paine Decl."), ¶¶ 23-56 (ML13126A401) (Ex. 8). The Board rejected the Contention, ruling that because the DSEIS had added *some* discussion, Intervenors were required to request submission of an *amended* contention under 10 C.F.R § 2.309(c). LBP 13-10 at 19-22. The Board subsequently rejected reconsideration.[8]

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[7] LBP-13-10 at 23-33 (July 26, 2013); *see also* Mem. Order of May 23, 2014 14-16 (Denying Contention against FSEIS.

[8] Mem. Order of Aug. 27, 2013; *see also* Mem. Order of May 23, 2014 12-14 (Denying Contention against FSEIS).

C. Environmental Contentions (EC) Dismissed After The Evidentiary Hearing

1. EC1: Failure To Adequately Characterize Baseline Water Quality

EC1 challenged the adequacy of the baseline water quality data collected for the FSEIS. Intervenors contended NEPA requires a scientifically valid baseline assessment, and relied on Dr. Richard Abitz and associated exhibits to demonstrate both the inadequacies of the baseline data, and the manner in which a meaningful baseline may be established.[9]

The Board purported to recognize SEI must "establish a *pre-licensing* monitoring program that is used to provide 'complete baseline data' on the ISR site and its environs," I.D. 4.16 (citing Criterion 7), and rejected SEI's argument that additional baseline data collection was *prohibited* by 10 C.F.R. § 40.32(e), which in reality permits "preconstruction monitoring to establish background information," *id.* § 40.4. *See* I.D. 4.19 n.17. Nonetheless, the Board rejected Intervenors' arguments, concluding "NEPA does not require the adoption of best practices," and finding Intervenors failed to show the data used for the FSEIS was "so facially deficient" that more data collection is necessary, given the License requirement to collect *adequate* data only for a "post-license" (*i.e.*, post-NEPA) baseline. I.D. 4.22. As regards the number of wells used and their locations, the Board determined that, irrespective of Dr. Abitz's testimony, "evidence of actual bias" was necessary to demonstrate a flaw in the data. *Id.* 4.22. Similarly, while acknowledging that the sampling wells were not fully screened (and thus did not collect accurate data), the Board found that the data collected was sufficient. *Id.* 4.31.

2. EC2: Failure To Disclose Likely Post-Project Water Quality Degradation

EC2 challenged whether the FSEIS's finding that the long-term impacts of the project on groundwater quality would be "SMALL" accurately disclosed the degradation of groundwater

[9] *See* JTI001-R (Test. of Dr. Richard Abitz) A.10-A.36 (Ex. 9); JTI051-R (Dr. Abitz Rebuttal) A.3-A.16 (Ex. 10). The Board found Intervenors' witnesses Dr. Abitz and Dr. Lance Larson qualified to testify on the each of the Contentions for which their testimony was offered. I.D. 4.14; 4.65; 4.119.

likely to be authorized at the conclusion of the Ross Project decommissioning. Given that *every* previous ISL operation has required an Alternative Concentration Limit (ACL) allowing a significant degradation of post-mining groundwater quality, Intervenors contended, the FSEIS must consider and disclose a reasonable range of the likely ACLs – termed a "bounding analysis" – relying on Dr. Lance Larson and associated exhibits to demonstrate that the FSEIS failed to adequately disclose that data.[10]

The Board agreed that, "based on the historical record, ACLs are a foreseeable consequence of ISR mining," I.D. 4.81, and that the FSEIS failed to include information necessary to evaluate those impacts. However, the Board "supplemented" the FSEIS with data included in Staff's prefiled testimony, and calculations included in the Initial Decision, and deemed the FSEIS adequate, as supplemented. *Id.* 4.89-4.96. The Board further deemed the FSEIS "one-page discussion" of results at other ISL sites to be all that NEPA requires. *Id.* 4.72.

3. EC3: Failure To Disclose Likely Off-Site Fluid Migration

EC3 challenged whether the FSEIS adequately assessed the likelihood and impacts of fluid migration – termed "excursions" – beyond the exempt aquifer. In light of the fluid migration that has occurred at other ISL sites, and the lack of a firm requirement for SEI to properly fill the more than 1,500 pre-existing vertical boreholes in and near the project site, Intervenors contended that the FSEIS fails to demonstrate the mined aquifer is confined. Given that aquifer confinement is a key premise to safeguarding against such migration, Intervenors argued the FSEIS inaccurately concluded that the impacts from such migration would be

[10] *See* JTI003-R (Dr. Larson Test.) (Ex. 1) A.9-A.66; JTI052-R (Dr. Larson Rebuttal) A.3-A.17 (Ex. 11).

SMALL, and relied on the expert testimony of both Dr. Larson and Abitz to demonstrate these deficiencies.[11]

The Board rejected Staff's argument that because any excursions will be detected by the monitoring well ring, filling the boreholes is not relevant to the conclusion that the impacts of excursions will be SMALL, finding "staff has overly discounted the importance of the license condition requirement that SEI act to locate and properly abandon all historic drill holes . . . ." I.D. 4.127. However, while recognizing that these boreholes "presents a daunting challenge," and that the license only requires an "attempt" to fill them all, *id.* 4.127, the Board concluded both SEI and Staff have an adequate "incentive" to fill these holes, to both keep the project operating and to support the "predictive" finding of small impacts. *Id.* 4.128 and n.66.

The Board also rejected evidence that the pump tests conducted to support the FSEIS show vertical groundwater communication between aquifers, *id.* 4.132-41.141, and documenting that uranium may travel faster than planned excursion parameters. *Id.* 4.142-4.145. Finally, the Board deemed irrelevant the risk of excursions within the exempt aquifer. *Id.* 4.146-147.

III. Errors In The Board's Rulings

1. Errors Regarding Contentions Dismissed Prior To Hearing

a. The Board erred in deeming Intervenors' project scope Contention inadmissible. LBP-13-10 at 23-33 (July 26, 2013). Intervenors raised a genuine issue of material fact, per 10 C.F.R. § 2.309(f), whether SEI's plans to conduct mining in the Ross "Amendment," Kendrick, Richards, and Barber "Satellite" Areas were sufficiently similar and connected to the Ross Project that the entire project should be considered in a single EIS. *See* FSEIS (Ex. 2) 5-5 to 5-6;

[11] *See*, JTI001-R (Ex. 9) A.37-A.47 and JTI051-R (Ex. 10) A.17 (Dr. Abitz); JTI003-R (Ex. 1) A.67-A.89 and JTI052R (Ex. 11) A.16 (Dr. Larson).

see also 40 C.F.R. § 1508.25(a)(1)-(3) (requiring single impact statement for "connected actions," "cumulative actions," and "similar actions").

The Board recognized that the mere fact that SEI had only applied for an initial license for the limited Ross Project was "hardly definitive" of whether plans for the entire Lance District should be considered in a single EIS. LBP-13-10 at 26. However, although Intervenors' declarant had provided detailed evidence showing that, contrary to the "proposed action," SEI had *concrete plans* to mine these additional areas, *see* Paine Decl. (Ex. 8) ¶¶ 23-56, and the Board recognized that Intervenors had demonstrated "a strong likelihood that [SEI] intend[s] that eventually all the Lance District ISR sites will be licensed and operating," LBP-13-10 at 29, the Board concluded that the contention was not admissible absent Intervenors' "showing . . . that the Ross facility lacks any independent utility in the absence of the completion of the other Lance District ISR sites." *Id.* at 29-30; May 23, 2014 Order 14-16 (FSEIS Order).

This ruling was in error, conflating contention admissibility with the merits. As is well-recognized, "in passing on the admissibility of a contention . . . it is not the function of a licensing board to reach the merits of [the] contention." *Sierra Club v. NRC*, 862 F.2d 222, 226 (9th Cir. 1988) (citations omitted); *Crow Butte Res.*, 2009 WL 1393858 *1, *14 (May 18, 2009) ("[w]hether a [petitioner] has proved its claim is not the issue at the contention pleading stage"). Here, by requiring Intervenors to "show" – *i.e*, *establish* – the merits of their contention in order to even *pursue* it, the Board misapplied the applicable legal standard, and Intervenors should have been permitted to pursue this issue at the hearing. *E.g. In the Matter of Duke Power Co.*, 9 NRC 146, 151 (1979).

The Board also erred in finding aspects of the contention untimely. LBP-13-10 at 30-32; May 23, 2014 Order 14-16 (FSEIS Order). According to the Board, since SEI had disclosed that

Peninsula Energy, Ltd. (PEL) was its corporate parent, and in the SER had suggested that satellites sites *could* be developed, Intervenors should have combed through PEL corporate documents when the SER was issued. *Id.* at n.18. This overly expansive view of whether information is "previously available" within the meaning of Section 2.309(c) cannot be sustained. Rather, because SEI *deliberately* mischaracterized the scope of the project in the SER, the information should not be deemed previously available. *Cf. Connors v. Hallmark,* 935 F.2d 336, 342 (D.C. Cir. 1991) (explaining that time limitations on presenting claims should be tolled where a party reasonably relies on misinformation provided by the defendant).

b. The Board also erred in refusing to allow Intervenors to pursue their cumulative impacts contention on the grounds that, because the DSEIS contained cumulative impacts language not contained in the SER, Intervenors were required to specifically detail the bases for a *new* contention pursuant to Section 2.309(c).[12] LBP 13-10 at 19-22; May 23, 2014 Order 12-14 (FSEIS Order). This ruling was in error, for the Board's finding that a new contention was *necessary* – because the DSEIS discussion of cumulative impacts "differ[ed] substantially" from the SER, LBP 13-10 at 21 – *itself demonstrated* that the information was not previously available, and thus that the Section 2.309(c) criteria were satisfied. At bare minimum, it was error to deny Intervenors' motion for reconsideration, *see* Mem. Order of Aug. 27, 2013, where the formalistic invocation of the 2.309(c) factors the Board deemed lacking from the initial filing was included. *See, e.g., Torres v. Oakland Scavenger Co.,* 487 U.S. 312, 316 (1988) ("[T]he requirements of the rules of procedure should be liberally construed and [] 'mere technicalities' should not stand in the way of consideration of a case on its merits."); *In the Matter of*

[12] 10 C.F.R. § 2.309(c) requires a prospective intervenor to demonstrate the information on which the contention "is based was not previously available" and is "materially different from information previously available." *Id.* §§ 2.309(c)(i) and (ii).

Consolidated Edison Co. of N.Y., 17 NRC 1117, 1119 (1983) (stating Commission looks to Federal Rules for guidance).

2. Errors Regarding Resolution Of EC1

As noted, *see supra at* 3, NEPA requires agencies to take a "hard look" at environmental consequences, *Marsh*, 490 U.S. at 374, based on "high quality" data and "[a]ccurate scientific analysis" of all information "essential" to the decision. 40 C.F.R §§ 1500.1(b); 1502.22(a). As regards the *baseline – i.e.*, pre-mining – water quality in the aquifer to be mined for the Ross project, the Board appeared to recognize, consistent with these legal precepts, SEI and Staff were required to collect "complete baseline data" in the NEPA process. I.D. 4.16 (citing Criterion 7); *id.* at 4.15 (applicant "is required to provide data from a groundwater monitoring program that is sufficient to establish a pre-licensing site characterization baseline for assessing the potential effects of facility operations on local groundwater quality"). The Board also *rejected* SEI's argument that it was *barred* from collecting more data than was provided in the FSEIS. I.D. 4.19 n.17. The Board's conclusion that Staff nonetheless considered enough baseline water quality data was in error, for several reasons:

a. Neither SEI nor Staff disputed that the baseline water quality data relied on in the FSEIS was insufficient to meaningfully characterize the site. *E.g.* Transc. (Ex. 12) at 354 (acknowledging only the ore zone is screened, thus providing inaccurate data); Transc. at 465 (acknowledging evaluation was *not* based on "*unbiased* group sampling") (emphasis added). They simply argued that *accurate* baseline characterization would occur *post-license*, when each monitoring well ring is constructed and the Commission Approved Background (CAB) is established for each constituent. Transc. at 380 (Dr. Johnson); 326 (Mr. Knode). The Board accepted this approach, concluding NEPA does not require "best practices," and framing the

question as whether the "sampling protocols [relied on for the FSEIS were] *so facially deficient* as to require that they be redone in accord with Joint Intervenors' preferred methodology." I.D. 4.22 (emphasis added).[13]

NEPA, however, requires accurate information be used to *inform* the decision, and thus deferring a meaningful baseline characterization until *after* the decision is made is fundamentally at odds with NEPA's purposes. *See, e.g. Metcalf v. Daley,* 214 F.3d 1135 (9th Cir. 2000) (vacating NEPA analysis conducted *after* the agency's underlying decision); *see also* 40 C.F.R. § 1500.1(b) ("NEPA procedures must insure that environmental information is available . . . *before* decisions are made and before actions are taken") (emphasis added).[14] Contrary to the Board's ruling (at 4.18-19), *In Re Hydro Resources, Inc*. (*HRI*), 63 NRC 1, 2006 WL 1704518 (2006), does not suggest otherwise. That decision did not concern NEPA's requirements, but rather an intervenors' right to a hearing on material licensing issues. Thus, while, consistent with *HRI*, "site-specific data to *confirm* proper baseline quality values" may be collected here as part of the post-license CAB process, *id.* *3, that has no bearing on whether legally sufficient baseline data must be collected for the NEPA process, *before the licensing decision is made*.

b. Based on this false legal premise – that accurate baseline data may be collected long after the license is issued – the Board never meaningfully considered Dr. Abitz's critique of the baseline water quality approach incorporated into the FSEIS, and his discussion of how this data must be collected to be of scientific value. Moreover, while paying lip service to the

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[13] The Board's reliance (I.D. at 4.22) on *Entergy Nuclear Generation Co*. (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 315 (2010), for the proposition that NEPA does not require "best practices," is misplaced, for that case stands for the considerably more modest proposition that the agency is free to choose any "reasonable" methodology. *Id.* As Dr. Abitz demonstrated, the methodologies used here were *not* reasonably designed to collect accurate baseline data.

[14] *See also, e.g. N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1085 (9th Cir. 2011) ("without [baseline] data, an agency cannot carefully consider information about significant environmental impacts") (internal quotations omitted); *Friends of Back Bay v. U.S. Army Corps of Eng'rs*, 681 F.3d 581, 588 (4th Cir. 2012).

appropriate legal framework, whereby it is SEI and Staff's burden to show compliance with NEPA by a preponderance of the evidence, I.D. 3.8, the Board put that burden *squarely on Intervenors*, requiring them to demonstrate the data relied upon was "so facially deficient" that it must be supplemented. *Id.* 4.22. Under any approach to evidentiary burdens, however, it is evident that the number of wells and their locations, and the sampling methods used, fell far short of NEPA's dictates.

i. As regards the number and location of wells, the Board required Intervenors demonstrate "evidence of actual bias." I.D. 4.22. The Board did not explain how Intervenors could meet such a burden, and, in fact, applying the correct legal framework, the Board also never explained how SEI and Staff had met *their* burden to demonstrate that the number of wells and their locations complied with basic scientific principles. As Dr. Abitz testified, EPA's "Unified Guidance" – entitled "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities" – sets forth specific, scientifically-based protocols for groundwater sampling to determine baseline water quality, including a recommended 8 to 10 independent samples drawn from randomly located wells. As he explained, this type of approach is necessary to collect scientifically meaningful data, and the data relied on in the FSEIS, which complied with none of these protocols, is deficient. Abitz Test. (JTI001-R) at A.14-A.15; A.33-A.37; Abitz Rebuttal A.3; A.6-A.8; Transc. at 428; *see also* EPA Unified Guidance (JTI006) (Ex. 13) at 5-3.[15]

Indeed, no witness or exhibit disputed Dr. Abitz's assessment that the wells relied on for groundwater sampling were "not located and distributed in a manner designed to collect data representative of overall site conditions," Abitz. Test. A.22, and the Board acknowledged that

[15] *See also* 80 Fed. Reg. 4156, 4186 (Jan. 26, 2015) (new proposed ISL mining regulations requiring reliance on a "[s]ufficient number of wells, at appropriate locations and depths . . . to yield representative samples in order to [measure] water quality").

requiring the use of such "best practices" is "not without some attraction." I.D. 4.21; *see also* Dept of Energy Char. Of Background Water Quality for Streams and Groundwater (JTI014 at 923-995) (App. F) (Ex. 14). Accordingly, the Board erred in summarily dismissing these concerns on the grounds NEPA does not require best practices, and that Intervenors failed to demonstrate the data collection conducted thus far was meaningless. I.D. 4.22. Rather, because Dr. Abitz demonstrated – and no one disputed – that the non-systematic approach used by SEI was neither designed to, nor did, collect representative baseline water quality data, the Board's conclusion that the FSEIS adequately considered this issue was in error. *See also* NRC Standard Review Plan for In Site Leach Uranium Extraction License Applications (NUREG-1569) (SEI007) (Ex. 15) at 58 (requiring "a sufficient number of baseline ground-water samples are collected to provide meaningful statistics . . . .").[16]

ii. The Board agreed with Intervenors that the sampling wells "were screened only through the part of the aquifer containing the stacked ore horizon," I.D. 4.30, and did not dispute that this approach could bias results to high values. *Id.* 4.27-28; *see also, e.g.* Transc. at 354 (SEI witness: "It is correct . . . that we do only screen the ore zone"); NUREG 1569 (SEI007) at 140 (discussing need for "fully screened monitor wells"). Nonetheless, the Board found SEI's approach "appropriate" because *some* wells sampled groundwater from the "non-mineralized parts of the" OZ aquifer and the post-license monitoring wells will be fully screened. I.D. 4.31. However, as the Board also recognized, the "non-mineralized zone" does not refer to areas without minerals (where unbiased data might be collected), but rather where there are not enough

[16] The Board also appeared to discount the relevance of an accurate baseline on the grounds that the aquifer is "exempt" under EPA regulations. I.D. 4.22 n.20. The Board thus ignored that this exemption was not based on the actual *quality* of the groundwater, but rather on the fact that is not a current drinking water source, and contains commercial minerals. In short, the characterization methodology permitted by the Board impermissibly allowed Staff to not determine the water quality. 10 C.F.R. § 51.71(d) n.3 (compliance with the water quality requirements "is not a substitute, and does not negate the requirement for NRC to weigh all environmental effects of the proposed action, including the degradation, if any, of water quality").

minerals "to be economically viable," *id.* n.28 – and thus the existence of these samples does not address the concern. Indeed, elsewhere in the Initial Decision the Board found that "the composition of the groundwater in the OZ may *vary considerably* depending on the nature of the minerals with which the groundwater is in contact," *id.* 4.141 (emphasis added) – demonstrating that a meaningful assessment of the baseline requires consideration of data *outside* the OZ.

Moreover, in the absence of any scientific protocol concerning the number and kind of monitoring wells necessary to collect meaningful baseline data (which the Board deemed unnecessary), it would be irrelevant even if these samples reflected that *some* data had been collected from outside the ore zone. Similarly, the accuracy of the excursion data that may be collected post-license is irrelevant to whether the *license was issued* based on a meaningful assessment of the baseline water quality – which, again, is the central NEPA question.

3. Errors In Resolution Of EC2

As noted, EC2 challenged whether the FSEIS disclosed the extent to which SEI's mining will degrade groundwater quality through establishment of ACLs. The Board's ruling that Intervenors failed to demonstrate any such deficiency was in error:

a. The Board recognized that an "important aspect" of the information necessary to address this issue – *i.e.*, the post-restoration ACL uranium levels permitted at *another* ISL site considered in the FSEIS (Smith Ranch-Highland wellfield A) – was not disclosed in the FSEIS. I.D. 4.89. Similarly, the Board agreed that for a different site considered in the FSEIS (Irigary), the Staff had included data that biased the results. *Id.* at 4.94-4.96. Under basic NEPA principles, either of these errors should have led to vacatur of the license, and a remand to the agency to reconsider its decision in light of accurate information. *E.g.*, *New York v. NRC*, 681 F.3d 471

(D.C. Cir. 2012) (vacating decision based on failure to consider relevant information in the NEPA process); *Monsanto Co. v. Geerston Seed Farms*, 560 U.S. 139, 165 (2010)**.**

The Board's decision instead to deem itself as having "supplement[ed]" the FSEIS, I.D. 4.89, and thereby declaring these violations cured was in error. The Board found its approach appropriate on the grounds that the "NEPA record of decision remains open," and thus may be amended based on the Board's ruling. I.D. 4.89 n.49. In reaching this conclusion, however, the Board ignored that *the license has long since been issued*. *See* supra at 2. Since the purpose of the NEPA process is to *inform* agency decision-making, it is a legal non-sequitur for the Board to "amend" the FSEIS without requiring the Staff to consider whether the license, and its conditions, remain appropriate in light of that additional information. 10 C.F.R. § 51.94 (FSEIS to "be considered" in agency decision-making). In short, in resolving these matters by deeming the FSEIS "supplemented," the Board violated the fundamental NEPA precepts that data may not be utilized simply to "justify[ ] decisions *already made*." 40 C.F.R. § 1502.2 (g) (emphasis added); 40 C.F.R. § 1500.1(b) ("NEPA procedures must insure that environmental information is available to public officials and citizens *before decisions are made and before actions are taken*"). Put another way, allowing the NEPA document to be "amended" long after the decision is made makes the process an entirely make-work exercise, rather than an integral aspect of agency decision-making, as Congress intended. *E.g., Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989) (NEPA mandates consideration of environmental consequences *before* a decision is made, so "important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast."). Moreover, the Board never considered whether the public should have an opportunity to

comment on the information disclosed for the first time as a result of the hearing process, further undermining NEPAs fundamental purposes. *E.g.* 40 C.F.R. § 1503.1.[17]

Indeed, the FSEIS's failure to comport with NEPA's "hard look" requirements is made plain by the Board's suggestion staff do a bit more analysis next time. *See* I.D. 4.101 n.58 (stating that although "staff apparently considers this analysis to be a 'one and done' effort, i.e., the bounding analysis apparently was included in the Ross FSEIS only to address EC 2 as admitted by the Board and will not be replicated for any other ISR facility," the failure to do such an analysis "raises unnecessary questions about agency compliance with the dictates of NEPA," because "an ACL is a foreseeable consequence of ISR mining, the environmental impacts of which seemingly should be addressed at the earliest realistic opportunity using relevant historical information"). And even as regards *this* FSEIS, the Board's recognition that the FSEIS simply included "a one-page discussion of the three post-1980s-approved aquifer restorations — Crow Butte wellfield 1, Smith Ranch-Highland wellfield A, and Irigaray mine units 1-9 — and their respective impacts on water quality within the exempted aquifer," I.D. 4.72, without even including necessary data on uranium concentrations, demonstrates that the very bounding analysis the Board acknowledged as necessary was not in fact performed.[18]

b. The Board also purported to rely on information it suggests is in the record but, in fact, is not. For example, to buttress its conclusion that the aquifer restoration approval at Crow Butte was not arbitrary (I.D. 4.86), the Board cites NRC Staff's expert for the proposition that "the staff's ACL decisionmaking is scientific in that the staff completes transport modeling to

[17] Similarly, NEPA's central purpose of considering *alternatives* is undermined if the FSEIS can be amended with additional information on the proposed action, with no separate consideration of how that might bear on the choice among alternatives. *See* 40 C.F.R. § 1502.14 (alternatives are "the heart of the environmental impact statement").

[18] As the Board noted, even uranium data that was in the FSEIS was inaccurate: while the FSEIS stated uranium concentrations at Crow Butte increased by only 18%, the actual number was 18.8 *times* pre-license levels. I.D. 4.83 n.48.

predict whether a constituent would travel beyond the boundary of the exempted aquifer before approving an aquifer restoration." *Id*. 4.84. However, *there is no evidence in the record of a transport model for the restoration at Crow Butte*. Indeed, in the very next sentence the Board states "the approved concentration level of uranium at Crow Butte unit 1 was within the secondary standard in use at the time as imposed on the production zone under Crow Butte's Nebraska state underground injection control permit, and *thus the staff assumed the concentration would also be protective outside the production area*." *Id.* (emphasis added).

Reliance on a non-existent transport model for Crow Butte, for a site that, as noted, the FSEIS relied on for uranium levels that were in error by orders of magnitude, *see supra* n.18, was in error. Moreover, these errors further serve to demonstrate that, for the Ross Project, Staff is likely to approve an ACL reflecting whatever contamination remains after SEI has attempted restoration efforts for some period that Staff subjectively deems sufficient, even if those levels are much higher than at Crow Butte or other sites. In short, the ACL selected for Crow Butte lacked a scientific or empirical basis for assessing restoration performance. JTI0052-R (Larson Rebuttal) (Ex. 11) A.4.

c. Compounding this oversight, the Board attempted to buttress staff's post-NEPA analysis of Smith Ranch-Highlands A. I.D. 4.91. First, the Board asserted Dr. Larson's approach relies on a range of sampling results collected during the groundwater sweep and restoration period. *Id*. This is not accurate: the active restoration efforts halted in 1998 and the NRC data Dr. Larson presented showing serious contamination was from stability data collected 2/5/1999 to 11/12/1999. *See* JTI0005A-R2 (Ex. 16) at 227 – 232.[19]

[19] Indeed, Staff suggests it used sampling results available from a 2004 PRI report cited in the FSEIS (FSEIS 4-46; NRC001 A.2.6 (p. 33)), but that 2004 PRI data, *if* it had been used, would have shown that sampling results demonstrate higher uranium contamination at 4.32 mg/L or 86X background (PRI 2004, p. 150) (available at . http://pbadupws.nrc.gov/docs/ML0403/ML040300369.pdf); *see also* NRC letter of June 29, 2004 (available at

Next, further confusing the matter and conflating Staff's response on a different restoration failure with the situation at Smith Ranch A, the Board dismissed Dr. Larson's criticisms for reliance on data from the restoration phase (which, as explained above, is not accurate) and from the stability monitoring period. I.D. 4.91. The Board then suggested Staff's purported reliance on data from the final group of water samples for comparison against baseline is more accurate (which again, is not what the Staff did, and supplemented by the Board, completed for the "bounding analysis" for Smith Highland (*see supra* n.19)), and the Board pointed to Staff's testimony (at 24 (NRC044 A.2.8 (p. 24)), for its discussion of the final group of water samples from Smith Ranch A. I.D. 4.91. However, the testimony on which the Board relied concerns restoration failures at the Nubeth site, *not* Smith Ranch A. *See* NRC044 A.2.8 (p. 24) (Ex. 18). The Board's inapposite reference fails to provide support for Staff's inadequate NEPA analysis and fails to accurately "amend" the FSEIS after the fact.[20]

d. Next, without explanation, the Board dismissed evidence of mining fluid excursions impacting water in vertically or horizontally adjacent aquifers outside of exempted areas. I.D. 4.98-4.101. The record of this proceeding includes dozens of examples of vertical excursions for which concentrations of uranium and selenium exceeded drinking water standards, and these occurred in shallow aquifers, not the mined ore zone subject to an aquifer

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http://pbadupws.nrc.gov/docs/ML0418/ML041840470.pdf). The original source for the 71x background contamination measure suggested for Smith Ranch A may be found from the February 1999 stability monitoring data found in the Borch *et al.* Report ("Determination of contaminant levels and remediation efficacy in groundwater at a former in situ recovery uranium mine," J. Environ. Monit., 2012, 14, 1814) (Ex. 17) (NRC037, p. 5, table 1), which was not the "last round" of sampling used by NRC Staff to accept the site decomissioning in 2004. All of this, of course, underscores the arbitrary nature of the purported NEPA review and "bounding analysis."

[20] The Board also erred in dismissing the data from Smith Ranch-Highland mine unit B as "irrelevant," I.D. 4.92, since *Staff relied on Christiansen Ranch, which also does not yet have a final approved ACL. FSEIS 4-46.*

exemption.[21] Also, the data from the Smith Highland ISL site shows extensive elevated groundwater concentrations of uranium and selenium in the shallow (~<200 ft depth), non-uranium ore bearing aquifers. These elevated concentrations of uranium and selenium were reportedly the result of dozens of failed ISL injection well casings in mine units C, E, and F. *Id. at* .pdf p. 8-20. None of this is addressed by the Board. I.D. 4.98-4.101.

e. Finally, regardless of the *post hoc* contamination measurements the Board construed to be an appropriate bounding analysis of reasonably foreseeable ISL impacts, reliance on the existence of an aquifer exemption for the mined aquifer and the potential for a future NEPA process for an ACL as support for the analysis conducted in the FSEIS evokes a NEPA process that is a make work exercise rather than one that might meaningfully inform an agency decision-maker. *See* In. Dec 4.106. The Board attempted to justify Staff's clear position that, because an ACL will require future approval, the impacts of an ACL could never be considered "large" under NEPA. I.D. 4.107 n.62. Indeed, the Board even went so far to acknowledge that the Staff's position "does, at least on its face, suggest a 'resolution by definition' approach." *Id*. Rather than grapple with a Staff position that makes NEPA meaningless, the Board stated that "validation of this staff approach lies in the fact that the ACL process requires another, separate agency judgment about what is an appropriate concentration level for the various hazardous constituents that will remain post-operation in the production aquifer and that this agency assessment is subject to an adjudicatory challenge." *Id*.[22] This position, upheld by the Board, that

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[21] *See, e.g.*, JTI005B-R2 at 61-62 (Ex. 19); 2012 Status Update Casing Leak Investigation C, E and F Wellfields Smith Ranch-Highland Operations (JTI036) at 59-85 (Ex. 20).

[22] The position the Board is upholding was best expressed by NRC's expert in answering the question "if the NRC were to approve an ACL thousands of times above EPA Safe Drinking Water Act Standards for uranium, the impacts could still be small?" Staff responded in pertinent part, "[s]o, if the ACL were, you know, let's say, you know, at a ridiculously large number then, in all likelihood, it would not – you could not demonstrate that it would be protective of the human health and the environment at that boundary of the exempted aquifer. So, the – you

the "ACL can't just be any number – it can't be ridiculous," permits EPA's aquifer exemption to be parlayed into authorization for the exempted aquifer to become a toxic, hazardous disposal area and puts off to the future any examination of that result, in flat violation of NEPA and NRC requirements.[23]

NEPA requires an agency to analyze the environmental impact of a project on, *inter alia*, "air and water and other natural systems, including ecosystems," 40 C.F.R. § 1508.8(b), including by disclosing "any adverse environmental effects which cannot be avoided should the proposal be implemented." *Id.* § 1502.16; *see also* 10 C.F.R. Pt. 51, Subpt. A, App. A, § 6. The impacts on these resources must be disclosed irrespective of immediate human consumption of the affected groundwater. *See* 40 C.F.R. § 1508.14 (defining the "environment" covered by NEPA to include "the natural and physical environment . . . ."). Moreover, an agency must cogently explain basis for terminology such as "small" impact, *e.g. Greater Yellowstone Coal. v. Kempthorne*, 577 F. Supp. 2d 183, 201 (D.D.C. 2008), and where it relies on mitigation techniques to ameliorate impacts, demonstrate that such techniques will be effective. *E.g. Robertson*, 490 U.S. at 352 ("omission of a reasonably complete discussion of possible mitigation measures would undermine the 'action-

know, the ACL can't just be any number. It has to be a number that meets that, you know, very important criteria that is protective of – at the – at the boundary of the exempted aquifer." Transc. 559-561.

[23] *See, e.g.*, 10 C.F.R. § 51.71(d) n.3 (compliance with other requirements "is not a substitute for, and does not negate the requirement for NRC to weigh all environmental effects of the proposed action, including the degradation, if any, of water quality") (emphasis added). It also defies all credulity for the Board to find support for the conclusion that any future ACL will only allow a "small" impact because Intervenors and others will have an opportunity to participate in the ACL process and pose an "adjudicatory challenge" to ensure it is protective. I.D. 4.107 n.62. Given the Board's disregard for Intervenors' overwhelming evidence and legitimate concerns in *this* proceeding, it was certainly in error for the Board to assume that Intervenors will be able to obtain an ACL protective of the environment in a *future* proceeding.

forcing' function of NEPA").[24] If these precepts are faithfully applied here, the Board's disposition of EC 2 must be deemed to be in error.

4. Errors Regarding Resolution Of EC3

There is no dispute that, if not properly filled, the more than 1,500 pre-existing boreholes in and near the Ross project site may permit fluid migration and therefore risk an excursion of contaminated water beyond the otherwise "confined" aquifer. *See* I.D. 4.120 (summarizing Staff finding that communication detected between OZ and DM aquifers was due to unfilled boreholes); FSEIS at 4-37 (SEI009A) (explaining that vertical excursions due to "improperly abandoned drillholes"). Although Staff argued that filling these boreholes was not relevant to the risks of excursions because the monitoring well ring would insure that any such excursions are detected and recovered before environmental damage occurs outside the exempt aquifer, the Board *rejected* this argument, finding the requirement to fill these holes an important element in the accuracy of the Staff's assessment in the FSEIS that the impacts from excursions would be SMALL. I.D. 4.126-127. In nonetheless concluding the FSEIS's impact assessment for excursion risks was accurate, the Board committed several legal errors warranting review:

a. The Board recognized that, under the license SEI need only "attempt" to fill the boreholes. *Id.* 4.127. While recognizing that filling these holes poses a "daunting challenge," *id.* 4.127, the Board concluded this requirement will lead to a small risk of excursions on the grounds that SEI and Staff have adequate "incentives" to fill these holes. *Id.* 4.128 and n.66.

In so concluding the Board *ignored* Intervenors' evidence showing that at another site – where the mining company had a similar "incentive" to avoid excursions – these excursions, due to unfilled boreholes, nonetheless occurred. JTI001R (Abitz Test.) A.41 (p. 47); *see also* JTI026

[24] *Southfork Band Council v. Interior*, 588 F.3d 718, 727 (9th Cir. 2009); *McDonnell Douglas Corp. v. U.S. Dep't of the Air Force*, 375 F.3d 1182, 1186-87 (D.C. Cir. 2004).

at 8 (Ex. 20) (Notice of Violation). In that case, the Texas Railroad Commission issued a Notice of Violation to Uranium Energy Corp. for failing to properly fill boreholes – explaining the company had *failed to comply* with the permit requirements to properly fill these holes. *Id.* ("permittee failed to segregate and replace topsoil, and/or properly install a cement surface plug, and/or allow pits to dry before backfilling and/or backfill or compact backfilled materials and topsoil above grade . . . and/or mark the exact location of each borehole"). The Board's failure to address why SEI's "incentive" to fill the holes in this case is likely to be greater than that of Uranium Energy Corp., or other instances cited by Intervenors,[25] warrants review.[26]

The Board similarly erred in finding that Staff has an "incentive" to insure these boreholes are filled "to fully support its predictive finding of SMALL long-term impacts from fluid migration." I.D. 4.128 n.66. The Board recognized that the boreholes *may not all be filled* "before ISR operations begin." I.D. 4.125 (citing Transc. at 766 (SEI witness Griffen testifying that the "license condition is worded the way it is . . . recognizing that there are a large number of holes out there [a]nd we may not be able to find every single one of them")). The Board also recognized that, in the event SEI does not make adequate efforts to fill the boreholes, Staff will be powerless to act absent a showing that SEI's violation is "'willful.'" I.D. 4.125. Under these circumstances, it was unreasonable for the Board to base its conclusion on Staff's "incentives."

Moreover, the Board's approach turned its review of Staff's NEPA process on its head, assuming that because the Staff made a prediction as to impacts, Staff will insure that prediction is satisfied. Of course, if that were the guiding principle, a NEPA impacts assessment would

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[25] *See* Larson Direct Test. (JTI003-R) at 51-53*; see also* NRC020, at 30 (W. P. Staub, et al., Oak Ridge National Laboratory, An Analysis of Excursions at Selected In Situ Uranium Mines in Wyoming and Texas, NUREG/CR-3967, ORNL/TM-9956 (July 1986)) (discussing other excursions).

[26] It also bears emphasizing that while elsewhere the Board criticized Intervenors for failing to provide "specific evidence" to support a contention, I.D. 4.145, the Board here simply *ignored* the evidence that was provided.

always be accurate, for the agency will always have an incentive to insure that its prediction comes true. To the contrary, the NEPA issue is whether, given evidence, Staff and SEI met the burden of demonstrating the risk of significant impacts from these excursions will be SMALL.

b. As regards the testing that *was* conducted, the Board also erred in rejecting Dr. Abitz's testimony demonstrating the aquifer is *not* confined. I.D. 4.132-141. Dr. Abitz plotted sodium and sulfate concentrations, which are naturally higher in the OZ than the Shallow Monitoring (SM) aquifer, and demonstrated that the data shows communication between the aquifers. *Id.* 4.139; JTI001-R (Abitz Test.) A.44. The Board rejected this conclusion on the grounds that "the better explanation lies in the staff witnesses' assertion that the composition of groundwater in the OZ aquifer *may vary considerably depending on the nature of the minerals with which the groundwater is in contact*." I.D. 4.141 (emphasis added). However, this conclusion contradicts the Board's approach to EC1, for in resolving that Contention the Board deemed SEI's limited groundwater sampling approach adequate to collect "complete baseline data" on the entire site. *See supra* at 12-13. But if the results of groundwater tests in the OZ will "vary considerably" depending on the mineral content where they are located, then SEI and Staff failed to demonstrate that the limited groundwater data collected meaningfully characterized the baseline. Alternatively, if, as the Board assumed in resolving EC1, the limited number of wells utilized collected data representative of the site, then, in EC 3, the fact that these data show elevated sulfate and sodium levels in the SM aquifer indicates that the OZ is not confined. *See, e.g. In the Matter of Kerr-McGee Chem. Corp.*, 33 NRC 81, 148 (1991) (reversing Board's "unexplained, unsubstantiated, and contradictory conclusions").[27]

[27] Similarly, the Board dismissed Intervenors' argument in EC 1 concerning Staff's averaging of water quality results without considering anomalies that might exist in individual wells, I.D. 4.34, but that dismissal is also irreconcilable with the Board's rejecting Dr. Abitz's analysis here on the grounds that the data collected from each well may "vary considerably" depending on its mineral content.

c. In response to Drs. Abitz's and Larson's demonstration, based on controlled experiments and scientific literature, that uranium may move through the aquifer more quickly than chloride and the other excursion indicator constituents, the Board found that Staff had shown that the aspects of ISR mining that make uranium mobile "*can* break down when groundwater moves out of the OZ," that the controlled experiments "*may* not be applicable" to the Ross site, and that "the behavior of uranium during transport in groundwater *is not yet well understood* . . . ." I.D. 4.144 (emphasis added). On that basis, the Board found Intervenors failed to demonstrate a "compelling" case, based on "convincing site-specific evidence," for "using uranium as an excursion indicator for the Ross Project . . . ." *Id.* 4.145.

This conclusion cannot be sustained, for it once again puts the burden on *Intervenors*, when in fact *Staff has the burden* to demonstrate why it refuses to monitor for migration of the very element that the ISR mining process is expressly designed to release into the groundwater. *See* I.D. 3.8. To be sure, if the Board had concluded that, in fact, Staff had demonstrated that uranium will move more slowly than these other constituents, the finding could be sustained. But where, as here, the Board found *uncertainty* regarding uranium transport rates, it was error for the Board to conclude that the Staff had appropriately found the impacts from excursions will be small based on excursion parameters that *will not include monitoring for uranium*.

d. Finally, Intervenors also submitted data from other ISL sites demonstrating both horizontal and vertical uranium excursions occurred, despite the same kind of protective measures being relied on for the Ross project – asserting this data further demonstrates the FSEIS's conclusion of SMALL impacts is erroneous. I.D. 4.146-4.148; *see* JTI003-R (Larson Test.) A.70-A.72; A.76-A.85. The Board discounted data on lateral excursions as irrelevant as long as they remain in the exempt aquifer. I.D. 4.147.

Once again, the Board erred in relying on the exempt aquifer to uphold the Staff's conclusion that impacts from excursions that remain in the aquifer will be SMALL. *See supra* at 13 n.16 and 19-20. The exempt aquifer *is part of the affected environment*, impacts to which must be disclosed and considered in the FSEIS. *See supra* at 3.

As regards horizontal excursions, which Intervenors demonstrated occurred elsewhere, the Board speculated excursions elsewhere might be due to "an engineering failure, *i.e.*, a casing leak," I.D. 4.147, without either relying on *any* evidence supporting that speculation, or explaining why SEI's project will not be prone to the same kind of problems that have plagued other ISR mining operations. Indeed, the FSEIS *description* of an excursion includes "*poor well integrity*," FSEIS 2-30, precisely what the Board assumes occurred at these other sites.[28]

IV. CONCLUSION

The Commission should remedy these fundamental legal and prejudicial procedural errors, which depart from established precedents, and raise substantial and important questions of law and policy warranting review. *See* 10 C.F.R. § 2.341(b)(4). Respectfully submitted,

/s/ Howard M. Crystal)
Meyer Glitzenstein & Crystal
1601 Conn. Ave., NW, #700
Washington, D.C. 20009
(202) 588-5206
hcrystal@meyerglitz.com
Counsel for Natural Resources Defense Council, Inc.

/s/ Geoffrey H. Fettus
Geoffrey H. Fettus,
Senior Attorney
Natural Resources Defense Council, Inc.
1152 15th St., NW, # 300
Washington, D.C. 20005
Tel: (202) 289-6868
Email: gfettus@nrdc.org
Counsel for Natural Resources Defense Council, Inc.

/s/ Shannon Anderson
Shannon Anderson,
Staff Attorney
Powder River Basin Resource Council
934 N. Main St.
Sheridan, WY 82801
Tel: (307) 672-5809
Email: sanderson@powderriverbasin.org
Counsel for Powder River Basin Resource Council

February 17, 2015

[28] The Board's resolution of this issue epitomizes its erroneous approach, where it summarily dismissed Intervenors' evidence from other sites without providing any reason to anticipate different results here. Surely, Intervenors were not required to demonstrate flaws in "the basic design of the ISR facility," I.D. 4.147, in order to show that excursions are likely here given that they have occurred at other sites using precisely the same techniques. In short, time and again the Board improperly framed Intervenors' burden in a manner that could not be satisfied regardless of the evidence they had presented.

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing NATURAL RESOURCES DEFENSE COUNCIL'S & POWDER RIVER BASIN RESOURCE COUNCIL'S PETITION FOR REVIEW OF ATOMIC SAFETY AND LICENSING BOARD'S JANUARY 23, 2015 INITIAL DECISION DENYING ENVIRONMENTAL CONTENTIONS 1 THROUGH 3, AND INTERLOCUTORY DECISIONS DENYING ENVIRONMENTAL CONTENTIONS 4/5A AND 6/7 in the captioned proceeding were served via the Electronic Information Exchange ("EIE") to the Commission and all other parties on the 17th day of February 2015, which to the best of my knowledge resulted in transmittal of same.

/ (electronically signed)
Howard M. Crystal
Meyer Glitzenstein & Crystal
1601 Conn. Ave., NW, #700
Washington, D.C. 20009
(202) 588-5206
hcrystal@meyerglitz.com

Counsel for Natural Resources Defense Council, Inc.

Date: February 17, 2015