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September 26, 2016

Via Electronic Mail and Hand Delivery

Todd Anthony Bianco, EFSB Coordinator
RI Energy Facility Siting Board
89 Jefferson Boulevard
Warwick, RI 02888

Re: Invenergy Thermal Development LLC's Application to Construct and Operate the Clear River Energy Center in Burrillville, Rhode Island
Docket No.: SB-2015-16

Dear Mr. Bianco:

On behalf of Invenergy Thermal Development LLC and the Clear River Energy Project ("Invenergy"), please find enclosed an original and ten (10) copies of Invenergy's Objection to the Conservation Law Foundation's Motion to Dismiss, along with accompanying exhibits.

Please let me know if you have any questions.

Very truly yours,

ALAN M. SHOER
ashoer@apslaw.com

Enclosures

cc: Service List

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

In Re: INVENERGY THERMAL DEVELOPMENT LLC'S APPLICATION TO CONSTRUCT THE CLEAR RIVER ENERGY CENTER IN BURRILLVILLE, RHODE ISLAND	**)** **)** **)** **)**	**Docket No. SB-2015-06**

OBJECTION OF INVENERGY THERMAL DEVELOPMENT LLC TO THE CONSERVATION LAW FOUNDATION'S MOTION TO DISMISS

I. INTRODUCTION

Now comes Invenergy Thermal Development LLC ("Invenergy") and hereby objects to the Conservation Law Foundation's ("CLF's") Motion requesting the Rhode Island Energy Facility Siting Board ("EFSB" or "Board") dismiss Invenergy's EFSB Application ("Invenergy's Application" or "Application") and close this docket.

CLF contends that Invenergy's Application should be dismissed, first concurring with the Town of Burrillville's ("Town's") assertion that "'Invenergy's failure to provide the EFSB, the Town and its Entities with requested information regarding its proposed water supply renders its application incomplete.'" *See* CLF's September 19, 2016 Motion ("CLF Motion"), 6 (quoting Town's Motion, 2).[1] CLF also asserts that Invenergy did not provide enough information for some of the agencies tasked with preparing advisory opinions, such that Parties were deprived of the opportunity to participate fully in this docket. *Id*. Further, CLF argues that the EFSB was deprived of information necessary to comply with the Energy Facility Siting Act ("Act"). *Id.*[2]

[1] CLF "expressly join[ed] in the Town's motion and adopt[ed] the Town's reasoning without repeating it in [its] memorandum." *Id.* at 6 n.3.

[2] It should be noted that CLF makes no mention of the many other agencies that submitted advisory opinions with no concern about lacking sufficient information. These other agencies expressed strong endorsements for the proven need for the project, its cost effectiveness, its importance to the support and backup of the growing renewable energy industry, its benefits to the socio-economic fabric of the state, the lowering electric rates, and the creation of hundreds of well-paying jobs, and the lowering of emissions rates, all as strong benefits of the project.

As explained more thoroughly herein, CLF's assertions are incorrect and CLF's Motion to Dismiss should be denied. Contrary to CLF's argument, the Board has not been "deprived" of opinions in order to proceed according to the process set forth in the Act as the Board has in fact received extensive and highly detailed Advisory Opinions from the agencies. CLF does not even refer to, for example, the opinions from the PUC (23 pages); OER (35 pages); Statewide Planning (44 pages), the Burrillville Tax Assessor, etc.[3]

Additionally, the Advisory Opinions the CLF refers to, after a full reading of the opinions, overwhelmingly do provide the Board with their opinions, advice and recommended conditions for the Board's consideration, as explained in more detail below. CLF ignores the overwhelming volume of expressed opinions that the Board now has before it. These Advisory Opinions provide the Board with ample information, developed in agency processes, to proceed before the EFSB to further review the Application with the Board and proceed to Final Hearings.

As to the selected portions of the Advisory Opinions that CLF quotes, CLF's Motion should be denied for several reasons: (1) Invenergy addressed all the Town's assertions in its Objection filed with the Board on September 19, 2016 and all arguments are incorporated herein; (2) Invenergy responded to every request from each and every agency rendering an advisory opinion with the best available information it had at the time of the request and thereby complied with all the requirements pursuant to the Act and the EFSB Rules of Practice and Procedure ("EFSB Rules"); and (3) EFSB precedent establishes that supplementing an application (e.g. water supply plans) and/or not having all permits filed at every stage during the EFSB

See Advisory Opinions of the Rhode Island Public Utilities Commission ("PUC"), the Rhode Island Office of Energy Resources ("OER"), the Rhode Island Division of Statewide Planning.

[3] *See also* PUD's opinion (although not relevant now); Historic Preservation; Town's Tax Assessor, all offering substantial advisory opinions and comments for the Board's consideration. None of these are mentioned in CLF's Motion.

proceedings does not constitute grounds for dismissal.[4]

II. ARGUMENT

A. CLF's Motion To Dismiss Should Be Denied For The Reasons Articulated In Invenergy's Objection To The Town's Motion To Dismiss.

On September 19, 2016, Invenergy filed its Objection to the Town's Motion to Dismiss. Invenergy incorporates by reference the arguments and analysis contained in its Objection. Much of the argument contained in CLF's Motion regarding the lack of information concerns the water supply issue referenced in the Zoning Board, Planning Board, Rhode Island Department of Environmental Management ("RIDEM") and Rhode Island Department of Health ("RIDOH") and the late removal of the use of water from the Pascoag Utility District ("PUD") as an open item of concern.[5]

However, this problem was imposed due to PUD's unilateral decision very late in the advisory process. It was only at the near end of the agency review process that the PUD Board voted to terminate the Letter of Intent with Invenergy for the use of Well 3A, thereby leaving Invenergy with no opportunity to supplement a new water supply proposal with these agencies before the Advisories were due. The Letter of Intent had been in place since September 25, 2015 and was revoked on August 19, 2016, less than a month before the end of the agency advisory opinion review process.

Invenergy timely notified the Board of this unilateral PUD decision and immediately set out to review other options, such as water supply with Harrisville water, another entity within the

[4] Also, CLF's assertion that "six" of the agencies providing the Board with their advisory opinions offered "no opinion" is a wild exaggeration, as will be refuted throughout this Objection.

[5] Invenergy's initial Application contained the best available information on all support facilities, including PUD's supplied water, when it was deemed complete, as Invenergy complied with all the requirements pursuant to the Act and the EFSB Rules.

Town.[6] Following these events, Invenergy filed a Motion for Extension, requesting additional time so as to allow for a new water plan to be filed with the Board for review by all parties. No party, including the Town and CLF objected to the Motion for an Extension, and it was therefore granted by the Board.[7]

Invenergy is prepared to accommodate the Board and other Parties to secure the needed time to review and comment on Invenergy's proposed water supply proposal when it is available for review, and as pointed out below, the Board is well within its authority (as shown in other siting board decisions) to allow the hearings to proceed and to condition its license by requiring the applicant to identify alternative water supply options and to return to the Board for further hearings and reporting as may be required.

Additionally, the Board is also authorized to allow supplemental and new evidence to be introduced that was not in the initial application and was developed as a result of changed circumstances or advice from the agencies. Section 11 the Act authorizes "[t]he board at this [final] hearing may, at its discretion, allow the presentation of new evidence by any party as to the issues considered by the agencies designated under § 42-98-9."

If the Act allows for modification at the final hearing stage, Invenergy is certainly permitted to provide supplemented information in advance of the final hearing stage. PUD's unilateral decision at the end of the agency review process warrants allowing Invenergy the ability to introduce and present new evidence on its water supply plans for the Board's consideration.

In the *Manchester Street* repowering proceeding, precedent established that amending and/or supplementing an application does not render the application incomplete under the Act, as

[6] The Harrisville Board voted against supplying Invenergy with a water supply.
[7] On September 20, 2016, the Board granted Invenergy's Motion to Extend the Procedural Schedule.

the applicants in *Manchester Street* supplemented their original application by revising, among other items, the net generating capacity of the facility, as well as the amount of water consumption needed for the project due to feedback and comments developed during the EFSB process. *See Manchester Street: Final Decision and Order*, Order 12, Docket No. SB-89-1, Dec. 17, 1990. The Board further required the applicant to investigate alternative water supply options *post-license*, and to report back results. Id

The parties' due process rights have not been violated because the EFSB process has sufficient flexibility to allow the procedural schedule to adjust in order to provide the parties and certain agencies adequate time to "be forewarned about the subject matter" before Final Hearings so that the Parties (including the Town) and certain agencies can form an "intelligent explanation or rebuttal."[8]

Lastly, dismissal is unwarranted and would result in drastically unfair, unduly harmful and impractical consequences given that many other agency review processes were undertaken and completed with no issues raised regarding lack of available information. *See* Advisory Opinions of the PUC, OER, Statewide Planning, Town Tax Assessor and Historic Preservation. It would be unfair to require all these agencies to redo all their efforts when the Board has ample options available to allow adjustments to scheduling and to condition its license with requested further information, as the Board determines may be needed.

Accordingly, for the reasons articulated in Invenergy's Objection to the Town's Motion to Dismiss, incorporated herein, the Board should deny CLF's Motion to Dismiss.

B. CLF's Motion To Dismiss Should Be Denied Because Invenergy Complied With All Requirements Pursuant To The Act And EFSB Rules As It Responded To Every Request From Each and Every Agency Rendering An Advisory Opinion With The Best Available Information It Had At The Time The Request Was Made.

CLF's Motion asserts that Invenergy purportedly failed to provide several agencies with necessary information for these bodies to render an advisory opinion. CLF Motion, 9. As discussed more thoroughly below, CLF's assertion is mistaken as Invenergy has complied with the Act and the Rules and has responded to each and every agency rendering an advisory opinion with the best available information it had at the time it was filed with the Board or when any request was submitted to Invenergy for more information.

1. Town Planning and Zoning Boards

CLF's argument that the Planning Board offered "no opinion" to the Board is completely false.[9] In fact, the Planning Board, after review of a voluminous record and after several nights of public hearings, as seen in its twenty-five (25) page report, advised the Board on the comprehensive plan issue and advised the Zoning Board with regard to noise impacts.[10] Additionally, the Planning Board further advised that the Board consider a number of recommendations and conditions that it would like to see attached to a Board license. The Planning Board expressed concern that it did not have the new water supply plan to evaluate and noted that it did not have complete and final engineering designs for the CREC or final permits from other state agencies. However, to suggest that the Planning Board did not offer *any* advisory opinions to the Board (due to water supply) is not what the Planning Board's Advisory Opinion says.

CLF also asserts that the Planning Board took issue that Invenergy's data responses were "incomplete." A review of this discussion in the Advisory Opinion, at page 9, reveals the

[9] CLF Motion, 3 (claiming that six agencies "declared that no opinion was possible").

[10] The Planning Board provided an Advisory Opinion to the Zoning Board to grant a waiver/special use permit with regard to the octave band of the noise ordinance. The Planning Board was prepared to advise the Board with regard to noise but could not due to a lack of quorum, not due to any lack of information from Invenergy. *See* Planning Board Advisory Opinion, 19.

Board's concern was not lack of information; rather that Invenergy's data response explained its preference to use a 19% aqueous ammonia mix (instead of the Planning Board's suggestion for 20%). Concerning hydrogen storage, this matter was fully addressed in detail in the Advisory Opinion of RIDOH. *See* RIDOH Advisory Opinion, 22-24. Also, a review of the voluminous responses to the highly detailed questions asked by the Town in more than fifteen data requests on highly technical points and a review of the studies, reports and expert consultant materials provided to the Board proves that Invenergy responses were responsive and contained responsive details on the questions asked. *See also* Chart Detailing Invenergy's Submissions to the Planning and Zoning Board, attached hereto as **Exhibit A**.

It is also incorrect to assert that Invenergy did not file sufficient details with the Board with regard to site plans and design for all parties, and all the designated agencies, to review. These documents were filed and all available on the Board's web page, as well as served on each of the Town's attorneys and others on the designated service list. The Town also made these documents available for review in a web link to EFSB filings on its Town web page.

Beyond the site plans and drawings supplied in the Initial Application, a review of the application materials, supplemental application details and data responses filed with the EFSB proves this point. *See*, e.g., Initial Application, Section 3.5 (Describing design of structure in detail with drawings and details); Supplemental Application Information; Drawing Package with 14 pages of design details and figures prepared by HDR and available on the Board's web site at http://www.ripuc.org/efsb/efsb/SB2015_06_Drawing%20Package.pdf; Response to RIDEM's First Set of Data Requests Exhibits (designs for oil storage tanks); Response to RIDEM's Second Set of Data Request No. 2-9 and Exhibit Figure 1, Wetlands Delineations; Response to Town's Seventh Set of Data Request No. 7-1 and Exhibit 1, HDR Conceptual Design and Site Diagram;

and Response to RIDEM's Third Set of Data Requests Exhibit 1 (ROW Site Plan, Water Main Plans, Treatment Plans, Proposed Layout Site Plan, Property Wetlands Data Site Plan), Exhibit 2 (Detailed Proposed Site Layout, Grading, Drainage and BMP Plan). These documents are just a few examples of the extensive detail on engineering design plans, site plans and drawings the Invenergy filed with the Board for review by all parties and respective agencies.

Similarly, CLF is again wrong in its assertion that the Zoning Board offered "no opinion" to the Board on the questions requested after a review of the available information filed by Invenergy. While the Zoning Board did express concern about lack of information on the water supply, the Zoning Board did nonetheless offer several opinions on the questions asked, relating to whether a special permit should be granted and whether a waiver from the noise ordinance was warranted. *See* Zoning Board Advisory Opinion, 3-12.

Moreover, in the case of major energy generating facilities, detailed designs are not developed until after a project has obtained its permits and licenses. The reason for this is that detailed final designs are prepared by the engineering procurement construction contractor ("EPC contractor") who will be the engineer of record and construct the facility The EPC contractor is not authorized to proceed to final design approval until most, if not all, permits are obtained, due to the fact that in order for the EPC contractor to prepare detailed designs, the EPC will need design information from equipment suppliers that will only be available once component selections and equipment purchase commitments are made. It is impractical to have an EPC contractor begin purchasing equipment and creating detailed designs until a project is near final approval or at the final permit approval.

CLF's claim of lack of information is further misplaced as it also failed to acknowledge that Invenergy responded to every data request—over two hundred specific requests from the

Town, many with multiple subparts—and every single question from the Town's solicitors, and Planning and Zoning Board officials throughout the agency review process, with the best available information it had at the time (some of it summarized above). *See also* **Exhibit A**.

In addition, after the review of volumes of reports, studies, plans, drawings and testimony, the Planning Board, through its attorneys, requested that Invenergy inform the Planning Board whether it would comply with each and every recommendation made by the Town's consultants. Invenergy complied with this request in testimony and in a separate written response.[11] Just because the Town may not have liked the information provided by Invenergy, that does not make Invenergy's responses incomplete.

In short, Invenergy provided the Planning and Zoning Boards with the most up-to-date and most detailed information it had available at the time any request was made, either in response to direct requests, as filed with the EFSB or as filed with the applications with the Town Boards. Certainly the "final" permits and details that the Planning and Zoning Boards are accustomed to receiving before rendering permitting decisions, rather than advisory opinions, will not be available until more permits have been reviewed and issued with any conditions imposed by other agencies (such as finals for RIDEM for air, stormwater and wetlands, etc), for the final design plans to be then prepared by the EPC Contractor. This process could take up to eighteen months after a favorable ruling by the Board. In the meantime, the record is replete with extensive drawings and materials that reflect more than sufficient information at this point in the process.

In short, Invenergy provided substantial and relevant detailed information as available to the company, for purposes of allowing the Planning and Zoning Boards to advise on the specific

[11] A copy of Invenergy's Response to the Planning Board request for comment on its consultant recommendations is attached as **Exhibit B.**

questions requested by the Board.

2. Building Inspector

CLF is also wrong to suggest that the Building Inspector offered "no opinion" to the Board in response to the Board's questions. The Board asked the Inspector first whether the project is subject to the Town's Erosion and Sediment Control Ordinance. The Inspector was certainly able to determine that the Ordinance, in his opinion, would apply to the project, stating "based on the nature of the proposal and what has been presented to the Town Planning Board and Zoning Board . . . it is clear that the proposed project is a land disturbing activity that is subject to the Town's Ordinance." Building Inspector Advisory Opinion, 4. The Inspector thus offered an opinion on the first question.

It is important to note the Inspector was aware (and we can therefore assume reviewed or certainly was able to review) all of the information that was filed with the EFSB and the Town's Planning and Zoning Boards. He makes reference to the Town's Planning and Zoning Board materials that Invenergy filed in forming his opinion. *Id.*

In Invenergy's Response to the Town's Planning Board request regarding whether Invenergy will comply with the Town's Peer Review Recommendations, Invenergy in fact submitted two relevant site drawings. First, an Exhibit 2 contained two color site plan details titled "Existing Drainage Conditions" showing specific contours as existing now, prepared by HDR, Inc.. Second, an Exhibit 4, contained CREC's preliminary soil erosion and sediment control plan, entitled "Preliminary Soil Erosion and Sediment Control Conceptual Plan," also prepared by HDR, Inc.[12] These site design documents certainly contain relevant detail regarding drawings "illustrating in detail existing and proposed contours, drainage features and vegetation;

[12] A copy of these two drawings, as Preliminary Soil Erosion and Sediment Control Conceptual Plan and as submitted to the Town Planning Board is attached as an exhibit (3) to **Exhibit B.**

limits of clearing and grading" and more, as stated in item "2" of the handbook referenced by the Building Inspector. Building Inspector Advisory Opinion, 3.

In Invenergy's Response to the RIDEM's Third Set of Data Requests, Exhibit 2, Invenergy submitted a detailed site plan to the Board, available for review by all parties and agencies as well, entitled, "Proposed Site Layout, Grading, Drainage and BMP Plan," prepared by HDR, Inc. This document contained more relevant information showing the details on site topography.

Therefore, Invenergy did submit preliminary soil and erosion control details and drawings with the Town that were available for review by the Building Inspector.[13] The Building Inspector states he reviewed the materials filed with the Planning Board. Evidently, he may have overlooked this information in his review; in any event, it is not true that Invenergy did not file sufficient information to allow the Building Inspector to opine on Invenergy's preliminary soil and sediment control plans.

Additionally, Invenergy did file the requisite "narrative describing the proposed land disturbance" and "other information or construction plans and details," Items 1 and 3 in the reference to the Soil/Sediment "Handbook," referenced by the Building Inspector, as shown in the narrative filed in the Initial Application. *See* Building Inspector Advisory Opinion, 3. Specifically, this information was in Section 3 of Invenergy's Application, Project Description and Facilities, 6-19; Sections 6.2, 6.3,6.4, 6.5, 6.6 for water, stormwater, vegetation, terrestrial ecology, 39-68, describing the BMP plan and reference materials for final design, to control stormwater, sediment reduction and soil erosion, 68-69. The Building Inspector decided not to

[13] Given that the Town's attorneys have requested hundreds of very specific data questions on all matters of interest concerning the Town's agency review process, the Town could certainly have made a specific, separate, written request for this document also, which it did not; nevertheless, the preliminary soil erosion document was in fact filed with the Town's attorney in response to his specific request for response to recommendations.

comment on these materials, but that does not mean Invenergy did not file this material with the Board and with the Town. All this material was filed and remains available for the Building Inspector to comment and advise upon to the Board in testimony at final hearings.[14]

Invenergy also provided the Board and the Town with substantial site plan and construction details, as referenced in response to numerous data questions showing the conceptual site design, layout and figures on relevant topography (see above), and as shown in the fourteen (14) pages of site drawings supplemented in the Initial EFSB Application.

CLF's argument that the Building Inspector could not opine regarding Invenergy's compliance with the Town's Erosion and Sediment Control Ordinance due to "lack of information" simply ignores all this relevant material filed with the Town. Invenergy has done its best to provide the EFSB and Building Inspector, through the Town's attorneys and Planning Board, with the information requested. All these documents were filed and are available for the Town's witness to further advise the Board at final hearings. Invenergy provided the Building Inspector, through the Town, with all the information available at the time regarding CREC's preliminary erosion and sediment plan.

Invenergy also notes that a final Soil Erosion and Sediment Control Plan will be filed—per RIDEM—with the Rhode Island Pollution Discharge Elimination System ("RIPDES") Stormwater Permitting review and any changes imposed by RIDEM.[15]

Finally, on the second question asked by the Board (compliance with other municipal

[14] In another siting decision, the Board noted in its Final Order that the Warwick Building Inspector did not issue an Advisory Opinion and noted that the applicant had not yet filed its Erosion and Sediment Control Plan with the Warwick Building Official. *Narragansett Electric Company (J-188) Transmission Line Improvement Project: Final Order*, Order 29, Docket No. SB-94-2, Jan. 4, 1996. The Board did not treat this as grounds to dismiss. The Board properly "treat[ed] this permit as a post-licensing permit under EFSB Rule 1.14." *Id.*

[15] In a recent data request, the Town has requested a copy of the preliminary stormwater design plans, which Invenergy will be providing (as a draft).

ordinances), it is again incorrect to suggest that no opinion was provided. The Opinion devotes nine (9) pages opining on findings with regard to zoning ordinances. Building Inspector Advisory Opinion, 5-13.[16] It is not necessary to respond with Invenergy's reactions at this point; the notion that "no" opinion was provided is simply not true.

3. Rhode Island Department of Transportation ("RIDOT")

A review of the materials Invenergy filed with the Board, and with RIDOT, also refutes CLF's claim that Invenergy did not submit any materials to RIDOT. It is also not true that RIDOT offered "no opinion" on the questions asked by the Board. Additionally, it appears that RIDOT unfortunately did not actually "see" the materials that were in fact filed by Invenergy with the Board, and further provided directly to RIDOT via separate correspondence.

Among the questions asked, the Board requested an opinion on whether a utility permit, a physical alteration permit or any other permits are required and should be issued. Also, the Board requested an opinion on the "potential impacts upon traffic and road conditions associated with the Facility during construction and operation." RIDOT Advisory Opinion, 1.

RIDOT's opinion on the first question was answered, by a description of the permits that are required, with recommendations on drainage and stormwater control responsibilities, as well as the sewer and water line utility permit requirements. *Id*. at 2.

Although Invenergy has yet to submit its final permit applications to RIDOT (these are typically filed once final licenses and other permits are received and contractors are ready to begin construction on roads), Invenergy filed detailed materials that provide all Parties and agencies, including RIDOT, with a great deal of information related to roads and matters under

[16] Invenergy is preparing detailed responses to each of these zoning ordinance findings, to present to the Board in its testimony and response to the Opinion.

RIDOT's typical purview and in response to the questions asked by the Board.[17]

In Invenergy's Application, Invenergy dedicated Section 6.8 to traffic matters, describing the routes, submitting a site access figure, describing delivery schedules and detailing mitigation measures. *See* Invenergy's Application, 83-93. Invenergy's traffic consultants from McMahon Associates (Maureen Chlebek, P.E. and Robert Smith, P.E.) also prepared a report titled "Traffic Impact Study for the Clear River Energy Center – Wallum Lake Road (Route 100) Burrillville, Rhode Island," dated May 2016 and the Appendix, filed with the Board on August 2, 2016 as a supplement to Invenergy's Response to the EFSB's Data Request No. 1-1. This traffic impact study was also submitted to RIDOT, via separate fed ex package (and emailed) to Mr. Bucci, as indicated in counsel's correspondence dated July 19, 2016. *See* **Exhibit C**, attached hereto.

Additionally, Invenergy's consultants, Ms. Chlebek and Mr. Smith, met with RIDOT's Managing Engineer of Road Design and the Chief Civil Engineer of Traffic Design in March of 2016, to discuss the Traffic Impact Study, pavement management plans, and expected travel routes for CREC.

All of this material was (and remains) available for RIDOT to comment on, in testimony or at final hearings, with regard to the questions asked by the Board, related to "the potential impacts upon traffic and road conditions associated with the Facility during construction and operation."[18]

Accordingly, CLF's assertion that Invenergy has failed to submit "anything" to RIDOT is

[17] Invenergy supplied PUD with preliminary information for PUD to prepare and file the water supply permits information with RIDOT, which PUD decided not to do, as evidenced by PUD's decision not to supply water. This permit information will need to be redesigned to reflect the alternative water supply pipeline route.

[18] Again, Invenergy timely filed these materials for review by RIDOT. The fact that these materials may not have been reviewed specifically by the appropriate RIDOT staff should not be used as a means to dismiss this application. There remains ample opportunity for RIDOT to comment, in testimony where Mr. Bucci has indicated he and others in his agency will be available at the hearings.

inaccurate and untrue. Invenergy did in fact submit relevant and responsive information to assist RIDOT with its advisory opinion.

4. Rhode Island Department of Environmental Management

Regarding the RIDEM Advisory Opinion, CLF misinterprets RIDEM's statements and fails to properly provide the full analysis that was provided. For example, CLF claims that RIDEM was not able to render an opinion on Oil Pollution Control. CLF Motion, 4. That is not true. RIDEM first notes that "there are no permit application requirements for above ground storage facilities"; RIDEM then comments on what Invenergy did file and concludes by commending Invenergy for its plan to meet all the requirements of the OPC regulations. RIDEM Advisory Opinion, 4 & 6.

RIDEM points out that Invenergy "provided preliminary conceptual design diagrams that exhibited the features that comply with the OPC Regulations," noting that final designs will not be prepared until later in the design schedule. Invenergy also provided RIDEM with detailed responses to specific questions on oil control. *See* Invenergy's Responses to RIDEM's 1st Set of Data Requests. It is therefore not accurate to claim that RIDEM did not have enough information to offer an opinion on the plans for OPC compliance.[19]

It is also not accurate to claim that RIDEM offered "no opinion" on matters concerning wildlife, habitat, biodiversity, recreation and other related concerns.[20] The Initial Application contains substantial detail on the studies performed by ESS Group, in Section 6 of the Application. RIDEM's opinion suggests it would like to see more survey and analysis.

[19] Invenergy responded to every request included in RIDEM's three sets of data requests, with the third set making sixty (60) different requests. Invenergy answered every single request to the best of its ability with all the information it had at the time of the request, so as to provide RIDEM with as much information as available at the time to consider in its Advisory Opinion.

[20] RIDEM is reserving final comment on impacts to the environment in the context of its review of all the permit applications.

However, RIDEM did offer its opinions on a number of issues and impacts that Invenergy (and other Parties) will be responding to in testimony. R.I. Gen. Laws 42-98-11. Opinions were noted with regard to oil controls (6), wildlife impacts (12), noise impacts (12-14), habitat and construction (19),[21] other habitat concerns (19-24), emissions/RGGI (25-28)[22] parks and campgrounds (32-33) and cumulative impacts/fragmentation (34-38), to name a few areas where opinions were provided.[23]

Ultimately, regardless of whether RIDEM now states it lacks information, the Act specifically provides RIDEM with exclusive jurisdiction to exercise its permitting authority where it exercises a permitting or licensing function under the delegated authority of federal law. *See* R.I. Gen. Laws § 42-98-7(a)(3). RIDEM listed the permits and licenses that it believes are specifically exempt from the Board's jurisdiction.[24] *Id*. Invenergy continues to work diligently in preparing its application for RIDEM's jurisdictional permits.

Therefore, RIDEM will be the permitting agency that will review all the data filed for the permits at the appropriate time, and the Board typically can condition its approvals with compliance with the requirements of RIDEM permitting jurisdiction and processes.[25] Invenergy

[21] RIDEM notes that Invenergy submitted more wetland materials in an addendum that will be reviewed along with the wetlands permits application, within RIDEM jurisdiction. RIDEM Advisory Opinion, 9. RIDEM also recognized the details Invenergy supplied to RIDEM's third set of data requests. *Id*.

[22] Agreeing with Invenergy's experts and OER's opinion that the project will "displace other fossil fuel fired generation resources[.]" RIDEM Advisory Opinion, 28.

[23] RIDEM staff understandably could not opine on water supply, given PUD's late decision to remove the wells from consideration.

[24] The following permits and licenses are exempt from the Board's jurisdiction: (1) Freshwater wetlands permit; (2) Air pollution prevention of significant deterioration permit; (3) Water Qualification Certification; and (4) Rhode Island Pollution Discharge Elimination System permit.

[25] To date, a Major Source Air Permit Application, an Air Dispersion Modeling Report, a Health Risk Assessment Report, an Air Permit Application Addendum and a Wetland Edge Verification Request have been submitted to RIDEM.

understands that there are strong views on the issues of environmental aspects of the project; these issues should be further explored in testimony and hearings before the Board.

5. Rhode Island Department of Health

CLF is again mistaken by claiming that RIDOH offered "no opinion." That is not what the RIDOH's Opinion said. RIDOH's Advisory Opinion offered a number of very specific opinions in response to the Board's questions. These concerned: EMF (7); noise (13-15), air pollution (21, emergency response (25/ammonia, 26/hydrogen), climate change/Resilient RI Act (29-30), other health concerns (mental health/lighting/cancer 31-33). RIDOH had to defer on water supply for the reasons detailed above. The only relevant information not available concerned the water supply information and a suggestion to see more lighting details.

In any event, on July 8, 2016, RIDOH published its Draft Advisory Opinion. On August 9, 2016, prior to RIDOH's public meeting and prior to the deadline set by RIDOH to submit comments and/or responses, Invenergy filed its response to RIDOH's Draft Advisory Opinion. Invenergy addressed RIDOH's concerns regarding electromagnetic fields, noise, air pollution, asthma, emergency response and prevention and climate change and health.[26] Invenergy provided its responses in order to ensure that RIDOH had all the information available when rendering its Advisory Opinion.

In sum, Invenergy complied with the Board's Preliminary Order and has done its best to provide every agency with any information requested of Invenergy, as part of the EFSB process. CLF has grossly exaggerated what the agencies lacked for information, has not fairly accounted for the full scope of opinions actually provided to the Board by the agencies and fails to appreciate that the Board's governing law accommodates the opportunity for the applicant to have an opportunity to adjust its application to reflect recommendations of the agencies and to

[26] A copy of Invenergy's Responses to RIDOH's Draft Advisory Opinion is attached hereto as **Exhibit D**.

provide updated evidence in testimony before the Board in final hearings. Accordingly, CLF's Motion to Dismiss should be denied.

C. CLF's Motion To Dismiss Should Be Denied Because EFSB Precedent Establishes That Supplementing An Application And/Or Not Having Final Information At Every Stage During the EFSB Proceedings Does Not Constitute Grounds For Dismissal.

As addressed in Invenergy's Objection to the Town's Motion to Dismiss, it is not unusual for a new energy generating facility project to undergo changes associated with the design and plans for the project during the EFSB process.[27] Additionally, it is also common for a new energy generating facility project not to have all final information regarding every aspect of a project available during all stages of the EFSB proceedings. *See Manchester Street: Final Decision and Order*, Order 12, Docket No. SB-89-1, Dec. 17, 1990.

For example, at the time the EFSB rendered its decision in *Manchester Street*, the applicants had *not even identified an alternative technology to ensure a control strategy was in place for both CO2 and NOx emissions, in the event CO2 re-designation was denied. Id.* In that case, the Board certainly did not dismiss the entire application merely because this data was not supplied and an agency could not render an advisory opinion on that issue; instead the Board properly conditioned its license and gave the applicants sixty (60) days from the date the decision was rendered to submit an alternative plan for air emissions control. *Id.*

Similarly, with regard to water supply, the applicants in *Manchester Street* actually changed their water supply plans during the EFSB process. *Id.* (stating "[w]hereas the [a]pplicants originally proposed to obtain all water required in excess of the daily maximum

[27] In *Rhode Island Hope Energy*, an applicant submitted a supplemental application to the Board with a revised height for two of the project's emission stacks. *Rhode Island Hope Energy: Final Order*, Order 35, Docket No. SB-98-1, May 24, 1999 (stating that "[i]n its supplemental application, Hope reduced the height of the two emission stacks from 210 feet above plant grade to 175 feet above plant grade").

output of the Olneyville well from the Providence water system . . ., the [a]pplicants (in response to inquiries from the Board [during final hearings it appears] as to the adequacy of the single well) proposed a program to utilize water storage capacity at the Station to optimize use of the groundwater resources and reduce the use of City water"). The applicants offered to proceed, after the license was issued, with a "modified operation plan and report back to the Board after two years of operating experience." *Id.* (Section E(a)).

Moreover, at the time of the final hearings, the applicants had not evidently applied for the underground injection well permit. *Id.* (Section E(b)(DEM's position)). The Board did not dismiss the application. In fact, RIDEM recommended "that the Board should require *further investigation* of the maximum supply potential at the proposed Olneyville well site, as well as further investigation of other sites that could be utilized in the event that the Olneyville well is subsequently found to be insufficient to meet all non-potable water needs throughout the station's operation." *Id.* (emphasis added). RIDEM also recommended a condition to the license "to seek *further information on water consumption* under both oil and gas combustion scenarios . . .." *Id.* (emphasis added).

Based on these recommendations and the unknowns and uncertainties regarding water supply *at the time of final hearings*, the Board did not dismiss the application as "incomplete"; rather, the Board expressed "concerns" and allowed the applicants to report back after two years of operating and further required the applicants to "investigate and, within six (6) months of the date of this decision, obtain ownership or control over an alternative well site that could serve as a supplemental water source to the Station." *Id.* In other words, the Board was within its authority to defer the decision on whether to order a second water supply source to be constructed. The lessons from *Manchester Street* are very important to emphasize; the Board

has ample authority to allow the application to proceed to final hearings, to hear the concerns and opinions of the experts, to receive the recommendations from the parties, through post hearing briefs and to make final determinations on whether further investigations, analysis and Board hearings and determinations should be made as a condition to the license.

In *Rhode Island Hope Energy*, an applicant had also not filed many of the necessary permits with RIDEM at the time the application was processed with the Board, including a Rhode Island Pollutant Discharge Elimination System permit for non-point source storm water runoff prior to entry of the Board's Final Order. *Rhode Island Hope Energy: Final Order*, Order 35, Docket No. SB-98-1, May 24, 1999. Again, the Board did not dismiss the application; instead, the Board stated that it was "unable to comment further on this particular aspect of the application" and conditioned the applicant's license on obtaining the necessary permits. *Id*.[28] Also, in *Rhode Island Hope Energy*, the applicant was unable to file a conceptual landscaping plan prior to Final Hearings. *Id*. However, again, the Board did not dismiss the application, instead the Board allowed the applicant to submit a "description of the conceptual landscaping plan" after the Final Hearing and after entry of the Board's conditional order. *Id*.

In *Narragansett Electric Company (J-188) Transmission Line Improvement Project*, the Board noted in its Final Order that the Warwick Building Inspector did not issue an Advisory Opinion and noted that the applicant had not yet filed its Erosion and Sediment Control Plan with the Warwick Building Official. *Narragansett Electric Company (J-188) Transmission Line Improvement Project: Final Order*, Order 29, Docket No. SB-94-2, Jan. 4, 1996. Instead of dismissing the application, as CLF would like the Board to believe is required by the Act and the

[28] The Board also noted that "DEM has not yet issued the air permit to Hope. Issues still to be considered by DEM include (a) ensuring that the Project can meet the discharge limits set by DEM for the use of treated effluent, and (b) evaluating technical data yet to be submitted by Hope, to ensure that the Project will meet the levels of ammonia and NO[x] which have been attained by other plants in this region." *Id*. at n.17.

Rules, the Board specifically stated that it would "treat this permit as a post-licensing permit under EFSB Rule 1.14." *Id.*

The Board's recognition of the energy project permit timing, along with well-recognized EFSB licensing process and authority, further supports the denial of CLF's Motion.

III. CONCLUSION

For the foregoing reasons, dismissing Invenergy's Application and closing this docket is not only unnecessary, but it also defies EFSB precedent. The Board has before it the Advisory Opinions to proceed. Therefore, Invenergy respectfully requests that the Board deny the CLF's Motion to Dismiss.

Respectfully submitted,

INVENERGY THERMAL DEVELOPMENT LLC

By Its Attorneys:

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Dated: September 26, 2016

CERTIFICATE OF SERVICE

I hereby certify that on September 26, 2016, I delivered a true copy of the foregoing responses to the Energy Facilities Siting Board via electronic mail to the parties on the attached service list.

/s/ Alan M. Shoer

EXHIBIT A

Document Submitted to the Town of Burrillville's Planning and/or Zoning Board	Description
Invenergy's Conceptual Plan Application	On March 31, 2016, Invenergy filed its Conceptual Plan Application to the Town Planning Board, which included the following: (1) general application; (2) subdivision and development plan checklist; (3) twelve full size plan sets of the plan; (4) Phase 1 Archeological Identification Survey; and (5) Rhode Island Department of Environmental Management Preliminary Determination letter.
Invenergy's Master Plan Submission	On June 13, 2016, Invenergy submitted its Master Plan Application, which attached an Executive Summary of its Planning Report, prepared by Edward Pimentel of Pimentel Consulting, Inc., dated June 2016 and CVS of all the expert consultants.
Invenergy Submitted the Following Reports to the Planning and Zoning Boards	Noise: • Michael Theriault Acoustics, Inc., "Noise Level Evaluation for the Clear River Energy Center," October 2015; • Michael Theriault Acoustics, Inc., "Transient Operation Noise Level Evaluation for the Clear River Energy Center," March 2016; Traffic: • McMahon Associates, "Traffic Impact Study for the Clear River Energy," May 2016; • McMahon Associates, "Clear River Energy Center, Burrillville, RI, Traffic Comment Responses," July 29, 2016; Air • ESS Group, Inc., "Air Dispersion Modeling Report – Clear River Energy Center—Burrillville, Rhode Island," October 30, 2015; Planning • Pimentel Consulting, Inc., "Executive Summary," June 2016.
Invenergy's Response to Town Planner Kravtiz Questions Regarding Invenergy and Comprehensive Plan	On May 23, 2016, Invenergy responded to over fifteen (15) questions from the Town's Planner, Thomas Kravitz, regarding Invenergy and the Town's Comprehensive Plan.
Invenergy's Response to Written Public Comment Submitted at July 11, 2016 Planning Board Meeting	On August 4, 2016, Invenergy submitted written responses to written public comment that had been submitted to the Planning Board and had not been answered through Invenergy's testimony. Attached to Invenergy's responses was a memorandum from McMahon Associates, Ryan Hardy's Pre-Filed Direct Public Utilities Testimony, EFSB Figure 6.12-2 – Viewshed Analysis, and the Office of Energy Resources' July 21, 2016 Presentation.
Invenergy's Responses to the Town's Peer Review Recommendations	On August 5, 2016, Invenergy responded to all recommendations of the Town's Peer Review expert consultants regarding the following topics: air, ammonia, noise, plan review, traffic and

	water. (This was submitted to the Planning and Zoning Boards.) Attached to the responses where exhibits with the following: (1) details regarding ammonia; (2) layout, grading and drainage plans: (3) preliminary soil erosion and sediment control conceptual plan; (4) Invenergy's responses to the Town's 13th Set of Data requests regarding traffic and (5) stream analysis.
Invenergy's Responses to the Rhode Island Department of Health's Draft Advisory Opinion	Invenergy responded to RIDOH's Draft Advisory Opinion regarding Electromagnetic Fields, noise, drinking water quality, air emissions, emergency response prevention, climate change and health. Its responses were submitted to the Planning and Zoning Boards.
Follow-Up Request From Solicitor McElroy	On August 19, 2016, Invenergy responded to follow-up requests from Solicitor McElroy and the Planning board regarding to questions about noise impacts on wildlife and concerns regarding specific intersections. Invenergy responded and attached a letter from Michael Hankard, Hankard Environmental, Inc. and a report from McMahon Associates, as well as studies that William Alhert from HDR, Inc. relied on in rendering his opinion regarding CREC's impact of Well 3A.
Invenergy's Zoning Board Application	On June 17, 2016, Invenergy submitted its Zoning Board Application, which included the following: (1) General Application for Special use Permit and Variance; (2) Plan Set; (3) 200' Radius Map; and (4) 200' Abutters list.
Planning Board Hearing Transcripts	All Planning Board Transcripts were submitted to the Zoning Board. Witnesses testified regarding noise, water, air, traffic, planning and other issues regarding CREC's impact on the Town.

EXHIBIT B

Invenergy Thermal Development LLC

Response to Town of Burrillville Peer Review Recommendations

INDEX

IN RE: INVENERGY THERMAL DEVELOPMENT LLC

PEER REVIEW RECOMMENDATIONS

A. AIR

Recommendation 1:	Overall recommendations regarding Air Dispersion Modeling Report. *See* Fuss & O'Neill report to Michael Wood, titled "Clear River Energy Center Air Quality Application Review," dated June 17, 2016; Testimony of Eric P. Epner, PE, June 20, 2016 Burrillville Planning Board Meeting, Transcript ("Tr."), p. 31-44.
Response:	Invenergy Thermal Development LLC (Invenergy) is currently updating its Air Dispersion Modeling Report and will supplement the record when finalized.
Respondent:	Michael Feinblatt, ESS Group, Inc.
Date:	August 5, 2016

B. AMMONIA

Recommendation 2: "[E]valuate the potential risk of a chemical accident under the Risk Management Plan requirements. At a minimum, the provisions for the prevention of chemical accidents should be addressed under the provisions of the General Duty Clause." *See* CDR Maguire and Sovereign Consulting Inc. report to Michael Wood, titled "Clear River Energy Center Ammonia Storage Review," dated June 15, 2016; Testimony of Thomas Hevner, June 20, 2016 Burrillville Planning Board Meeting, Tr. p. 45.

Response: The risks have been evaluated and a complete Risk Management Plan (RMP) is not required. Aqueous ammonia for the gas turbine selective catalytic reduction (SCR) systems will be stored at 19% concentration in a 40,000 gallon aboveground storage tank. The EPA requires facilities that store 10,000 pounds or more of aqueous ammonia which is stored at a concentration of 20% or greater to conduct an off-site consequence analysis and prepare a Risk Management Plan (RMP) to prevent and mitigate the consequences of accidental releases. The RMP does not apply to aqueous ammonia stored at a concentration of less than 20% in any amount.

The Facility will not be subject to the RMP requirements, but will be subject to the EPA's General Duty Clause, which requires facilities to access hazards, prevent accidental releases, and minimize the consequences of any releases which occur. Consistent with the General Duty Clause, Invenergy is proposing the following to ensure the safe storage of aqueous ammonia on-site, and to minimize the consequences in the unlikely event that an accidental ammonia release were to occur:

- The ammonia storage tank and its associated transfer pumps and piping will be enclosed within a concrete containment area designed to contain up to 110% of the capacity of the storage tank.
- The containment area will be filled with a passive evaporative control system designed to reduce the exposed surface area of any ammonia within the containment system by at least 90%.
- The containment area will be equipped with ammonia sensors to alert Facility operators of any system leaks.

- Procedures will be established and documented for the periodic maintenance, inspection and testing of the containment area, the leak detection system, and the evaporative control system.
- Emergency procedures will be established and documented, including the training of staff in the procedures and the proper use of the personal protective equipment which would be required during a release.
- Invenergy will coordinate with local emergency responders and the nearest hazardous materials response team to establish emergency procedures in the unlikely event of a release of ammonia from the Facility.

Acute Exposure Guideline Levels (AEGLs) are used by emergency planners and responders as guidance in dealing with accidental releases of chemicals into the air. AEGLs are expressed as concentrations of airborne chemicals at which health effects may occur and are designed to protect the elderly and children, as well as other individuals who may be susceptible.

AEGL levels are dictated by the severity of the toxic effects caused by the exposure, as follows:

- AEGL-1 (Level 1): Notable discomfort, irritation, or certain asymptomatic non-sensory effects. Any effects are not disabling and are transient and reversible upon cessation of exposure.
- AEGL-2 (Level 2): Irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape.
- AEGL-3 (Level 3): Life-threatening health effects or death.

Airborne concentrations below the AEGL-1 are exposure levels which could produce mild, transient, odor, taste, and sensory irritation. These effects are non-disabling, allowing for safe evacuation from any impacted areas.

For ammonia, the 1-hour AEGL concentrations have been defined as follows:

- AEGL-1: 30 parts per million (ppm)
- AEGL-2: 160 ppm
- AEGL-3: 1,100 ppm

Although the CREC is not subject the Risk Management Program, a worst-case accidental release scenario has been evaluated to assess the potential consequences in the extremely unlikely event of a release of the full 40,000 gallons of 19% aqueous ammonia into the containment area. This assessment was performed using the Area Locations of Hazardous Atmospheres (ALOHA) Model developed by the EPA and the National Oceanic and Atmospheric Administration and included as a prescribed technique under the Risk Management Program. It was completed in accordance with the procedures contained in the EPA's "Risk Management Program Guidance for Offsite Consequence Analysis".

The analysis was first conducted without and then with the proposed passive evaporative control system. The results of the worst-case accidental release scenario assessment completed for the CREC aqueous ammonia storage tank are shown in both tabular and graphical form in **Exhibit 1**. Based on the ALOHA modeling results, the furthest downwind distances from the ammonia storage tank at which the in-air ammonia concentrations would exceed each of the ammonia AEGL levels during a worst-case accidental release are as follows:

AEGL Level	w/o Evaporative Controls	w/ Evaporative Controls
AEGL-1	389 yards	121 yards
AEGL-2	174 yards	53 yards
AEGL-3	64 yards	20 yards

As shown on the figures in **Exhibit 1**, all of the areas in which the in-air ammonia concentration would exceed the AEGL-1 level are within the Project and/or Spectra site, which is private property not accessible to the general public. Emergency procedures will be established to evacuate Algonquin (Specrtra) and CREC personnel from these areas in the event of a release and to require emergency personnel to utilize the proper personal protective equipment before entering these areas until the released ammonia has been properly recovered.

	The in-air ammonia concentrations in all areas beyond the Spectra site during a worst-case accidental release would be below the AEGL-1 level, thus resulting in no adverse health effects upon exposure. Although there would be no public health risk, Invenergy will work with local emergency responders to establish emergency procedures in the unlikely event that there is an accidental release of ammonia from the facility.
Respondent:	Michael Feinblatt, ESS Group, Inc.
Date:	August 5, 2016

AMMONIA - Continued

Recommendation 3:	"[C]onsider conducting an impact zone analysis for the proposed storage of 40,000 gallons of 19% aqueous ammonia." *See* CDR Maguire and Sovereign Consulting Inc. report to Michael Wood, titled "Clear River Energy Center Ammonia Storage Review," dated June 15, 2016.
Response:	*See* response to Recommendation 2.
Respondent:	Michael Feinblatt, ESS Group, Inc.
Date:	August 5, 2016

AMMONIA - Continued

Recommendation 4: "[C]onsider a less hazardous chemical than 19% aqueous ammonia for use in the proposed plan emission control system." *See* CDR Maguire and Sovereign Consulting Inc. report to Michael Wood, titled "Clear River Energy Center Ammonia Storage Review," dated June 15, 2016; Testimony of Thomas Hevner, June 20, 2016 Burrillville Planning Board Meeting, Tr. p. 45.

Response: Selective Catalytic Reduction (SCR) has been demonstrated to be the Best Available Control Technology (BACT) to control the NOx emissions from the CREC gas turbines and has been deemed to be BACT for dozens of power plants permitted throughout the country. It should be pointed out that Ocean State Power has an SCR and uses 29.4% aqueous ammonia and has two 60,000 gallon double-walled storage tanks (120,000 gallons total storage capacity) on site.

The SCR process is based on the chemical reduction of the NOx molecule. Reagent is injected into the flue gas stream through an injection grid mounted in the ductwork. The reagent mixes with the flue gas before entering a reactor chamber container containing a catalyst. As the flue gas and reagent diffuse through the catalyst and contact activated catalyst sites, NOx in the flue gas chemically reduces to nitrogen and water, reducing the amount of NOx emitted to the atmosphere by as much as 95% or more, depending on the amount of reagent and catalyst material used. Some amount of the excess reagent passes through the reactor and is emitted to the atmosphere. These emissions are typically referred to as ammonia slip.

An SCR system can either use anhydrous ammonia, aqueous ammonia or aqueous urea as the reduction reagent. The reagent used for the majority of SCR systems is aqueous ammonia, as it is safer to transport, store and handle than anhydrous ammonia, and it penetrates the catalyst pores more readily then aqueous urea, providing a higher NOx control efficiency. The use of aqueous ammonia over urea also reduces the probability of fouling and corrosion in equipment downstream of the injection point.

The use of 19% aqueous ammonia in SCR systems at power plants similar to the CREC has been the industry standard for many years

as it provides the best balance between safe transport, storage and handling, maximizing the achievable NOx control efficiency, and minimizing the emissions of unreacted ammonia to the atmosphere.

The use of aqueous urea at CREC would alleviate some of the potential hazards that can be associated with ammonia storage. However, the facility will be designed and operated to minimize those hazards and their potential impact to the surrounding community. Furthermore, the use of aqueous urea at CREC would not provide the highest achievable level of NOx emissions control which will be needed to fully comply with the BACT and LAER (Lowest Achievable Emission Rate) regulatory requirements to which the facility is subject for its NOx emissions.

Based on a thorough assessment of all available alternatives and the considerations discussed above, 19% aqueous ammonia is the preferred alternative as the reagent to be used in the CREC SCR systems.

Respondent: Michael Feinblatt, ESS Group, Inc.

Date: August 5, 2016

AMMONIA - Continued

Recommendation 5:	"The Pascoag Fire Department should be consulted concerning the equipment and training to respond to chemical accidents at CREC." *See* CDR Maguire and Sovereign Consulting Inc. report to Michael Wood, titled "Clear River Energy Center Ammonia Storage Review," dated June 15, 2016.
Response:	Invenergy will coordinate with the Pascoag Fire Department, as well as with other local emergency responders and hazardous materials response teams concerning the equipment and training needed to properly and safely respond in the unlikely event there is an accidental chemical release at the CREC facility.
Respondent:	John Niland, Invenergy Thermal Development LLC
Date:	August 5, 2016

AMMONIA - Continued

Recommendation 6:	"The Burrillville Hazard Mitigation Plan 2015 should be updated to include the CREC prior to the storage of ammonia on site." *See* CDR Maguire and Sovereign Consulting Inc. report to Michael Wood, titled "Clear River Energy Center Ammonia Storage Review," dated June 15, 2016.
Response:	Invenergy agrees that the Burrillville Hazard Mitigation Plan 2015 should be updated to include the CREC and will provide any project information or technical assistance needed to assist with that update.
Respondent:	Michael Feinblatt, ESS Group, Inc.
Date:	August 5, 2016

C. NOISE

Recommendation 7: "[T]he Town may want to make this test [a compliance test] a mandatory condition of the permit and reserve the right to witness the test and/or conduct its own independent testing." Hessler Associates, Inc., report to Michael Wood, titled "Invenergy Clear River Energy Center Facility Noise and Community Noise Impacts," dated May 26, 2016.

Response: Invenergy will require the EPC contractor to comply with the noise limits imposed on the Project. Compliance will be demonstrated by a mandatory compliance test that will be a condition of the construction contract. The test will be monitored by an independent consultant, who is approved by the lenders (the "Banks") hired by the project entity and monitored by the Bank's Independent Engineer (IE) who will certify that compliance has been met, and if not what steps would be necessary in order to comply.

The Town is welcome to conduct its own independent noise monitoring when CREC is conducting its noise test.

Respondent: John Niland, Invenergy Thermal Development LLC

Date: August 5, 2016

NOISE – Continued

Recommendation 8:	"[E]xtend the turbine building so that it encloses the ACC steam duct, the horizontal portion and some of the risers." Testimony of David Hessler, June 20, 2016 Burrillville Planning Board Meeting, Tr. p 28.
Response:	The reduction of steam by-pass noise is being controlled by using low-noise by-pass valves, low-noise discharge devices, and the lagging of the by-pass duct. Our modeling indicates that a building enclosing the ACC duct and risers is not necessary given all of the other noise reduction measures that have been designed into the CREC. The EPC contractor selected to conduct the final design of the CREC will conduct its own independent noise analysis and may come to the same or different conclusions. The EPC contractor will be contractually obligated to measure noise from the completed facility and demonstrate compliance with the Town's noise level limit, both for normal operation and start-up. If testing indicates an exceedance of the limit, the EPC contractor will be required to provide additional mitigation to achieve compliance, and this may or may not involve a building. Re-testing to demonstrate compliance will also be required.
Respondent:	Michael Hankard, Hankard Environmental
Date:	August 5, 2016

NOISE – Continued

Recommendation 9:	"[H]eavily lag with sound proof lagging on [the ACC steam duct]." Testimony of David Hessler, June 20, 2016 Burrillville Planning Board Meeting, Tr. p 28.
Response:	The proposed acoustical design of the CREC currently includes heavy lagging on the ACC duct. This was added to the design after publication of the Transient Noise Level Evaluation report, which was published in March 2016 and provided to the Burrillville Planning Board on May 26, 2016.
Respondent:	John Niland, Invenergy Thermal Development, LLC Michael Hankard, Hankard Environmental
Date:	August 5, 2016

NOISE – Continued

Recommendation 10:	"Use []low noise valves[.]" Testimony of David Hessler, June 20, 2016 Burrillville Planning Board Meeting, Tr. p 28.
Response:	Low-noise valves are included in the design of the CREC.
Respondent:	Michael Hankard, Hankard Environmental
Date:	August 5, 2016

NOISE – Continued

Recommendation 11: "In order to verify this guarantee I would suggest field testing an installation using similar or representative valves and diffusers, if such a test can be worked out with CCI and the plant. If the actual performance conforms to the guaranteed value then appropriate noise mitigation can be designed (probably lagging only) to bring the overall system sound power down to the allowable value determined from the facility noise model. If the actual performance is higher than 82 dBA then the system noise abatement can be designed to whatever the higher level is." Hessler Associates, Inc., report to Michael Wood, titled "Invenergy Clear River Energy Center Additional Comments on Facility Noise Issues," dated July 12, 2016.

Response: CREC will continue to work with General Electric and CCI to determine what sort of testing may have been conducted on the quoted valves and/or to identify a suitable existing facility where noise level measurements can be made to verify that the noise levels from steam by-pass during start-up being quoted for the CREC will be met. If it is possible to conduct a test, or obtain similar test data that could be applied to CREC, we will provide that information. *See* response to Recommendation 12, below.

Respondent: Michael Hankard, Hankard Environmental

Date: August 5, 2016

NOISE – Continued

Recommendation 12: "If a field test is impractical then I would ignore the guarantee and assume that the steam duct sound level will be in the 95 to 100 dBA range during bypass (based on past first-hand measurements of ducts using CCI low noise valves). The mitigation required for such a situation would probably involve a free-standing rigid enclosure over the initial (Figure 1) or entire horizontal run and lagging on the vertical risers. However, the appropriate amount of attenuation for each section or component must be calculated through analytical modeling." Hessler Associates, Inc., report to Michael Wood, titled "Invenergy Clear River Energy Center Additional Comments on Facility Noise Issues," dated July 12, 2016.

Response: Invenergy respectfully disagrees with Mr. Hessler. Invenergy has been provided with noise level guarantee that will be made contractually binding with GE/CCI and the EPC contractor, and when Invenergy uses this data in it noise model, it obtains the reported results. *See* response to Recommendation 8, above.

Respondent: Michael Hankard, Hankard Environmental

Date: August 5, 2016

Recommendation 13: "If field testing or design assumptions suggest an enclosure, it should be built along with the rest of the plant and not held back as a potential retrofit, since that would create a period during which start-up noise would presumably be non-compliant." Hessler Associates, Inc., report to Michael Wood, titled "Invenergy Clear River Energy Center Additional Comments on Facility Noise Issues," dated July 12, 2016.

Response: Design assumptions currently suggest that a building around the ACC duct is not necessary to achieve compliance with the Town's noise level limit during start-up. If field testing at an existing facility can be arranged, and if such testing indicates that current design assumptions are incorrect, then action will be taken to remedy that, and such action may or may not include adding a building around the ACC duct to the design.

Respondent: John Niland, Invenergy Thermal Development LLC
Michael Hankard, Hankard Environmental

Date: August 5, 2016

D. PLAN REVIEW

Recommendation 14: "Invenergy perform a stormwater analysis and provide a Stormwater Report and plans for the stormwater system proposed." *See* CDR Maguire and Sovereign Consulting Inc. report to Michael Wood, titled "Clear River Energy Center Master Plan Drawing Package Review," dated June 16, 2016; Testimony of James Jackson, June 20, 2016 Burrillville Planning Board Meeting, Tr. p 62.

Response: Invenergy plans to comply with this recommendation. Invenergy is currently in the process of designing the Project's stormwater systems and will be submitting a detailed Freshwater Wetlands Alteration Permit application to RIDEM for review and approval. This permit application addresses stormwater issues both during and after construction as well as impacts to wetlands. .

Invenergy is providing the following preliminary documents to describe the Stormwater Management Plan for the Project:

- A draft Site Layout, Grading, Drainage, and BMP Plan (**Exhibit 2**) showing pre- and post-development conditions and Best Management Practices (BMP) provisions.
- A draft Soil Erosion and Sediment Control exhibit that discusses construction-phase management of soil erosion (**Exhibit 3**).

A narrative describing the proposed stormwater management for the project site including BMPs to be incorporated into the Project will be supplemented when final.

Respondent: John Niland, Invenergy Thermal Development LLC

Date: August 5, 2016

PLAN REVIEW - Continued

Recommendation 15:	"[C]onsider using Algonquin Lane in lieu of construction of the proposed access road." *See* CDR Maguire and Sovereign Consulting Inc. report to Michael Wood, titled "Clear River Energy Center Master Plan Drawing Package Review," dated June 16, 2016; Testimony of James Jackson, June 20, 2016 Burrillville Planning Board Meeting, Tr. p 62.
Response:	Invenergy is unable to comply with this recommendation. Invenergy does not own Algonquin Lane and has been denied permission to use Algonquin Lane by Algonquin Gas Transmission, LLC. *See* Letter to John Niland, Invenergy Thermal Development LLC from Algonquin Gas Transmission, LLC dated July 24, 2015, a copy was previously provided to the Burrillville Planning Board on May 25, 2016.
Respondent:	John Niland, Invenergy Thermal Development LLC
Date:	August 5, 2016

Recommendation 16: "[C]onsider reducing the size of the laydown area or having off-site construction parking and staging to offset the massive amounts of wetland impacts." *See* CDR Maguire and Sovereign Consulting Inc. report to Michael Wood, titled "Clear River Energy Center Master Plan Drawing Package Review," dated June 16, 2016; Testimony of James Jackson, June 20, 2016 Burrillville Planning Board Meeting, Tr. p 62-63.

Response: The laydown plan has been configured so as to avoid wetland impact to the extent practicable and has minimal wetland impacts, as shown in **Exhibit 2**.

For the power plant, the biological wetland impact is approximately 0.7 Acres and the perimeter wetland is about 1.3 Acres. The stormwater plan is in the process of being finalized and the final calculations and numbers will be reflected in the Freshwater Wetland Alteration Permit.

Respondent: Michael Feinblatt, ESS Group, Inc.

Date: August 5, 2016

E. TRAFFIC

Recommendation 17: "CDR Maguire recommends that the developer address our comments and confirm that their conclusions remain valid." *See* CDR Maguire and Sovereign Consulting Inc. report to Michael Wood, titled "Clear River Energy Center Traffic Impact Study Review," dated June 16, 2016.

Response: Invenergy addressed CDR Maguire's comments and confirmed that the Traffic Impact Study conclusions remain valid. *See* Invenergy's Responses to the Town's 13th Set of Data Requests and Memorandum to Beth Noonan, From McMahon Associated, Titled "Clear River Energy Center, Burrillville, RI, Traffic Comment Responses," dated July 29, 2016, attached as **Exhibit 4**; *see also* Testimony of Maureen Chlebek, McMahon Associates and Robert Smith, McMahon Associates at the Planning Board's June 20, 2016 Public Hearing.

Respondent: Maureen Chlebek and Robert Smith, McMahon Associates

Date: August 5, 2016

TRAFFIC – Continued

Recommendation 18: "The proponent's Appendix 'A' to the Traffic Impact Study notes the commitment to an appropriate level of restoration for roadway sections degraded by the construction-related traffic. The Town may wish to pursue a firmer commitment with regard to identifying degraded areas and the appropriate restorations."

Response: The truck route identified for this project involves roadways that fall under RIDOT jurisdiction. The proponent has proactively assessed the roadway conditions along the truck routes (Route 100) in Burrillville and Glocester, RI and has initiated coordination with RIDOT regarding the roadway conditions. RIDOT is in agreement with the approach to measure baseline roadway conditions, to monitor these roadways during construction, and to continue to coordinate with RIDOT. To date, RIDOT has not required a formal agreement with the proponent. The proponent is required to obtain a Physical Alteration Permit (PAPA) from RIDOT for the curb opening on Route 100 at the site entrance, and such issues can be resolved during the permitting process. Invenergy's Response 13-13 to the Town's 13th Set of Data Requests.

Respondent: Robert Smith, McMahon Associates

Date: August 5, 2016.

F. WATER

Recommendation 19: "It should be confirmed that there is not a hydraulic connection between the water sources for the Pascoag and Harrisville Utility Districts. In the event that the CREC project does not [sic] proceed, it would be beneficial to demonstrate that the residual contamination relative to the petroleum release in Pascoag will not impact the water supply sources in Harrisville." *See* CDR Maguire and Sovereign Consulting Inc, to Michael Wood, titled "Clear River Energy Center MTBE Issue Review," dated June 16, 2016; Testimony of Thomas Hevner, June 20, 2016 Burrillville Planning Board Meeting, Tr. p 73.

Response: To date the Harrisville Utility District (HUD) wells have not been impacted by the groundwater contamination from the North Main Street Mobile site, even during the period that PUD Well 3A was operational. To ensure that the use of PUD Well 3A does not impact the HUD wells, CREC will conduct monitoring of the groundwater quality between PUD's Well 3A and the HUD wells during PUD Well 3A operation at locations to be selected with input from PUD, HUD and RIDEM.

Respondent: Michael Feinblatt, ESS Group, Inc.

Date: August 5, 2016

Recommendation 20: "Prior to reactivating PUD Well #3A . . ., additional data should be collected to be protective of human health and the environment. A pump test should be conducted at an appropriate flow rate and duration until the stabilization of contaminants of concern is achieved. During the pump test, water samples should be collected from the PUD Well #3A, select overburden and bedrock wells located throughout the Site, and the Pascoag River. All samples should be submitted for laboratory analysis of total petroleum hydrocarbon, VOCs and gasoline oxygenates." *See* CDR Maguire and Sovereign Consulting Inc, to Michael Wood, titled "Clear River Energy Center MTBE Issue Review," dated June 16, 2016; Testimony of Thomas Hevner, June 20, 2016 Burrillville Planning Board Meeting, Tr. p 74.

Response: A pumping test protocol for the initial phase (capacity testing) of testing at PUD Well #3A has been submitted to RIDEM for its review. A second pumping test protocol for the second phase of testing (average or normal conditions) will be submitted to RIDEM following the completion of the initial phase and evaluation of the resultant data. Both protocols will include the collection of baseline groundwater samples from PUD Well 3A and select nearby overburden and bedrock monitoring wells for VOC and gasoline oxygenates analyses.

Respondent: Michael Feinblatt, ESS Group, Inc.

Date: August 5, 2016

Recommendation 21: "A vapor intrusion assessment of commercial and residential properties located within the Site should be conducted. . . . The impact of operating PUD Well #3A should be evaluated by collecting baseline vapor intrusion data (i.e. –TO-15 and APH) prior to utilizing PUD #3A as a water source for the proposed Clear River Energy Center, during a pump test, and during continued operation until the effects of the shifting VOC impacted plume and the potential off-gassing from the migrating VOC impacted groundwater plume are well understood. Sub-slab vapor (an indoor air samples if needed) should be collected utilizing laboratory supplied SUMMA canisters and submitted for laboratory analysis TO-15 and APH." *See* CDR Maguire and Sovereign Consulting Inc, to Michael Wood, titled "Clear River Energy Center MTBE Issue Review," dated June 16, 2016; Testimony of Thomas Hevner, June 20, 2016 Burrillville Planning Board Meeting, Tr. p 82.

Response: Invenergy does not intend to perform any vapor intrusion assessments on the properties in the vicinity of PUD Well #3A at this time. RIDEM performed a Soil Vapor Intrusion Study in 2006 for this area and found no significant VOC concentrations. Given the significant reductions in monitored groundwater concentrations following the performance of site cleanup activities by RIDEM and their subcontractors at the North Main Street Mobil site, and considering the results of the 2006 RIDEM Study, additional vapor intrusion assessments are not warranted at this time. That being said, if directed by RIDEM to conduct such tests, during a pump test, we will comply.

Respondent: Michael Feinblatt, ESS Group, Inc.

Date: August 5, 2016

Recommendation 22:	"If a pump test is not conducted for an adequate duration prior to reactivating PUD Well #3A, a vapor intrusion assessment plan should be designed and implemented prior to the reactivation of PUD Well #3A." *See* CDR Maguire and Sovereign Consulting Inc, to Michael Wood, titled "Clear River Energy Center MTBE Issue Review," dated June 16, 2016.
Response:	*See* answer to Recommendations 20 & 21.
Respondent:	Michael Feinblatt, ESS Group, Inc.
Date:	August 5, 2016

WATER – Continued

Recommendation 23:	"Upon reactivating PUD Well 3A, continued air monitoring should be conducted until aquifer and contaminant stabilization has been achieved and the seasonal effect on the concentration of VOCs is well understood. *See* CDR Maguire and Sovereign Consulting Inc, to Michael Wood, titled "Clear River Energy Center MTBE Issue Review," dated June 16, 2016.
Response:	A long-term monitoring plan, including a contingency plan that has the necessary financial assurance to cover environmental liabilities associated with plume movement, will be developed and implemented during the operation of the PUD Well 3A. The long-term monitoring plan will address the ongoing monitoring of groundwater quality during the operation of PUD Well 3A and the evaluation of the data to assess plume conditions and the potential for any adverse impacts to human health.
Respondent:	Michael Feinblatt, ESS Group, Inc.
Date:	August 5, 2016

WATER – Continued

Recommendation 24:	"Contingency arrangements should be presented for response actions from CREC in the event that indoor air impact to properties with buildings occurs from reactivation of Well #3A." *See* CDR Maguire and Sovereign Consulting Inc, to Michael Wood, titled "Clear River Energy Center MTBE Issue Review," dated June 16, 2016; Testimony of Thomas Hevner, June 20, 2016 Burrillville Planning Board Meeting, Tr. p 75.
Response:	*See* Response to Recommendation 23.
Respondent:	Michael Feinblatt, ESS Group, Inc.
Date:	August 5, 2016

Recommendation 25: "A revised [Pare Engineering treatment] study should be completed to determine treatment requirements based on current conditions, conditions when the well is pumping at full capacity resulting in impacted VOC plume migration toward PUD Well #3A, and the feasibility of either PUD or Invenergy . . . to fund the construction and ongoing operation of this system. The revised study should demonstrate that any petroleum constituents would be removed from the water prior to conveyance to the CREC facility for use as process water. The performance criteria for removed from the [sic] water should be below laboratory quantification limits. *See* CDR Maguire and Sovereign Consulting Inc, to Michael Wood, titled "Clear River Energy Center MTBE Issue Review," dated June 16, 2016; Testimony of Thomas Hevner, June 20, 2016 Burrillville Planning Board Meeting, Tr. p 71-73.

Response: The results of the planned pump tests referenced in the prior responses will be used to finalize the design of the treatment system that is proposed for PUD Well 3A. The results of the pump test will be used to size the various components including the carbon vessels, determine removal efficiencies and evaluate construction, operation and maintenance costs.

CREC is proposing to remove MTBE to levels that do not exceed the analytical laboratories reporting limit.

Respondent: Dr. William Ahlert, HDR Engineering, Inc.

Date: August 5, 2016

WATER – Continued

Recommendation 26: "A dual train system with at least 3 GAC units on each train should be considered for redundancy and performance. The potential building size and process and instrumentation diagram for the water treatment at the Wellhead #3A should be estimated for planning purposes in the design process." *See* CDR Maguire and Sovereign Consulting Inc, to Michael Wood, titled "Clear River Energy Center MTBE Issue Review," dated June 16, 2016; Testimony of Thomas Hevner, June 20, 2016 Burrillville Planning Board Meeting, Tr. p 74.

Response: A dual train system is being planned. *See* response to Recommendation 25, the results of the planned pump tests will be used to evaluate the sizing and configuration of the proposed treatment system and the building that will be needed to house the treatment system.

Respondent: Dr. William Ahlert, HDR Engineering, Inc.

Date: August 5, 2016

Recommendation 27: "Confirm that the reactivation of well #3A for use as process water is not a concern for the 7Q10 stream flow data for Clear River." *See* CDR Maguire and Sovereign Consulting Inc, to Michael Wood, titled "Clear River Energy Center MTBE Issue Review," dated June 16, 2016; Testimony of Thomas Hevner, June 20, 2016 Burrillville Planning Board Meeting, Tr. p 75.

Response: A revised Streamflow Depletion Analysis has been developed addressing comments from the RIDEM and RIWRB and is included as **Exhibit 5**. The analysis was performed in accordance with the RIDEM Draft Streamflow Depletion Methodology (May 13, 2010). The findings of the revised analysis shows that the total water use by all of the identified uses on the Clear River watershed will not exceed the total allowable stream depletion amounts under all reasonably expected growth rates through 2064 for both the Clear River watershed and a smaller sub-watershed upstream of the PUD current and potential future water sources.

Respondent: Michael Feinblatt, ESS Group, Inc.

Date: August 5, 2016

Recommendation 28: "Based on the capacity of Well #3A, and the potential concerns related to the 7Q10 stream flow data for the Clear River, CREC should consider discharging a portion or the entirety of the spent process water into Clear River." *See* CDR Maguire and Sovereign Consulting Inc, to Michael Wood, titled "Clear River Energy Center MTBE Issue Review," dated June 16, 2016; Testimony of Thomas Hevner, June 20, 2016 Burrillville Planning Board Meeting, Tr. p 75.

Response: The findings of the revised Stream Depletion Analysis (**Exhibit 5**) shows that the total water use by all of the identified uses on the Clear River watershed will not exceed the total allowable stream depletion amounts under all reasonably expected growth rates through 2064 for both the Clear River watershed and a smaller sub-watershed upstream of the PUD current and potential future water sources. The wastewater from the CREC will be discharged to the Town of Burrillville Wastewater Treatment Facility. Following treatment at the Water Treatment Facility, the water will be discharged to the Clear River.

Respondent: Michael Feinblatt, ESS Group, Inc.

Date: August 5, 2016

WATER – Continued

Recommendation 29:	"As a contingency, additional water sources beyond the Pascoag Utility District should be considered to supplement the process water demand." *See* CDR Maguire and Sovereign Consulting Inc, to Michael Wood, titled "Clear River Energy Center MTBE Issue Review," dated June 16, 2016; Testimony of Thomas Hevner, June 20, 2016 Burrillville Planning Board Meeting, Tr. p 75.
Response:	Invenergy is exploring additional alternative water supply options and will advise on the status of the potential additional water supply options when they are determined to be a viable water supply for the project.
Respondent:	John Niland, Invenergy Thermal Development LLC
Date:	August 5, 2016

WATER – Continued

Recommendation 30:	"For the elimination of possible odors, we recommend that a maximum level of MTBE in the discharge be capped at 20 to 40 µg/l." *See* CDR Maguire and Sovereign Consulting Inc, to Michael Wood, titled "Clear River Energy Center MTBE Issue Review," dated June 16, 2016; Testimony of Thomas Hevner, June 20, 2016 Burrillville Planning Board Meeting, Tr. p 78.
Response:	CREC is proposing to remove MTBE at PUD Well 3A to levels that do not exceed the analytical laboratories reporting limit therefore MTBE will not be present at detectable levels in the plant discharge and as a result there will be no odor issue related to MTBE.
Respondent:	Dr. William Ahlert, HDR Engineering, Inc.
Date:	August 5, 2016

WATER – Continued

Recommendation 31: "[W]e also recommend that they establish a discharge permit with Burrillville Sewer Commission to control what contaminants can go in that water that go to the treatment plan." Testimony of James Jackson, June 20, 2016 Burrillville Planning Board Meeting, Tr. p 89.

Response: CREC will submit an application for a RI Industrial Wastewater Discharge Permit (IWDP) that will provide information from which RIDEM can identify any pre-treatment requirements for discharges from the facility into the Town's existing sewer system. CREC believes that RIDEM will determine from the IWDP application that discharges from the CREC facility will not require a pre-treatment to discharge to the Town of Burrillville's sewer system. Once that determination has been made CREC will apply for and expects to receive a discharge permit from the Burrillville Sewer Commission that will address specific discharge limits that will be applicable to the CREC facility in order that discharges from CREC will not impact the Burrillville Sewer Commission's NPDES permit for the Town of Burrillville Wastewater Treatment facility.

CREC expects that periodic sampling of CREC's wastewater discharges will be required by the Burrillville Sewer Commissioners during operation of the facility to confirm that the wastewater characterization provided by CREC in its IWDP application is consistent with the actual wastewater composition discharged when the CREC facility is placed into operation.

Respondent: Michael Feinblatt, ESS Group, Inc.

Date: August 5, 2016

IN RE: INVENERGY THERMAL DEVELOPMENT LLC

RHODE ISLAND DEPARTMENT OF HEALTH RECOMMENDATIONS

Response: At this time, Invenergy cannot commit to complying with any of the recommendations suggested by the Rhode Island Department of Health's ("DOH") *draft* advisory opinion, dated July 8, 2016, pending a hearing to be held on August 9, 2016, whereby further information will be provided by Invenergy that may change the *draft* advisory opinion. At this juncture, it is premature for Invenergy to respond regarding any *draft* recommendations.

Respondent: John Niland, Invenergy Thermal Development LLC

Date: August 5, 2016

EXHIBIT 1

ALOHA RESULTS- WITHOUT PASSIVE CONTROLS (CONTAINMENT SURFACE AREA NOT REDUCED)
secondary containment area: 2443.6 sq ft

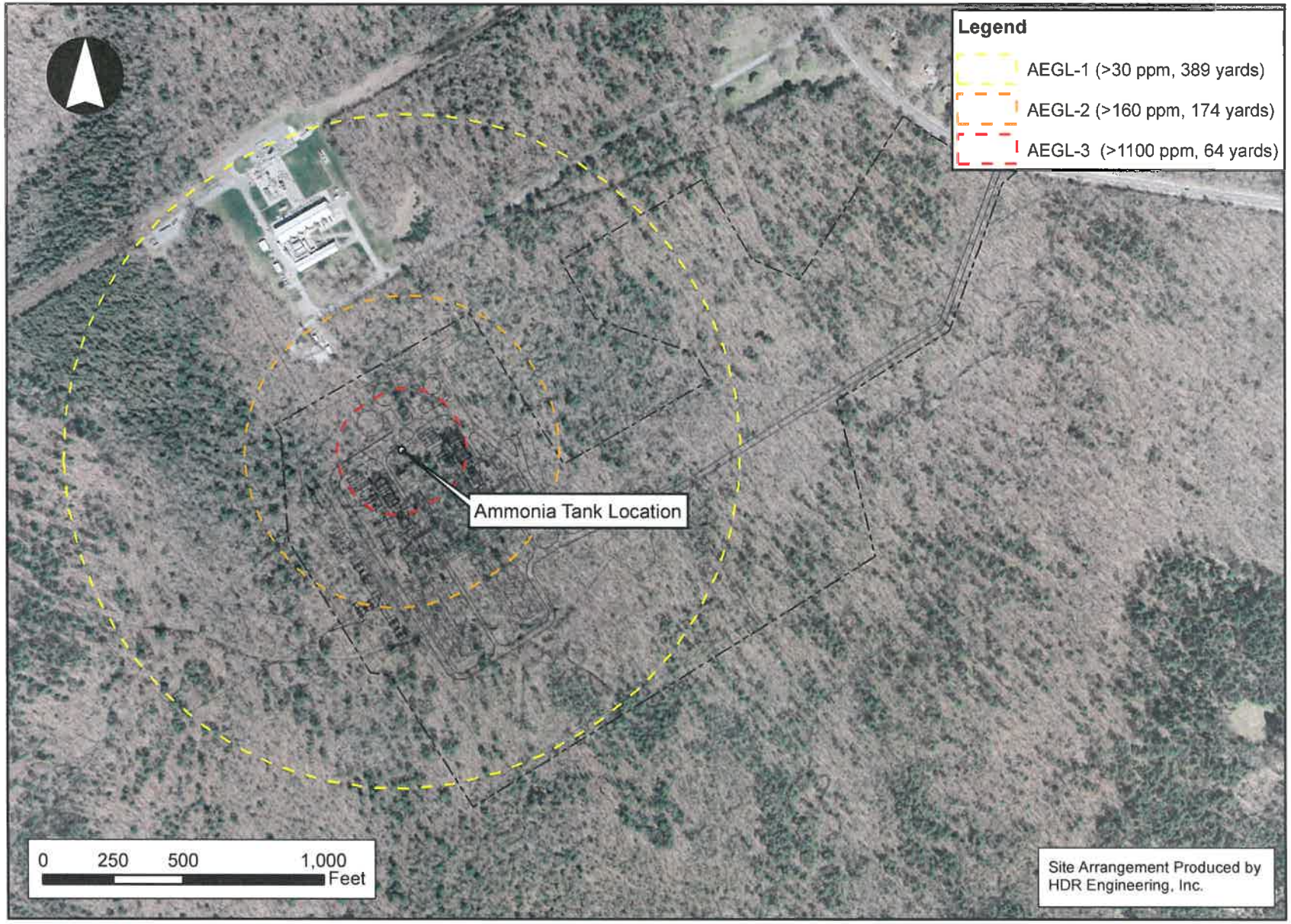
SITE DATA:
Location: BURRILLVILLE, RHODE ISLAND
Building Air Exchanges Per Hour: 0.47 (unsheltered single storied)
Time: July 18, 2016 1545 hours EDT (using computer's clock)

CHEMICAL DATA:
Chemical Name: AQUEOUS AMMONIA
Solution Strength: 19% (by weight)
Ambient Boiling Point: 120.3° F
Partial Pressure at Ambient Temperature: 0.63 atm
Ambient Saturation Concentration: 644,698 ppm or 64.5%
Hazardous Component: AMMONIA
CAS Number: 7664-41-7 Molecular Weight: 17.03 g/mol
AEGL-1 (60 min): 30 ppm AEGL-2 (60 min): 160 ppm AEGL-3 (60 min): 1100 ppm
IDLH: 300 ppm LEL: 150000 ppm UEL: 280000 ppm

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: 0.63 meters/second from s at 3 meters
Ground Roughness: urban or forest Cloud Cover: 5 tenths
Air Temperature: 104° F Stability Class: A
No Inversion Height Relative Humidity: 65%

SOURCE STRENGTH:
Evaporating Puddle (Note: chemical is flammable)
Puddle Area: 2443.6 square feet Puddle Volume: 40000 gallons
Ground Type: Default soil Ground Temperature: 104° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 40.1 pounds/min
(averaged over a minute or more)
Total Amount Hazardous Component Released: 2,151 pounds

THREAT ZONE:
Model Run: Gaussian
Red : 64 yards --- (1100 ppm = AEGL-3 [60 min])
Orange: 174 yards --- (160 ppm = AEGL-2 [60 min])
Yellow: 389 yards --- (30 ppm = AEGL-1 [60 min])



Area Locations of Hazardous Atmospheres (ALOHA) Model Result

Ammonia Off-Site Consequences Analysis
without Passive Evaporative Controls

ALOHA RESULTS- WITH PASSIVE CONTROLS (CONTAINMENT SURFACE AREA REDUCED BY 90%)

SITE DATA:

Location: BURRILLVILLE, RHODE ISLAND
Building Air Exchanges Per Hour: 0.47 (unsheltered single storied)
Time: July 18, 2016 1545 hours EDT (using computer's clock)

CHEMICAL DATA:

Chemical Name: AQUEOUS AMMONIA
Solution Strength: 19% (by weight)
Ambient Boiling Point: 120.3° F
Partial Pressure at Ambient Temperature: 0.63 atm
Ambient Saturation Concentration: 644,698 ppm or 64.5%
Hazardous Component: AMMONIA
CAS Number: 7664-41-7 Molecular Weight: 17.03 g/mol
AEGL-1 (60 min): 30 ppm AEGL-2 (60 min): 160 ppm AEGL-3 (60 min): 1100 ppm
IDLH: 300 ppm LEL: 150000 ppm UEL: 280000 ppm

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)

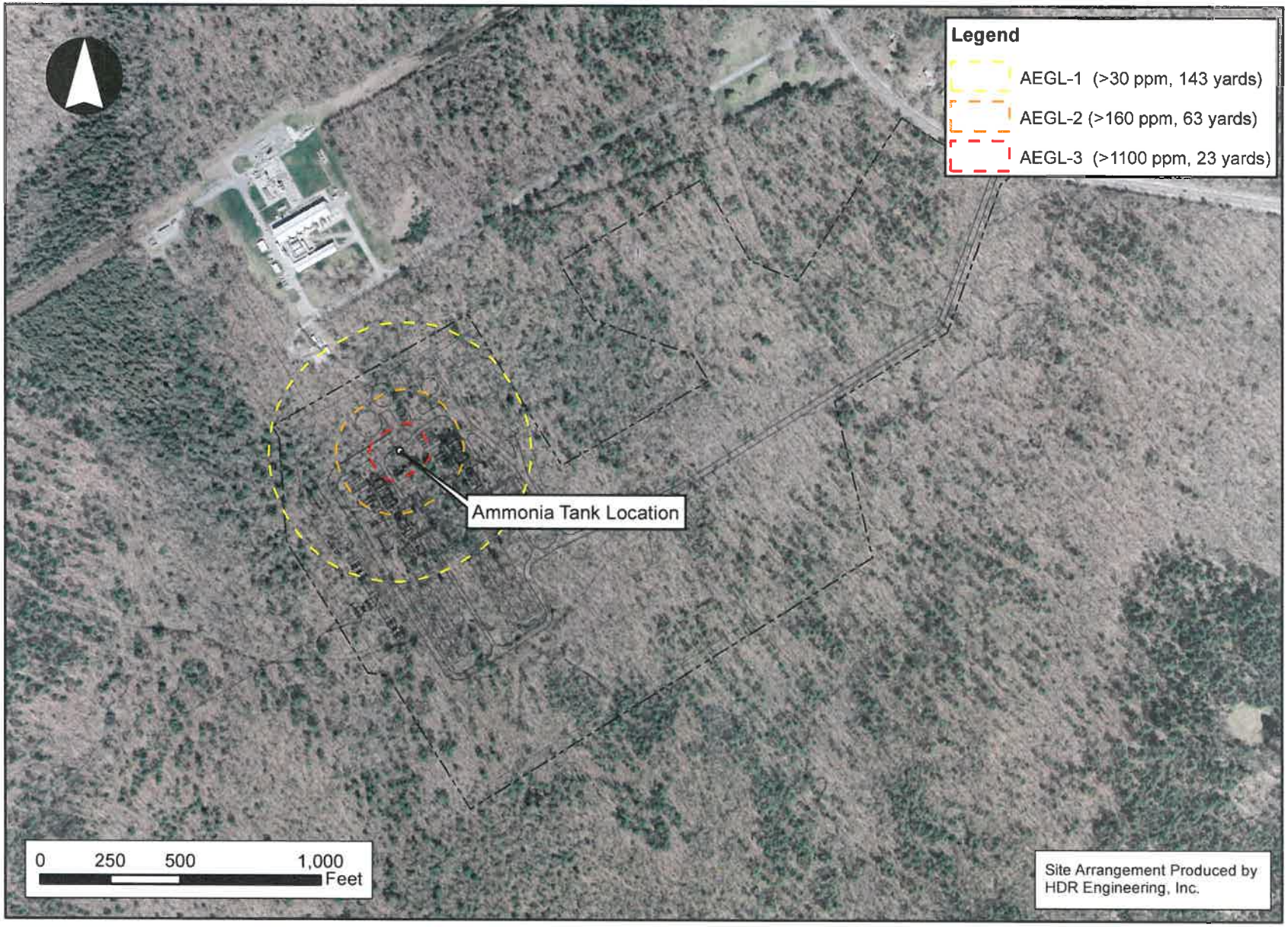
Wind: 0.63 meters/second from s at 3 meters
Ground Roughness: urban or forest Cloud Cover: 5 tenths
Air Temperature: 104° F Stability Class: A
No Inversion Height Relative Humidity: 65%

SOURCE STRENGTH:

Evaporating Puddle (Note: chemical is flammable)
Puddle Area: 244.36 square feet Puddle Volume: 40000 gallons
Ground Type: Default soil Ground Temperature: 104° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 5.01 pounds/min
(averaged over a minute or more)
Total Amount Hazardous Component Released: 295 pounds

THREAT ZONE:

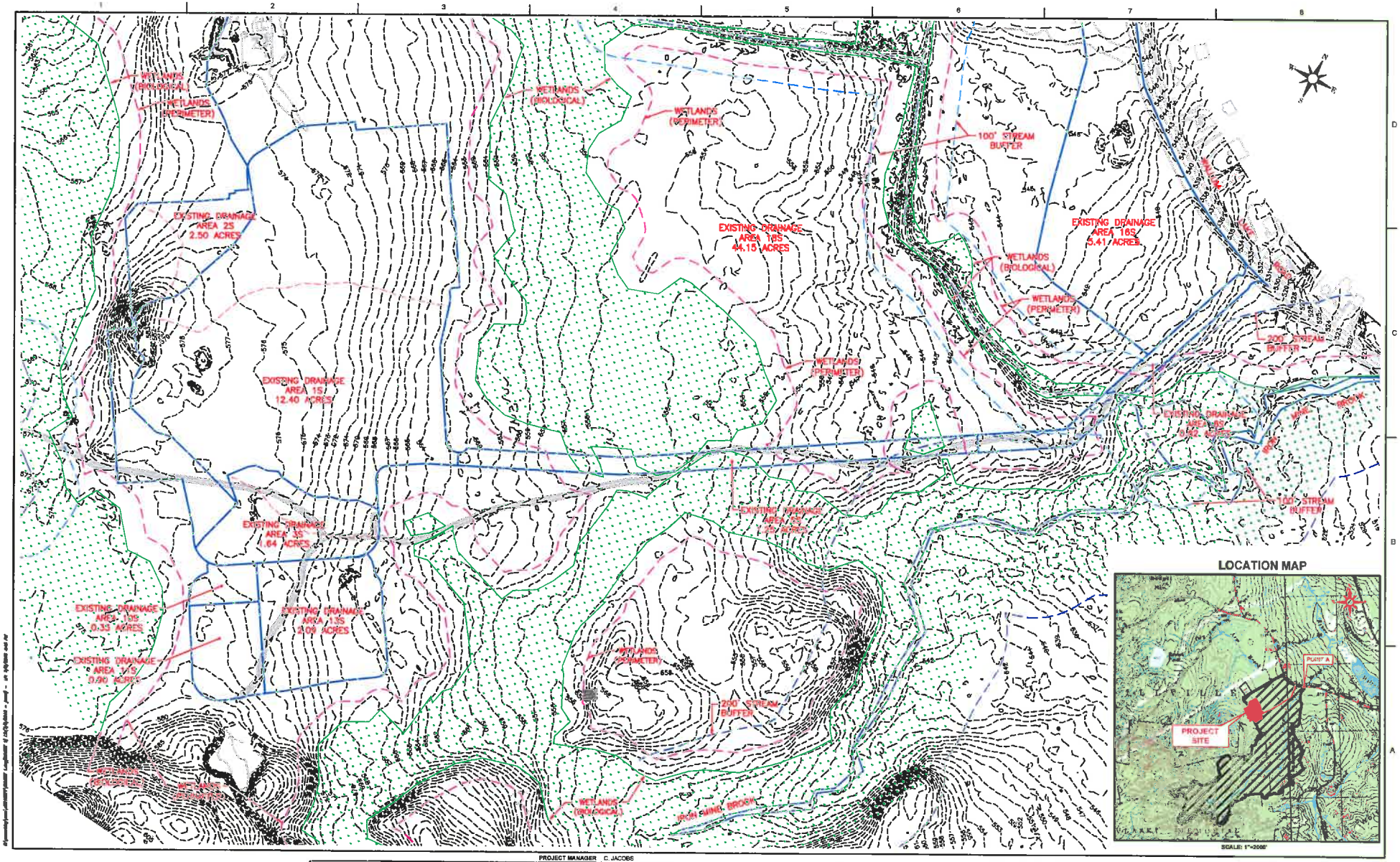
Model Run: Gaussian
Red : 23 yards --- (1100 ppm = AEGL-3 [60 min])
Note: Threat zone was not drawn because effects of near-field patchiness
make dispersion predictions less reliable for short distances.
Orange: 63 yards --- (160 ppm = AEGL-2 [60 min])
Yellow: 143 yards --- (30 ppm = AEGL-1 [60 min])



Area Locations of Hazardous Atmospheres (ALOHA) Model Result

Ammonia Off-Site Consequences Analysis
with Passive Evaporative Controls

EXHIBIT 2



PROJECT MANAGER C. JACOBS

ISSUE	DATE	DESCRIPTION

PROJECT NUMBER 00000000238629

INVENERGY, LLC
CLEAR RIVER ENERGY CENTER
TOWN OF BURRILLVILLE,
PROVIDENCE COUNTY, RHODE ISLAND

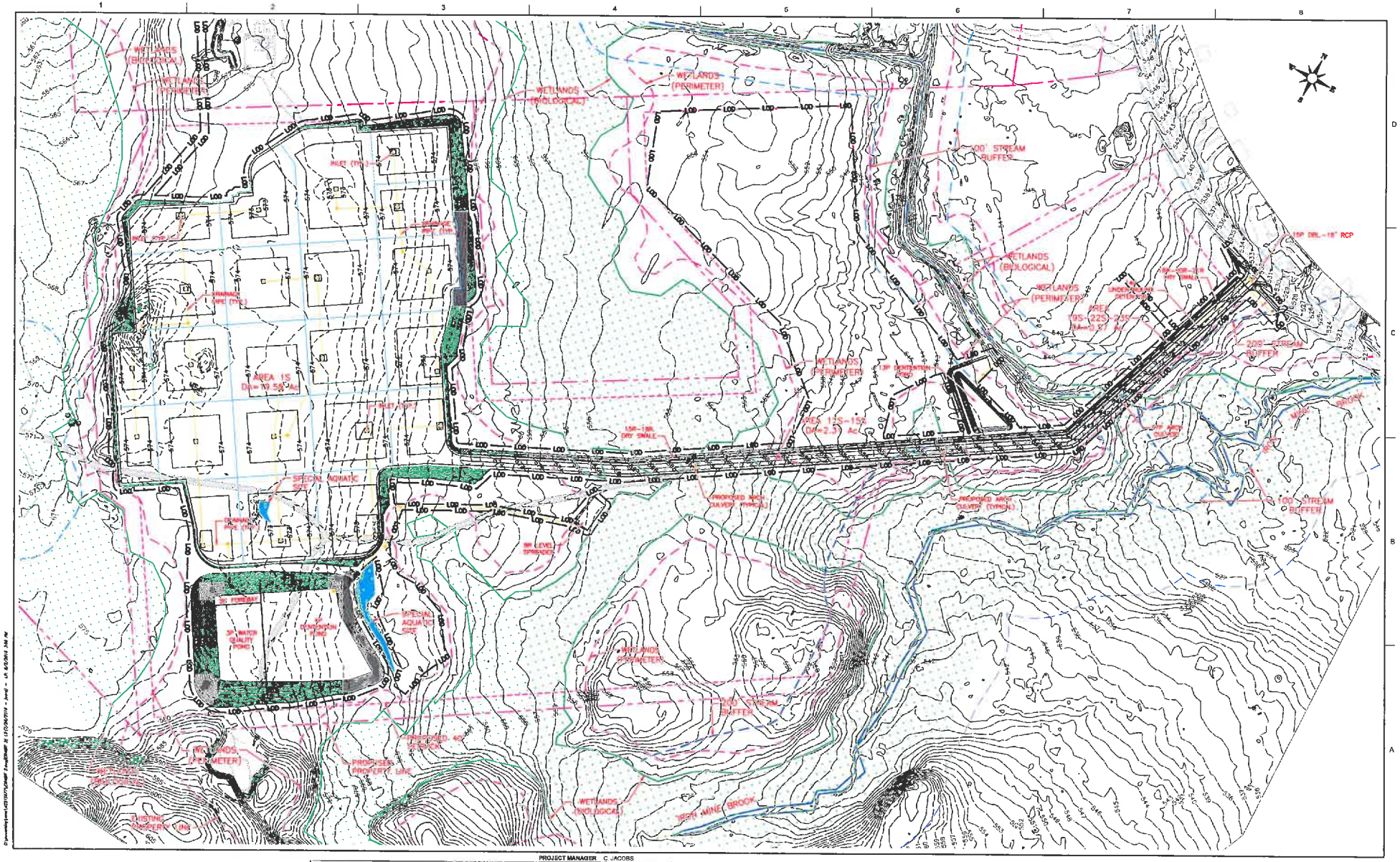
EXISTING DRAINAGE CONDITIONS

SCALE IN FEET 0 50 100

FILENAME EXHIBIT 2.dwg

SCALE AS SHOWN

SHEET **EXHIBIT 2**



ISSUE	DATE	DESCRIPTION

PROJECT MANAGER C. JACOBS

PROJECT NUMBER 00000000239926

INVENERGY, LLC
CLEAR RIVER ENERGY CENTER
TOWN OF BURRILLVILLE,
PROVIDENCE COUNTY, RHODE ISLAND

PROPOSED SITE LAYOUT, GRADING, DRAINAGE AND BMP PLAN

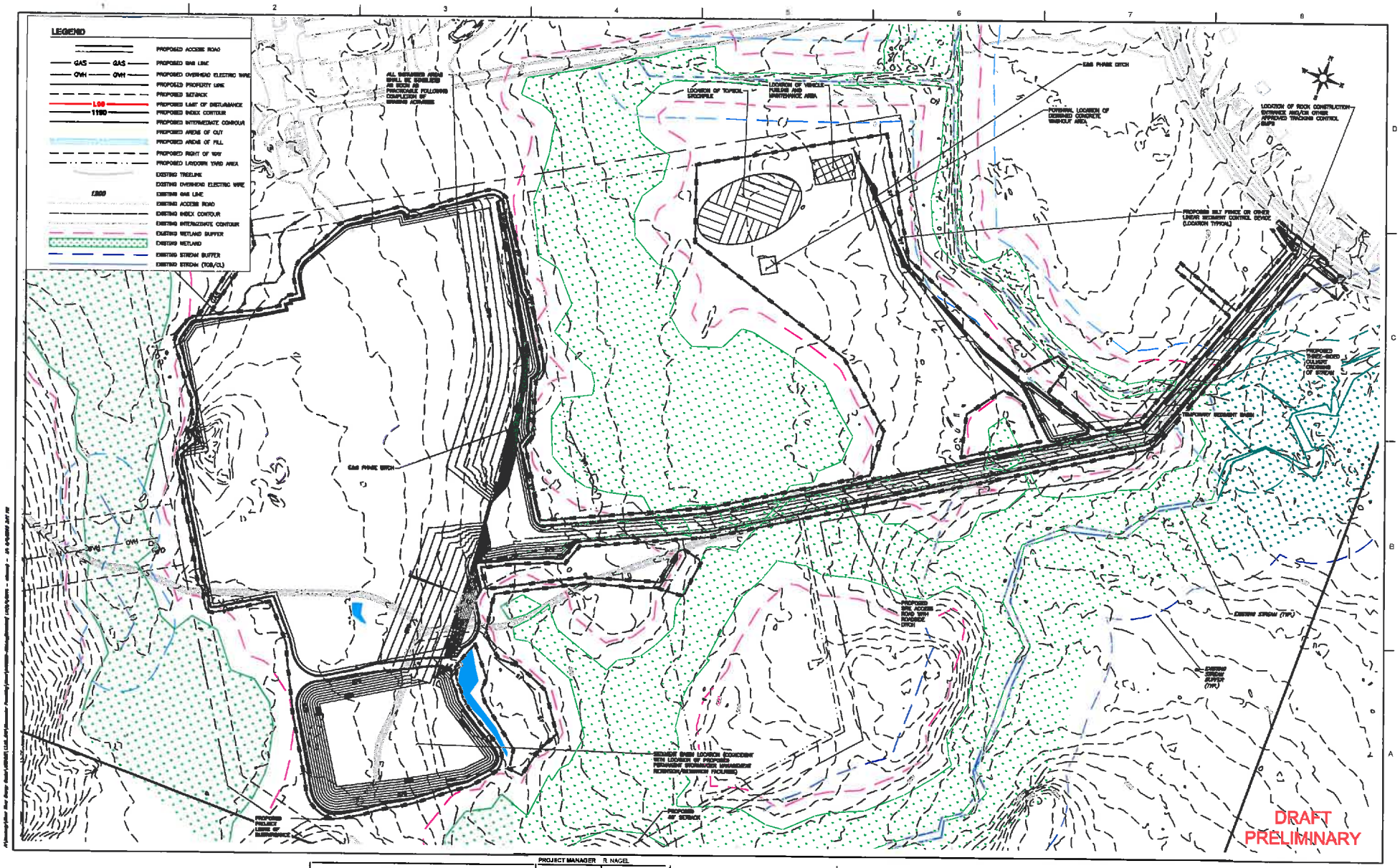
SCALE IN FEET 0 100 200

FILENAME EXHIBIT 2.dwg

SCALE AS SHOWN

SHEET **EXHIBIT 2**

EXHIBIT 3



ISSUE	DATE	DESCRIPTION
A	09/15/2016	DRAFT ISSUED FOR OWNER REVIEW

PROJECT MANAGER R. NAGEL

PROJECT NUMBER 000000000239920

INVENERGY, LLC
CLEAR RIVER ENERGY CENTER
TOWN OF BURRILLVILLE,
PROVIDENCE COUNTY, RHODE ISLAND

CLEAR RIVER ENERGY CENTER

PRELIMINARY SOIL EROSION AND SEDIMENT CONTROL CONCEPTUAL PLAN

SCALE IN FEET 0 100 200

FILENAME EXHIBIT 4

SCALE AS NOTED

SHEET EXHIBIT 4

EXHIBIT 4

ADLER POLLOCK & SHEEHAN P.C.

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Fax: 617-482-0604

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June 20, 2016

Via Federal Express/Electronic Mail

Todd Anthony Bianco, EFSB Coordinator
RI Energy Facilities Siting Board
89 Jefferson Blvd.
Warwick, RI 02888

Re: Invenergy Docket No. SB-2015-06

Dear Mr. Bianco:

On behalf of Invenergy, enclosed please find an original and ten copies of Invenergy Thermal Development LLC's Responses to The Town of Burrillville's 13th Set of Data Requests.

Please let me know if you have any questions.

Very truly yours,

ALAN M. SHOER
ashoer@apslaw.com

Enclosures

cc: Service List

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: INVENERGY THERMAL DEVELOPMENT LLC's APPLICATION TO CONSTRUCTION THE CLEAR RIVER ENERGY CENTER IN BURRILLVILLE, RHODE ISLAND

DOCKET No. SB-2015-06

INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO THE TOWN OF BURRILLVILLE'S 13th SET OF DATA REQUESTS

Traffic

13-1 Page 3: By what criteria were only the driveway and two unsignalized intersections identified for the study? Were no other intersections along the Route 100/Route 44 corridor affected by a 400 vph site traffic increase?

RESPONSE 13-1 The study area was chosen to focus on the major unsignalized stop-controlled intersections within the Town of Burrillville that will be most likely impacted by the proposed project due to their close proximity to the site and potential increased delays. The remaining major intersections to the south are under traffic signal control and along major arterial state numbered routes such as Route 44 where traffic volumes were found to be higher (15,590 vpd on Main Street (Route44) vs. 6,500 vpd on Pascoag Main Street) and can handle additional volumes. In addition, the Route 102/Route 44 signalized intersection in Chepachet has been recently studied by the Rhode Island Department of Transportation ("RIDOT") and is slated for a major intersection improvement project that will convert this intersection into a modern roundabout. Construction of this roundabout is expected to be completed by the end of 2017.

RESPONDENT: Maureen Chlebek, McMahon Associates

DATE: June 20, 2017

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: INVENERGY THERMAL DEVELOPMENT LLC's APPLICATION TO CONSTRUCTION THE CLEAR RIVER ENERGY CENTER IN BURRILLVILLE, RHODE ISLAND

DOCKET No. SB-2015-06

INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO THE TOWN OF BURRILLVILLE'S 13th SET OF DATA REQUESTS

13-2 Page 5: Is Main Street really 62 feet wide?

RESPONSE 13-2: On page 5 of the Traffic Impact Study, Main Street in Chepachet was inadvertently described as 62 feet wide. The correct dimension should be listed as 32 feet for a typical cross section including a 12 foot-wide travel lane in each direction and an eight foot-wide parking lane along the eastern side of the roadway.

RESPONDENT: Maureen Chlebek, McMahon Associates

DATE: June 20, 2016

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: INVENERGY THERMAL DEVELOPMENT LLC's APPLICATION TO CONSTRUCTION THE CLEAR RIVER ENERGY CENTER IN BURRILLVILLE, RHODE ISLAND

DOCKET No. SB-2015-06

INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO THE TOWN OF BURRILLVILLE'S 13th SET OF DATA REQUESTS

13-3 Page 7: The statement that the weekday afternoon peak hour of adjacent street traffic occurred between 5 p.m. and 6 p.m. (3rd paragraph) does not appear to be supported in the appendices. Please explain.

RESPONSE 13-3: The weekday afternoon peak hour was listed incorrectly as 5:00 PM to 6:00 PM on page 7 of the Traffic Impact Study. The statement should be revised to read: "The weekday afternoon peak hour of adjacent street traffic is shown to occur between 3:15 PM to 4:15 PM." All of the traffic analysis included in the report was based on the correct peak hour of 3:15 PM to 4:15 PM and our conclusions remain valid.

RESPONDENT: Maureen Chlebek, McMahon Associates

DATE: June 20, 2016

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: INVENERGY THERMAL DEVELOPMENT LLC's APPLICATION TO CONSTRUCTION THE CLEAR RIVER ENERGY CENTER IN BURRILLVILLE, RHODE ISLAND

DOCKET No. SB-2015-06

INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO THE TOWN OF BURRILLVILLE'S 13th SET OF DATA REQUESTS

13-4 Page 8: How was the period (3:15 - 4:15) in the heading of the far right column determined? See 13-3 above.

RESPONSE 13-4: On page 8 of the Traffic Impact Study, the weekday afternoon peak hour of 3:15 PM to 4:15 PM was listed in the Automatic Traffic Recorder ("ATR") Summary as this is the identified network peak hour that was analyzed in our traffic analysis. The network peak hour was identified by comparing the peak turning movement traffic volumes at the two adjacent intersections of Pascoag Main Street/Church Street and Pascoag Main Street/Sayles Avenue to see when the combination of traffic volumes at the two key study area intersections is the highest. In addition, it was also determined to be the network peak hour when comparing the weekday afternoon peak hour volumes from the seven ATRs that were collected on the various truck route roadways. It is standard practice to analyze a network peak hour of when the combination of adjacent roadway volumes and potential traffic increases with the project would coincide to assess potential traffic impacts during the worst peak hours of the day.

RESPONDENT: Maureen Chlebek, McMahon Associates

DATE: June 20, 2016

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: INVENERGY THERMAL DEVELOPMENT LLC's APPLICATION TO CONSTRUCTION THE CLEAR RIVER ENERGY CENTER IN BURRILLVILLE, RHODE ISLAND

DOCKET No. SB-2015-06

INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO THE TOWN OF BURRILLVILLE'S 13th SET OF DATA REQUESTS

13-5 Page 11: Route 100 / Route 44 Roundabout: While no detours are anticipated, couldn't other traffic control strategies such as temporary lane blockage or temporary alternating traffic flow introduce traffic disruption and delay?

RESPONSE 13-5: While there is potential for alterations in traffic flow and other traffic control strategies during the construction of the Route 100/Route 44 roundabout, information on traffic control has not yet been released. It is our understanding that RIDOT will maintain traffic flow in both directions during construction. Vehicles traveling through the Route 100/Route 44 construction work zone in route to the project site will follow the traffic control measures set forth by RIDOT.

RESPONDENT: Maureen Chlebek, McMahon Associates

DATE: June 20, 2016

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: INVENERGY THERMAL DEVELOPMENT LLC's APPLICATION TO CONSTRUCTION THE CLEAR RIVER ENERGY CENTER IN BURRILLVILLE, RHODE ISLAND

DOCKET No. SB-2015-06

INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO THE TOWN OF BURRILLVILLE'S 13th SET OF DATA REQUESTS

13-6 Page 25: 3rd paragraph – Please clarify the PM peak hour (See 13-4 above).

RESPONSE 13-6: On page 8 of the Traffic Impact Study, the weekday afternoon peak hour of 3:15 PM to 4:15 PM was listed in the ATR Summary as this is the identified network peak hour that was analyzed in our traffic analysis. The network peak hour was identified by comparing the peak turning movement traffic volumes at the two adjacent intersections of Pascoag Main Street/Church Street and Pascoag Main Street/Sayles Avenue to see when the combination of traffic volumes at the two key study area intersections is the highest. In addition, it was also determined to be the network peak hour when comparing the weekday afternoon peak hour volumes from the seven ATRs that were collected on the various truck route roadways. It is standard practice to analyze a network peak hour of when the combination of adjacent roadway volumes and potential traffic increases with the project would coincide to assess potential traffic impacts during the worst peak hours of the day.

RESPONDENT: Maureen Chlebek, McMahon Associates

DATE: June 20, 2016

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: INVENERGY THERMAL DEVELOPMENT LLC's APPLICATION TO CONSTRUCTION THE CLEAR RIVER ENERGY CENTER IN BURRILLVILLE, RHODE ISLAND

DOCKET No. SB-2015-06

INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO THE TOWN OF BURRILLVILLE'S 13th SET OF DATA REQUESTS

13-7 Page 28: 2021 Construction Build, Pascoag Main / South Main – Please define the "short duration" of the degraded turning movement operation?

RESPONSE 13-7 We have described the degraded operation as "short duration," meaning less than one hour. The site generated traffic includes a staff shift change, which generally surges and occurs in less than an hour, as opposed to occurring consistently throughout the peak hour.

RESPONDENT: Maureen Chlebek, McMahon Associates

DATE: June 20, 2016

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: INVENERGY THERMAL DEVELOPMENT LLC's APPLICATION TO CONSTRUCTION THE CLEAR RIVER ENERGY CENTER IN BURRILLVILLE, RHODE ISLAND

DOCKET No. SB-2015-06

INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO THE TOWN OF BURRILLVILLE'S 13th SET OF DATA REQUESTS

13-8 Page 28: 2021 Construction Build, Pascoag Main / South Main – How much of a decline in level of service would have been experienced had it NOT been conservative?

RESPONSE 13-8 The construction truck trips are expected to occur between 8:00 AM and 3:00 PM and the employee shift change is expected to occur between 5:00 PM and 6:00 PM. Realistically, these two trip types will never occur together, and the majority of these trips will never occur during the weekday afternoon peak hour. For purposes of providing a conservative traffic study, however, we assumed that 25% of the daily truck trips and all of the employee shift change traffic will occur during the weekday afternoon peak hour.

If we were to analyze the weekday afternoon peak hour from 3:15 PM to 4:15 PM with what is projected to occur, we would have no additional trips during the above ground construction phase. However, during the underground construction phase when concrete deliveries are allowed until 4:00 PM, there would be a minimal number of concrete trucks delivering between 3:15 PM and 4:00 PM and a negligible impact on peak hour traffic.

Since the construction employee trips are the highest volume of traffic added to the network and shifts are expected to change between 5:00 and 6:00 PM, it is expected that this time period will be affected. If the employee trips were added to this time period, it is expected that the northbound left turn movement would operate at level-of-service ("LOS") E and under capacity. All other movements at this intersection are expected to operate at LOS C or better. LOS is a grading scale that measures the average amount of delay expected at an intersection approach. LOS E or better describes delays of less than 50 seconds at an unsignalized intersection.

RESPONDENT: Maureen Chlebek, McMahon Associates

DATE: June 20, 2016

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: INVENERGY THERMAL DEVELOPMENT LLC's APPLICATION TO CONSTRUCTION THE CLEAR RIVER ENERGY CENTER IN BURRILLVILLE, RHODE ISLAND

DOCKET No. SB-2015-06

INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO THE TOWN OF BURRILLVILLE'S 13th SET OF DATA REQUESTS

13-9 Page 29: 2021 Construction Build, Pascoag Main / Church – Please define the "short duration" of the degraded turning movement operation?

RESPONSE 13-9 We have described the degraded operation as "short duration," meaning less than one hour. The site generated traffic includes a staff shift change, which generally surges and occurs in less than an hour, as opposed to occurring consistently throughout the peak hour.

RESPONDENT: Maureen Chlebek, McMahon Associates

DATE: June 20, 2016

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: INVENERGY THERMAL DEVELOPMENT LLC's APPLICATION TO CONSTRUCTION THE CLEAR RIVER ENERGY CENTER IN BURRILLVILLE, RHODE ISLAND

DOCKET No. SB-2015-06

INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO THE TOWN OF BURRILLVILLE'S 13th SET OF DATA REQUESTS

13-10 Page 29: 2021 Construction Build, Pascoag Main / Church – How much of a decline in level of service would have been experienced had it NOT been conservative?

RESPONSE 13-10 The construction truck trips are expected to occur between 8:00 AM and 3:00 PM and the employee shift change is expected to occur between 5:00 PM and 6:00 PM. Realistically, these two trip types will never occur together, and the majority of these trips will never occur during the weekday afternoon peak hour. For purposes of providing a conservative traffic study, however, we assumed that 25% of the daily truck trips and all of the employee shift change traffic will occur during the weekday afternoon peak hour.

If we were to analyze the weekday afternoon peak hour from 3:15 PM to 4:15 PM with what is projected to occur, we would have no additional trips during the above ground construction phase. However, during the underground construction phase when concrete deliveries are allowed until 4:00 PM, there would be a minimal number of concrete trucks delivering between 3:15 PM and 4:00 PM and a negligible impact on peak hour traffic.

Since the construction employee trips are the highest volume of traffic added to the network and shifts are expected to change between 5:00 and 6:00 PM, it is expected that this time period will be affected. If the intersection of Pascoag Main Street at Church Street were analyzed with the employee site trips added between 5:00 PM and 6:00 PM, the southbound approach is expected to operate at LOS E and under capacity. All other movements are expected to operate at LOS B or better. LOS is a grading scale that measures the average amount of delay expected at an intersection approach. LOS E or better describes delays of less than 50 seconds at an unsignalized intersection.

RESPONDENT: Maureen Chlebek, McMahon Associates

DATE: June 20, 2016

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: INVENERGY THERMAL DEVELOPMENT LLC's APPLICATION TO CONSTRUCTION THE CLEAR RIVER ENERGY CENTER IN BURRILLVILLE, RHODE ISLAND

DOCKET No. SB-2015-06

INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO THE TOWN OF BURRILLVILLE'S 13th SET OF DATA REQUESTS

13-11 Page 30: Table 6 – Is there sufficient Intersection sight distance in both directions? The table and text are unclear on this.

RESPONSE 13-11 As noted in Table 6, the required intersection sight distance ("ISD") to the west for left turning traffic is 640 feet and to the east for right turning traffic is 725 feet, based on the 85th percentile speeds. Based on our field measurements, there is over 1,000 feet of available sight distance to the east which exceeds the stopping sight distance ("SSD") and ISD requirements. To the west, we measured approximately 580 feet of available sight distance which exceeds the requirements for SSD but is 160 feet short of the requirements for ISD.

Although it is desirable to meet both the SSD and ISD, meeting SSD is deemed acceptable by standard engineering practices since motorists approaching the site driveway have adequate time to react to a vehicle exiting the site driveway and safe conditions are maintained.

RESPONDENT: Maureen Chlebek, McMahon Associates

DATE: June 20, 2016

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: INVENERGY THERMAL DEVELOPMENT LLC's APPLICATION TO CONSTRUCTION THE CLEAR RIVER ENERGY CENTER IN BURRILLVILLE, RHODE ISLAND

DOCKET No. SB-2015-06

INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO THE TOWN OF BURRILLVILLE'S 13th SET OF DATA REQUESTS

13-12 Page 30: The last paragraph refers to adequate sight distance for heavy vehicle access, but the bottom of Page 29 states the design vehicle is a single unit truck. Are these the same vehicles?

RESPONSE 13-12 The sight distance evaluation conducted for this project was based upon the methodology published in "A Policy on Geometric Design of Highways and Streets" by the American Association of State Highway and Transportation Officials ("AASHTO"). According to these guidelines, heavy vehicle adjustments can be applied to the ISD criteria. There are not heavy vehicle adjustments for the SSD criteria in the AASHTO guidelines.

ISD can be adjusted for single unit trucks or for combination vehicles (trucks larger than single unit). For this project, the sight distance criteria was adjusted for a single unit truck since the majority of the truck traffic assessing the site is expected to consist of single unit trucks. Had we applied the ISD adjustment for combination trucks, the overall conclusions for ISD would remain the same. There are over 1,000 feet of available sight distance to the east, which will accommodate combination trucks, and 580 feet of sight distance to the west, which meets ISD for a passenger vehicle but does not meet ISD requirements for heavy vehicles. It should be noted that intersection sight distance is met for the passenger cars exiting the site, which is the majority of site traffic.

The driveway does meet safe SSD in both directions based on AASHTO guidelines. Stopping sight distance is a function of reaction time and braking distance and indicates that motorists have ample time to react to a vehicle exiting the site driveway.

RESPONDENT: Maureen Chlebek, McMahon Associates

DATE: June 20, 2016

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: INVENERGY THERMAL DEVELOPMENT LLC's APPLICATION TO CONSTRUCTION THE CLEAR RIVER ENERGY CENTER IN BURRILLVILLE, RHODE ISLAND

DOCKET No. SB-2015-06

INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO THE TOWN OF BURRILLVILLE'S 13th SET OF DATA REQUESTS

13-13 The Traffic Impact Study notes Invenergy's commitment to an appropriate level of restoration for roadway sections degraded by construction-related traffic. Is Invenergy prepared to sign an agreement evidencing this commitment? If so, will Invenergy prepare such a proposed agreement and forward it to the Town's attorney?

RESPONSE 13-13 The truck route identified for this project involves roadways that fall under RIDOT jurisdiction. The proponent has proactively assessed the roadway conditions along the truck routes (Route 100) in Burrillville and Glocester, RI and has initiated coordination with RIDOT regarding the roadway conditions. RIDOT is in agreement with the approach to measure baseline roadway conditions, to monitor these roadways during construction, and to continue coordinate with RIDOT. To date, RIDOT has not required a formal agreement with the proponent. The proponent is required to obtain a Physical Alteration Permit ("PAPA") from RIDOT for the curb opening on Route 100 at the site entrance, and such issues can be resolved during the permitting process.

RESPONDENT: Robert Smith, McMahon Associates

DATE: June 20, 2016

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: INVENERGY THERMAL DEVELOPMENT LLC's APPLICATION TO CONSTRUCTION THE CLEAR RIVER ENERGY CENTER IN BURRILLVILLE, RHODE ISLAND

DOCKET No. SB-2015-06

INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO THE TOWN OF BURRILLVILLE'S 13th SET OF DATA REQUESTS

INVENERGY THERMAL DEVELOPMENT LLC
By its Attorneys,

/s/ Alan M. Shoer
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One Citizens Plaza, 8th Floor
Providence, RI 02903-1345
Tel: 401-274-7200
Fax: 401-751-0604
Dated: June 20, 2016

CERTIFICATE OF SERVICE

I hereby certify that on June 20, 2016, I delivered a true copy of the foregoing responses to the Town of Burrillville's Data Requests via electronic mail to the parties on the attached service list.

/s/ Alan M. Shoer

SB-2015-06 Invenergy CREC Service List as of 05/02/2016

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Matthew M. Kozsuch, P.E.
Maureen Chlebek, P.E., PTOE
Dean A. Carr, P.E.

MEMORANDUM

TO: Beth Noonan

FROM: Maureen Chlebek, P.E., PTOE

DATE: July 29, 2016

RE: Clean River Energy Center
Burrillville, RI
Traffic Comment Responses

McMahon Associates has prepared this memorandum to provide responses to traffic related comments made at the Burrillville meetings in June and July of 2016.

Comment 1. Crash Comment: "Has the non-intersection crash history along Route 100 been investigated?"

Response 1: Crash data was collected from the Burrillville town line on South Main Street to the proposed site on Wallum Lake Road for all study area roadways following the truck route. Additional analysis was performed to determine the number of crashes on the study area roadway segments. Intersections at the study area intersections are not included in this summation. A detailed summer of crashes along the truck route roadway segments is attached. When considering the number of crashes on the roadways, consider that the data covered a three-year period from 2013-2016 and that the roadway lengths vary.

Comment 2: ADT Comment: Please provide estimates of the daily trip generation.

Response 2: Under future build conditions when the power plant is fully occupied and operating, an expected 60 additional trips (30 vehicles in, 30 vehicles out) are expected daily, including trips for 25 power plant employees and various delivery vehicles during the day. The existing ADT and ADT with the addition of the proposed power plant is compared below.

	Existing ADT	Existing Build ADT	% Increase
South Main Street	4950	5000	1%
Pascoag Main Street	6500	6550	1%
Church Street	3650	3700	2%

As shown in the table, the project is expected to create a minor increase in traffic overall in comparison to the average daily traffic.

Comment 3. Alternative Truck Route Comment: "Have you explored alternative truck routes to the site?"

Response 1: Alternative truck routes have been explored and evaluated. See attached report on alternative truck routes. The results indicate that the alternative truck routes would not viewed as advantageous for construction vehicles originating in the Providence metro area. This is mainly due to the additional distance of 10+ miles, and also that the roadways do not appear to present an overall upgrade in terms of their ability to handle larger vehicles when compared to the originally assumed route.

Crash Summary

	Wallum Lake Road	Church Street	High Street	South Main Street
Segment Length (miles)	5	0.8	0.09	2.2
Years Reported	1/1/2013-12/31/2015	5/10/2013-5/10/2016	5/10/2013-5/10/2016	5/10/2013-5/10/2016
Type				
Angle	0	2	2	14
Head-on	1	0	0	0
Rear-end	1	1	0	9
Read to Side	0	1	0	0
Sideswipe	1	1	3	4
Animal	0	0	0	5
Rear to Rear	0	0	1	0
Single Vehicle	18	6	3	13
Unknown	0	3	2	2
Total	21	14	11	47
Severity				
Property Damage	16	11	10	37
Personal Injury	5	3	1	10
Fatality	0	0	0	0
Other	0	0	0	0
Total	21	14	11	47
Weather				
Clear	16	10	5	33
Cloudy	0	3	5	6
Rain	1	1	0	2
Snow	2	0	1	5
Blowing snow	1	0	0	0
Ice	0	0	0	0
Sleet	1	0	0	1
Fog	0	0	0	0
Unknown	0	0	0	0
Total	21	14	11	47
Time				
7:00 AM to 9:00 AM	2	2	3	5
9:00 AM to 4:00 PM	9	7	8	19
4:00 PM to 6:00 PM	1	2	0	6
6:00 PM to 7:00 AM	9	3	0	17
Total	21	14	11	47

Source: Town of Burrillville Police

INVENERGY CLEAR
RIVER ENERGY CENTER

ALTERNATE TRUCK ROUTES

Prepared by

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

McMahon Associates
55 Dorrance Street, Suite 403
Providence, RI 02903

Based on feedback received at the Burrillville Planning Board meetings of June 20 and July 11, 2016, we have investigated alternate truck routes that may potentially be utilized by construction vehicles accessing the site. Our initial traffic studies assumed that the majority of vehicles would originate in the Providence metro area, and therefore travel I-295 to US 44 to RI Route 100. The originally assumed truck route is shown as Route A in the attached diagram. Route 44 is a designated US route and is on the National Highway System, and Route 100 for most of its length has wide shoulders and good sight distance, suitable for larger vehicles. This is also the most direct route, measuring approximately 16 miles from I-295 to the site, passing through the village of Chepachet in Glocester (A-1). Only a small section of roughly one mile through the village of Pascoag has reduced roadway width, and a tight curve at the intersection of Pascoag Main Street and Church Street (A-2).

A-1: Putnam Pike (Main St.) at Money Hill Rd

A-2: Pascoag Main St at Church St

The Planning board questioned if there were alternate routes that construction vehicles might utilize and suggested investigation of RI/MA Route 146 to MA Route 16 and RI/MA Route 96 (Route B). We have investigated the feasibility of this suggested route and note the following. Also starting measurement from I-295, this route is significantly longer than the original assumed truck route, totaling 28.5 miles. Route 146 in Rhode Island and Massachusetts is primarily freeway, covering approximately 13 miles of the alternate route, and truck traffic can easily be accommodated on this roadway. Route 16 is of variable width, some areas having wide shoulders, others having little or no shoulder. It travels through the village of East Douglas and the Town Common of Douglas. East Douglas has a small commercial area with shops on each side of the road, and numerous crosswalks (similar to Route 107 in Harrisville). Douglas Town Common is more rural/historical. There are two noteworthy intersections along this piece of Route 16. First, is the intersection of Davis Street and NE Main Street (B-1). This intersection is under partial stop control with a flashing beacon. Route 16 (Davis Street) comes in at a sharp skew with to NE Main Street which has the right-of-way in the westbound direction. Sight distance is somewhat limited at this intersection. Second, is the intersection of SW Main Street and South Street (Route 96) (B-2).

B-1: Davis Street at NE Main Street

South Street intersects SW Main at a skewed angle, and sight distance is limited here as well, particularly looking west from the South Street northbound approach. From this intersection, Route 96 heads south back into Rhode Island, is somewhat narrow at first, but with wider shoulders toward the southern end. Unfortunately, there are no suitable east-west cross connections to the site on Route 100, so construction vehicles would need to proceed all the way to Hill Road (B-3), and then use Route 107 to Route 100 north. This would require vehicles to pass through the village of Pascoag, including the Church Street section.

B-2: South St at SW Main St


B-3: Round Top Rd at Hill Rd

As an alternate to this suggested route, we also investigated a slight variation (Route C). Instead of turning south onto Route 96 in Douglas, MA, continuing west on SW Main Street for just over one mile, it intersects with Wallum Lake Road (Route 100). This leads directly to the proposed site, and is about 3 miles shorter than the suggested alternate route (totaling 25.5 miles). Similar to Route 96, Route 100 is narrow at first in Massachusetts, but widens upon entering Rhode Island. There is a sharp, stop controlled portion at its intersection with East Wallum Lake Road (C-1). Immediately following that curve is a section of somewhat steep grade (C-2). Since this route comes in from the north, it does not travel the section of Route 100 through the village of Pascoag.


C-1: Wallum Lake Rd at E Wallum Lake Rd


C-2: Wallum Lake Rd

In summary, upon review of the two noted alternate truck routes, we do not feel that they would provide a route that would be viewed as advantageous for construction vehicles originating in the Providence metro area. This is mainly due to the additional distance of 10+ miles, and also that the roadways do not appear to present an overall upgrade in terms of their ability to handle larger vehicles when compared to the originally assumed route. For the majority of construction vehicles accessing the proposed site from the Providence metro area, we feel they would most likely utilize the originally assumed route noted above. However, for any construction vehicles for which trips may originate in the Worcester area, the suggested route (with the variation noted above) may present a considerably shorter trip. At this time it is difficult to project what percentage of construction vehicles may originate in the Worcester area. While this percentage is assumed to be small, any use of this alternate would potentially reduce the overall truck traffic currently projected to utilize Route 100 through Pascoag.

ALTERNATE TRUCK ROUTES

BURRILLVILLE, RI

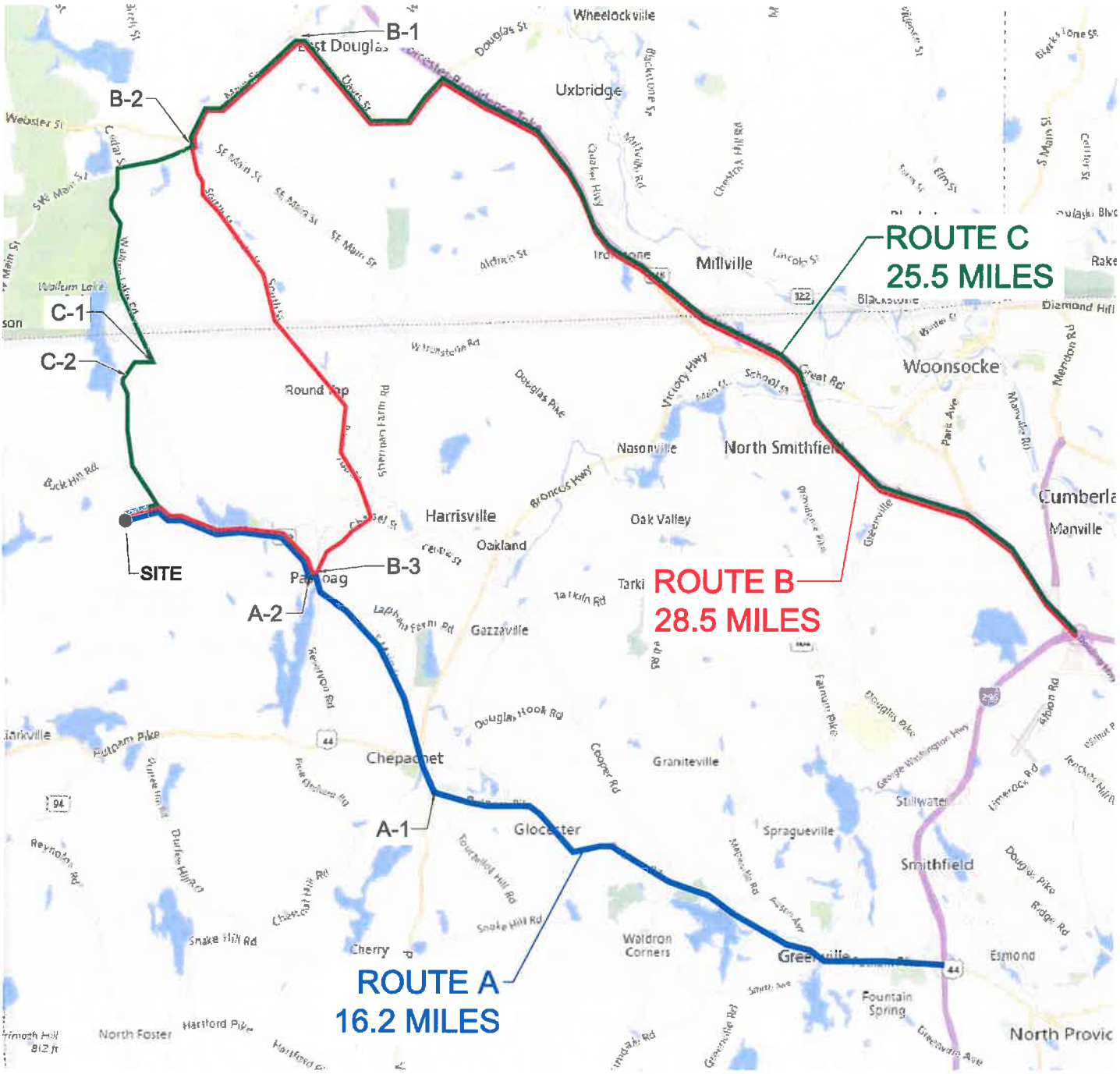


EXHIBIT 5

Amendment 1.0 replaces Section 6.2.4 Water Supply – Impacts of Withdrawals on Clear River

Clear River Energy Center – Stream Depletion Analyses

Invenergy, LLC (Invenergy) filed an Energy Facility Siting Board (EFSB) application on October 29, 2015 to seek approval of the construction and future operation of the Clear River Energy Center (CREC) on an industrial site within the Town of Burrillville, Rhode Island. The EFSB filing included a plan to source water for the Project from the Pascoag Utility District (PUD) by pumping water from PUD's well #3A. This well had become contaminated in the past from release(s) of gasoline that had occurred at a local gasoline station. Water from PUD's well #3A would be treated and the treated water pumped in a dedicated water pipeline for use exclusively by the CREC facility. Water pumped from PUD's well #3A is groundwater that would otherwise discharge to the Clear River, as such the CREC EFSB filing included a stream depletion analysis for the Clear River and CREC's expected water use. All wastewater from the CREC Project will be discharged to the Town of Burrillville sewer system through a dedicated sewer line that will convey the CREC Project's wastewater back to the Town of Burrillville's wastewater treatment facility.

The stream depletion analysis included in the EFSB application focused on water use throughout the year and specifically during the summer season (July-August-September) and was based on publicly available water use estimates for the Clear River sub-basin developed by US Geological Survey (USGS), the Rhode Island Water Resources Board and by information generated on current water use by the two water utilities in the Town of Burrillville. Projections of water use by CREC were based on plans for the facility that were current at the time of filing.

Based on subsequent discussions with Rhode Island Department of Environmental Management (RIDEM) and representatives of the Rhode Island Water Resources Board (RIWRB), CREC has further revised the stream depletion analysis of the Clear River to assess potential impacts to the entire Clear River watershed and to a sub-basin of the Clear River upstream of the current, historic and proposed PUD water sources (PUD sub-watershed), including PUD well #3A.

CREC has also considered its operational plans for the facility to identify water use reduction approaches that would further reduce water use during the most sensitive months of July, August and September which have been identified by RIDEM as the season when resident spawning, rearing & growth of herring and shad out occur in the Clear River. CREC accepts that water use during this season along the Clear River must be addressed by CREC's plans for operation of the CREC facility.

In developing the following stream depletion analyses, CREC has used water use estimates within the Clear River watershed as developed by independent publically-available analyses of water use within the Clear River sub-basin and projections of that water use into the future based on population projections made by the Rhode Island Statewide Planning Program Technical Paper No. 162 published in April 2013.

The Statewide Planning Program in Technical Paper No. 162 developed population projections for the time period 2010-2040 for all of the communities in Rhode Island, including the Town of Burrillville. The objectives of the Statewide Planning Program are: (1) to prepare strategic and systems plans for the state; (2) to coordinate activities of the public and private sectors within this framework of policies and programs; (3) to assist local governments in management, finance, and planning; and (4) to advise the Governor and others on physical, social and economic topics.

The Preface to Technical Paper No. 162 includes the following; "Population projections assist planners with assessing the future built environment and natural resources needs, including transportation options, appropriate housing and sufficient water supply". As a result CREC believes population projections made by the Statewide Planning Program are intended for the specific purpose of making water use projections to support community planning.

The Statewide Planning Program projects the population of Rhode Island will continue to have very slow population growth from 2015 through the mid-2030s, at which time the growing number of older residents will again cause a slight decline in the state's population. For the Town of Burrillville, the Statewide Planning Program projects from 2015 through 2040 there will be a net decline in population of -0.6% in the Town of Burrillville as a result of net migration and the aging of the overall population.

Table 1
Population Projections – Statewide Planning Program

Town	Count	Projection					
	2010	2015	2020	2025	2030	2035	2040
Burrillville	15,955	15,757	15,713	15,813	15,860	15,818	15,675

Although the Statewide Planning Program makes this population prediction for the Town of Burrillville, CREC in developing its stream depletion analyses for the Clear River projects growth in water use based on population projections in the range of -0.1% to 0.5% annual growth. This range of growth in population addresses the potential impact on water use should in fact the population of the Town of Burrillville increase at levels not predicted by the Statewide Planning Program. The range of -0.1% to 0.5% also covers the full range of population projections and associated water use identified in the most recent Water Supply System Management Plans (WSSMPs) developed by both the Harrisville Fire and Pascoag Utility districts.

The following stream depletion analyses address water use within the Clear River watershed and the PUD Sub-watershed.

Stream Depletion Analysis - Clear River Watershed
To develop the following stream depletion analysis for the Clear River watershed, CREC relied on studies and analyses of water use previously completed by the USGS, the RIWRB and the WSSMPs as developed by Harrisville Fire District and the Pascoag Utility District.

CREC used these references to make the stream depletion analysis results as independent of the CREC project as is possible within the information available. In developing the following stream depletion analysis only the projection of water use made for CREC Project has been developed by the CREC Project, all other water use estimates have been developed by other independent sources which are identified.

To project the results of the stream depletion analysis into the future CREC has applied a population growth range of -0.1% to 0.5% per year to account for potential growth in water use within the Clear River watershed and, specifically, within the Town of Burrillville. CREC believes, given the projection of an overall decline in population in the Town of Burrillville for the time period of 2015 to 2040, that this stream depletion analysis is conservative.

The Clear River is a tributary to the Blackstone River. The USGS conducted a study in cooperation with the RIWRB to collect, organize, and analyze water-use and water-availability data for the Lower Blackstone River basin, including the Clear River watershed. In 2003 the USGS, in cooperation with the RIWRB, published a report titled "Estimated Water Use and Availability in the Lower Blackstone River Basin, Northern Rhode Island and South-Central Massachusetts, 1995-99". This reference will be referred to as "USGS Study".

The USGS Study analyzed water use and availability in the Lower Blackstone River basin and all of the sub-basins including the Clear River watershed. **Figure 1** provides a graphic showing the entire Clear River watershed included in that study which comprises a total of 45.5 square miles.

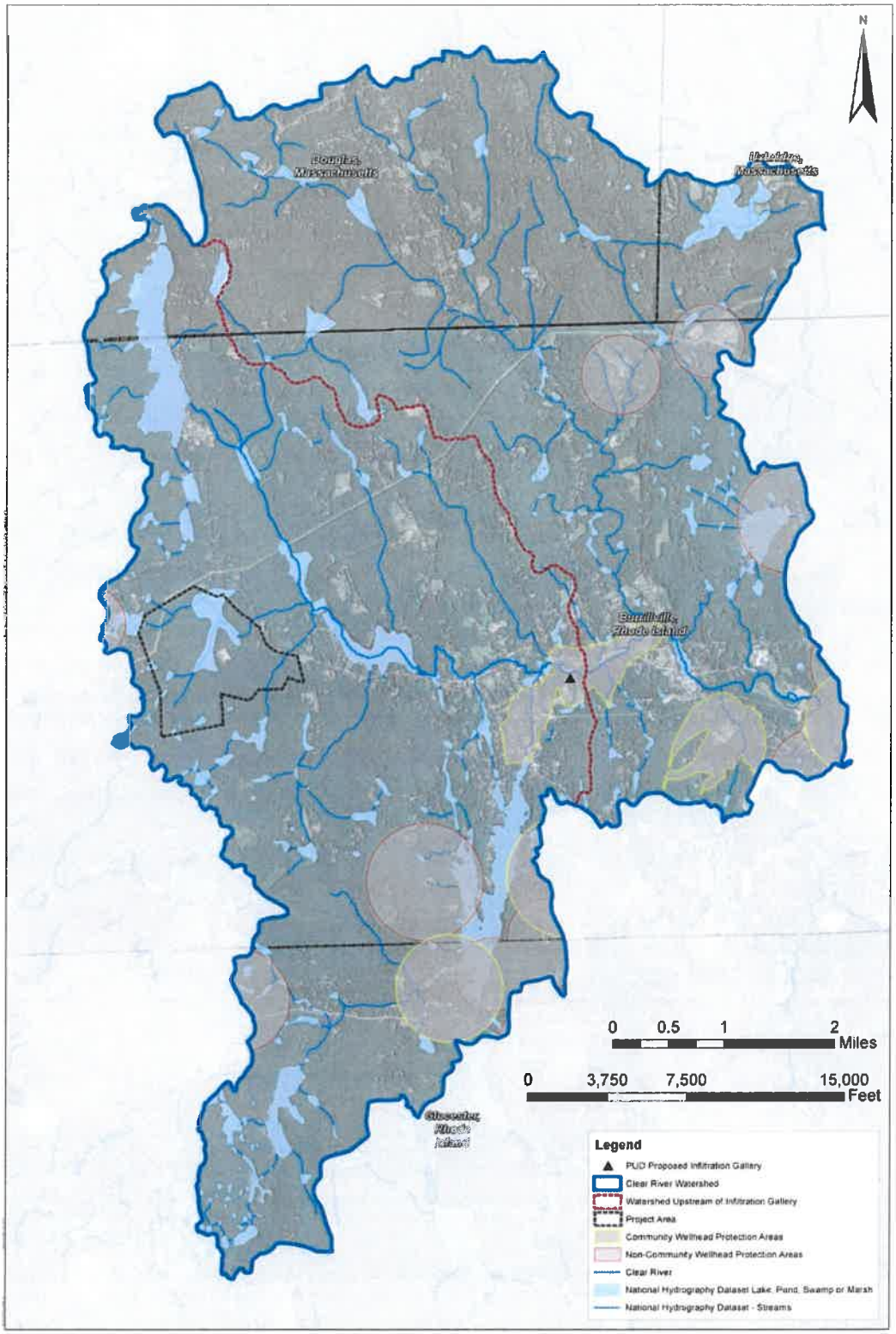


FIGURE 1 – CLEAR RIVER WATERSHED

The USGS Study addresses all water uses within the Clear River watershed including: domestic, commercial, industrial, and agricultural uses and provides an analysis of the amount of water use in each of these categories that is supplied by public-supply sources versus self-supply sources. The USGS Study also included domestic water use within the towns of Burrillville and Glocester (Rhode Island) and the communities of Douglas and Uxbridge (Massachusetts). The analysis of domestic water use by USGS also included water use by public-supply withdrawals, public-supply imports and exports and self-supply water use occurring primarily at residential properties. Self-supply water use is essentially residential and multi-residential properties that rely on their own groundwater wells. Where appropriate, based on accepted convention, self-supply residential water use is reduced in total to account for the fact that these residential properties discharge their domestic wastewater to on-site treatment systems which discharge water back to groundwater; thus the majority of self-supply water use returns approximately 85% of the total water withdrawn back to the Clear River watershed in the form of a groundwater discharge.

Table 2 below was developed from Figure 7 of the USGS Study which provides an estimate of water use within the Clear River watershed for commercial, industrial, agricultural and self-supply uses. Although the self-supply residential water use was adjusted to account for the fact that these residential users discharge 85% of their water use to groundwater via on-site domestic treatment systems, it was assumed that all commercial, industrial and agricultural uses were consumptive, that water used by these categories of users is consumed and not returned to the Clear River watershed.

Table 2
Self-Supply, Commercial, Industrial and Agricultural Water Use Clear River Water Shed

Water Use	Estimated Use (MGD)	Information Source
Self-Supply	0.06	Figure 7 USGS Study **
Commercial	0.122	Figure 7 USGS Study ***
Industrial	0.007	Figure 7 USGS Study
Agricultural	0.04	Figure 7 USGS Study

** Figure 7 Clear River Self-Supply X 0.15 to account for water use returned to groundwater
*** Figure 7 Clear River Commercial shows 2.501 MGD – 2.379 MGD import used by OSP = 0.122 MGD balance of Commercial
MGD – million gallons per day

Table 3
Public Water Supply Withdrawals in MGD

Users and Customers	FY13 Jul	FY13 Aug	FY13 Sep	FY13 Oct	FY13 Nov	FY13 Dec	FY13 Jan	FY13 Feb	FY13 Mar	FY13 Apr	FY13 May	FY13 Jun
Harrisville Fire District **	0.26	0.26	0.21	0.20	0.20	0.18	0.21	0.20	0.21	0.22	0.22	**0.23**
Pascoag UD – Purchased	0.30	0.27	0.24	0.24	0.24	0.23	0.22	0.24	0.23	0.25	0.29	**0.04**
Pascoag UD (well 5)	0.05	0.05	0.05	0.05	0.05	0.01	0.05	0.05	0.05	0.05	0.05	**0.04**
Total HFD & PUD	**0.61**	**0.58**	**0.50**	**0.49**	**0.49**	**0.42**	**0.48**	**0.49**	**0.49**	**0.52**	**0.56**	**0.31**

** Harrisville's water use is net sales to PUD
MGD – million gallons per day

Table 4
Public Water Supply Withdrawals in MGD

Users and Customers	FY15 Jul	FY15 Aug	FY15 Sep	FY15 Oct	FY15 Nov	FY15 Dec	FY15 Jan	FY15 Feb	FY15 Mar	FY15 Apr	FY15 May	FY15 Jun
Harrisville Fire District ***	0.55	0.51	0.49	0.43	0.41	0.39	0.39	0.41	0.44	0.42	0.56	0.61
Pascoag UD Purchased ***	-	-	-	-	-	-	-	-	-	-	-	-
Pascoag UD (well 5)	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03
Total HFD & PUD	**0.59**	**0.55**	**0.53**	**0.47**	**0.45**	**0.43**	**0.43**	**0.45**	**0.48**	**0.46**	**0.60**	**0.64**

*** The quantity of water shown for HFS in FY15 includes water purchased by PUD from HFS
MGD – million gallons per day

Table 3 and **Table 4** above present the monthly total water use reported by the Harrisville Fire and Pascoag Utility Districts for fiscal years 2013 and 2015, as provided by the RIWRB. Since the RIDEM Stream Depletion Methodology is focused on the months of July, August and September, a comparison of these three months finds that the month of July was the highest month of the three in Fiscal Year 2013 slighter higher than the month of July in Fiscal Year 2015. Based on this assessment of reported water

usage for these fiscal years, a total public-supplied water usage of 0.61 MGD seems appropriate to use for the summer daily water use by the Harrisville Fire and Pascoag Utility districts for months of July, August and September.

CREC also reviewed other available water use information reported by the Pascoag Utility District (PUD) and Harrisville Fire District (HFD) to verify the water use reported for FY 2013 and FY 2015 by the RIWRB. This review found that the annual average daily water use reported by HFD in its most recent WSSMP, which represented the combined water use of Harrisville Fire District and the Pascoag Utility District, was 0.51 MGD over the years of 2006 to 2012. Adding PUD's well #5 water use of 0.05 MGD brings the total average daily water use to 0.56 MGD for the years 2006 to 2012. From this review CREC determined that a value of 0.61 MGD average daily use for the month of July was a reasonable estimate for purposes of this stream depletion analysis.

CREC further reviewed PUD's 2015/2016 WSSMP to determine PUD's projections for growth as reported in that plan. PUD is projecting essentially no growth in its water use through 2034. CREC also reviewed HFD's most recent WSSMP filed in 2015 and finds that HFD total water use over the years from 2006 to 2015 has steadily declined from peaks in 2006/2007 with an annual daily average over the years of 2006 to 2015 of approximately 0.51 MGD. Review of Harrisville Fire District's WSSMP also identified that HFD has projected a growth rate of 5.8% for the years of 2010 to 2020 or an average annual growth rate of 0.58% per year. HFD also projects a growth rate of 4.28% for the years of 2020 to 2030 or an average annual growth rate of 0.43% per year.

From review of the above reports by HFD and PUD, CREC selected the month of July in Fiscal Year 2013 (0.61 MGD) as reasonably representative of the combined water use of the Harrisville Fire and Pascoag Utility Districts for that month and will project the daily water use of Pascoag Utility and Harrisville Fire District Utilities into the future at a maximum annual growth rate of 0.5%.

Table 5 below appeared in the CREC EFSB as Table 6.2-3 of that application filed on October 29, 2015. **Table 5** identifies the CREC Project's projected water use, evaporated losses and wastewater discharged to the Town of Burrillville sewer system.

Table 5
Daily Water Use, Wastewater Generated and Evaporative Water Use

Operating Season and Fuel	Water Use	Wastewater Generated	Consumptive Evaporative Loss
Summer *Firing Natural Gas*	**224,640 gpd**	**89,280 gpd**	**135,360 gpd**
Annual Average *Firing Natural Gas*	102,240 gpd	69,120 gpd	33,120 gpd
Winter *One CT Firing Gas other CT Firing Oil*	924,489 gpd	200,160 gpd	724,329 gpd

gpd – gallons per day

Since the EFSB filing in Oct 2015; CREC has reviewed its operational plans for the facility to identify water use reduction approaches that would further reduce water use during the most sensitive months of July, August and September, identified by RIDEM as the season of resident spawning, rearing & growth of herring and when shad out occurs in the Clear River. CREC accepts that water use during this season along the Clear River must be addressed by CREC's plans for operation of the CREC facility.

Table 6 below presents CREC's revised projected water use, wastewater generated and total consumptive evaporative water losses from the facility during the summer season. CREC has been able to further reduce its daily summer water use by an additional 26% over the water use estimate previously provided in the EFSB application, as shown in **Table 5** above.

Table 6			
Daily Water Use, Wastewater Generated and Evaporative Water Use GPD			
Operating Season and Fuel	**Water Use**	**Wastewater Generated**	**Consumptive Evaporative Loss**
Summer *Firing Natural Gas*	**165,600 gpd**	**77,760 gpd**	**87,840 gpd**
Annual Average *Firing Natural Gas*	102,240 gpd	69,120 gpd	33,120 gpd
Winter *One CT Firing Gas other CT Firing Oil*	924,489 gpd	200,160 gpd	724,329 gpd
gpd – gallons per day			

Table 7 below presents CREC's water use projections in millions of gallons per day which is the same units used in the water use estimates shown in **Tables 1 through 5** above.

Table 7			
Daily Water Use, Wastewater Generated and Evaporative Water Use in MGD			
Operating Season and Fuel	**Water Use**	**Wastewater Generated**	**Consumptive Evaporative Loss**
Summer *Firing Natural Gas*	**0.165 MGD**	**0.078 MGD**	**0.088 MGD**
Annual Average *Firing Natural Gas*	0.102 MGD	0.069 MGD	0.033 MGD
Winter *One CT Firing Gas other CT Firing Oil*	0.924 MGD	0.200 MGD	0.724 MGD
MGD – million gallons per day			

Table 8 below provides a summary of all of the water uses within the Clear River watershed based on the USGS Study, information provided by the RIWRB and WSSMPs as developed by the two major water utilities within the Clear River watershed. **Table 8** also includes CREC's summer daily water use projection of 0.165 MGD. To support the stream depletion analysis all of the water uses identified above will be applied to the July, August and September summer season for comparison to RIDEM's stream depletion criteria.

Table 8		
Projection of All Water Uses Within The Clear River Watershed		
Water Use	**Estimated Use (MGD)**	**Information Source**
Self-Supply	0.06	Table 2
Commercial	0.122	Table 2
Industrial	0.007	Table 2
Agricultural	0.04	Table 2
Harrisville Fire District	0.26	Table 3 (FY 2013)
Pascoag Utility District Purchased	0.30	Table 3 (FY 2013)
Pascoag Utility District Well #5	0.05	Table 3 (FY 2013)
Total Water Use of Above	**0.839**	**Total Existing Water Use**
CREC Daily Summer Use	0.165	Table 7
Total All Existing Uses & CREC	**1.00**	
** Figure 7 Clear River Self-Supply X 0.15 to account for water use returned to groundwater *** Figure 7 Clear River Commercial shows 2.501 MGD – 2.379 MGD import used by OSP = 0.122 MGD balance of Commercial		
MGD – millions of gallons per day		

To assess the potential impact of the CREC's water use on flows within the Clear River when combined with all other water uses within the watershed, the Project referred to the Rhode Island Streamflow Depletion Methodology (SDM) published by the RIDEM - Office of Water Resources dated May 13, 2010. Included in that methodology is the Monthly Allowable Streamflow Depletion criteria which is the acceptable percent reduction of the 7Q10 flow of a watershed based on its classification for designated

time periods throughout the year. The Clear River is classified as a Class 3 watershed according to RIDEM's classification system used in the SDM.

> According to the SDM, *"the Rhode Island SDM establishes the volume of water that can be extracted from a stream (whether as direct stream withdrawals or indirect groundwater withdrawals) while still leaving sufficient flow to maintain habitat conditions essential to a healthy aquatic ecosystem. The methodology maintains natural variations of streamflow and considers ecological sensitivity of each resource. It also incorporates the concept of balancing human and ecological needs for water by differentiating the degree of allowable depletions according to watershed characteristics and current human influences. This methodology will help quantity the amount of water that may be available for human uses by defining the degree to which streamflow may be altered and continue to sustain environmental resources"*

As noted in the SDM, the methodology allows for a simple calculation of allowable streamflow depletion by considering:

- Existing withdrawals and returns
- Locations of these withdrawals and returns within the watershed
- Time of year
- Watershed characteristics
- Natural low-flow conditions of the stream/river

Table IV-3 of the SDM reproduced here as Table 9 below provides the results of an SDM analysis completed by RIDEM for selected locations in northern Rhode Island, including the Clear River, which relied on specific USGS reports. The RIDEM SDM analysis identifies the Natural 7Q10 for the Clear River as 5.1 MGD and the Allowable Depletion for the Clear River as 1.5 MGD (30% of the Natural 7Q10; allowable summer depletion) for the months of July, August and September.

Table 9

Table IV-3 of RIDEM's Stream Depletion Methodology

Month	Bioperiod	Hydroperiod	Class 1	Class 2	Class 3	Class 4	Class 5
October	Spawning & Outmigration	Medium - Low	20%	40%	60%	80%	100%
November December	Overwinter	Medium	40%	80%	120%	160%	200%
January February	Overwinter & Channel Forming	High	60%	120%	**180%**	240%	300%
March April	Anadromous Spawning	High	60%	120%	180%	240%	300%
May	Anadromous Spawning	Medium	40%	80%	120%	160%	200%
June	Peak Resident Spawning	Medium-Low	20%	40%	60%	80%	100%
July, August, September	Resident Spawning Rearing & Growth Herring & Shad Out	Low	10%	20%	**30%**	40%	50%

According to the RIDEM methodology, the cumulative water uses within the Clear River watershed should be less than 1.5 MGD during July-September to be protective of the other natural functions of the river.

Although the Statewide Planning Program predicts a decline in the population of the Town of Burrillville, over the years of 2010 to 2040, CREC, in developing its Stream Depletion analyses for the Project, has

assumed growth in water use based on population projections in the range of -0.1% to 0.5% annual growth rate. This range of growth in population addresses the potential impact on water use should in fact the population of the Town of Burrillville increase at levels not predicted by the Statewide Planning Program. The range of -0.1% to 0.5% also covers the full range of population projections and associated water use identified in the most recent WSSMPs developed by both HFD and PUD.

CREC used the water use estimates presented in **Table 8** above and projected the current water use on the Clear River forward into the future by applying an annual growth rate in the range of -0.1% to 0.5%. To be conservative, although commercial, industrial and agricultural water use is not necessarily tied directly to population growth, CREC applied the annual growth of -0.1% to 0.5% to all of the water uses identified in **Table 8**, except the water use by the CREC project which will be flat over its expected operating life.

Figure 2 provides a graph projecting the total water use as identified in Table 8 for the years 2016 to 2064. **Figure 2** shows that CREC's total daily summer water use is expected to be 3.2% of the allowable stream depletion of 1.5 MGD. **Figure 2** also shows that the total water use by all of the identified uses on the Clear River watershed will not exceed the total allowable stream depletion of 1.5 MGD under all reasonably expected growth rates through 2064.

Figure 2
Stream Depletion Analysis 2013 - 2064 (July - September)
Clear River Watershed
All Existing Uses & CREC Summer Water Use Case C
For Annual Water Use Growth Rates Identified

Stream Depletion Analysis - PUD Sub-watershed

Based on discussions with RIDEM and representatives of the RIWRB, CREC has further reviewed stream depletion analysis to assess potential impacts to a sub-basin of the Clear River watershed which includes all current and historic PUD water sources (including PUD Well #3A) and their proposed infiltration gallery site.

Using information developed in **Table 8** above, for the Clear River watershed streamflow depletion analysis, water use estimates for self-supply, commercial, industrial and agricultural were adjusted in proportion to the ratio of the area of the Clear River watershed (45.5 square miles) to the area of the PUD Sub-watershed (23.8 square miles). As accepted convention CREC applied this ratio of 23.8/45.5 = 52% to the previously estimated self-supply, commercial, industrial and agricultural water use estimates in **Table 8** to develop the data presented in **Table 10** below.

Table 10
Self-Supply, Commercial, Industrial and Agricultural Water Use Clear River Watershed

Water Use	Estimated Use (MGD)	Information Source
Self-Supply	0.031	Figure 7 USGS Study **
Commercial	0.063	Figure 7 USGS Study ***
Industrial	0.004	Figure 7 USGS Study
Agricultural	0.021	Figure 7 USGS Study
MGD – million gallons per day		

Table 11 below is the same information previously provided in **Table 8** except that the water uses for self-supply, commercial, industrial and agricultural use are those identified in **Table 10** above and water uses by HFD are not included given that all of HFD's wells are located downstream of the PUD Sub-watershed. CREC has also assumed for this analysis that all water use by the Pascoag Utility District were derived from wells located within this PUD Sub-watershed and not purchased from the Harrisville Fire District.

Table 11 shows the estimated water uses for all uses within this PUD Sub-watershed including the CREC at its new summer water use demand of 0.165 MGD in the summer months of July, August and September.

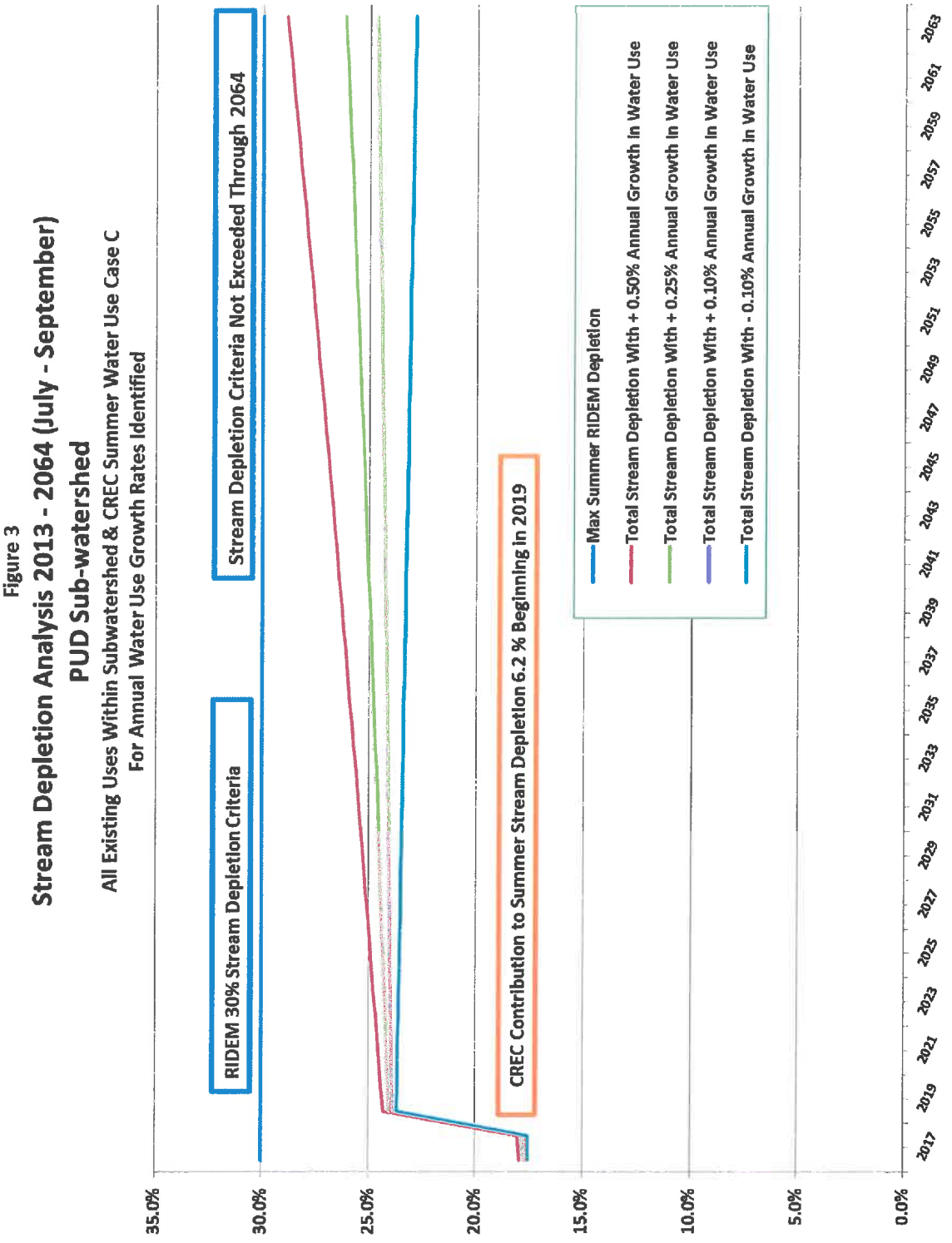
Table 11
Projection of All Water Uses Within The Clear River Watershed

Water Use	Estimated Use (MGD)	Information Source
Self-Supply	0.031	52% of the use from Table 2
Commercial	0.063	52% of the use from Table 2
Industrial	0.004	52% of the use from Table 2
Agricultural	0.021	52% of the use from Table 2
Pascoag Utility District Purchased	0.30	Table 3 (FY2013)
Pascoag Utility District Well #5	0.05	Table 3 (FY 2013)
Total Water Use of Above	**0.469**	**Total Existing Water Use**
CREC Daily Summer Use	0.165	Table 7
Total All Existing Uses & CREC	**0.634**	
** Figure 7 Clear River Self-Supply X 0.15 to account for water use returned to groundwater *** Figure 7 Clear River Commercial shows 2.501 MGD – 2.379 MGD import used by OSP = 0.122 MGD balance of Commercial		
MGD – million gallons per day		

CREC used the water use estimates presented in **Table 11** above and projected the current water use on the smaller PUD Sub-watershed forward into the future by applying an annual growth rate in the range of -0.1% to 0.5%. To be conservative, although commercial, industrial and agricultural water use is not necessarily tied directly to population growth, CREC applied the annual growth of -0.1% to 0.5% to all of the water uses identified in **Table 8**, except the water use by the CREC project which will be flat over its expected operating life.

Figure 3 provides a graph projecting the total water use as identified in Table 11 for the years of from 2016 to 2064 a 48 year projection into the future. **Figure 3** shows that CREC's total daily summer water use is expected to be 6.2% of the total stream depletion allowed of 0.785 MGD under this scenario. **Figure 3** also shows that the total water use by all of the identified uses on the Clear River water shed will not exceed the total allowed stream depletion criteria of 0.785 MGD under all reasonably expected growth rates through 2064.

Figure 3


Stream Depletion Analysis 2013 - 2064 (July - September)
PUD Sub-watershed
All Existing Uses Within Subwatershed & CREC Summer Water Use Case C
For Annual Water Use Growth Rates Identified
RIDEM 30% Stream Depletion Criteria
Stream Depletion Criteria Not Exceeded Through 2064
CREC Contribution to Summer Stream Depletion 6.2 % Beginning in 2019
Max Summer RIDEM Depletion
Total Stream Depletion With + 0.50% Annual Growth in Water Use
Total Stream Depletion With + 0.25% Annual Growth in Water Use
Total Stream Depletion With + 0.10% Annual Growth in Water Use
Total Stream Depletion With - 0.10% Annual Growth in Water Use
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
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Gas versus Distillate Oil Firing

The natural gas supply is delivered to New England via pipeline from outside of the region. Historically, expansion of the natural gas supply into the region was not pursued because natural gas was more expensive than distillate oil. With the major expansion in natural gas supply in the U.S., there has been a significant reduction in the price of natural gas, and as a result, many major gas pipeline companies are pursuing projects to expand their delivery capacity into the New England region. As a result, once these natural gas pipeline expansions are complete, the pressures on the regional natural gas distribution system that historically have forced the use of distillate oil firing will be lessened.

To put the above in perspective, over the last five years with the current limited pipeline capacity into the region, there has been an average of only five days per year when gas fired electric generation were asked to switch to distillate oil. Five days per year means, if the Project had existed for the last five years, that the Project would have fired natural gas 98.6% of the time, and as a result, the Project's daily water use and wastewater discharge would have been in the range of 102,240 gpd and 69,000 gpd respectively 98.6% of the year. Last winter the Project would not have been asked to fire distillate oil at all. Projecting forward with the natural gas pipeline expansions underway, the total annual days of Project oil firing should lessen with the increasing supplies of natural gas helping to reduce winter shortage of this critical fuel to the region.

The RIDEM SDM also includes guidance on the monthly allowable streamflow depletion as a percent of the 7Q10 for each watershed for the time period of January/February which coincides with the months the Project may be required to fire distillate oil should that be required in any winter season. For the January/February months, the RIDEM SDM methodology identifies (see Table 9 above) an Allowable Streamflow Depletion for Watershed Classification 3 of 180% of the 7Q10.

Given that RIDEM has determined that the Natural 7Q10 flow for the Clear River is 5.1 MGD and using the allowed January/February streamflow depletion of 180% of the 7Q10 finds that the January/February total allowable water withdrawal could be as high as 1.8 X 5.1 MD = 9.2 MGD.

Although the Project expects to be fired almost exclusively on natural gas, for those days when the Project is required to fire distillate oil, the Project's water demand will be approximately 0.9 MGD for each oil-fired day. In contrast, the water withdrawals to support the community are essentially the same in the winter as that in the summer, and from the above reports, will remain at approximately 1.0 MGD as shown in Table 8. Thus, the Project's need for an increased water supply in the winter (January/February) season could be readily sustained from the Clear River watershed within the SDM criteria.

Based on this conservative stream depletion analysis completed for the entire Clear River watershed, as well as the PUD Sub-watershed, the Project believes that the Clear River can support the water supply needs of the Project as well as the other water supply needs in the watershed well into the future.

Analysis of Well Capacities Versus Existing Water Use on Clear River
As part of the streamflow depletion analysis for the CREC Project, RIDEM requested that CREC explore allocation of the available streamflow depletion volume (1.5 MGD; July – September period) using the permitted capacity of the water sources for HFD and PUD. To support this evaluation, RIDEM provided copies of select well permits that were readily available in their files. To supplement this information, CREC also used listed well capacities in the following document.

- Maguire Group, Inc., 2008, Statewide Supplemental Water Supply Feasibility Assessment (SSWSFA), Phase II: Executive Summary, Report Presented to: Rhode Island Water Resources Board, August 2008. (Maguire Document)

Table 3 (Capacity of Water Suppliers) within the Maguire Document included information on pumping capacity of individual wells for both HFD and PUD. The following table provides a summary of the information compiled from the available well permits and the above document for existing water sources.

Table 12			
Water Supplier	**Water Source**	**Permitted or Listed Source Capacity (MGD)**	**Information Source**
HFD	Well #1	0.22	SSWSFA, 2008
	Well #2	0.16	SSWSFA, 2008
	Well #3	0.23	SSWSFA, 2008
	Wells #4, #5, #6	0.576	RIDEM Permit, Application No. 01-0172, 2001
HFD Total: 1.186 MGD			
PUD	Well #5	0.108	RIDEM Permit, Application No. 05-0567, 2006
PUD Total: 0.108 MGD			
HFD and PUD Combined Total: 1.294 MGD			

The Water Supply System Management Plan (WSSMP; 2015) for HFD notes that two additional water sources are being explored (Well #7 and a second site) in order to develop reserve capacity for maximum day demand and future growth of the community. The estimated yield of Well #7 is noted as 300 gpm in this document. The 2016 PUD WSSMP notes that a study is currently underway to explore new supply sources for the PUD in an effort to ease the reliance of the PUD on the HFD water system for its water supply. A Groundwater Withdrawal Permit Application and Request for Preliminary Determination (NWSI, 2015) has been submitted to the RIDEM by PUD for a pilot test at the proposed Clear River Infiltration Gallery. The maximum proposed withdrawal rate for this proposed source is 400 gpm.

This assessment of the streamflow depletion relative to permitted or listed water source capacities does not include the capacities for any proposed water sources for PUD and HFD since the actual capacities of these potential sources have yet to be determined or approved. However, in order to present a similar assessment to the streamflow depletion evaluations based on actual and projected water use, as presented earlier in this document, the estimated self-supplied domestic, commercial, industrial and agricultural water usage, as documented in the Estimated Water Use and Availability in the Lower Blackstone River Basin, Northern Rhode Island and South-Central Massachusetts, 1995-1999 (Barlow, 2003) was used. This total self-supplied usage is listed as 0.23 MGD (Figure 7 of that document). The following table summarizes the source capacities for HFD and PUD, as listed above, and the estimated self-supplied usage relative to the available streamflow depletion for the period July through September, as noted in the RIDEM streamflow depletion methodology.

Table 13		
Supplier or Water Use	**Existing Source Capacity (MGD)**	**Available Streamflow Depletion (MGD; July – September)**
HFD	1.186	
PUD	0.108	
Self-Supplied (Clear River)	0.23	
Total Public Supply Capacity and Self-Supplied Usage	1.524	
		1.5

It is clearly evident from Table 13 above, that the total permitted or stated capacity for existing HFD and PUD water sources plus the estimated self-supplied domestic, commercial, industrial and agricultural water use within the Clear River watershed already exceeds the available streamflow depletion for the July through September timeframe, when the least amount of water is available, in accordance with the RIDEM methodology. As noted above, this evaluation does not take into consideration any proposed (but as yet un-approved) water sources being developed by either HFD or PUD. The results of this evaluation make it clear that water allocation and associated assessments of streamflow depletion must be based on actual and projected water usage rather than source capacity. It is paramount that public water suppliers develop an adequate number of water sources with sufficient capacity to provide redundancy and operational flexibility to ensure that they can provide the necessary supply to their consumers. However, the allocation of available water resources cannot be based on this excess capacity but should be based

on actual water use, projected community growth (+/-) and re-allocated periodically to ensure a well-managed resource for the future.

References

C&E Engineering Partners, Inc. 2016. Pascoag Utility District Water Supply System Management Plan – Executive Summary. February 2016.

Maguire Group, Inc., 2008, Statewide Supplemental Water Supply Feasibility Assessment, Phase II: Executive Summary, Report Presented to: Rhode Island Water Resources Board, August 2008.

Northeast Water Solutions, Inc. 2015. RIDEM Groundwater Withdrawal Permit Application and Request for Preliminary Determination for Proposed Clear River Infiltration Gallery Pilot Test. Pascoag Utility District. April 14, 2015.

Rhode Island Department of Environmental Management. 2001. Permit to Alter Freshwater Wetlands, Eccleston Field Well Site, Application No. 01-0172.

RIDEM. 2006. Permit – Insignificant Alteration to Freshwater Wetlands, PUD Well #5. Application 05-0567.

RIDEM. 2010. Streamflow Depletion Methodology (Draft). Office of Water Resources. May 13, 2010.

Rhode Island Statewide Planning Program, Division of Planning. 2013. Rhode Island Population Projections. Technical Paper 162.

Rhode Island Water Resources Board. 2016. Summary of Clear River Basin Demand, Fiscal Years 2013 and 2015.

Stantec. 2015. Water Supply System Management Plan – Executive Summary. Harrisville Fire District, Burrillville, Rhode Island. July 17, 2015.

U.S. Geological Survey. 2003. Estimated Water Use and Availability in the Lower Blackstone River Basin, Northern Rhode Island and South-Central Massachusetts, 1995-1999. WRI Report 03-4190.

EXHIBIT C

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July 19, 2016

Via Federal Express/Electronic Mail

Joseph A. Bucci, P.E., Acting Administrator
Rhode Island Department of Transportation
Division of Highway & Bridge Maintenance
360 Lincoln Avenue
Warwick, RI 02888

Re: Invenergy Docket No. SB-2015-06

Dear Mr. Bucci:

On behalf of Invenergy Thermal Development LLC, enclosed please find a copy of the following report that provides further information that may be relevant to your Advisory Opinion for the Rhode Island Energy Facility Siting Board:

(1) "Traffic Impact Study for the Clear River Energy," prepared by McMahon Associates, dated May 2016.

This study was also submitted to the Town's Planning Board, as part of their review of the Invenergy Project.

Please let me know if you have any questions.

Very truly yours,

ALAN M. SHOER
ashoer@apslaw.com

Enclosures

cc: John Niland, Invenergy
Maureen Chlebek, McMahon Associates

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EXHIBIT D

ISSUE-1: ELECTROMAGNETIC FIELDS

RIDOH's Opinion: The RIDOH concluded in its draft advisory opinion that although the proposed addition to the electrical transmission line in the ROW to be used by CREC will increase the strength of magnetic fields therein and close by, the resulting intensity of potential human exposure is well within the limits set by international standard-setting agencies. The RIDOH further concluded that EMFs have not been demonstrated to create health risks – acute or otherwise – at the levels generated by the transmission lines in question. For this reason, the RIDOH concluded that the health impact of CREC attributable to EMFs is negligible, and may in fact be non-existent.

Invenergy's Response: Invenergy Thermal Development LLC ("Invenergy") agrees with the Rhode Island Department of Health's ("RIDOH") conclusion that the health impact of Clear River Energy Center ("CREC") attributable to electromagnetic fields ("EMFs") is negligible, and may in fact be non-existent.

Respondent: Michael Feinblatt, ESS Group, Inc.

Date: August 9, 2016

ISSUE-2: **NOISE**

RIDOH's Opinion: The Draft Advisory Opinion (Draft Opinion) references WHO Nighttime Noise Levels for Europe 1999. RIDOH states that the 40 dBA WHO nighttime Lowest Observed Adverse Effect Level of 40 dBA is an 8-hour average.

Invenergy's Response: The World Health Organization ("WHO") Night Noise Guidelines for Europe was published in 2009. In the 2009 WHO document the lowest effect level is defined as an 8-hour average, but also the annual average of the 8-hour nighttime averages. Thus, it is not appropriate to say that the CREC noise levels, as reported, are above this standard. The maximum noise level expected from the CREC is 43 dBA, but this assumes 100% of the time the facility is at full operation, 100% of the time atmospheric conditions are conducive to sound propagation, and that all residences are always downwind of the CREC. If Invenergy were to average all the nights of no or low operation, as well as the nights of upwind or poor propagation conditions, the annual average would be below 40 dBA. Thus, CREC would comply with the WHO standard.

Table 2 of RIDOH's Draft Opinion states that existing noise levels are 8-hour averages, but they are 20-minute averages. Thus, the statement that existing levels are above WHO's 40 dBA threshold is not necessarily accurate, because one needs to base such a statement on much longer-term measurements. Also, the Total column in Table 2 is not accurate either, because they are adding 20-minute sampled levels to longer term operational levels.

Respondent: Mike Hankard, Hankard Environmental, Inc.

Date: August 9, 2016

ISSUE-2: NOISE - CONTINUED

RIDOH's Opinion: RIDOH makes the comments that the CREC analysis did not take into account the additional noise that will be generated by the proposed additional turbine at Algonquin.

Invenergy Response: Invenergy's understanding is that Algonquin intends on upgrading its facility prior to the CREC coming online. The new compressors may be similar to the Solar turbine(s) installed as part of their previous upgrade, which are relatively quiet. Regardless, because the new compressor units will replace old reciprocating engine units, it can safely be assumed that the upgrades will improve the facility's efficiency and lower its noise emissions. Thus, if Invenergy were to factor in the noise level of the planned Algonquin facility upgrades overall noise levels would, if anything, be lower than they are today.

In Table 3, RIDOH takes existing noise levels, adds them to predicted construction noise levels, and then claims that impacts could occur based on EPA standards. This is not appropriate. Any negative reaction on the part of residents to construction noise should be judged on construction noise levels only, which at most are predicted to reach 53 dBA at one location. This level falls into the 'moderate annoyance' category of WHO. Construction-only noise levels at all other locations are less than 50 dBA, which is below EPA's annoyance threshold. Also, the existing noise levels in Table 3 are 20-minute samples, not 16-hour averages as the table's title suggests.

With regard to the Ldn analysis summarized in RIDOH Table 4: First, the CREC Ldn levels shown in RIDOH Table 4 are from the CREC Noise Level Evaluation Report. These levels have been adjusted to account for low ambient levels. This adjustment included adding of 5 to 10 dBA to the actual Ldn levels depending on location. For example, the un-adjusted Ldn at M1 is 50 dBA. Regardless, RIDOH's analysis of operational Ldn levels over-estimates impact. For example, at M1 outdoor nighttime CREC levels are predicted to be 43 dBA (Leq) at most, which would result in indoor levels of less than 30 dBA, which meets WHO and U.S. EPA standards for sleep interference. Daytime levels are also predicted to be, at most, 43 dBA, which will generally be inaudible compared to noise from traffic and the Algonquin station.

Thus, it does not seem appropriate for RIDOH to conclude that noise levels from the operation of the CREC are above a level that is

"associated with cognitive effects in some children." This is not at all in line with the health based standards that RIDOH cites.

Respondent: Mike Hankard, Hankard Environmental, Inc.

Date: August 9, 2016

ISSUE-2: NOISE - CONTINUED

RIDOH's Opinion: The Draft Opinion gives examples of how an intruding noise could be annoying because of time patterns, pitch, type of noise, and individual differences.

Invenergy's Response: The CREC will generally operate on a continuous basis, and all transient noise sources/events (i.e. start-up, venting, etc.) have been silenced to a significant degree. With regard to pitch, the frequency spectrum of the CREC will not contain any tones, and is of a broadband nature that is non-intrusive. It is understood that there is substantial variation in the perception of noise throughout the general population, but that is not within the control of CREC. Invenergy has designed the CREC facility such that its noise emissions are below that of the Town's stringent limits and below WHO and EPA noise level standards.

Respondent: Mike Hankard, Hankard Environmental, Inc.

Date: August 9, 2016

ISSUE-2: NOISE - CONTINUED

RIDOH's Opinion: The Draft Opinion states that the full impact of the CREC, in addition to the potential new turbine at Algonquin, is impossible to predict. The RIDOH recommended that Invenergy should work in conjunction with Algonquin to minimize neighborhood noise impacts to the extent possible and that such actions should include, but not be limited to, consideration of equipment and operational modifications, sound proofing of impacted residences and, if indicated, the purchase of properties subject to noise levels that cause serious annoyance and/or sleep disruption.

Invenergy's Response: Invenergy and its consultants do not agree that noise impacts from the combined operation of the upgraded Algonquin station and the CREC are impossible to predict. As discussed above, it is our expectation that the upgraded Algonquin station will be quieter than the current station, thus the CREC and Algonquin combined levels will be less than currently estimated. Predicted CREC noise levels are: (1) below the Town's very stringent standard, (2) below WHO sleep interference and daytime annoyance standards, and (3) will be inaudible during the daytime compared to existing noise levels.

CREC has implemented significant equipment and operational design features to limit sound levels so that they comply with the Town's zoning ordinance. *See* Michael Theriault Acoustics, Inc., "Transient Operation Noise Level Evaluation for the Clear River Energy Center," March 2016 (filed with the Energy Facility Siting Board on August 2, 2016, supplementing Invenergy's response to the Energy Facility Siting Board's Data Request No. 1-1); Hessler Associates, Inc., "Invenergy Clear River Energy Center Facility Noise and Community Noise Impacts," May 26, 2016 (available at http://www.burrillville.org/sites/burrillvilleri/files/uploads/05-26-16_noise_report.pdf).

Invenergy does not anticipate the need for additional mitigation measures such as soundproofing or property acquisition.

Respondent: Mike Hankard, Hankard, Inc.
Michael Feinblatt, ESS Group, Inc.

Date: August 9, 2016

ISSUE-3: DRINKING WATER QUALITY

RIDOH's Opinion: The RIDOH recommended that efforts be made to protect source water for nearby wells, including private wells and Wallum Lake, from contamination through each phase of the project, including construction and operation.

The RIDOH also stated that the MTBE-contaminated wells cannot be used to provide water to the plant's offices. Should the power plant use well water on-premises for human use and consumption, and its offices serve more than 25 persons more than 60 days out of the year, then the plant will have to obtain a public water system license through RIDOH's Center for Drinking Water Quality.

Invenergy's Response: Invenergy will be required to implement numerous controls and best management practices both during construction and operation through the stormwater and water quality permitting processes to ensure the protection of source water from contamination.

Invenergy will obtain a RIPDES Construction General Permit, which will require the development and implementation of a Soil Erosion and Sediment Control Plan which will include extensive pollution prevention practices throughout all construction activities.

The Stormwater Management Plan for the Project will include stormwater control systems and best management practices to fully comply with the Rhode Island Stormwater Design and Installation Standards Manual during operation. An Operation and Maintenance Plan will also be developed for post-construction monitoring and maintenance of stormwater control systems.

Invenergy will obtain a RIPDES Multi-Sector General Permit for Industrial Activities, which will require the development of a Stormwater Pollution Prevention Plan.

All chemicals will be stored on-site in sealed containers in designated areas equipped with secondary containment systems as required. All plant employees responsible for chemical storage and handling will be trained to handle chemicals responsibly and in accordance with applicable regulations. A routine inspection and maintenance program will be established to ensure that all containment and spill control equipment at the facility is in proper working order at all times. A Spill

Prevention, Control, and Countermeasures Plan will also be developed for the storage of fuel oil at the facility.

Invenergy is proposing an on-site well to provide potable water for plant personnel during operation (post-construction). The well will not service more than 25 people more than 60 days out of the year so a public water system license will not be required. Invenergy will submit an Application for Source Approval to the RIDOH for approval of the potable well as a non-community, non-transient water system.

Respondent: Michael Feinblatt, ESS Group, Inc.

Date: August 9, 2016

ISSUE-4: AIR POLLUTION

RIDOH's Opinion: The RIDOH concludes that although there is epidemiological evidence that health effects may be associated with exposures to NO_2 at levels below the NAAQS, no other health-based standard is available for evaluating impacts of that pollutant at this time. The RIDOH also notes that although states are allowed to adopt more stringent standards than the NAAQS, no states have promulgated a short-term NO_2 standard that is more stringent than the NAAQS. The RIDOH further notes that standards are needed to make informed, consistent regulatory decisions.

Invenergy's Response: Invenergy agrees with the RIDOH that standards are needed to make informed, consistent regulatory decisions. The EPA has set the primary NAAQS to provide public health protection, including protecting the health of sensitive populations such as asthmatics, children, and the elderly. The secondary NAAQS provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. As required by the Clean Air Act, EPA periodically conducts thorough and extensive reviews of the science upon which the NAAQS are based and the NAAQS themselves to ensure they reflect the latest scientific evidence and understanding.

The NAAQS are the standards which are in place nationally to help regulatory agencies make informed, consistent decisions on whether air quality is being protected. The air quality impact analysis completed for the CREC Project has demonstrated that the emissions from the facility, when combined with the emissions from other nearby sources and existing background concentrations, will not cause or contribute to an exceedance of the NAAQS. This ensures that during the operation of the facility, the concentrations of criteria pollutants in the ambient air will remain at levels which are protective of public health and public welfare.

RIDEM has adopted the NAAQS and has also established Acceptable Ambient Levels ("AALs") for air toxic contaminants. The AALs are based on established inhalation exposure limits and represent the concentration of a substance that a facility may contribute to the ambient air at or beyond its property line.

The air quality impact analysis completed for the CREC Project has demonstrated that the emissions from the facility will not cause an exceedance of an AAL at or beyond the property line. This ensures that during the operation of the facility, the concentrations of air toxic

compounds from the facility beyond the property line will be at levels which will not result in adverse health effects upon exposure.

A Health Risk Assessment has also been completed for the Project which demonstrated compliance with all of the health based risk guidelines established by RIDEM for the cumulative impact of all air toxics emitted that have the potential to effect the respiratory system. *See* Invenergy's Responses to the Conservation Law Foundation's Data Request No. 1-2, filed with the Energy Facility Siting Board on January 28, 2016.

The completion of these required impact studies has demonstrated that the CREC will meet all of the established health-based air quality standards for which it is subject, and in doing so it has been demonstrated that air quality will be maintained at levels which have been deemed to be safe for public health and the public welfare during its operation.

Respondent: Michael Feinblatt, ESS Group, Inc.

Date: August 9, 2016

ISSUE-5: ASTHMA

RIDOH's Opinion: The RIDOH states that without an in depth research study or comprehensive Health Impact Assessment, it is not possible to say definitively that emissions from the CREC facility will have no impact on asthma rates or on the wellbeing of nearby individuals with asthma. The RIDOH recommends that if air quality modeling shows air quality impacts as far as Woonsocket, additional steps should be taken to examine, mitigate, and/or prevent those impacts. The RIDOH also recommends that, if the CREC is to be built, all possible steps be taken to reduce harmful emissions and mitigate the health effects of emissions, with special consideration to individuals with asthma or otherwise impaired respiratory health.

Invenergy's Response: The EPA has set the primary NAAQS to provide public health protection, including protecting the health of sensitive populations such as asthmatics, children, and the elderly. The secondary NAAQS provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

The NAAQS are the standards which are in place nationally to help regulatory agencies make informed, consistent decisions on whether air quality is being protected. The air quality impact analysis completed for the CREC Project has demonstrated that the emissions from the facility, when combined with the emissions from other nearby sources and existing background concentrations, will not cause or contribute to an exceedance of the NAAQS. This ensures that during the operation of the facility, the concentrations of criteria pollutants in the ambient air will remain at levels which are protective of public health and public welfare, including for asthmatics.

A Health Risk Assessment has also been completed for the Project which demonstrated compliance with all of the health based risk guidelines established by RIDEM for the cumulative impact of all air toxics emitted that have the potential to effect the respiratory system. *See* Invenergy's Responses to the Conservation Law Foundation's Data Request No. 1-2, filed with the Energy Facility Siting Board on January 28, 2016.

The completion of these required impact studies have demonstrated that the CREC will meet all of the established health-based air quality standards for which it is subject, and in doing so it has been

demonstrated that air quality will be maintained at levels which have been deemed to be safe for public health and the public welfare during its operation, including for asthmatics.

The air quality impact studies completed for the Project extended out 50 kilometers in every direction. The City of Woonsocket was included in each of the studies conducted. The results of the studies showed that the air quality impacts from the Project in Woonsocket will be insignificant, as defined by the EPA.

The Project is required to implement the Best Available Control Technology ("BACT") for all pollutants to be emitted and the Lowest Achievable Emission Rate ("LAER") for NOx and VOC emissions. Particulate matter ("PM") emissions can contribute to asthma triggers. NOx and VOC are precursors to ozone. Ozone, also known as smog, is created by the chemical interaction of NOx, VOC and sunlight. Human exposure to ozone can cause both acute or short-term and chronic or long-term health effects, primarily to vulnerable populations including, children, the elderly, and people with preexisting respiratory and cardiovascular health conditions. With the implementation of BACT for PM emissions and LAER for NOx, and VOC emissions from the Facility, all possible steps have been taken to reduce the emissions of the pollutants which can be harmful to individuals with asthma or otherwise impaired respiratory health.

The analysis included in the EFSB Application for the Project detailed the significant regional air emissions decreases which will occur as a result of the CREC displacing the operation of older, dirtier generating resources. These effects will occur both regionally and locally and will result in air quality improvements over time. The public health benefits associated with an improvement in air quality due to reduced air pollutant emissions have been proven to lead to fewer cases of asthma and other respiratory illnesses in areas where ambient air quality is improved.

Respondent: Michael Feinblatt, ESS Group, Inc.

Date: August 9, 2016

ISSUE-6: EMERGENCY RESPONSE AND PREVENTION

RIDOH's Opinion: The RIDOH recommended that Invenergy establish written procedures to maintain the integrity of the ammonia storage tank containment area as well as written emergency procedures. The RIDOH also recommended that the ALOHA model be run assuming a failure of the passive controls to be used to reduce the evaporation rate, and if the distance to the toxic end-point extends off-site, appropriate planning should be implemented. The RIDOH also recommended that Invenergy coordinate with local emergency responders.

The RIDOH recommended that Invenergy put in place written procedures for the inspection, testing, and maintenance of all equipment related to the storage of hydrogen at the facility. All staff involved with the storage, transfer and use of hydrogen should have the appropriate training. Coordination with local emergency responders is essential.

The RIDOH recommended that all potential hazards be evaluated in a facility-wide RMP-like hazard analysis.

Invenergy's Response: Aqueous ammonia for the gas turbine selective catalytic reduction ("SCR") systems will be stored at 19% concentration in a 40,000 gallon aboveground storage tank. The EPA requires facilities that store 10,000 pounds or more of aqueous ammonia which is stored at a concentration of 20% or greater to conduct an off-site consequence analysis and prepare a Risk Management Plan (RMP) to prevent and mitigate the consequences of accidental releases. The RMP does not apply to aqueous ammonia stored at a concentration of less than 20% in any amount.

The Facility will not be subject to the RMP requirements, but will be subject to the EPA's General Duty Clause, which requires facilities to access hazards, prevent accidental releases, and minimize the consequences of any releases which occur. Consistent with the General Duty Clause, Invenergy is proposing the following to ensure the safe storage of aqueous ammonia on-site, and to minimize the consequences in the unlikely event that an accidental ammonia release were to occur:

- The ammonia storage tank and its associated transfer pumps and piping will be enclosed within a concrete containment area designed to contain up to 110% of the capacity of the storage tank.

- The containment area will be filled with a passive evaporative control system designed to reduce the exposed surface area of any ammonia within the containment system by at least 90%.
- The containment area will be equipped with ammonia sensors to alert Facility operators of any system leaks.
- Procedures will be established and documented for the periodic maintenance, inspection and testing of the containment area, the leak detection system, and the evaporative control system.
- Emergency procedures will be established and documented, including the training of staff in the procedures and the proper use of the personal protective equipment which would be required during a release.
- Invenergy will coordinate with local emergency responders and the nearest hazardous materials response team to establish emergency procedures in the unlikely event of a release of ammonia from the Facility.

Acute Exposure Guideline Levels ("AEGLs") are used by emergency planners and responders as guidance in dealing with accidental releases of chemicals into the air. AEGLs are expressed as concentrations of airborne chemicals at which health effects may occur and are designed to protect the elderly and children, as well as other individuals who may be susceptible.

AEGL levels are dictated by the severity of the toxic effects caused by the exposure, as follows:

- AEGL-1 (Level 1): Notable discomfort, irritation, or certain asymptomatic non-sensory effects. Any effects are not disabling and are transient and reversible upon cessation of exposure.
- AEGL-2 (Level 2): Irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape.
- AEGL-3 (Level 3): Life-threatening health effects or death.

Airborne concentrations below the AEGL-1 are exposure levels which could produce mild, transient, odor, taste, and sensory irritation. These effects are non-disabling, allowing for safe evacuation from any impacted areas.

For ammonia, the 1-hour AEGL concentrations have been defined as follows:

- AEGL-1: 30 parts per million (ppm)
- AEGL-2: 160 ppm
- AEGL-3: 1,100 ppm

Although the CREC is not subject the Risk Management Program, a worst-case accidental release scenario has been evaluated to assess the potential consequences in the extremely unlikely event of a release of the full 40,000 gallons of 19% aqueous ammonia into the containment area. This assessment was performed using the Area Locations of Hazardous Atmospheres ("ALOHA") Model developed by the EPA and the National Oceanic and Atmospheric Administration and included as a prescribed technique under the Risk Management Program. It was completed in accordance with the procedures contained in the EPA's "Risk Management Program Guidance for Offsite Consequence Analysis".

The analysis was first conducted without and then with the proposed passive evaporative control system. The results of the worst-case accidental release scenario assessment completed for the CREC aqueous ammonia storage tank are shown in both tabular and graphical form in **Exhibit 1**. Based on the ALOHA modeling results, the furthest downwind distances from the ammonia storage tank at which the in-air ammonia concentrations would exceed each of the ammonia AEGL levels during a worst-case accidental release are as follows:

AEGL Level	w/o Evaporative Controls	w/ Evaporative Controls
AEGL-1	389 yards	121 yards
AEGL-2	174 yards	53 yards
AEGL-3	64 yards	20 yards

As shown on the figures in **Exhibit 1**, all of the areas in which the in-air ammonia concentration would exceed the AEGL-1 level are within the Project and/or Spectra site, which is private property not accessible to the general public. Emergency procedures will be established to evacuate Algonquin (Spectra) and CREC personnel from these areas in the event of a release and to require emergency personnel to utilize the

proper personal protective equipment before entering these areas until the released ammonia has been properly recovered.

The in-air ammonia concentrations in all areas beyond the Spectra site during a worst-case accidental release would be below the AEGL-1 level, thus resulting in no adverse health effects upon exposure. Although there would be no public health risk, Invenergy will work with local emergency responders to establish emergency procedures in the unlikely event that there is an accidental release of ammonia from the facility.

Invenergy will put in place written procedures for the periodic inspection, testing, and maintenance of all equipment, controls, and sensors related to the storage and use of hydrogen at the facility. All staff involved with the storage, transfer and use of hydrogen will be provided with the appropriate training in procedures necessary to ensure the safe maintenance and operation of the hydrogen system, including emergency procedures. Periodic refresher training of this training will be provided to the relevant staff. Invenergy will coordinate with local emergency responders, including the nearest hazardous materials response team. Invenergy will provide them with all relevant information regarding the quantity of hydrogen stored on site and its location, transport routes and procedures.

Although not subject to the RMP requirements, Invenergy will conduct a facility-wide RMP-like hazard analysis to ensure full compliance with the General Duty Clause. This assessment will include the ammonia, hydrogen, and fuel oil storage and delivery systems, the storage and transportation of hazardous waste generated at the facility, and the transport and use of natural gas at the facility or in the pipeline or related infrastructure.

Respondent: Michael Feinblatt, ESS Group, Inc.

Date: August 9, 2016

ISSUE-7: CLIMATE CHANGE AND HEALTH

RIDOH's Opinion: The RIDOH supports the Resilient Rhode Island Act's goals.

Invenergy's Response: Invenergy also supports the Resilient Rhode Island Act's (the "Act") goals. The Resilient Rhode Island Act establishes a goal to achieve greenhouse gas reductions from 1990 levels by specified target dates. It states that consideration of the impacts of climate change be within the powers and duties of all state agencies.

The State has established the RI Executive Climate Change Coordinating Council ("EC4") which is tasked with working with RIDEM to determine the impacts from CREC on meeting the goals of the Act and RI State Energy Policy.

The average CO_2 emission rate from the CREC will be at least 48 percent less than the average CO_2 emission rate in Rhode Island from power generation in 1990 and at least 10 percent less than the average CO_2 emission rate in Rhode Island from power generation in 2014 on a pound per megawatt-hour basis. Furthermore CREC will displace other regional power generation and in so doing will reduce regional GHG emissions. Reductions in the GHG emissions from the power generation sector such as these will play a crucial role in Rhode Island meeting the goals set forth by the Resilient Rhode Island Act.

Respondent: Michael Feinblatt, ESS Group, Inc.

Date: August 9, 2016

EXHIBIT 1

ALOHA RESULTS- WITHOUT PASSIVE CONTROLS (CONTAINMENT SURFACE AREA NOT REDUCED)
secondary containment area: 2443.6 sq ft

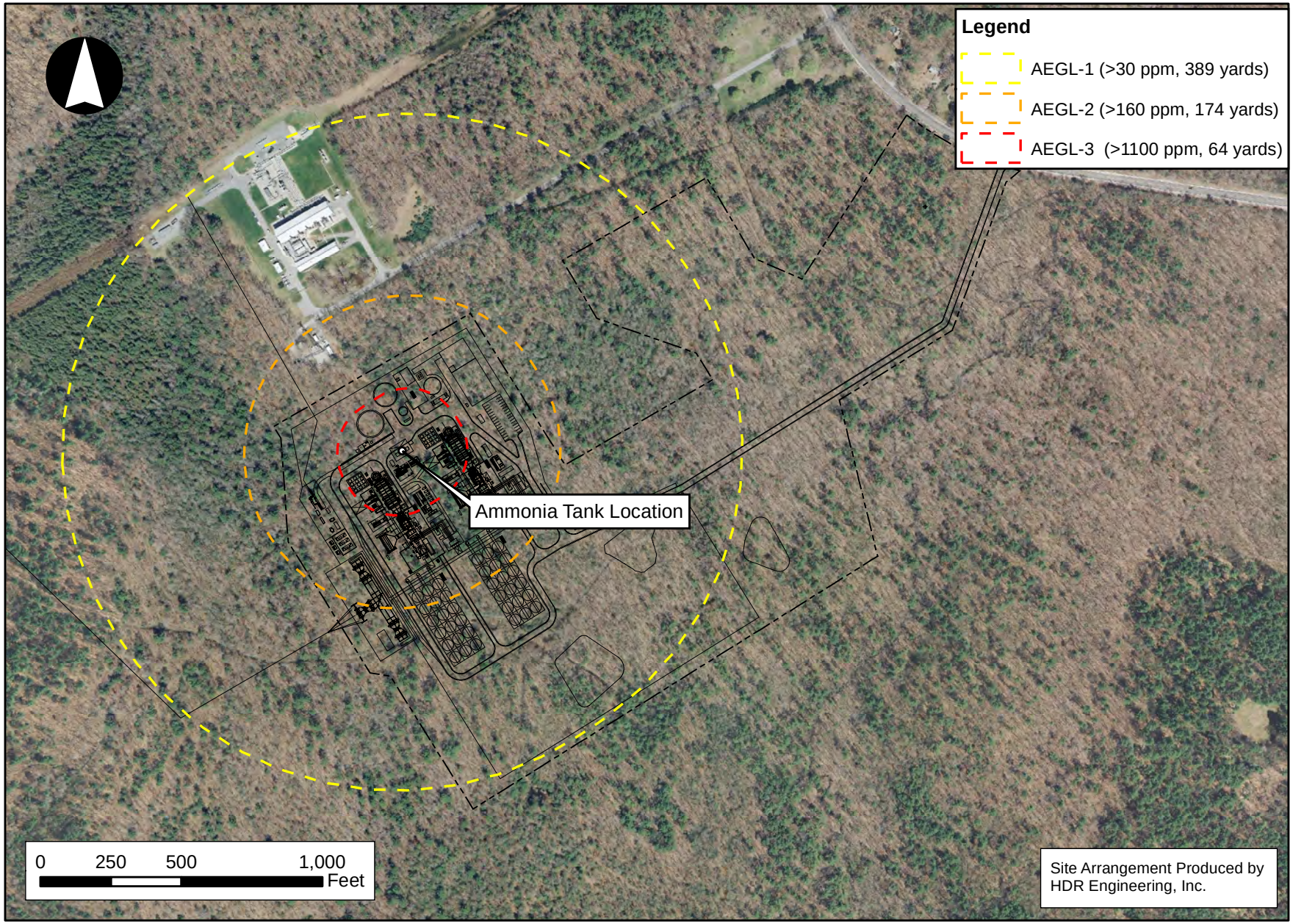
SITE DATA:
Location: BURRILLVILLE, RHODE ISLAND
Building Air Exchanges Per Hour: 0.47 (unsheltered single storied)
Time: July 18, 2016 1545 hours EDT (using computer's clock)

CHEMICAL DATA:
Chemical Name: AQUEOUS AMMONIA
Solution Strength: 19% (by weight)
Ambient Boiling Point: 120.3° F
Partial Pressure at Ambient Temperature: 0.63 atm
Ambient Saturation Concentration: 644,698 ppm or 64.5%
Hazardous Component: AMMONIA
CAS Number: 7664-41-7 Molecular Weight: 17.03 g/mol
AEGL-1 (60 min): 30 ppm AEGL-2 (60 min): 160 ppm AEGL-3 (60 min): 1100 ppm
IDLH: 300 ppm LEL: 150000 ppm UEL: 280000 ppm

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: 0.63 meters/second from s at 3 meters
Ground Roughness: urban or forest Cloud Cover: 5 tenths
Air Temperature: 104° F Stability Class: A
No Inversion Height Relative Humidity: 65%

SOURCE STRENGTH:
Evaporating Puddle (Note: chemical is flammable)
Puddle Area: 2443.6 square feet Puddle Volume: 40000 gallons
Ground Type: Default soil Ground Temperature: 104° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 40.1 pounds/min
(averaged over a minute or more)
Total Amount Hazardous Component Released: 2,151 pounds

THREAT ZONE:
Model Run: Gaussian
Red : 64 yards --- (1100 ppm = AEGL-3 [60 min])
Orange: 174 yards --- (160 ppm = AEGL-2 [60 min])
Yellow: 389 yards --- (30 ppm = AEGL-1 [60 min])



Area Locations of Hazardous Atmospheres (ALOHA) Model Result

Ammonia Off-Site Consequences Analysis
without Passive Evaporative Controls

ALOHA RESULTS- WITH PASSIVE CONTROLS (CONTAINMENT SURFACE AREA REDUCED BY 90%)

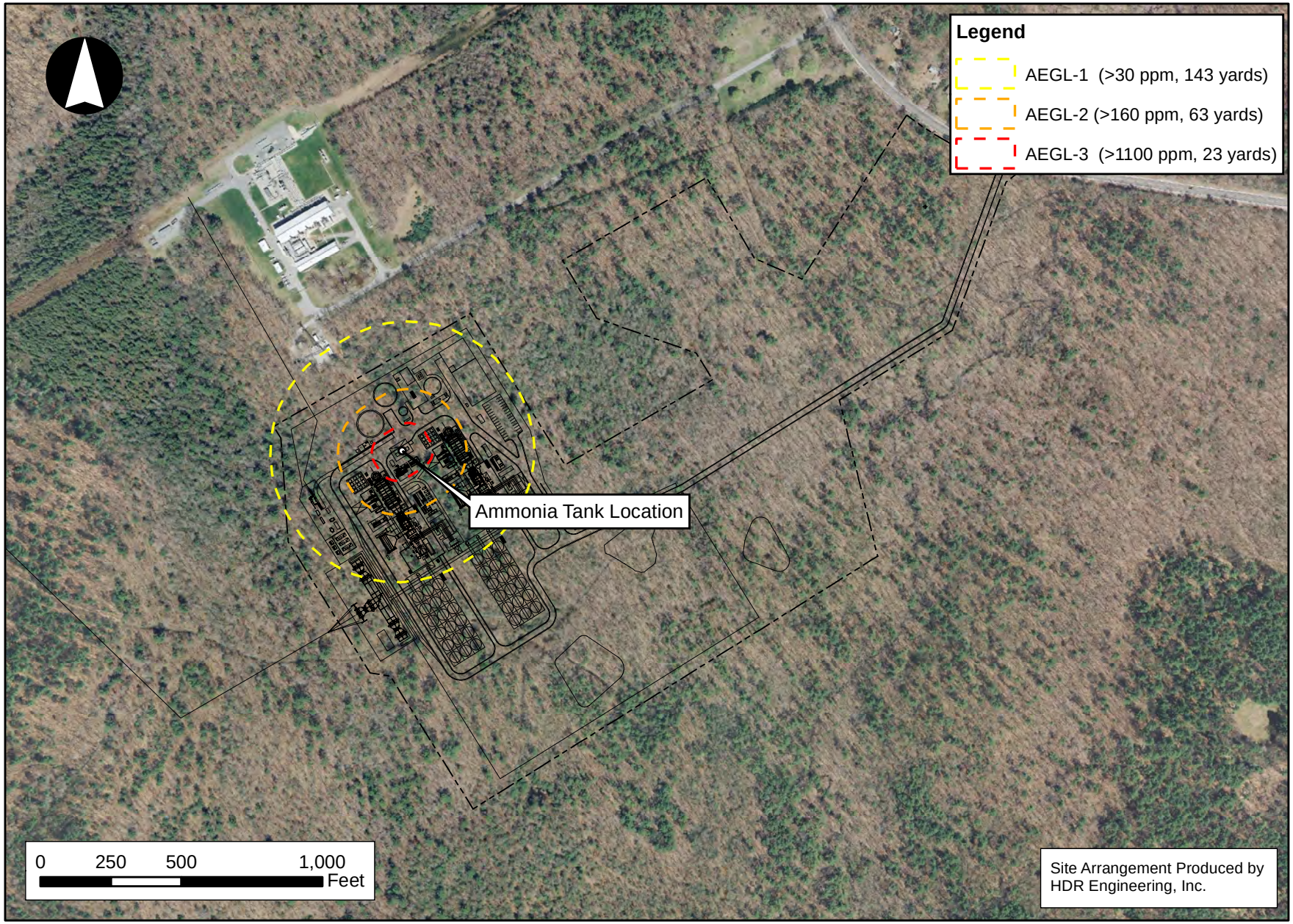
SITE DATA:
Location: BURRILLVILLE, RHODE ISLAND
Building Air Exchanges Per Hour: 0.47 (unsheltered single storied)
Time: July 18, 2016 1545 hours EDT (using computer's clock)

CHEMICAL DATA:
Chemical Name: AQUEOUS AMMONIA
Solution Strength: 19% (by weight)
Ambient Boiling Point: 120.3° F
Partial Pressure at Ambient Temperature: 0.63 atm
Ambient Saturation Concentration: 644,698 ppm or 64.5%
Hazardous Component: AMMONIA
CAS Number: 7664-41-7 Molecular Weight: 17.03 g/mol
AEGL-1 (60 min): 30 ppm AEGL-2 (60 min): 160 ppm AEGL-3 (60 min): 1100 ppm
IDLH: 300 ppm LEL: 150000 ppm UEL: 280000 ppm

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: 0.63 meters/second from s at 3 meters
Ground Roughness: urban or forest Cloud Cover: 5 tenths
Air Temperature: 104° F Stability Class: A
No Inversion Height Relative Humidity: 65%

SOURCE STRENGTH:
Evaporating Puddle (Note: chemical is flammable)
Puddle Area: 244.36 square feet Puddle Volume: 40000 gallons
Ground Type: Default soil Ground Temperature: 104° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 5.01 pounds/min
(averaged over a minute or more)
Total Amount Hazardous Component Released: 295 pounds

THREAT ZONE:
Model Run: Gaussian
Red : 23 yards --- (1100 ppm = AEGL-3 [60 min])
Note: Threat zone was not drawn because effects of near-field patchiness
make dispersion predictions less reliable for short distances.
Orange: 63 yards --- (160 ppm = AEGL-2 [60 min])
Yellow: 143 yards --- (30 ppm = AEGL-1 [60 min])



Area Locations of Hazardous Atmospheres (ALOHA) Model Result

Ammonia Off-Site Consequences Analysis
with Passive Evaporative Controls