SOAH DOCKET NO. 582-15-2082
TCEQ DOCKET NO. 2015-0069-MSW

APPLICATION OF 130 ENVIRONMENTAL PARK, LLC FOR PROPOSED PERMIT NO. 2383	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

TJFA, LP's & ENVIRONMENTAL PROTECTION IN THE INTEREST OF CALDWELL COUNTY'S (and ALIGNED INDIVIDUAL PROTESTANTS') CLOSING ARGUMENTS

TO THE HONORABLE ADMINISTRATIVE LAW JUDGES KERRIE JO QUALTROUGH AND CASEY BELL:

Protestants TJFA, L.P. ("TJFA") and Environmental Protection in the Interest of Caldwell County ("EPICC") and aligned individual Protestants (collectively, "Protestants") hereby submit their Closing Arguments. Protestants urge the Honorable ALJs to deny the application for a landfill permit submitted by Applicant 130 Environmental Park, LLC (Applicant). For support, Protestants respectfully offer the following:

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I. Introduction

Green Group Holdings, LLC decided to enter the solid waste disposal business in Texas. So, it formed 130 Environmental Park LLC (Applicant), found a vacant site in Caldwell County, and decided to pursue a landfill permit. What it failed to do, however, is any due diligence. It failed to conduct an adequate site selection investigation. And so the site it has chosen for its proposed landfill is replete with complications that render the site a risky and inappropriate one for a landfill. Among the features that render this site deficient for a landfill are the presence of multiple floodplains, the presence of a high-hazard dam and reservoir, complex geology with numerous preferential migration pathways, lack of an access road into the proposed permit boundary, lack of water supply, and a nearby dangerous intersection.

Instead of searching for another, more appropriate site, however, Applicant instead chose to disregard the risks that its proposed landfill presents to human health and the environment. Its unusual facility boundary, for instance, (unsuccessfully) attempts to avoid the floodplain, but it fails to account for inevitable changes to the floodplain, as a result of increasing extreme climate events. The application simply ignores the high-hazard dam, providing no analysis of potential impacts caused by the proposed landfill and the increased drainage. The subsurface characterization presents an overly simplistic description of the geology, reflecting a uniform fat clay with no fractures and limited secondary features, which is inconsistent with publicly available sources and subsequent subsurface investigations. The access road is not included in the application at all. There is no plan for a reliable water supply. And Applicant simply ignored the requirement that it obtain county approval for development in or near a floodplain.

Applicant then presented witnesses who hyperbolically declared the site as ideal for a landfill; some went as far as stating that the site is the best ever encountered for a proposed landfill in Texas. But some of these same witnesses also conveniently discarded all evidence that might actually support, or dispute, these implausible descriptions of the site. This, alone, warrants denial of the requested permit.

Ultimately, Applicant displayed a serious disrespect for applicable TCEQ requirements and for professional and legal standards, and a disrespect for the Caldwell County community and its health and environment. This began when Applicant submitted an application for a transfer station, for the purpose of attempting to establish a preexisting land use that would insulate it from any subsequent landfill siting ordinance that the County might enact. Notably, Applicant has taken no steps to actually construct this transfer station. Applicant then hastily submitted to TCEQ Parts I and II of its landfill application, even though it never intended to pursue a bifurcated permitting process. Again, its objective was to have a portion of an application on file at TCEQ, in an attempt to avoid enforcement of any subsequently enacted landfill siting ordinance. And, in spite of numerous requests to do so by the Executive Director (ED), Applicant never pursued County approval for development of its proposed landfill facility and access road. Applicant did not even coordinate with Plum Creek Conservation District (PCCD) regarding impacts to the high hazard dam and reservoir on the proposed landfill site.

It's the Applicant's disregard for TCEQ's rules that warrant denial of its application. Applicant simply failed to present evidence and failed to satisfy its burden of proof regarding a number of applicable TCEQ regulations.

Applicant's belated attempts to correct this error by collecting additional data regarding its subsurface characterization do not remedy the defects in its application. Applicant spoliated evidence, and it should suffer the consequences for doing so. In any event, as with various other issues, the evidence presented by Applicant does not support its subsurface characterization and does not satisfy TCEQ's rules. For the reasons described below, Applicant's request for a landfill permit must be denied.

II. ISSUES RAISED

1. <u>Sufficiency of Property Rights</u>

By this issue, Protestants contest whether the Applicant has demonstrated sufficient property rights and necessary approvals that are necessary for a landfill permit. TCEQ Rule 330.67 instructs that it is the responsibility of the owner or operator of a landfill to possess or acquire a sufficient interest in or right to use the access route to the proposed landfill site.[1] Further, the owner or operator shall retain the right of entry to the facility until the end of the post-closure period.[2] And finally, the rule requires an owner or operator to obtain any permits or approvals that may be required by local agencies, such as for building construction.[3]

Because Applicant has not included an access road in its application, and an access road is not included in the draft permit, Applicant has failed to demonstrate that it has complied with this rule. Moreover, because Applicant has failed to obtain all necessary approval from local agencies, this further warrants denial of its application for failure to comply with this rule. Finally, because Applicant failed to coordinate with Plum Creek Conservation District regarding use of its reservoir and impacts on PCCD's easement rights, Applicant failed to fully address the requirements of this rule.

These issues are discussed, in more detail, in later sections of this brief, and those arguments will not be repeated here.

2. **Evidence of Competency & 3. Compliance History**

Without question, Applicant has failed to demonstrate competency as required by TCEQ rules. Competency is a fundamental requirement of this Application. Some of the relevant competency requirements are set forth in section TCEQ Rule 330.59.

Who is the Applicant?

Section 330.59(e) requires the Applicant to "list all persons having over a 20% ownership in the proposed facility." Section 330.59(f)(4) requires identification of the "names of principals and supervisors of the owner's or operator's organization … together with previous affiliations with other organizations engaged in solid waste activities." Information including compliance histories regarding other solid waste sites in Texas or elsewhere in which the owner, operator, or other affiliated entities have had a direct financial interest or operated are also required to be contained in the Application.[4]

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[1] 30 Tex. Admin. Code § 330.67(a).
[2] *Id.* (b).
[3] *Id.* (d).
[4] 30 Tex. Admin. Code § 330.59(1), (2) & (6).

Here, Applicant not only failed to meet any of these requirements, but also exhibited a lack of competence in even knowing the answers to these questions. The Application fails to identify "all persons having over a 20% ownership in the proposed facility" as required by Rule 330.59(e). As far as the paperwork goes, 130 Environmental Park is a wholly-owned subsidiary of Green Group Holdings,[5] and franchise tax forms filed with the State of Texas identify Herzog Contracting Corp. and Phillips Management & Service, Inc. each having more than a 20% interest in Green Group Holdings.[6] At a minimum this should have been disclosed in the Application.

In fact, 130 EP is a fiction; these corporate formalities are ignored and 130 EP does not have an existence separate from Green Group Holdings. Nor is it clear that Green Group Holdings has an existence separate from its two owners. The only thing that Ernest Kaufmann and David Green (principles of 130 EP) knew for sure when they were deposed in this case is that Kaufmann was president of both 130 EP and Green Group Holdings.[7] Kaufmann testified that he and David Green are the internal management for Green Group Holdings.[8] David Green testified that he is a Vice President of Green Group Holdings, but he doesn't know who the other officers are.[9] Kaufmann's testimony and the Texas franchise tax forms do not identify Green as an officer but identify Art Van Meter and Patrick McMullan as the only two other officers of Green Group Holdings besides Kaufmann.[10]

Regarding 130 EP, Green did not know whether he is an officer of 130EP[11] and did not know whether there are any officers.[12] Kaufmann testified there are no officers.[13]

Further, Kaufmann did not know whether Green Group Holdings is an LLC or a corporation.[14] Exhibit 20 to Protestants' Exhibit 11, the Kaufmann depositions, is an

[5] Ex. P-11, Kaufmann at 14 & 192; Ex. P-10, Green at 32.
[6] Ex. P-11, Kaufmann Exhibit 19.
[7] Ex. P-11, Kaufmann testimony at 13; Ex. P-10, Green at 30 & 33.
[8] Ex. P-10, Green at pp. 80-81.
[9] Ex. P-10, Green at pp. 32-33.
[10] Ex. P-11, Kaufmann exhibit 19
[11] Ex. P-10, Green at p. 26.
[12] Ex. P-10, Green at p. 30.
[13] Ex. P-11, Kaufmann at p. 13.

"operating agreement" between Green Group Holding and 130 EP, with Kaufmann signing the agreement on behalf of both parties.[15] But Mr. Kaufmann could not even identify who the parties to this agreement are.[16] He did not know who drafted the operating agreement or who represented GGH in the deal.[17] Either Kaufmann, Green, 130 EP, and Green Group Holdings are too incompetent to be able to answer the basic questions regarding competency required by TCEQ rules, or these corporate forms are mere fictions to disguise the true principals behind 130 EP – which itself is evidence of incompetency and the lack of truthful, accurate and complete information submitted with the Application.

TCEQ Rule 330.59(f)(4) requires the Applicant to name "the principals and supervisors of the owner's or operator's organization." Yet, Applicant failed to identify any principals including Green Group Holding.[18] All the principals disclosed on the Texas franchise tax forms should also have been disclosed here.[19] Besides Kaufmann, the "supervisors" and "staff" named in the Application are Thad Owings and Oscar Allen. Yet Kaufmann testified that 130 EP has no employees, and neither of these two individuals are officers either.[20] There is no existing evidence of a competent staff to own and operate the landfill.

The principals' and supervisors' affiliations with other solid waste activities, experience with landfills and licenses, should have been detailed, and all solid waste sites in which either the owner or operator has a direct financial interest or any Texas sites that an owner or operator here has owned or operated should have been disclosed.[21] None of this was disclosed.

Kaufmann was President of the Pintail operation in Waller County where the TCEQ Executive Director rejected the Application due to lack of compliance with TCEQ

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[14] Ex. P-11, Kaufmann at p. 14.
[15] Ex. P-11, Kaufmann at 194, lines 1-10.
[16] Ex. P-11, Kaufmann at 193, line 8-25.
[17] Ex. P-11, Kaufmann at 194, lines 17-25.
[18] *See* 130EP-1, p. 50.
[19] *See* Ex. P-11, Kaufmann exhibit 19.
[20] Ex. P-11, Kaufmann at 21.
[21] 30 Tex. Admin. Code § 330.59(f)(1), (2), & (4).

rules. Green Group Holdings, Herzog Contracting Corp., and Phillips Management & Service are principals of the Pintail landfill also. And they have ownership or affiliation with at least nine other landfill sites or operations that were not disclosed in the Application.[22]

The Application and Applicant clearly violates the foundational requirement of accuracy and completeness, and on that basis alone should be rejected.

Lack of Competency

Kerry D. Maroney P.E. is the only principal of Biggs & Mathews, Inc.[23] and was the lead engineer who sealed parts 1, 2, Appendex 2K, part 3 and part 4 of the Application.[24] Yet according to Maroney, he was not the engineer of record until after the Application was filed in September of 2013.[25] And Mr. Maroney did little investigation of some of the most basic facts and knew little about some aspects of the Application that he had sealed.

Mr. Maroney prepared the competency section of the Application and was its sponsoring witness.[26] In the Application, 130EP-1, page 49, Mr. Maroney asserts: "No other person or entity has over a 20 percent ownership of the proposed facility." Maroney knew Green Group Holdings owned 130 EP and was its parent.[27] But he testified that he did not know whether Green Group Holdings had "more than a 20 percent stake in 130 Environmental Park LLC" and testified that he did not know whether it was not his responsibility to find out and put that information in the Application.[28]

Even after Maroney received a notice of deficiency from TCEQ complaining that he had not provided information regarding the individuals who owned more than 20 percent of 130 EP, he still did not make any effort to learn the identity of these

[22] Ex. P-11, Kaufmann at p. 192, lines 6-24.
[23] Tr. V. 9, p. 2060 lines 14-25 & 2061, line1.
[24] Tr. V. 1, p. 145, lines 20-25 and 146, lines 1-7.
[25] Tr. Vol. 1, page 157, lines 1-5.
[26] Tr. Vol. 1, page 160, lines 8-10.
[27] Tr. Vol. 1, page 160, lines 21-23 & page 161, lines 2-4.
[28] Tr. Vol. 1, page 161, lines 5-10 & 162, lines 13-16.

individuals.[29] He made no effort to provide a list of all individuals who owned more than 20% of 130 EP and still does not know the answer to this inquiry.[30]

To determine who the principals and supervisors of 130 EP were as required by Rule 330.59(f)(4), Maroney simply asked Kaufmann for the information. [31] After eliciting this testimony about Kaufmann at the hearing, Protestants asked Maroney the following:

> Q. So, did you basically just copy and paste the information he gave you?
>
> A. I put in the application what he provided us as being assuming, and I relied on him that he was knowledgeable and understood the --- … to provide me that information to put in the Application.[32]

Maroney's unwillingness to take responsibility for knowing who owned 130 EP and who its principals and supervisors were made it difficult for him to seal something that complied with Rule 330.59(f)(1), (2), (4), & (6) regarding other landfill interests of 130 EP owns, principals and supervisors.

Maroney testified that he did not know whether Green Group Holdings operated any other solid waste facilities. But this is not the first MSW landfill application that GGH has attempted to get approved in Texas. Green Group's first permit application in Texas, known as the Pintail Landfill (MSW Permit No. 2377), demonstrated the incompetence of this Applicant in putting together thorough application materials that are protective of human health and the environment. In its permitting process, the Pintail landfill permit application was issued numerous notices of deficiencies, and countless hours of staff assistance before being declared technically complete. Even after the technical review and initiation of the hearing process, Pintail's application still contained remaining deficiencies, due to unrecorded levels of seasonal groundwater. Indeed,

[29] Tr. V. 9, p. 2074, lines 5-25 & p. 2075, lines 1-11.
[30] Tr. V. 9, p. 2074, lines 5-24 & p. 2075, lines 1-11.
[31] Tr. V. 9, p. 2075, lines 24-25 & 2076, lines 1-3, 12-18 & 2077, lines 1-5.
[32] Tr. V. 9, p. 2077, lines 10-14 & 17-18.

Applicant's own consultant, John Michael Snyder, stated via affidavit that the design of the landfill did not comply with TCEQ rules, and therefore it would not be adequately protective of human health and the environment.[33]

After seeking a remand to revise the application again, the TCEQ's Executive Director held the applicant accountable to regulatory compliance, stating that, to avoid providing limitless application revisions, the Executive Director decided to return the application as deficient. In doing so, the Executive Director noted:

> Over the last four years, the agency has worked closely with your consultants to ensure that the technical portion of the application meets all necessary requirements. Specifically, the TCEQ staff has spent over 1,300 hours reviewing the Pintail application and found over 400 instances of deficiencies, resulting in four formal notices of technical deficiencies. All of these were then addressed before the draft permit was prepared. Despite this significant effort, the application is still deficient.
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> * * *
>
> For the integrity of the municipal solid waste landfill program, this is not where we want to be at this point in the process. The application has already undergone extensive technical review, a draft permit has been prepared, and the matter has been referred to the State Office of Administrative Hearings. Itis at this point that momentous site information is discovered which significantly alters the approach to the design of the facility. Based on these facts, we do not think an application amendment is appropriate and the only reasonable course available is to return the application as deficient.

This is relevant to the issue of competency. Demonstrating prior history with environmental permits is required by the TCEQ when submitting an application. 130 Environmental Park purposefully did not identify the Pintail landfill as an entity in its application, because doing so would bring attention to the eventual fate of this landfill, which in this case would not reflect positively on this Applicant's ability to prepare thorough application materials.

[33] Ex. P-31.

For landfill applications, a demonstration of competency is essential. It has serious implications for public health and the environment and for the function of TCEQ and public participation. This permit should be denied because of the Applicant's complete failure to demonstrate competency and comply with the Texas Administrative Code regulations related to competency.

4. Land Use Compatibility

Applicant has failed to adequately evaluate, verify, and consider the impacts of the proposed landfill on surrounding land uses. An applicant for a landfill permit bears the responsibility of providing the Commission with sufficient and accurate information to conduct a land use compatibility analysis. At the contested-case hearing, an applicant bears the burden of proof on all issues, including land-use compatibility.

Here, Applicant conducted an incomplete investigation of surrounding land uses and failed to provide the Executive Director with all information that would be relevant to a land use compatibility analysis. At the hearing, Applicant expert demonstrated that he failed to obtain sufficient information to even formulate an accurate and complete understanding of the unique characteristics of the area that undoubtedly bear on land use compatibility. In short, Applicant failed to satisfy its burden on the issue of land use compatibility.

Applicable Rule

The language in TCEQ Rule 330.61(h) makes clear that a primary concern of the rule is that "the use of any land for a municipal solid waste facility not adversely impact human health or the environment."[34] To address this concern, the rule requires an applicant to provide information regarding "the likely impacts of the facility on cities, communities, groups of property owners, or individuals" by analyzing a number of factors, including "the compatibility of land use" and "other factors associated with the public interest."[35] The rule is written in broad language, allowing for an applicant's

[34] 30 Tex. Admin. Code § 330.61(h).

[35] 30 Tex. Admin. Code § 330.61(h).

inclusion of any type of information that may assist the Executive Director in conducting a land use compatibility analysis.

The applicant is required to provide certain information listed in Rule 330.61(h)(1) through (6) to assist the Commission in evaluating the impact of the site on the surrounding area. The list of information that an applicant must include in its application is not an exhaustive one. It is intended as a "framework," or starting point. It is the goal, or the purpose, that is served by the inclusion of this information that must be the focus of a land use compatibility analysis, and any information that assists the Executive Director in achieving this goal must be included in the application:

In other words, an applicant does not satisfy its burden by simply listing the information required by the rule. The list of information that is included in the rule is intended to "assist the commission" in evaluating the impacts of the proposed landfill. But, ultimately, an applicant bears the burden of analyzing the compatibility of land uses and other factors associated with the public interest.

Evidence Presented Regarding Land Use Compatibility

John Worrall testified on behalf of Applicant regarding land use compatibility. What is clear from his testimony, however, is that he looked only at the specific factors that are enumerated in TCEQ land use rule, 330.61(h), but did not consider any site-specific conditions in his analysis.

For instance, he did not take into account Plum Creek Conservation District's reliance on its easement for water storage, and how the proposed landfill might impact the District's use of the reservoir.

Mr. Worrall also failed to consider the existence of the County's landfill siting ordinance. Yet, he acknowledged that the existence of a landfill siting ordinance reflects the desires of the county regarding where they believe landfills should be sited within the county.[36]

Mr. Worrall testified that the proposed landfill site is ideal, in his opinion, because of the access it provides to major transportation routes. But he also acknowledged that he

[36] Tr. V. 1, p. 67, ll. 14-18.

was not at all familiar with traffic risks and accidents that have occurred along this stretch of US 183. He looked at no traffic reports. And he knew of no anecdotal information regarding the history of traffic collisions along this stretch of the highway. He acknowledged that, had he known that the highway was prone to accidents, then he would have reconsidered his "hyperbolic" statement regarding land use compatibility.[37]

Mr. Worrall also did not consider how the presence of a floodplain might impact site access issues, particularly during times of emergency.[38]

Worrall also justified his land use compatibility finding based on the "organic" design of the landfill. But he later admitted that the proposed height of the landfill—about 170 feet high—is taller than any buildings within five miles of the proposed landfill site.[39] The only structures he could think of, near the proposed landfill site, that reached similar heights were power lines and maybe antennae.[40]

Mr. Worrall further failed to consider, in his land use analysis, the recently constructed Brewer Strawn Elementary School, which is only about 3 miles from the proposed landfill site.[41] According to Mr. Worrall, he did not need to consider it, because it was beyond a mile from the proposed site. Yet, he acknowledged that schools are usually located in areas where growth is anticipated.[42] In fact, to some degree, schools spur residential growth, though they do not tend to attract industrial growth.[43]

Another reason Mr. Worrall did not consider the newly constructed elementary school is because he does not quite understand the concern of some people and school districts regarding conflicts between landfill traffic and bus routes. In Mr. Worrall's opinion, both are ubiquitous "hallmarks of Western civilization," and so he has "never quite understood that particular concern."[44] Further, Mr. Worrall testified that no matter

[37] Tr. V. 1, p. 74, ll. 1-19.
[38] Tr. V. 1, p. 77, ll. 8-16 & p. 78, ll. 12-15.
[39] Tr. V. 1, p. 84, ll. 7-19.
[40] Tr. V. 1, p. 84, ll. 19-25; p. 85, l. 3.
[41] Tr. V. 1, p. 90, ll. 7-22.
[42] Tr. V. 1, p. 90, ll. 23-25.
[43] Tr. V. 1, p. 91, ll. 1-11.
[44] Tr. V. 1, p. 73, ll. 9-15.

how many residences existed within a mile of a landfill, this would not impact his opinion regarding land use compatibility.[45]

In sum, the testimony and evidence offered by Applicant regarding land use compatibility provided no real analysis at all. Mr. Worrall simply provided the specific data that is required by TCEQ's Rule 330.61(h). But he did not take into account any of the site specific conditions that exist at this site. And even if he had, it is not clear that *any* land use, proximate to the site, would have persuaded him to declare the proposed landfill incompatible. Mr. Worrall was most impressed by the access of the site to a major transportation route and by the "organic" shape of the proposed landfill. These factors, however, do not constitute a true analysis of land use compatibility. Because Mr. Worrall failed to take into account other site-specific conditions and proximate land uses, his testimony cannot support a land use compatibility finding.

5. Transportation and Traffic

Summary of Argument

Applicant has failed to demonstrate compliance with TCEQ's traffic requirements. TCEQ rules require information regarding the adequacy and availability of all roads that will be used to access a landfill site, and data on the volume of background traffic and site-generated traffic in the area of a site. In performing its analysis of the nearby roadway network, Applicant wholly ignored a private roadway that will be used for a substantial distance by all vehicles accessing the landfill site from US 183N. Furthermore, Applicant did not perform a sufficient analysis of all intersections that will potentially be used to access the site. In the case of the intersection of FM 1185 and US Highway 183N, the site-generated traffic would be travelling through an intersection where many fatalities have already occurred, and any accidents caused by the site-generated traffic at this intersection are likely to also be severe, as acknowledged by Applicant's own expert.

In light of 130EP's failure to fully evaluate the availability and adequacy of the nearby roadway network, and in light of the dangers posed by the addition of more heavy

[45] Trv. V. 1, p. 140, ll. 2-6.

traffic to these roadways, 130EP has not met its burden to demonstrate that roadways used to access the facility will be adequate and available.

Applicable Rules

TCEQ Rule 330.61 requires an applicant to submit certain information regarding transportation and the roadway network surrounding a landfill. In addition to certain other information required, TCEQ rules provide that an applicant shall:

> (1) provide data on the availability and adequacy of roads that the owner or operator will use to access the site;
> (2) provide data on the volume of vehicular traffic on access roads within one mile of the proposed facility, both existing and expected, during the expected life of the proposed facility;
> (3) project the volume of traffic expected to be generated by the facility on the access roads within one mile of the proposed facility[.][46]

This information is important in evaluating whether the roadway network in the area of a landfill has the capacity to accommodate a landfill.

<u>130EP has not evaluated all relevant access roads.</u>

TCEQ rules require an analysis of the availability and adequacy of all roads that will be used to access the site, without limitation on whether the roads are public or private. Likewise, data is required regarding the volume of vehicular traffic on access roads during the life of the facility, as well as the volume of traffic to be generated by the facility without regard to whether the access roads are public or private. In this case, a private road will be used to access the facility, which has been wholly ignored in Applicant's traffic analysis.

Applicant relied primarily on the Traffic Impact Analysis contained within the Application in its attempt to demonstrate compliance with the TCEQ regulations. That Traffic Impact Analysis was conducted by John Denholm, III, P.E.[47] As he acknowledged during the hearing on the merits, Mr. Denholm testified in deposition that he was not an expert on TCEQ regulations, and during the hearing on the merits, he testified that he was

[46] 30 Tex. Admin. Code § 330.61.
[47] Tr. V. 1, pp. 244-245.

offering no opinion as to whether the roadways used to access the facility are "adequate and available" as those terms are used in the TCEQ regulations.[48]

The TIA completed by Mr. Denholm examined two roadways: State Highway 130 and US Highway 183.[49] At hearing, Mr. Denholm acknowledged that he made no evaluation of the private roadway within the property boundary either from a traffic standpoint or from a structural integrity standpoint.[50] Mr. Denholm does not know if the entrance road will be graded, and has not seen a design of that roadway.[51] This roadway crosses the 100-year floodplain at several locations.[52] Yet, Mr. Denholm made no analysis to determine how flooding events would impact the adequacy and availability of this roadway.

The TIA also contains no projection of the background traffic that may be present on this access road as a result of other development that could occur within the private property, although Mr. Denholm did acknowledge that such development would create additional traffic.[53] Although the Applicant relies on a review of other roadways by the Texas Department of Transportation ("TxDOT"), in the case of the entrance road, TxDOT has made no review of the roadway.[54] As depicted in the Application, the Facility will make use of the entire length of this roadway, which extends for more than a mile.[55]

Because he did not include any analysis of the private access road, Mr. Denholm made no evaluation of the availability of this access road for the life of the facility. The access road is on private property, and the record fails to establish that the owner of the property in the future will have an obligation to continue to allow Applicant use of that roadway; nor does the record establish an obligation on the part of the private landowner to maintain the roadway.

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48 Tr. V. 1, p. 246.
49 Ex. 130 EP-1, p. 166.
50 Tr. V. 1, p. 247.
51 Tr. V. 1, p. 254.
52 Ex. 130EP-1, p. 140.
53 Tr. V. 2, p. 280.
54 Tr. V. 2, p. 306.
55 Ex. 130EP-1, p. 131.

By failing to provide data on the adequacy and availability of the private roadway used to access the facility, and by failing to perform any analysis of projected traffic volumes on this roadway, the Applicant has not demonstrated compliance with the permitting requirements of TCEQ Rule 330.61(i). **In order to ensure the availability of the entrance road, the permit boundary should be expanded to fully include this entrance road.**

<u>130EP has not adequately evaluated all relevant intersections.</u>

The TIA performed by Mr. Denholm evaluated two intersections: (1) the intersection of FM1185 with US Highway 183N, and (2) the intersection of Schuelke Road and US highway 183N.[56] Through its submission of a driveway permit to TxDOT, the Applicant also provided some analysis of the intersection between the private entrance road and US Highway 183N.[57] However, TCEQ's enforcement jurisdiction is limited beyond the permit boundary, and a private road could also be constructed within the property that would connect to Farm to Market Road 1185.[58] There is nothing to prevent this from occurring. Mr. Denholm made no evaluation of this potential intersection between the private access road and FM 1185; nor did he perform an evaluation of FM 1185 in this area if the entrance road were to connect to FM 1185 rather than US HWY 183N.

The failure to include the access road within the permit boundary presents a number of issues, including issues related to the enforceability of certain permit and regulatory requirements. There are at least 3 off-site (that is, outside of the permit boundary) potential access routes to get to the permit boundary entry point. And yet, these were not made a part of any traffic analysis. For instance, it is not inconceivable that Hohmanville Road could potentially be used as an access route to the proposed landfill. This is a small road that was not designed to handle heavy traffic. In addition, this road would need substantial dust emission controls and mud removal controls. But

[56] Ex. 130EP-1, p. 166.
[57] Ex. 130EP-1, p. 188.
[58] Tr. V. 1, p. 248.

because it is not contemplated as an access route in the permit application or the draft permit, this road has not been evaluated. More importantly, it is not clear what type of enforcement authority, if any, TCEQ would have regarding use of this road to access the permit boundary entry point.

Even if traffic accessing the facility moves as applicant predicts, virtually all of the traffic entering the facility will travel through the intersection of FM1185 with US Highway 183N.[59] Due to the high speeds on US HWY 183, Mr. Denholm noted that traffic accidents at this intersection are likely to be severe when they occur.[60] In fact, fatal crashes have previously occurred at this intersection, although Mr. Denholm does not consider those fatalities to be a relevant concern in his analysis.[61] Unfortunately, the daughter of EPICC member Byron Friedrich was killed in a car accident on US Highway 183 near this intersection.[62] In addition, school buses make use of this intersection.[63] In light of the dangerous conditions at this intersection, it is inappropriate to authorize the addition of the significant volumes of heavy traffic that will result from the operation of the proposed landfill.

Furthermore, located within a mile of the site is the on ramp to SH 130.[64] This on-ramp will be utilized by heavy vehicles leaving the landfill site.[65] Those vehicles will need to go from a dead stop at the facility entrance road, and accelerate while crossing two lanes of traffic in order to reach the on-ramp.[66] This will create a conflicting traffic pattern that could lead to an accident.[67] In doing so, cars on the access road will potentially be within the "blind spot" of these heavy vehicles.[68] The heavy vehicles have

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[59] Ex. 130EP-1, p. 88.
[60] Tr. V. 1, pp. 269-270.
[61] Tr. V. 1, p. 243.
[62] Ex. P-2, p. 9-10.
[63] Ex. P-3, p. 7.
[64] Ex. 130EP-1, p. 167.
[65] Tr. V. 1, pp. 249-250.
[66] Tr. V. 1, pp. 267-268.
[67] Tr. V. 1, p. 268.
[68] Tr. V. 1, p. 268.

poorer operating capabilities than passenger cars on the roadway.[69] Yet, Mr. Denholm made no evaluation of this intersection.[70]

In short, Mr. Denholm's traffic analysis was deficient for his failure to adequately consider the dangerous conditions at the intersection of FM1185 and US HWY183N, his failure to consider the potential intersection of the entrance road to the facility with FM 1185, and his failure to evaluate the on-ramp entrance road with SH 130 just north of the driveway for the facility.

Special Conditions and Modifications

In order to ensure the availability of the private entrance road for the life of the facility, the permit boundary should be expanded to include the entirety of the entrance road extending to US HWY183. This would require the amendment of the application, but it is necessary to ensure an available access route to the facility for both the Applicant and the TCEQ, in the event that TCEQ needs to access the site if the operator abandons the landfill, and to clarify which access point and access roadway is allowed by the permit.

6. Geology and Soils

Summary of Argument

The only thing that can be said about the geology report included in the application is that there is nothing consistent or reliable about it, and there is no factual basis—no verifiable evidence—to support the assumptions and opinions included in the geology report. The process, or methodology, for conducting the subsurface investigation and collecting the data to prepare the geology report was flawed at every step. From the preparation of the initial soil boring plan to the preparation of the final boring logs, Applicant's expert consultants failed to comply with regulatory requirements or professional standards.

The various problems with the subsurface investigation and characterization can be summarized as follows: (1) information in the application is inconsistent,

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[69] Tr. V. 1, pp. 251-252.
[70] Tr. V. 1, pp. 266-267.

contradictory, and unreliable; (2) the process for conducting the subsurface investigation and preparing the geology report—to the extent any evidence was provided about that process—did not comply with regulatory requirements or professional standards of care, was not documented, and did not appear to include any quality assurance/quality control measures; (3) the original data and evidence that formed the basis for Applicant's experts' opinions were discarded, and so there is no data available to test or verify Applicant's representations; and (4) subsequent evidence collected (by Applicant and Protestants) in 2016 contradicts the factual representations, assumptions, and opinions included in the Applicant's geology report. In sum, the geology report included in the application and the corresponding testimony offered by Applicant's expert consultants are unreliable and unsupported by the evidence. This renders the geology report and Applicant's expert opinions legally insufficient; they constitute "no evidence" of the subsurface geology.

Failure to provide a reliable and supportable subsurface characterization is not only a violation of TCEQ's rules. It also results in serious risks to human health and the environment, because without an understanding of the subsurface, one cannot properly and effectively monitor the subsurface for potential migration of contaminants. These risks are magnified in sensitive areas, such as the one proposed here. This is discussed in more detail in the section regarding groundwater monitoring.

First Step: Soil Boring Plan--Regulatory Requirements

The investigation of the subsurface of a proposed landfill site and the preparation of a geology report is not simply an academic exercise. Indeed, even before an application can be prepared and submitted, an applicant must first submit a soil boring plan to TCEQ for approval. TCEQ rules provide detailed guidance regarding the objectives of the soil boring plan and how the soil borings are to be conducted. Importantly, the "soil boring plan, including locations and depths of all proposed borings, shall be approved by the executive director prior to initiation of work."[71] Even

[71] 30 Tex. Admin. Code § 330.63(e)(4).

modifications to the soil boring plan must be approved by the Executive Director.[72] And the rules make clear that the borings must be conducted in accordance with established field exploration methods, and they include recommendations for preferred boring methods.[73]

Starting with this very first step in conducting a subsurface investigation, the Applicant—more specifically, Mr. Snyder—failed to comply with TCEQ's rules. The initial soil boring plan prepared by Mr. Snyder was dated August 30, 2013, and was received by TCEQ's Executive Director on September 4, 2013.[74] After a series of modifications to the plan, the Executive Director's staff finally approved the soil boring plan on October 10, 2013.[75] Yet, by the time the soil boring plan was approved, the Applicant had already drilled all of the borings it intended to drill on the proposed landfill site.[76] In fact, Applicant had already commenced the boring program before the soil boring plan had even been submitted to TCEQ.[77] Applicant, however, failed to mention this fact in the various communications—dated August 30, 2013; September 16, 2013; September 23, 2013; and September 25, 2013—to the ED, before the boring plan was approved.

Moreover, in the soil boring plan, Applicant committed to conduct slug tests in selected piezometers.[78] According to Applicant, the slug test data was intended to be used "to provide the hydrogeologic characterization of the site and to provide an analysis of the most likely pathways for pollutant migration," and "to facilitate the design of an appropriate groundwater monitoring plan."[79] Yet, Applicant never performed these slug tests. Nor did Applicant seek to modify the soil boring plan or otherwise advise the ED that they no longer planned to conduct any slug tests.

[72] 30 Tex. Admin. Code § 330.63(e)(4)(E).
[73] 30 Tex. Admin. Code § 330.63(e)(4)(C).
[74] Tr. V. 2, p. 362.
[75] Ex. 130EP-4, p. 35.
[76] Tr. V. 2, 365:16-20.
[77] Tr. V. 2, p. 341.
[78] Ex. P-33.
[79] Ex. P-33.

So, in sum, Applicant began drilling its borings before ever submitting a soil boring plan to the ED. They completed those borings before the soil boring plan was even approved. They committed to conduct slug tests, but never did. And despite several opportunities to do so, Applicant failed to advise TCEQ that it had already started drilling borings before the plan was approved or that it had dispensed with the plan to conduct slug tests. Applicant simply chose to disregard the regulatory requirements and its representations to TCEQ. This was just the first step in preparing and submitting an application to TCEQ and in investigating the subsurface of the site; yet, it is indicative of the manner in which Applicant completed its subsurface investigation and prepared its geology report.

Second Step: Subsurface Investigation

What occurred during the subsurface investigation is less than clear. That is, the methods used to conduct the subsurface investigation and the results of the subsurface investigation remain ambiguous, at least in part because they were not well-documented, and the testimony and evidence presented by Applicant were unreliable and inconsistent.

As an initial matter, the type of drilling method employed by Applicant remains unclear. Each of the boring logs indicates that the borings were drilled using wet rotary. But testimony by Snyder and Adams revealed otherwise.[80] And some of the boring logs include notes indicating that no fluids were introduced during drilling.[81] In any event, what is clear is that the boring logs do not present an accurate or reliable account of the drilling and sampling methods employed by Applicant.

If anyone should have been familiar with the drilling methods employed by Applicant, it should have been Snyder. Snyder signed and sealed the boring plan.[82] Snyder sealed the geology report included in the Application, which includes the subsurface investigation report and boring logs.[83] Snyder sealed the boring logs, which

[80] Tr. V. 2, p. 388, ll. 1-25, p. 389, ll. 1-4.
[81] *See, e.g.,* Ex. 130EP-4, pp. 75, 103.
[82] Ex. P-33.
[83] Adams also sealed this Report, but his seal appears to be limited to Sections 2.3, 5.1, and 5.2 of the Report, not the subsurface investigation report or the boring logs.

indicate that wet rotary methods were used to drill the borings. According to the Geology Report, "all drilling operations were supervised by John Michael Snyder, P.G., a professional geoscientist."[84] And ultimately, Snyder was responsible for preparing a narrative that describes the "investigator's interpretations of the subsurface stratigraphy based upon the field investigation."[85]

According to Snyder's testimony, however, Snyder was only on the site 2 or 3 times during the drilling of the borings, and even then, he was not out on the site all day.[86] So, it's no wonder that he was unsure of the drilling methods employed to drill the borings.

The results of the subsurface investigation, according to Snyder's report, were implausibly simplistic. Essentially, Snyder determined that Strata I and II consisted of fat clay. The Geology Report acknowledged that in Stratum I, "occasional discontinuous occurrence of cobbles, pebbles, and some gravel" were present up to about 6 feet. Stratum II, however, was described as hard and dense, and every boring log classified the soils in this stratum as "CH" or fat clay.[87] Furthermore, "evidence of fracturing" was not observed in this fat clay, and only one slickenside was observed in a single boring.[88]

To be clear, these descriptions were not intended to be "general" descriptions or a summary of the results of the subsurface investigation. TCEQ's rules require specific, detailed data from the subsurface investigation. The Geology Report must "describe all borings drilled on site" and must include a site map showing "the surveyed locations and elevations of borings."[89] The boring logs must include "a detailed description of materials encountered including any discontinuities such as fractures, fissures, slickensides, lenses, or seams."[90] And, again, ultimately, a narrative that describes the "investigator's

[84] Ex. 130-EP 4, p. 20.
[85] 30 Tex. Admin. Code § 330.63(e)(4)(H).
[86] Tr. V. 2, p. 368, ll. 21-25; p. 369, ll. 1-5.
[87] Ex. 130EP-4, pp. 51-126.
[88] Ex. 130EP-4, p. 23.
[89] 30 Tex. Admin. Code § 330.63(e)(4).
[90] *Id.*

interpretations of the subsurface stratigraphy based upon the field investigation" must be provided.[91]

Based on the evidence presented, Snyder cannot be considered to have "supervised" the drilling operations, under anyone's definition of "supervise."[92] He did not oversee or monitor the drilling operations. Any phone calls he may have had with the driller or with Adams may have resulted in daily accounts of events that occurred in the field. They may have even included some instructions and decision-making on Snyder's part. But Snyder was clearly not supervising the drilling activities—not by phone or otherwise.

Nor can Snyder realistically be considered the "field investigator" for purposes of the subsurface investigation. Again, Snyder was on site only 2 or 3 times.[93] His testimony regarding the drilling methods used to drill the borings was equivocal. He did not personally observe the sampling methods used. He did not observe the manner in which the soils were removed from beneath the surface—whether Shelby tubes were bent or the blow counts for the split-spoon sampling or whether fluids were used for drilling or whether the driller lost circulation of the fluids. Nevertheless, Snyder was the geoscientist who prepared the geology report and sealed it. This calls into question the representations made in the application regarding the methods employed for the subsurface investigation.

Step Three: Preparation of Boring Logs & Geology Report

Although he did not observe much, if any, of the field investigation, Snyder ultimately prepared and sealed the boring logs that were submitted to the TCEQ. By now, the Honorable ALJs are likely quite familiar with Snyder's methods in preparing the final logs, and in particular, his method of disposing of the original data that presumably formed the basis for the logs. But a review of his testimony regarding this issue is

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[91] *Id.* § 330.63(e)(4)(H).

[92] It appears that Snyder did not initially identify himself as the geoscientist who supervised the drilling operations. This statement was added in response to an NOD, instructing Applicant to identify the geoscientist responsible for supervising drilling operations.

[93] Tr. V. 2, p. 368, ll. 21-25.

illuminating, in that it confirms that there is no way to verify the accuracy or reliability of those boring logs.

Snyder testified that, Stamoulis—the driller—extracted soil samples from the subsurface, and he, Stamoulis, prepared field logs, which documented his observations during the field investigation, including his observations of the soils that came out of the borings. Stamoulis also wrapped and labeled the samples that came out of the ground.

The field logs and many of the samples were then delivered to Snyder's office. Some samples were taken directly to the lab for analysis.[94]

During his testimony, Snyder made clear that he only observed the soil samples that were brought back to his office, and even then, he did not observe all of the samples brought to the office. In fact, he testified that Adams observed more of the soil samples than he did. And some of the samples were sent directly to the lab before they could be observed by Snyder.[95]

According to Snyder, both he and Adams prepared the final logs that were included in the application. They revised the field logs that Stamoulis had prepared, after observing some of the soil samples and after sending some to the lab for analysis. Snyder explained that any secondary features noted in the logs (namely, the single slickenside that was noted) were based on his and Adams' observations. After revising Stamoulis' field logs and finalizing the boring logs to be submitted with the application, the soil samples and the original field logs were discarded.

It is not clear, from the testimony, when the samples and logs were discarded. However, what is clear is that they were destroyed before the Executive Director had completed the technical review of the application. Applicant first submitted Parts III and IV of its application on February 14, 2014. Protestants' counsel sent a preservation of evidence letter on March 20, 2014—a little over a month after Parts III and IV were submitted to TCEQ.[96] And TCEQ issued a Notice of Deficiency regarding the entire

[94] Tr. V. 2, p. 373, ll. 22-25,& p. 374, ll. 1-7.
[95] Tr. V. 2, p. 372, ll. 19-25 & p. 373, ll. 1-5.
[96] Ex. P-36.

application (including the recently submitted Parts III and IV) on May 6, 2014. Snyder testified that by the time he received Protestants' preservation of evidence letter, the field logs and soil samples no longer existed.[97]

So, the data that formed the basis of Snyder's representations to TCEQ were destroyed before TCEQ had even finished its technical review—even before the first NOD was issued regarding the geology section of the application. This means that Applicant was unable to refer back to this data when necessary to respond to the NODs. In fact, TCEQ's initial NOD to Applicant addressing the geology report requests additional detail regarding observations of secondary features. But because the soil samples were already destroyed, Snyder could not have gone back to look at them to verify the information he provided regarding secondary features in response to the NOD.

Interestingly, that same NOD instructed Applicant to provide boring logs for the piezometers that were completed by Applicant. In response, Applicant submitted logs for the 17 completed piezometers and added a narrative discussion regarding the piezometer borings. According to this narrative, "the piezometer borings were drilled and samples were observed to confirm consistency with the original boring lithologies."[98] What is not noted, however, is when, how, or by whom the samples were observed. Snyder was not out in the field when the piezometers were drilled.[99] The samples were not preserved and returned to Snyder's office. In fact, many, if not all, of the samples consisted only of cuttings.[100]

In any event, the piezometer logs that were submitted to TCEQ, in response to the NOD, were logs that documented the original soil borings, not the piezometers that were

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[97] Tr. V. 2, p. 393, ll. 7-16. To be clear, Snyder testified that by the time he received the preservation of evidence letter, the field logs had been destroyed. He could not recall when the soil samples were destroyed, but according to Snyder, after he received the preservation of evidence letter, he checked on the samples, and they were no longer in existence. Tr. V. 2, p. 393, ll. 10-16.

[98] Ex. 130EP-4, p. 20.

[99] Tr. V. 2, p. 387, ll. 4-6.

[100] Tr. V. 2, p. 386, ll. 7-13 (explaining that Snyder used soil boring logs to create piezometer logs because the soil borings were actually sampled, in contrast to piezometers); p. 388, ll. 6-25 (explaining that Snyder relied on soil boring logs to create piezometer logs because piezometers resulted in cuttings, as opposed to actual soil samples); p. 389, ll. 1-11 (same).

drilled separately from the soil borings; they are simply not what they purport to be. In other words, the piezometer logs do not reflect observations of soil samples from the piezometer borings; they reflect observations of soils from the nearby soil borings.[101] The piezometer logs are simply duplicates of the logs for the soil borings. Yet, this is not explained in the narrative of the geology report, or anywhere in the geology report. One is thus led to believe that the piezometer logs reflect observations of soils from the piezometer borings. This cannot be what TCEQ's geologist intended when he requested logs for the piezometers.

Summation of inadequate procedures for subsurface investigation

In sum, the piezometer logs do not include any reliable data regarding the lithology encountered during the drilling of the piezometers. The soil boring logs that were sealed by Snyder were not all based on his observations. Moreover, the only person who actually observed all of the soils that are described in the logs was Stamoulis; yet, his field logs, documenting his observations, were revised by Snyder and Adams and then discarded. And there is no longer any data in existence to verify the information included in the Geology Report. In fact, that data was discarded even before TCEQ issued its first NOD regarding the Geology Report. So, the data was not available to the Executive Director's geologist, if he had elected to verify the information included in the application, and it was not available to Applicant's own consultants, if they had wanted to go back and verify the information included in the application. It goes without saying that this data was also unavailable to protesting parties and to the ALJs, making it impossible to verify the information that was included in the application.

Geology Report and Subsurface Characterization are not reliable, do not comply with basic regulatory and professional standards, and constitute no evidence

A review of only the information that was submitted to TCEQ in Applicant's geology report, without considering any contrary evidence, reveals that this information

[101] *See* Tr. V. 2, p. 390, ll. 3-14 (explaining that description of "silt partings" in log for piezometer P-7 reflects observation from soil boring BME-07, not from piezometer).

is not reliable. It does not comply with TCEQ's regulatory standards. It does not comply with professional standards. And it does not comply with legal standards.

As the Supreme Court noted in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), an expert enjoys a unique position within a trial's fact-finding mission:

> Unlike an ordinary witness an expert is permitted wide latitude to offer opinions, including those that are not based on firsthand knowledge or observation. Presumably, this relaxation of the usual requirement of firsthand knowledge – a rule which represents a most pervasive manifestation of the common law insistence upon the most reliable sources of information, *is premised on an assumption that the expert's opinion will have a reliable basis*.

Daubert, 509 U.S. at 592 (internal quotations and citations omitted) (emphasis added). Therefore, to ensure that only credible expert testimony is admitted into evidence, *Daubert's* analysis instructs trial courts to act as "gatekeepers," protecting the record from "speculative, unreliable expert testimony." *McCorvey v. Baxter Healthcare Corp.*, 298 F.3d 1253, 1256 (11th Cir. 2002).

In order to constitute scientific knowledge that will assist the trier of fact, the proposed testimony must be relevant and reliable, which incorporates the traditional relevancy analysis under Rules 401 and 402 of the Texas Rules of Evidence. In the case of *E.I. DuPont de Nemours & Co. v. Robinson*. 923 S.W.2d 549 (Tex. 1995), the Texas Supreme Court established six factors for consideration in determining the relevance and reliability of an expert opinion:

(1) The extent to which the expert's theory has been or can be tested;

(2) Whether the theory has been subjected to peer review and/or publication;

(3) The technique's potential rate of error;

(4) Whether the underlying theory or technique has been generally accepted as valid by the relevant scientific community;

(5) The extent to which the technique relies upon the subjective interpretation of the Expert; and

(6) The non-judicial uses which have been made of the theory or technique.

As noted by the Texas Supreme Court, an expert cannot escape this standard by claiming that his or her opinions are based on general principles, rather than the use of a specific method analysis: "it seems exactly backwards that experts who purport to rely on general engineering principles and practical experience might escape screening by the district court simply by stating that their conclusions were not reached by any particular method or technique."[102]

To this end, there must be some basis for the opinion offered to show its reliability. The data underlying an expert's opinion should be "independently evaluated in determining if the opinion itself is reliable." *Merrell Dow Pharmaceuticals, Inc. v. Havner*, 953 S.W.2d 706, 713 (Tex. 1997); *accord Gammill v. Jack Williams Chevrolet, Inc.*, 972 S.W.2d 717, 728 (Tex. 1998). Evidence is to be excluded when "there is simply too great an analytical gap between the data and the opinion proffered." *Id.* (instructing courts not to ignore fatal gaps in an expert's analysis or assertions that are simply incorrect). It is the basis of an expert's opinion, and not the opinion itself, that holds probative value. *City of San Antonio v. Pollock*, 284 S.W.3d 809, 816 (Tex. 2009) (quoting *Coastal Transportation Co. v. Crown Central Petroleum Corp.*, 136 S.W.3d 227, 232 (Tex. 2004)). A mere conclusory opinion is not relevant evidence, because it fails to make the existence of a material fact more or less probable. *Id.* (quoting *Cas. Underwriters v. Rhone*, 132 S.W.2d 97, 99 (1939)). "If the foundational data underlying opinion testimony are unreliable, an expert will not be permitted to base an opinion on that data because any opinion drawn from that data is likewise unreliable." *Havner*, 953 S.W.2d at 713. Moreover, an expert opinion is unreliable "even when the underlying data are sound if the expert draws conclusions from that data based on flawed

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[102] *James R. Gammill et al. v. Jack Williams Chevrolet, Inc. and American Isuzu Motors, Inc.*, 972 S.W.2d 713, 725 (Tex. 1998).

methodology." *Id.* Where an expert's opinions are based upon unreliable underlying data they are inadmissible and, thus, no evidence at all. *Pollock*, 284 S.W.3d at 816.

Applicant's evidence regarding the geology report—its experts' testimony and the exhibits they sponsor—violate the principles announced in *Daubert* and *Havner*. Snyder sealed and sponsored the geology report, including the borings logs and the piezometer logs in the report. But Snyder did not personally observe the samples as they came out of the ground and did not prepare the initial field notes or original logs. He was not even present during the drilling of the borings, except on a few occasions. This, alone, renders his opinions suspect.

In addition, Snyder's theory regarding the subsurface geology has not been and cannot be tested.[103] Without the original logs and samples, there is no way to determine whether his opinions are based on reliable observations and reliable information. In light of Snyder's admissions that he and Adams revised the original field logs in order to create final logs to be submitted to TCEQ and then discarded the original data on which the logs were based, Snyder's (and Adams') opinions cannot be considered reliable. Applicant did not even take photos of the samples or retain electronic images of the field logs—a simple process that would have provided *some* evidence of the factual bases for Snyder's opinions. Because there is no way to test their opinions regarding the subsurface without the data that formed the basis for those opinions, Applicant's evidence cannot satisfy the *Daubert* analysis and cannot be considered reliable, admissible evidence.

Applicant further failed to comply with the legal duty to preserve evidence. A party breaches its duty to preserve evidence if it fails to exercise reasonable care. *Brookshire Bros., Ltd. v. Alridge*, 438 S.W.3d 9, 20 (Tex. 2014). The breach can be either intentional or negligent. *Id.* at 20-21. While a party "is under no duty to keep or retain every document in its possession, it is under a duty to preserve what it knows, or

[103] Admittedly, Protestants were able to drill their own borings, and the results of those borings are discussed later in this portion of this brief. Those results, as explained below, contradict Snyder's characterization of the subsurface. Protestants' argument is, however, that the representations included in Applicant's geology report—the soil classifications, lithological descriptions, the discussion of secondary features—cannot be tested, because the bases for these opinions regarding the subsurface geology no longer exist.

reasonably should know is relevant in the action, is reasonably calculated to lead to the discovery of admissible evidence, [or] is reasonably likely to be requested during discovery." *Trevino v. Ortega*, 969 S.W.2d 950, 957 (Tex. 1998) (Baker, J., concurring). Importantly, "when a party's duty to preserve evidence arises before the destruction or when a policy is at odds with a duty to maintain records, the policy will not excuse the obligation to preserve evidence" or justify its destruction. *Id.*; *accord Adobe Land Corp. v. Griff, LLC*, 236 S.W.3d 351, 360 (Tex. App.—Fort Worth 2007, pet. denied) ("Griffin's duty to preserve arose well before it discarded the sample. Therefore, Griffin's failure to preserve cannot be justified simply because the evidence was destroyed pursuant to its corporate policies.").

In this case, there was no question that Protestants in a contested landfill hearing would request the information that formed the basis of the Applicant's subsurface characterization. This is, at least, the third landfill hearing that Mr. Snyder has been involved in, wherein the protesting parties requested access to field notes, original logs, and samples. Furthermore, Applicant requested a direct referral; in other words, Applicant requested the litigation. And there was no question that once the hearing commenced, Applicant would be subject to discovery requests, including 194 requests for disclosure. And yet, Snyder discarded relevant information that he used to form his opinions in anticipation of his expert testimony.

In addition to failing to comply with legal standards, the geology report also fails to comply with TCEQ regulatory standards. First, Rule 330.57(d) makes clear that it's the applicant's responsibility "to provide the executive director data of sufficient completeness, accuracy, and clarity to provide assurance that operation of the site will pose no reasonable probability of adverse effects on the health, welfare, environment, or physical property of nearby residents or property owners."[104] If an applicant violates this rule and submits false information (as Applicant indisputably did with the piezometer logs, at least), this constitutes grounds for denial of the permit.[105]

[104] 30 Tex. Admin. Code § 330.57(d).
[105] *Id.*

TCEQ rules also impose a duty on a permittee (and thus an applicant) to retain all data used to complete the final application and any supplemental information.[106] Undeniably, field logs prepared by the driller and soil samples collected by the driller were used to complete the final application, including the final logs, submitted by Applicant to TCEQ, just as were the laboratory results. Applicant knew to retain the lab analyses, but refused to retain any other data that formed the basis of the final logs and geology report.

TCEQ rules also make clear that preparation of the application must conform with the Texas Engineering Practice Act and the Texas Geoscience Practice Act.[107] The Code of Professional Conduct adopted by the Texas Board of Professional Geoscientists imposes a duty to preserve evidence arising from the subsurface investigations. Rule 851.106 provides:

> A Professional Geoscientist or Geoscience Firm shall keep adequate records of geoscientific services provided to the public for no less than five (5) years following the completion and final delivery of the service. Adequate records shall include, but not be limited to: Relevant documentation that supports geoscientific interpretations, conclusions, and recommendations; [and] Other relevant records.[108]

The "public," in turn, means "Any individual(s), client(s), business or public entities, or any member of the general population whose normal course of life might reasonably include an interaction of any sort with or be impacted by geoscientific work."[109]

Finally, the American Society of Testing and Materials (ASTM) has adopted standards to be used for subsurface explorations. According to ASTM D5434-12, "the ***preparation of field logs*** provides documentation of field exploration procedures and findings for geotechnical, geologic, hydrogeologic, and other investigations of subsurface site conditions."[110]

[106] 30 Tex. Admin. Code § 305.47.
[107] *See* 30 Tex. Admin. Code § 330.57(f).
[108] 22 Tex. Admin. Code § 851.106(f)(2, (5).
[109] *Id.* § 851.10(34).
[110] Ex. P-5E.

In addition to these written TCEQ and other regulatory requirements and standards, testimony offered by various witnesses during the hearing further illustrates a geoscientist's duty in preserving information that forms the basis for his or her opinion. For instance, Dr. Skinner, who testified on behalf of Applicant regarding his archaeology investigations, explained that he relies on his field notes to prepare his final report.[111] He further explained that he retains his field notes indefinitely, and still has field notes from as far back as 1983.[112] He also still has the samples he collected from his investigation of the proposed landfill site and intends to hold onto them until the entire permitting process is over.[113]

Similarly, Feather Wilson, the geologist who consults with the Plum Creek Conservation District, testified that he too keeps his field notes indefinitely.[114] While he explained that he does not retain soil samples indefinitely, he does retain them for "as long as there's any question about them."[115]

Helpfully, Mr. Wilson explained why maintaining field logs and soil samples is so important. Field notes, Mr. Wilson explained, are "imperative" because "there's no record of what you've done" if you do not maintain field notes.[116] There is information to be gleaned out in the field from field observations that one cannot obtain otherwise.[117] And the field notes (and samples) provide evidence of those field observations, according to Mr. Wilson. According to Mr. Wilson, rocks speak the truth, and "you can't deny the rocks."[118] He further testified that he has been in several depositions where he had to look up his old field notes from 10, 12, as many as 20 years before, to refresh his memory as to what happened out in the field.[119]

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[111] Tr. V. 1, p.222, ll.6-10.
[112] Tr. V. 1, pp. 223-24.
[113] Tr. V. 1, pp. 226-27.
[114] Ex. P-8, p. 32, ll. 6-20.
[115] Ex. P-8, p. 69, l. 15.
[116] Ex. P-8, pp. 31-32.
[117] Ex. P-8, p. 30 (providing an example to illustrate this point).
[118] Ex. P-8, p. 30, ll. 1-3.
[119] Ex. P-8, p. 32, ll. 6-16.

He also explained that any soil samples relevant to pending litigation would be maintained in his barn, at least through the end of the litigation because "[i]t's evidence," and "[i]t would be unethical for me [Wilson] to destroy those samples."[120] He further testified that he might refer back to those samples as he prepared to testify in any litigation for which the samples might be relevant.[121]

This failure to preserve evidence warrants a spoliation instruction, and Protestants re-urge their request for such an instruction here.[122] Even without the instruction, however, this failure to preserve evidence—the evidence that served as the basis for Snyder's expert opinions—renders Snyder's opinions unreliable and legally insufficient.

An expert providing expert opinion testimony must show the connection between the data relied on and the opinion offered. *Gammill v. Jack Williams Chevrolet*, 972 S.W.2d 713, 726 (Tex. 1998). When expert testimony is involved, courts are to rigorously examine the validity of facts and assumptions on which the testimony is based. *Exxon Pipeline Co. v. Zwahr*, 88 S.W.3d 623, 629 (Tex. 2002). It is now well-established that although expert opinion testimony may provide valuable evidence in a case, "it is the basis of the witness' opinion, and not the witness' qualifications or his bare opinions alone, that can settle an issue as a matter of law; a claim will not stand or fall on the mere ipse dixit of a credentialed witness." *Burrow v. Arce*, 997 S.W.2d 229, 235 (Tex. 1999).

The Supreme Court has held that opinion testimony that is conclusory or speculative is "incompetent evidence" and cannot support a judgment. *Coastal Transp. Co. v. Crown Cent. Petroleum Corp.*, 136 S.W.3d 227, 232 (Tex. 2004). An expert's opinion is conclusory if it is based on tests or data that do not support the conclusions reached. *City of San Antonio v. Pollock*, 284 S.W.3d 809, 818 (Tex. 2009). In other words, even if some basis is offered for an opinion, if that basis does not, on its face, support the opinion, the opinion is still conclusory. And it is not considered probative evidence. *Id.* Even if an expert's methodology is reliable, his opinion may nevertheless be

[120] Ex. P-8, p. 69, ll. 16-23.

[121] Ex. P-8, p. 69, ll. 24-25 thru p. 70, ll. 1-5.

[122] Protestants incorporate by reference here its prior motion seeking an instruction regarding spoliation.

unreliable if the facts upon which the expert relied do not support the conclusions reached. *Volkswagen of Am., Inc. v. Ramirez*, 159 S.W.3d 897, 902 (Tex. 2004).[123]

Similarly, an expert's opinion is unreliable if it is based on assumed facts that vary from the actual facts, *Burroughs Wellcome Co. v. Crye*, 907 S.W.2d 497, 499 (Tex. 1995), or if it is based on tests or data that do not support the conclusions reached. *Pollock*, 284 S.W.3d at 818. In either instance, the opinion is not probative evidence. Thus, evidence that might be "some evidence" when considered in isolation is nevertheless rendered "no evidence" when contrary evidence shows it to be incompetent. *Keller v. Wilson*, 168 S.W.3d 802, 812-13 (Tex. 2005).

In this case, the evidence presented by Applicant, including the Geology Report in the application and Snyder's (and Adams') testimony constitutes no evidence. The bases of the opinions offered by Snyder (and Adams) are completely unreliable. The methodology for collecting the evidence is not clear. But based on what is known, the borings and collection of samples was not supervised by a professional geoscientist, as required by TCEQ rules. The field logs and the soil samples that formed the basis for the final logs and geology report no longer exist. Revisions were made to the field logs by Snyder and Adams, but the basis for those revisions is unclear and unreliable. Snyder admitted that he did not even observe all of the soil samples; yet, he sealed the boring logs. No slug tests were performed. The piezometer logs are fabricated, in that they are not logs of the piezometer borings at all. Snyder's opinions—as reflected in the geology report and his testimony—are conclusory and thus no evidence.

[123] In *Volkswagen of America, Inc. v. Ramirez*, the Supreme Court held that even when an expert offers some basis for his opinion, if that basis does not support the opinion, the opinion is still conclusory. In that case, the plaintiff's car bumped against another vehicle traveling the same direction, then crossed a 500-foot grassy median to the opposite side of the highway and hit a third car head-on. The plaintiff's expert concluded that the rear wheel of the plaintiff's car came loose from the axle before the accident rather than after, and therefore caused, rather than was caused by, the accident. The expert pointed to several facts to show that the wheel bearing failed and noted that after the accident, grass was found in the hub of the detached wheel. But he could not explain how the wheel detached before the accident but nevertheless remained in the car's wheel well while the car crossed the median and collided with another car. The Supreme Court concluded that, even assuming the expert's methodology was reliable and taking the record at face value, the facts on which he relied did not support his conclusion.

This would be true even if no contrary evidence were offered; that is, even if one were to consider only the evidence presented by Applicant in support of its geology report. But in this case, there is substantial contrary evidence in the record—evidence offered by the Protestants and even evidence by the Applicant.

Other evidence reveals unreliability of subsurface characterization

<u>Leona & gravel</u>

As an initial matter, Applicant presented an unreliable description of the surface geology at the proposed landfill site. In its application, Applicant all but discounts the Leona formation and minimizes the presence of gravel at the site.

In the geology report, Applicant states: "The site is located on the outcrop of the Midway Group. The Midway in the area consists primarily of dense, silty, fat clay (high plasticity inorganic clay, CH)."[124] It further describes the occasional discontinuous occurrence of remnant pebbles and cobbles and some gravel, which have settled into the upper clays.[125] The Leona is described as having been eroded from the site, leaving the Midway formation outcropping at the surface.[126] But there is no evidence to support this description of the surface geology, because the field logs and soil samples from the borings on which this description was purportedly based no longer exist; they were discarded. The evidence that does exist does not support the description of the surface provided by Applicant; it is contrary to the description.

First, the U.S. Geological Survey Geologic Database of Texas map shows that most of the proposed landfill site is underlain by the Leona Formation.[127] And according to the Geological Database of Texas, the Leona Formation forms a broad terrace of sand, clay and gravel up to 50 feet thick.[128] The Midway Group, on the other hand, crops out under a much smaller area of the proposed landfill footprint.[129] And contrary to the

[124] Ex. 130EP-4, p. 22.
[125] *Id.*
[126] *Id.*
[127] Ex. P-5I.
[128] Ex. P-5, p. 20, ll. 20-28.
[129] Ex. P-5I.

description in the application (*i.e.*, fat clay), the Midway is described as silty and sandy clay with silt and sand more abundant upward.[130]

Some of the evidence collected by Applicant's own consultants also demonstrates a greater presence of gravel and cobbles than what is described in the application. For instance, Applicant's wetlands investigation noted in 19 different locations where cobbles were identified as a restrictive layer at depths ranging from 4 to 8 inches. Many of these locations are below the proposed footprint.[131]

Also, Dr. Skinner's archaeological investigation revealed the presence of gravel near the surface of the proposed landfill footprint. In fact, all of the 42 descriptions of lithologic material in the shovel test pits describe the presence of gravel, including descriptions such as: "with abundant gravel," "with 50% gravel," and "with 80% gravel."[132] These descriptions are also supported by the field notes that were retained by Dr. Skinner and his staff.[133]

Similarly, Applicant's own photos of the surface near the proposed landfill site also demonstrate significant pockets of gravel.[134]

Evidence obtained from Plum Creek Conservation District further demonstrates the presence of substantial gravels, consistent with the presence of the Leona formation. Boring logs in cross-sections for the Plum Creek Conservation District Reservoir No. 21 dam include intervals of clayey sand and intervals of clayey gravel.[135] The cross-sections from the borings demonstrate that the intervals can be correlated among borings, indicating the presence of continuous strata. And these cross-sections and borings are located within the proposed facility property boundary and slightly more than 1000 yards south of the facility boundary.[136]

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[130] Ex. P-5, p. 20, ll. 28-30.
[131] Ex. P-5, p. 23, ll. 1-10.
[132] Ex. P-5L.
[133] *See* Ex. P-27 & P-28.
[134] *See* Ex. P-5AB.
[135] Ex. P-5J.
[136] Ex. P-5, p. 22, ll. 23-30.

Finally, Dr. Lauren Ross, who first visited the proposed landfill site in August 2015, testified that she observed areas of the site with significant amounts of gravel across the surface.[137] She documented her observations with photographs.[138]

Dr. Ross again visited the site in February 2016. During that visit, she, along with Protestants' other consultants, dug 5 trenches. Again, she observed the presence of cobble, gravel, and course sand at the surface of the proposed landfill site in 4 of those trenches: T-1, T-2, T-3, and T-5.[139]

This evidence demonstrates that Applicant's description of the surface geology at the proposed landfill site, and in particular, its description of the Leona formation as being eroded away, with only remnants of pebbles and cobbles remaining in the clay, is unreliable. Indeed, this evidence reveals that the facts are contrary to the facts as described in the geology report of the application. In short, Snyder's opinions regarding the presence of the Leona at the proposed landfill site are unsupported, unreliable, and constitute no evidence.

Subsurface Geological Investigation

As with the descriptions of the surface geology in the application's geology report, the descriptions of the subsurface are similarly unreliable and inconsistent with other evidence, including evidence presented by Applicant. As a reminder, Applicant's subsurface characterization simplistically described the subsurface as consisting uniformly of a high-plasticity fat clay. Regarding secondary features, Applicant stated that no fractures or fissures were present, and only one slickenside was present.

As described above, this description of the subsurface is not consistent with published, peer-reviewed data. The Geologic Database of Texas describes the Midway Group (which, according to Applicant, is what underlies the proposed site) as silty and sandy clay with silt and sand more abundant upward.[140] The mapped geologic formations

[137] Ex. P-5, p. 23, ll. 23-24.
[138] Ex. P-5M.
[139] Ex. P-5, p. 23, ll. 23-29.
[140] *See* Ex. P-5, p. 20, ll. 25-30.

are described as comprised of highly variable material with seams, lenses, and laminae of more permeable material.[141]

In addition, Applicant sent relatively few of the soil samples it collected to the lab for analysis. For some borings, no samples were sent to the lab for analysis at all.[142] Nevertheless, Mr. Adams (the geotechnical engineer) testified that as he worked on revising the field logs and preparing the final logs, he compared the soil classifications noted in the logs to the lab reports for the samples that were sent to the lab.[143] He testified that he was responsible for the final revisions to the logs because he was the one looking at the geotechnical lab data for soil classifications.[144] A review of the lab results, however, reveals that at least some of those results did not support a classification of CH or "fat clay."

For example, boring BME-31 reflects that a sample from about the 20-foot depth was sent to the lab for analysis (Sample U-12).[145] The lab analysis produced a liquid limit lab result that is *not* consistent with a CH or "fat clay" classification, and Mr. Adams acknowledged this in his testimony.[146] He agreed that the lab result supports a classification of "CL," not CH.[147] Significantly, there was only one sample that was sent to the lab for analysis from this boring.[148] And the lab results should have resulted in a soil classification of "CL." But the entire interval, including the segment from which the sample was retrieved, was classified as "CH," or fat clay. And Mr. Adams could offer no plausible justification for this.

Again, because the initial field logs and soil samples were discarded, there is no other evidence to compare to, and verify, the final soil borings included in the geology report. There are no photographs of the soils. There isn't even a chain of custody—to demonstrate who last possessed the soil samples. And there is no written quality

[141] Ex. P-5, p. 25, ll. 6-8.
[142] *See, e.g.*, Ex. EP-4, pp. 60 & 61 (log for BME-04).
[143] Tr. V. 4, p. 776, l. 25 thru p. 777, ll. 1-3.
[144] Tr. V. 4, p. 786, ll. 15-22.
[145] Ex. EP-4, p. 123.
[146] Tr. V. 4, p. 780, ll. 7-21.
[147] Tr. V. 4, p. 781, ll. 6-14.
[148] *See* Ex. EP-4, pp. 123-24; Tr. V. 4, p. 782, ll. 1-15.

assurance/quality control plan to help decipher how Snyder and Adams ultimately prepared the final logs and reached their final opinions regarding the lithology.

Later, in 2016, after the ED had completed its technical review of the application, and after the application had been referred to SOAH for a hearing, Applicant collected additional subsurface data. But this 2016 subsurface data proved to be inconsistent with, and contradicted, the evidence from Applicant's own 2013 Geology Report. The data collected from Applicant's 2016 boring program provides even more support for the notion that the representations about the subsurface geology in the application are simply unreliable.[149]

Regarding secondary features, the original Geology Report in the application identified no fractures and only one slickenside, in the investigation of 2,957 feet of subsurface. Yet, in 2016, Applicant observed 19 fractures in the subsurface. As explained by Dr. Ross, the probability of finding no fractures in 2013 and finding 19 fractures in 2016 is implausible—or "miniscule," as described by Dr. Ross. She calculated the probability to be $4x10^{-47}$.[150]

The results of Protestants' subsurface investigation likewise revealed numerous secondary features, including numerous fissures and fractures.[151] Mr. Rubinov, the geologist who was on site during Protestants' field investigation, also observed evidence of a possible fault in the subsurface.[152] According to Mr. Rubinov, there were gypsum and iron oxide fissures or layers at "every site where a borehole was completed by

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[149] Applicant offered into evidence what it labeled as a "supplemental geology report." But this report cannot be considered a supplement to the geology report in the application, for a number of reasons. First, Applicant did not submit a boring plan for approval by the ED before drilling its new borings in 2016. Second, the ED did not conduct a technical review of the supplemental geology report, because the technical review period for the application was already over. The ED no longer had jurisdiction over the application; jurisdiction had already transferred to SOAH. Third, the drilling of the borings was not supervised by Snyder, as required by TCEQ rules. And fourth, this "supplemental geology report" includes evidence that actually contradicts the representations in the geology report included in the application. Yet, there is no explanation provided for the contradictions. In essence, Applicant's "supplemental geology report" impeaches its own application materials.

[150] Ex. P-5, p. 26, ll. 22-25.

[151] *See* Ex. P-5P; Ex. P-6, p. 19, ll. 6-22; & Ex. P-6F.

[152] The existence of a fault is further discussed in the section regarding "Faults" later in this brief.

Protestants," and numerous fissures or layers present in a majority of the boreholes.[153] He further observed silt seams or layers at every boring drilled by the Protestants.[154] This differs from Applicant's boring logs, included in the application, which fail to identify silt seams, gypsum seams, or fractures.

In addition to inconsistencies regarding observations of secondary features, evidence from the 2016 subsurface investigation reveals inconsistencies regarding soil classifications. Again, the geology report in the application characterizes the subsurface geology as consisting solely of silty fat clay (CH), with "remnant gravels" observed in Stratum I. But the results of Protestants' subsurface investigation (including laboratory analyses of Applicant's sediment samples) reveal that this characterization is overly simplistic, and the subsurface is actually much more variable. In fact, the subsurface consists of lean clays, silts, fat clays, clayey sands, gravels intermixed with clay, sandstone, and siltstone.[155]

Some of Protestants' borings and trenches were drilled or dug in close proximity to Applicant's earlier borings from the 2013 subsurface investigation. In several instances, intervals that had been classified by the Applicant as high plasticity clay (CH) in the application were not consistent with the lithology encountered by Protestants in nearby borings or trenches. The lab analyses for soil samples collected by Protestants at nearby intervals reflected clayey sand with gravel, lean clay with sand, clayey gravel, and sandstone.[156]

Even Applicant's lab analyses for soil samples collected by them in 2016 reveal that the subsurface does not consist of a uniform fat clay, contrary to what was represented in the application's geology report. Applicant's lab analysis of soil samples collected from the 2016 subsurface investigation classified at least 4 samples as silt and 7 as low plasticity.

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[153] Ex. P-6, p. 19, ll. 20-22.
[154] Ex. P-6, p. 20, ll. 1-5.
[155] *See* Ex. P-6, p. 16, ll. 7-14; P-5, p. 25, ll. 28-31 thru p. 26, ll. 1-3; *see also* Ex. P-5S.
[156] *See* Ex. P-5S.

While Protestants were not tasked with characterizing the subsurface of the proposed landfill site and did not endeavor to do so, Protestants' subsurface investigation, coupled with the subsurface investigation conducted by Applicant in 2016, reveal that Applicant's initial 2013 subsurface investigation failed to characterize the range of material present in the subsurface at the proposed landfill site. Protestants' subsurface investigation demonstrates that Applicant's geology report is unreliable and misrepresents subsurface conditions at the site. Similarly, Snyder's opinions and conclusions regarding the subsurface conditions at the site are unreliable and constitute no evidence.

In sum, the geology report prepared by Applicant and included in the application offers no legal evidence regarding the subsurface conditions at the site. Applicant has failed to comply with TCEQ's rules requiring a reliable geology report based on professional standards and methodologies. Applicant has also failed to satisfy the legal standards for offering reliable expert evidence and testimony. Applicant spoliated all evidence that purportedly formed the basis for the representations in the geology report, thus making it impossible to test and verify the conclusions in that report. And evidence collected by Applicant and Protestants in 2016 reveals that the representations in the geology report are simply wrong. Based on all of the above, Applicant's application for a landfill permit must be denied.

It is worth noting that the Applicant had the right idea when it elected to conduct a subsequent subsurface investigation in 2016 and actually retained the field logs and soil samples from that subsurface investigation. But the process by which it conducted this additional subsurface investigation did not comply with TCEQ rules and procedures.

If Applicant desired to conduct an additional subsurface investigation, it should have requested a remand to allow the ED to approve revisions to the initial soil boring plan. Then, after the subsurface investigation was complete, Applicant could have revised its application materials, including the geology report, based on the newly acquired subsurface information. And the ED could then have conducted a technical review of the new information and revisions to the application. This process can still occur, if the current application is denied. Applicant can then prepare a revised application based on accurate and verifiable data.

In fact, this is the process that Applicant's consultants are pursuing in the Pintail matter. That is, after the Pintail application was denied or returned, Applicant elected to drill additional borings, collect additional data, revise its application, and re-submit it to TCEQ for technical review. The same process should be followed here.

7. Hydrogeology

Related to geology is hydrogeology. Here, too, Applicant has oversimplified the conditions at the proposed landfill site. Indeed, Applicant all but admits to this, explaining that groundwater that the Stratum III surface was used as a proxy for a groundwater surface.[157] Because groundwater was encountered in only a few piezometers, Applicant elected to rely on the Stratum III surface to represent groundwater gradient. But this artificially created groundwater gradient is not supported by site-specific conditions. Further, the hydraulic conductivities presented by Applicant are unreliable. In sum, the application fails to present a reliable representation of the site hydrogeology.

Qualifications of Dr. Ross

As an initial matter, it is worth exploring the qualifications possessed by Dr. Ross on this issue, as she was the most highly qualified and most experienced witness presented regarding groundwater movement. She holds a bachelor's degree in civil engineering, a Master of Science degree in civil engineering, and a Doctor of Philosophy degree in civil engineering. And her master's degree research was water and solute movement into and through saturated soils.[158] Having worked as an engineer since 1977, her areas of expertise include water resources engineering, water quality protection and engineering design, groundwater transport, stormwater management, erosion and sedimentation controls, solid waste management and disposal, statistical methods, and

[157] Ex. 130EP-4, p. 31.
[158] Ex. P-5, p. 6.

environmental monitoring.[159] She has substantial field and laboratory experience in the measurement of hydraulic conductivity. She's an expert in statistical methods for environmental monitoring, and has taught more than a dozen classes on the subject for graduate students and professionals.[160] While she may not possess as much solid waste facility design experience as Snyder or Adams, her expertise and experience in groundwater movement, water quality protection, and environmental monitoring are superior.

Hydraulic Conductivity

As explained by Dr. Ross, hydraulic conductivity is a measure of the subsurface capacity to transmit groundwater.[161] It is the best measure to indicate the potential for leachate migration to aquifers from the landfill, if there were a landfill liner leak.[162]

The hydraulic conductivities that were determined by the Applicant and included in the application were based on laboratory analysis, not in-situ field tests.[163] It's worth noting that Applicant represented in the soil boring plan that they would conduct in situ permeability tests, or slug tests, but did not do so. According to the application, the limited occurrence of groundwater at the site "prohibited [Applicant from] conducting field permeability tests in site piezometers.[164] During their 2016 subsurface investigation, however, Protestants conducted a slug test, the results of which are discussed below, and they vary from the lab analysis provided by Applicant.

Dr. Ross explained, in her testimony, why lab tests are generally insufficient to accurately reflect in situ field conditions and the potential for leachate migration from the landfill.[165] To conduct hydraulic conductivity test, in the lab, on soil samples that have not been remolded, the soil sample must have sufficient cohesiveness to remain intact

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[159] *Id.*
[160] *Id.* at p. 7.
[161] Ex. P-5, p. 30, ll. 21-23.
[162] *Id.*
[163] Ex. EP-4, p. E-19.
[164] Ex. EP-4, p. E-19.
[165] *See* Ex. P-5, p. 31.

during sampling, storage, and transport.[166] This means that when variable strata exist, such as was present at the proposed landfill site, the more cohesive and more plastic unremolded samples are most likely to be selected for laboratory analysis, resulting in lower hydraulic conductivities.[167] Samples with silty seams are not likely to be tested for permeability in the lab on an unremolded sample because they will fall apart.[168]

Dr. Ross further testified that during both the Applicant's and Protestants' 2016 subsurface investigation, she observed numerous soil samples that would not have been sufficiently cohesive to allow for permeability testing on an unremolded sample.[169] When cobbles or gravel are present in the soils, as they were in the upper strata at the proposed landfill site, these materials are generally removed before remolding the soil sample and analyzing it in the lab.[170] In remolding the samples to make them more cohesive for analysis, natural structures like root holes, bedding, fissures, and fractures are removed; yet, these features contribute significantly to hydraulic conductivity in the natural, in situ, setting.[171] These features, along with silt seams and partings and gypsum seams, are indicative of preferential zones of groundwater movement.[172]

In sum, Dr. Ross concluded that the proposed landfill site, here, is complex and consists of materials that are not consistently cohesive. Thus, laboratory analysis (of either unremolded or remolded soils) is not a reliable indicator of the range of permeability of the soils at the site.[173] In situ analysis was necessary for the complex lithology that exists at this site.[174]

Even if one were to assume that the lab tests were sufficient to determine permeability at the site, there are significant differences between the laboratory hydraulic conductivities from the 2013 subsurface investigation versus the 2016 subsurface

[166] *Id.*
[167] *Id.*
[168] *Id.*
[169] *Id.*
[170] *Id.*
[171] *Id.*
[172] *Id.*
[173] *Id.*, p. 32.
[174] *Id.*

investigation. A summary of the hydraulic conductivities from the 2013 subsurface investigation can be found in Table E-11 of the application.[175] These hydraulic conductivity values are lower than the values measured on samples collected during Applicant's 2016 supplemental subsurface investigation and Protestants' subsurface investigation.[176]

For example, at Protestants' boring MP-1A (which is adjacent to Applicant's boring BME-32, from its 2013 investigation), at the 43 to 44 feet interval, Protestants measured hydraulic conductivity, based on lab samples, as high as 1.19×10^{-6} centimeters per second. And the laboratory hydraulic conductivity results for Applicant's soil sample from their 2016 boring BME-38, at 44 to 46 feet, indicated hydraulic conductivities as high as 2.5×10^{-6} centimeters per second.[177] These results demonstrate that the hydraulic conductivity of some of the soils at the proposed site are about 100 times higher than the values represented in the application, based on the 2013 subsurface investigation.[178]

Finally, it is worth noting that even though Applicant's 2016 supplemental subsurface investigation report described the loss of drilling fluid circulation in one of its borings, BME-43, Applicant failed to adjust the estimated range of hydraulic conductivity at the site based on this loss of circulation. Nor did the Applicant adjust the potential for leachate migration. Applicant simply reported the occurrence, but failed to analyze the significance of it or draw any logical conclusions regarding this occurrence.

Conceptual Groundwater Model

The application states that groundwater occurs at the interface between Strata II and III.[179] But Applicant's piezometer data do not support this description. In fact, the evidence is to the contrary.

First, the elevations of the piezometers do not appear to have been measured accurately. Dr. Ross testified that she measured the bottoms of Applicant's piezometers

175 Ex. EP-4, p. E-20.
176 *See* Ex. P-5, p. 31 & Ex. P-5O.
177 Ex. EP-7, p. 32.
178 Ex. P-5, p. 32, ll. 20-26.
179 Ex. EP-4, p. E-16 & E-19.

when she visited the site in August 2015.[180] Based on her measurements, 9 of the 17 piezometer bottoms do not reach the interface between Strata II and III; they are more than 1 foot higher than the contact between the 2 strata.[181] The bottoms for 6 of those piezometers measure more than 5 feet higher than the interface between the 2 strata.[182]

Moreover, in their supplemental 2016 subsurface investigation report, Applicant reported that it revised the locations and elevations for several of the piezometers it installed in 2013. (Applicant also revised the locations and surface elevations for its 2013 borings. At least one of these boring locations was off by about 50 feet.) A change in the elevation of the top of a piezometer also impacts the elevation of the screened interval at the bottom of the piezometer. And as Mr. Avakian, the geologist for the ED, testified, if the top of casing elevations are wrong, then, the screened intervals are also wrong, which means that the recorded potentiometric levels are also wrong.[183]

In addition, the 2016 subsurface investigation reveals that the interface between Strata II and III is not as represented in the application. Dr. Ross explained that in 2016, several of the new boreholes were drilled in close proximity to boreholes that had been drilled in 2013. And yet, at several of these locations where more than one borehole had been drilled, the elevation of the interface between Strata II and III were different. At 6 of those locations, the interface elevations for different boreholes at the same location differed by more than 5 feet.[184] This means that the contour lines purportedly reflecting the Stratum III surface, in the application, do not accurately represent actual conditions at the site.

Finally, the groundwater flow represented in the application is also unreliable. Dr. Ross described examples of the inconsistencies in the groundwater flow in her prefiled testimony.[185] The delineation of contours at the surface of Stratum III, near boring BME-1, is not consistent with the measured interface of Strata II and III at that location. That is,

[180] Ex. P-5, p. 37.
[181] *Id.*
[182] *Id.*
[183] Tr. V. 9, p. 2005.
[184] Ex. P-5, p. 36.
[185] Ex. P-5, p. 36 (referencing Figure E6-2 in the application).

the contour is at 520 feet mean sea level, but the measured elevation for the interface is 528.91, which is closer to 530 feet.

In addition, the direction of groundwater flow, as represented in Figure E6-2 of the application, is from the center of the landfill toward the edges of the landfill. Yet, if one compares BME-1 and BME-7, this does not make sense. BME-1 is at or near the location for piezometer P-01; both are at the northwestern edge of the landfill. This piezometer is one of the few piezometers that recorded the presence of groundwater, and recorded a high water elevation of 534.14 feet mean sea level. BME-7, however, also had a piezometer drilled nearby, but this piezometer did not record any groundwater. The interface between Strata II and III at BME-7 is recorded as 524.95 feet mean sea level. It does not make sense that groundwater would flow from BME-7 (where there is no groundwater) up to BME-1 (where groundwater has been recorded).

Taken together, (1) the inconsistencies regarding the elevation of the interface between Strata II and III at boreholes that were drilled in close proximity; (2) the screening of piezometers at elevations above where one would expect to find the interface between Strata II and III; and (3) the inconsistencies between measured groundwater elevations and assumed groundwater flow directions, reveal that Applicant's conceptual groundwater model is unreliable. The evidence does not support this groundwater model. And thus, Applicant has failed to provide evidence supporting its hydrogeology theories.

8. Faults

Faults are relevant to the siting of a proposed landfill for a couple of reasons. First, the presence of certain kinds of faults—namely, a fault that has had displacement in Holocene time—could present a siting restriction or prohibition.[186] But faults that do not satisfy this definition are still relevant to the siting of a proposed landfill. This is because a fault generally presents relevant information regarding the subsurface of the site—information that is essential in determining preferential migration pathways for contaminants, in the event of a landfill liner failure. In this case, the evidence established

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[186] 30 Tex. Admin. Code § 330.555.

the presence of this second type of fault—the type of fault that presents a preferential migration pathway.

Evidence regarding the presence of this fault is hardly in dispute. During the Applicant's 2016 subsurface investigation, the driller experienced a loss of circulation of drilling fluids at the site of boring BME-43, at about 30 feet below ground level.[187] About 100 to 200 gallons of water was very quickly lost into the subsurface.[188] This indicated that a feature with sufficient permeability to accommodate this volume of water and rate of evacuation was present in the subsurface.[189] Mr. Rubinov, the consulting geologist for Protestants, was present on the site and observed the loss of circulation experienced by Applicant's driller.

Although Applicant's geologist, Snyder, was not present on site when the loss of circulation was experienced, he documented the occurrence in the supplemental geology information he provided as Applicant's Exhibit EP-7. What he failed to do, however, is analyze the significance of this loss of circulation or otherwise factor it into his opinions regarding hydraulic conductivity at the site.

In fact, Snyder minimized the significance of this loss of circulation, when he described it in his supplemental report: "Circulation of drilling fluid was lost *in only one* boring: BME-43 at a depth of approximately 28 to 30 feet."[190] According to Snyder (who, again, was not present at the site when the loss of circulation occurred), "the limited volume of drilling fluid lost (approximately 200 gallons) and the ease of re-establishing circulation to complete the boring to its total depth of 56 feet bgs demonstrated that the porosity of the zone in which circulation was lost was limited in extent/total volume."[191] But there was no evidence to support this conclusory statement regarding porosity, and Snyder failed to describe any methodology he employed in reaching this conclusion.

[187] Ex. P-6, p. 20.
[188] *Id.* at p. 21.
[189] *Id.*
[190] Ex. EP-7, p. 9.
[191] *Id.*

By contrast, Mr. Rubinov analyzed a number of factors to inform his opinion that the lost circulation indicated the presence of a fault. This opinion was shared by Dr. Ross, based on her analysis, as well. For instance, both Mr. Rubinov and Dr. Ross noted that the elevation of the interface or contact between the weathered and unweathered zones at MP-3 (which was drilled by Protestants in close proximity to BME-43) was significantly different than the elevation for the contact in BME-43. The weathered/unweathered contact at BME-43 was encountered at 30 feet. At the nearby MP-3 borehole, the weathered/unweathered contact was encountered between 46.5 and 50 feet. As Mr. Rubinov explained, "In other words, at two boreholes approximately 20-30 feet apart, the weathered to unweathered contact changes by 16.5 to 20 feet vertically."[192] This difference at site MP-3 versus BME-43 is significantly greater than at any other locations.

Furthermore, Mr. Rubinov and Dr. Ross both observed abundant gypsum fissures in Protestants' boring MP-3, at depths of 40 to 45 feet. And both Applicant and Protestants documented the frequent occurrence of fractures and fissures at these boring locations. Dr. Ross noted that while she observed frequent gypsum seams and veins in all of the borings drilled by Applicant and Protestants in 2016, the gypsum deposits in the samples from boring MP-3 at 40 to 45 feet were significantly larger, more extensive, and clustered into groups in a way that was different than the other samples she observed.[193]

The significant loss of circulation of drilling fluids at BME-43, the difference in the weathered/unweathered contact in 2 borings (BME-43 and MP-3) that were drilled in close proximity to each other, and the presence of abundant secondary features at these boring locations, taken together, indicate that a fault is likely present at this location. This fault presents a preferential pathway for transmission of fluids and potential leachate migration at the site.

This preferential pathway is at odds with the subsurface characterization presented in the landfill permit application. The subsurface characterization would lead one to conclude that the subsurface consists of a uniform fat clay (CH) with no fractures and no

[192] Ex. P-6, p. 21, ll. 7-11; *see also* Ex. P-5, p. 35, ll. 11-15.
[193] Ex. P-5, p. 35, ll. 20-25.

preferential migration pathways. The loss of circulation at BME-43 and abundant secondary features, however, contradict this representation.

It is worth noting that without field notes or original field logs, one cannot be certain that a similar loss of circulation of fluids did not occur during the 2013 subsurface investigation. Snyder was only present during that subsurface investigation 2 or 3 times, and his description of the drilling methods, in his geology report, did not include much detail. If a loss of circulation had occurred, one wonders how or where it would have been documented. If it had been documented by the driller in his field notes or logs, those original notes and logs were discarded. In the case of the 2016 supplemental report, the significance of the loss of circulation was minimized and did not warrant any further analysis by Snyder.

Finally, Applicant drilled a number of borings without the introduction of fluids. In those instances, there is no way to tell whether a loss of circulation might have occurred if drilling fluids had been introduced.

9. Groundwater Monitoring

An accurate subsurface characterization is essential for the proper design of a landfill and for designing the associated groundwater monitoring system.[194] In addition, an accurate understanding of the subsurface conditions is essential to understanding the potential risk of landfill construction and operation to adjacent ground water resources.[195] Applicant has failed to present evidence of an accurate and reliable characterization of the subsurface, and accordingly, has failed to identify the multiple potential pathways for leachate migration that are present at the proposed landfill site.

In this case, the evidence presented indicates that in the vicinity of Protestants' boring MP-1 (in the southeast corner of the site), there is a high potential for leachate migration. This is also the area that evidences a depositional interface between the Midway and the Wilcox formations.[196]

[194] *See* Ex. P-5, p. 20, ll. 5-6; 30 Tex. Admin. Code § 330.403(e)(1).
[195] *See* Ex. P-5, p. 20, ll. 7-9.
[196] *See, e.g.,* Tr. V. 7, p. 1518, ll. 11-16.

First, Protestants' temporary piezometer MP-1 and Applicant's piezometer P-32—both in the southeastern boundary of the site—consistently measured groundwater.[197] Because groundwater transmitted fairly quickly into the Protestants' temporary piezometer, this supports the conclusion that there is some hydraulic gradient that caused the groundwater to flow into the temporary well, which means that the groundwater was stored in lithological material that can transmit the water, like silt material.[198]

The lithology observed in boring MP-1 was consistent with descriptions of both the Midway and the Wilcox. It consisted of clayey silt and cemented sandstone, which is the type of material one would expect at the depositional interface between the two formations.[199] As Mr. Rubinov explained during his testimony, there is no clean break or boundary separating the Midway from the Wilcox formation. Instead, there is a transition between the two formations, which is evidenced by layers or interfingering of silts, and silts interbedded with clays, some sandstone, some siltstone, some clay, all of which are indicative of a "deltaic deposit" or a transitional environment.[200] And in a transitional zone, it is difficult to distinguish between Midway and Wilcox material because the environment is transitioning from on to the other.[201]

Finally, the Geologic Database of Texas and the Texas Water Development Board map the Wilcox Group as outcropping at the surface just east of the proposed landfill site.[202] Further, there are numerous wells completed in the Carrizo-Wilcox Aquifer, which are in close proximity to the location where the potential for leachate migration may be the highest.[203]

As explained above, evidence presented by Protestants and by Applicant based on the 2016 subsurface investigation indicates that multiple potential pathways for leachate migration are present, particularly in the southeast area of the site; yet they are not

[197] Ex. P-5, p. 30, ll. 9-11.
[198] Tr. V. 7, p. 1679, ll. 1-6 (testimony by Rubinov).
[199] *See* Ex. P-5, ll. 12-15; Tr. V. 7, p. 1517, ll. 10-19 & p. 1678, ll. 9-18.
[200] Tr. V. 7, pp. 1677-78.
[201] *Id.*
[202] *See* Ex. P-5, pp. 30-31 & Ex. P-5AD.
[203] *See* Ex. P-5, p. 30, ll. 15-18, Ex. P-5AD, & Ex. P-5T.

represented in the landfill application. As illustrated by Dr. Ross via her prefiled testimony, there exists "a potential migration pathway of leachate from the proposed landfill through Leona sands and gravels, through silt or fine sand laminae of the Wilcox Group, or through silt or sand laminae or secondary fissures and fractures in the Midway Group into the Carrizo-Wilcox aquifer recharge zone and nearby water wells."[204]

By failing to present an accurate subsurface characterization, including preferential migration pathways for contamination, Applicant discounts the risks of contaminants escaping from the landfill, via secondary features or zones of lower plasticity, and into the Carrizo-Wilcox and nearby water wells. And its groundwater monitoring system cannot be considered adequately protective because it fails to account for site-specific conditions. This warrants denial of the application.

10. General Facility Design

TCEQ Rule 330.63(b)(2)(E) requires an applicant to provide generalized construction details of slab and subsurface supports of all storage and processing components. Applicant has not provided accurate and complete information to comply with this requirement.

The design of the foundations supporting the on-site storage and processing components is particularly important considering that the landfill site has significant topographic relief. For example, the natural ground surface beneath the leachate storage tanks varies by roughly ten feet, while the natural surface beneath the proposed transfer station varies by roughly six feet, and the natural surface also varies beneath the scalehouse and the citizen's convenience center.[205] Applicant has not identified the elevation at which any of these facilities will be constructed; given the varying natural elevations, however, the use of fill may be necessary as subsurface support for these facilities.[206] Yet, Applicant has provided no details regarding the subsurface support for these storage and processing components. Construction schematics are provided for the

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[204] Ex. P-5, p. 21, ll. 12-15.
[205] 130EP-1, p. 63.
[206] Tr. 846.

leachate storage tanks in Drawing D3.6 within Part III of the application, but no details regarding subsurface supports is provided.[207]

During the hearing, Greg Adams admitted that he had performed no geotechnical evaluation of the leachate storage tanks, the citizen's convenience center, the scalehouse, or the on-site transfer station.[208] With no information regarding the subsurface supports for these storage and processing components, and no geotechnical evaluation to demonstrate that subsurface support will not be needed, Applicant has failed to provide the information required by TCEQ Rule 330.63(b)(2)(E).

This omission is of critical importance. The leachate storage tanks will potentially contain a volume of 33,250.6 cubic feet of leachate, which is equivalent to approximately 250,000 gallons.[209] These tanks will also be located at the edge of the 100-year floodplain and near an intermittent stream.[210] Thus, if the subsurface support for this tank facility is insufficient, the resulting spill of contaminated water would quickly contaminate natural waters. This failure to comply with the rules, therefore, warrants denial of the application.

11. Waste Management Unit Design

Slope Stability

The owner or operator of a landfill must ensure that the liner is stable during the filling and operation of the landfill.[211] If a slope failure occurs, then that failure would breach the liner and could cause additional problems if the failure results in the uncontrolled movement of waste.

In evaluating the stability of the landfill, Applicant evaluated several different potential modes of failure for the final cover slope.[212] One type of cover slope failure is a

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[207] App. Ex. 130EP-3, p. 47.
[208] Tr. 845-846.
[209] App. Ex. 130EP-3, p. 420. (1 cubic foot equals 7.48052 US Liquid Gallons).
[210] App. Ex. Adams-4, p. 2; App. Ex. 130EP-1, p. 121.
[211] 30 Tex. Admin. Code § 330.337.
[212] Ex. 130EP-3, p. 65.

"Circular arc" failure. A circular failure is a failure of the final cover system where the failure plane crosses through the waste mass:[213]

Ex. P-54: Adams' Depiction of a Circular Arc Failure.

This type of failure occurs where the top slope and a portion of the landfill essentially rotate as a single block. A circular arc failure that cuts through the toe of the landfill will tend to force material upwards at the base of the failure, as shown above.[214] For this type of failure, weight on the upslope area tends to exert a driving force, which is a force that would make failure more likely.[215] Since the failure plane cuts through the waste mass itself, the likelihood of such a slope failure depends on parameters such as the weight and shear strength of the waste mass.[216] Notably, when analyzing the potential for a slope failure, a failure would occur instantaneously once the driving forces exceed the resistance.[217]

In order to determine whether the landfill would be sufficiently stable, Applicant focused on whether certain "safety factors" selected by the Applicant would be met.[218] In this context, a "factor of safety" is the resistance to a failure divided by the driving force that would tend to cause a failure.[219] A factor of safety is intended to account for and offset the uncertainties involved in the slope stability modeling that is performed.[220] In this case, Mr. Adams selected "recommended" safety factors derived from the Corps of

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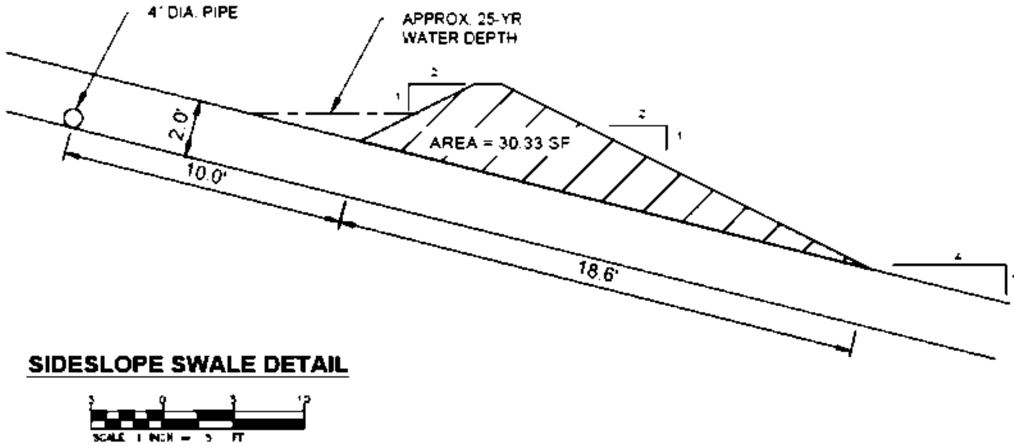
213 Tr. 815.
214 Tr. 822.
215 Tr. 823.
216 130EP-3, p. 65.
217 Tr. 831-832.
218 130EP-3, p. 66.
219 Tr. 889.
220 Tr. 923, 926.

Engineers "Design and Construction of Levees" manual.[221] This manual, however, does not indicate that it is to be used in the evaluation of landfills.[222] Mr. Adams did not adjust the factor of safety selected in light of any of the particular circumstances at this site. Instead, he simply used the same safety factors applied at every other landfill he has evaluated.[223]

In this case, there are numerous ways in which the conditions at the Landfill will potentially differ from the conditions assumed in the slope stability modeling. Most fundamentally, the model used was a two-dimensional model.[224] At the landfill site, forces will be exerted in three dimensions, and the forces being ignored by Applicant's model could make a slope failure more likely or less likely.[225] Because the model is only two-dimensional, it does not account for the irregular or "amoeba" shape of the proposed landfill.[226]

The stability analysis also did not account for all weight that will be contributing to the driving forces potentially causing a failure at the landfill. The design of the final cover of the landfill includes numerous sideslope swales. Tracy Bratton, the County's expert witness, determined that these swales constitute approximately 45% of the face of the landfill, and there are over 37 miles of these berms/channels at an estimated weight exceeding 800,000,000 pounds.[227] Mr. Bratton developed a cross-section of such a swale, including the water that the swale will hold:

[221] Tr. 815-816, 130EP-3, p. 78.
[222] Tr. 816.
[223] Tr. 824-825.
[224] Tr. 909.
[225] Tr. 920.
[226] Tr. 918, 85, 812.
[227] Ex. Caldwell-1, p. 18



Sideslope Swale Detail[228]

Although these swales would add weight to the topslope area of the landfill where they would contribute to the driving forces tending to cause a failure, neither the weight of these swales, nor the weight of the water they would contain, were considered in Mr. Adams' slope stability analysis.[229] Although it is true that the water held by the swales will eventually be drained, it is also true that slope failures occur instantaneously when driving forces are sufficient,[230] and thus the presence of water exerting weight on the slope for even a brief period of time must be accounted for in order to develop a fully accurate determination of the potential for a slope failure.

Furthermore, Mr. Adams' stability analysis depends on an accurate characterization of the weight and shear strength of the waste placed into the landfill. The calculations assume a uniform weight of 60 pounds per cubic foot, and a consistent shear strength for the waste.[231] But, the weight of the waste will be variable, and no testing will be performed to monitor the weight of the waste; Mr. Adams conceded that the shear strength of the waste material will not be consistent.[232]

In this way, considerable uncertainty exists in the accuracy of the slope stability modeling used due to (1) the use of a two-dimensional model that does not account for

[228] Ex. Caldwell-1G, p. 2.
[229] Ex. 130EP-3, pp. 77- 212, Tr. 825, 840.
[230] Tr. 831-832.
[231] Ex. 130EP-3, p. 81.
[232] Tr. 838-839.

the irregular shape of the landfill, (2) Applicant's failure to consider the extensive sideslope swales that will be present at the landfill, and (3) the uncertainty in the qualities of the waste that Applicant is relying upon to prevent a failure at the landfill. Applicant's "cookie-cutter" approach of relying upon factors of safety taken from a Corps of Engineers manual does not fully address these uncertainties, in combination with the sensitive location of the site as a result of the proximity to the floodplain, the proximity to a high hazard dam, and the proximity to nearby residences.

Furthermore, Applicant has failed to address the local stability of the sideslope swales. Even if the weight of the swales does not cause a catastrophic circular failure of the side of the landfill, there is still good reason to ensure that the swales individually will remain stable. The swales are designed to have a 2:1 slope.[233] As Mr. Bratton noted, slopes exceeding 3:1 typically require special consideration with regard to slope stability, establishment of vegetation, and long-term maintenance.[234] Yet, Mr. Adams made no analysis of the stability of the slopes on these swales.[235] Even if such a failure did not compromise the liner or cover of the landfill, TCEQ Rule 330.305(e) requires the use of surface water protection and control practices that provide long-term, low maintenance geotechnical stability.[236] Applicant has not made the necessary showing that these drainage swales are geotechnically stable.

Soil Balance

TCEQ Rule 330.63(e)(5) requires an applicant to provide "geotechnical data that describes the geotechnical properties of the subsurface soil materials and a discussion with conclusions about the suitability of the soils and strata for the uses for which they are intended."[237] In this case, Applicant intends to rely upon on-site soils as the source of soil for liners and daily cover.[238] Within the application, Applicant has noted that on-site soils will be required for: (1) construction of the compacted soil liner; (2) the protective

[233] Caldwell-1, p. 18.
[234] Caldwell-1, pp. 19-20.
[235] Tr. 829.
[236] 30 Tex. Admin. Code § 330.305(e).
[237] 30 Tex. Admin. Code § 330.63(e)(5).
[238] Tr. Vol. 4, p. 809.

cover components of the liner system; (3) the infiltration and erosion layer components of the final cover system; (4) operational cover (daily and intermediate); and (5) general earthfill.[239] The application goes on to conclude that soil from the proposed landfill excavations or on-site borrow sources will be available to provide material for general fill, the compacted soil liners, protective cover, and daily/intermediate cover.[240]

Applicant has not demonstrated that the soils on-site are suitable for use in the landfill as it has claimed. As Dr. Lauren Ross observed, the boring logs characterize the subsurface as composed uniformly of high-plasticity clay.[241] But, in fact, laboratory tests for several samples indicate that some of the soil material beneath the site is low plasticity clay and silts.[242] Furthermore, as noted, the material at the site contains considerable quantities of sand, gravel and cobble material in Stratum I. Applicant has simply not accounted for the true character of the soils at the site when claiming that the soils at the site are suitable as a supply for the soil needs of the landfill.

Applicant's failure to perform a soil balance further undermines its claim that on-site soils are suitable for all the various soil needs at the landfill. No soil balance has been provided to determine what portion of the soils on-site are, in fact, suitable for the proposed uses, and whether this amount is sufficient to supply the quantity of soil needed for construction and operation of the landfill.[243] Without the inclusion of a soil balance, Applicant's geotechnical evaluation fails to demonstrate that the on-site soils are suitable for use as source material for the liner and cover needs at the facility.

This mischaracterization is particularly problematic given the failure of Applicant's experts to adhere to professional practice standards in much of the work performed thus far, as discussed above.[244] Dr. Ross noted that, "[d]uring landfill construction, professional practice standards ensure accurate characterization of landfill

[239] App. Ex. 130EP-3, p. 61.

[240] App. Ex. 130EP-3, pp. 62, 67, 68, 69.

[241] Protestants Ex. 5, p. 25.

[242] Protestants Ex. 5, p. 25, referencing lab test results for BME-28 at 14 feet, BME-29 at 13 feet and BME-31 at 23 feet.

[243] Tr. 730, 809.

[244] Protestants Ex. 5, p. 12-15.

bottom and sidewall lithology and the suitability of materials for berm and liner construction."[245] Considering the inconsistency in the soils present on-site, and the significant presence of material that is not suitable for use as soil liner material, greater testing and verification requirements should be included in the Liner Quality Control Plan for the Facility.

12. Unstable Areas

Protestants have presented their arguments regarding slope stability in the section above regarding waste management unit design, and will not repeat those arguments here. Based on the arguments presented above, Applicant has failed to comply with TCEQ rules regarding slope stability, and its application should therefore be denied.

13. Landfill Gas Monitoring

Summary of Argument

Applicant's landfill gas management plan is deficient. Applicant has failed to demonstrate its landfill gas management plan complies with all applicable requirements of the TCEQ regulations.[246] The plan does not adequately account for gravel and secondary features that are contained in the soils at the site. Further, the planned monitoring system does not address the potential for harmful landfill gas constituents to enter surface waters present at the landfill site. The location of numerous landfill gas probes within the 100-year floodplain compromises the system. Moreover, the landfill gas management plan fails to contain a complete backup plan to be used if the main landfill gas system breaks down or becomes ineffective. Finally, the plan does not adequately address potential non-methane organic compound (NMOC) emissions in a manner that ensures compliance with all applicable regulations.

Landfill Gas Contains Harmful Constituents

Landfill gas must be carefully addressed because such gases potentially contain a number of harmful constituents. Keith Parker testified for the Applicant regarding landfill gas issues. He testified that landfill gas may contain constituents including

[245] Protestants Ex. 5, p. 15.
[246] *See, e.g.,* 30 Tex. Admin. Code § 330.371.

methane, carbon dioxide, carbon monoxide, and non-methane organic compounds ("NMOC").[247] NMOC includes a variety of harmful constituents such as volatile organic compounds (VOC), hazardous air pollutants (HAPs), and odorous compounds.[248] The health effects of exposure to HAPs can include cancer, respiratory irritation, and damage to the nervous system.[249] Mr. Parker also noted that landfill gas can contain constituents that would contaminate surface water, including metals that can contaminate surface water.[250] Even modern landfills can experience problems with a landfill gas leak. Mr. Parker himself was previously involved in remediation of DFW landfill, where landfill gas was found to be leaking from a Subtitle D landfill.[251]

Applicable Regulatory Requirements

TCEQ regulations require that the Site Development Plan contained in an application must include a landfill gas management plan.[252] That plan must address all requirements of Subchapter I of Chapter 330 relating to landfill gas management. TCEQ Rule 330.371 establishes that the type and frequency of landfill gas monitoring shall be based on certain factors including soil conditions at a site, hydrogeologic conditions at the site, and hydraulic conditions at the site.[253] Furthermore, the landfill gas management plan must include a description of systems including installation procedures and timelines for installation, monitoring procedures, and procedures to be used during maintenance.[254] The landfill gas management plan shall also include a backup plan to be used if the main system breaks down or becomes ineffective.[255] Additionally, TCEQ regulations require that a landfill owner or operator comply with certain federal regulations that address NMOCs.[256]

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[247] Tr. 168-169.
[248] Standards of Performance for New Stationary Sources and Guidelines for Control of Existing Sources: Municipal Solid Waste Landfills, 61 FR 9905-01 (Mar. 12, 1996).
[249] *Id.*
[250] Tr. 178.
[251] Tr. 170-171.
[252] 30 Tex. Admin. Code § 330.63(g).
[253] 30 Tex. Admin. Code § 330.371(b)(1).
[254] 30 Tex. Admin. Code § 330.371(g)(2).
[255] 30 Tex. Admin. Code § 330.371(g)(3).
[256] 30 Tex. Admin. Code § 113.2061.

Failure to consider soil, hydrogeologic, and hydraulic conditions

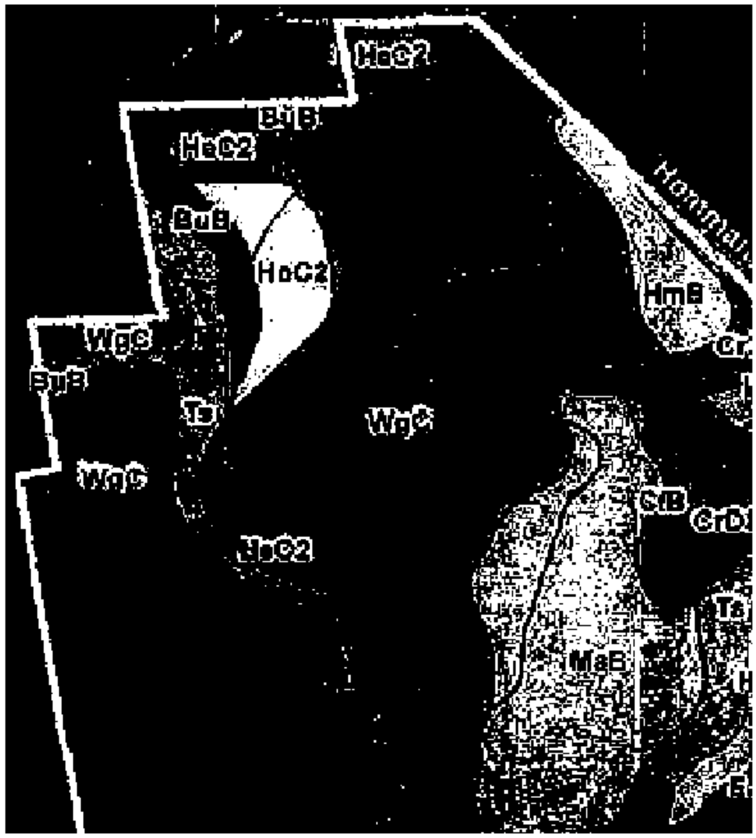
In designing the landfill gas management plan, Applicant has failed to comply with TCEQ Rule 330.371(b)(1), requiring an applicant to consider soil conditions, hydrogeologic conditions, and hydraulic conditions. As noted, the TCEQ Rules establish specific factors that must be considered in the determination of the type and frequency of landfill gas monitoring. Those factors include the soil conditions at a site, the hydrogeologic conditions, and the hydraulic conditions surrounding the site. Applicant has not sufficiently addressed any of these.

Soil conditions can have a significant impact on the necessary design of a landfill gas management system. For example, landfill gas travels more quickly through gravel than it travels through clay.[257] In fact, the presence of gravel necessitates that landfill gas monitoring probes must be placed closer together.[258]

Mr. Parker, who was responsible for the landfill gas management system in the application, testified that he did no work himself to examine the soil conditions at the site.[259] Instead, he relied solely on information provided to him by Mr. Snyder.[260] Based on this information, he assumed that clay was the only type of soil present at the site, and he assumed that no secondary features were present at the site,[261] even though the 2016 subsurface investigation conducted by Applicant revealed at least 19 fractures present in the soil samples collected.

As the hearing demonstrated, gravelly soils dominate the surface soils at the site. Mr. Parker delineated the footprint of the landfill on a soil map that had been provided in a different part of the application:

[257] Tr. V. 1, p. 173.
[258] Tr. V. 1, p. 177.
[259] Tr. V. 1, p. 171.
[260] Tr. V. 1, p. 171.
[261] Tr. V. 1, pp. 171-172.



WgC - Wilson gravelly loam, 1 to 5 percent slopes

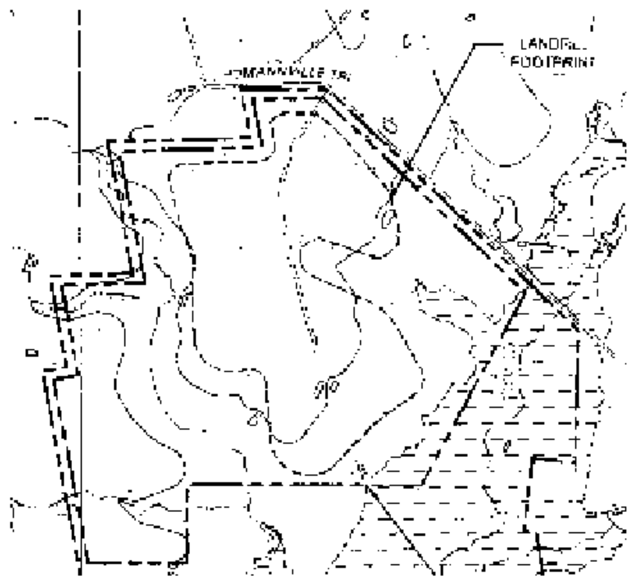
Excerpt from Exhibit P-19, Soil Survey Map with Landfill Footprint Imposed

As shown on this map, Mr. Parker conceded that Wilson Gravelly loam borders most of the landfill.[262] Parker had made no evaluation of the depth of gravel at the landfill, but instead relied on Mr. Snyder's representation that it was only 3-5 feet deep.[263]

In failing to consider the gravel present at the site, and in failing to consider the secondary features present at the site, Mr. Parker did not sufficiently consider soil and hydrogeologic conditions at the site. To the degree that he considered soil conditions and hydrogeologic conditions at the site, that consideration was premised entirely on the work of Mr. Snyder, which is not reliable for the reasons described in Section 6, above.

[262] Tr. V. 1, pp. 173-174.
[263] Tr. V. 1, p. 174.

The hydraulic conditions at the site create a potential for contaminants in the landfill gas to reach surface waters undetected. This potential was neither considered nor addressed in the development of the landfill gas management plan. The landfill footprint is surrounded by streams, lakes, and floodplain to the west, south and east.[264]



USGS Map Demonstrating Landfill footprint and nearby Intermittent Stream[265]

Mr. Parker testified that landfill gas can contain constituents that would contaminate surface water, including metals that can contaminate surface water.[266] Even so, Mr. Parker testified that the hydraulic conditions at the site had *no impact* on the design of the landfill gas monitoring network, and that he did not evaluate the potential for surface water contamination when designing the landfill gas management system.[267]

The evidence presented demonstrates that the surface waters present at the site are vulnerable to contamination by leaking landfill gases, and the proposed monitoring system is not designed to detect and prevent such contamination of surface waters. As Mr. Parker testified, in several areas of the site, escaping landfill gases would reach surface waters before they would reach any landfill gas monitoring probe. Mr. Parker conceded that in areas to the west and southwest of the landfill footprint landfill gas

[264] Ex. P-20, Ex. 130EP-3, p. 25.
[265] Excerpted from App. Ex. 130EP-1, p. 60.
[266] Tr. V. 1, p. 178.
[267] Tr. V. 1, p. 178.

would reach the on-site intermittent stream prior to detection by any landfill gas monitoring probe.[268] Despite this potential, Applicant does not propose any monitoring of the nearby surface waters to detect the contamination of these waters by landfill gas.[269]

In addition to the potential contamination of surface water, Applicant's failure to consider the hydraulic conditions at the site is also problematic because so much of the site is encompassed, on three sides, within the 100-year floodplain. In fact, nine of the landfill gas probes are proposed to be located within the 100-year floodplain.[270] Mr. Parker made no attempt to orient the design to avoid the floodplain.[271] This creates potential problems in the ability of the Applicant to construct and access the monitoring problems, while also creating potential modifications of floodwater flow patterns that the Applicant has not considered or evaluated.

The Plan fails to include the required description of installation procedures.

The landfill gas management plan also lacks a sufficient description of systems, including installation procedures and timelines for installation, monitoring procedures, and procedures to be used during maintenance.[272] The Gas Management Plan depicts 186 gas extraction wells that are proposed to be located within the footprint of the landfill.[273] Although the design of these wells is set forth in the application, no detail regarding the installation of these wells is provided within the landfill gas management plan.[274] These gas extraction wells will each be empty, while surrounded by gravel.[275] Mr. Parker conceded that these wells could "absolutely" provide a conduit for the movement of leachate within the landfill.[276] Mr. Parker performed no evaluation of this potential, however.[277] It should be noted that gas wells *must* be constructed so as to be totally

[268] Tr. V. 1, pp. 181-182, 183.
[269] Tr. V. 1, p. 183.
[270] Tr. V. 1, p. 184; Ex. P-20 (Reflecting that Probes GP-9, GP-12, GP-13, GP-14, GP-17, GP-20, GP-21, GP-22, and GP-24 are all located within the 100-year floodplain).
[271] Tr. V. 1, p. 186.
[272] 30 Tex. Admin. Code § 330.371(g)(2).
[273] Ex. 130EP-5, p. 33.
[274] Tr. V. 1, p. 189.
[275] Tr. V. 1, p. 189; 130EP-5, p. 34.
[276] Tr. V. 1, p. 190.
[277] Tr. V. 1, p. 190.

waterproof; water cannot be allowed to in the monitor well. Yet, Mr. Parker did not consider how this will be achieved.

In addition to the lack of any description for the installation process for the gas extraction wells completed from the top of the landfill, there is also no description of the installation process for gas collection pipes proposed to be located along the base of the landfill. These pipes are depicted in the liner design details, but they are not addressed in the landfill gas management plan.[278] Mr. Parker testified that "there's nothing related to the installation" of these pipes in the landfill gas management plan.[279] In fact, Mr. Parker conceded that the landfill gas management plan simply did not address the design of this gas collection pipe system in the base of the landfill.[280]

Lack of Backup Plan

As noted, TCEQ Rule 330.371(g) requires that the landfill gas management plan must include a backup plan to be used if the main system breaks down or becomes ineffective.[281] Mr. Parker testified that Section 3.4 of the landfill gas management plan constitutes Applicant's backup plan intended to fulfill this requirement:

> Q: [L]ook at Section 330.371(g). Are you with me?
>
> A: Yes, sir.
>
> Q: So it says, "A landfill gas management plan shall be prepared that includes the following." And then under Subsection 3, it says, "A back-up plan should be used if the main system breaks down and becomes ineffective." Did I read that correct?
>
> A: Yes, sir.
>
> Q: Okay. So the back-up plan you're referring to is the one that is in 130EP-5, Page 17?

[278] Ex. 130EP-3, p. 43.
[279] Tr. V. 1, p. 199.
[280] Tr. V. 1, p. 200.
[281] 30 Tex. Admin. Code § 330.371(g)(3).

A: Well, keep in mind, this section involves control and monitoring. So for the monitoring portion, yes. That Section 3.4 on Page 17 is our back-up, yes.

Q: And that's the back-up plan if -- if the individual probe breaks, it sets out the guidelines for how you will repair or replace that individual probe. Correct?

A: Right. If any portion of the system breaks, then, yes.

Q: So is there anywhere else in the application where it talks about the back-up plan, if the main system breaks down as proposed in this rule, or is this the only place we can turn to find the language "back-up plan"?

A: In reference to this rule, this is probably the only place.[282]

But, as Mr. Parker acknowledged, the "Back-up" plan set forth in Section 3.4 of the landfill gas management system addresses solely what should be done in the case where a particular probe ceases to function.[283] The landfill gas management plan states in Section 3.4 that "[t]he following is a back-up plan to be used if any installed LFG monitoring probes or continuous monitoring devices become unusable or inoperative."[284]

The inclusion of instructions requiring the replacement of a malfunctioning probe does not constitute the systematic backup plan anticipated by the rules. TCEQ rules specify that a backup plan shall be provided in case the "*main system*" becomes ineffective.[285] The landfill gas probes are only one element of the landfill gas management system design, and the system could be ineffective for reasons wholly unrelated to whether the proposed probes are properly functioning. For example, the system could be ineffective if the radius of influence for the probes is not sufficient in light of the design spacing between the probes.[286] Yet, the landfill gas management plan does not contain any backup plan to address a situation where the *system* proves to be

[282] Tr. V. 1, pp. 213-214.
[283] Tr. V. 1, p. 201.
[284] 130EP-5, p. 17.
[285] 30 Tex. Admin. Code § 330.371(g)(3).
[286] Tr. V. 1, pp. 204-205 & p. 176 (The "radius of influence" is the area that a particular probe is evaluating.).

ineffective due to the *design* of the main system. Without such a plan, the landfill gas management plan does not satisfy the requirements of the TCEQ rules.

The LFG Plan fails to adequately address non-methane organic compounds.

While methane is a primary contaminant of concern in landfill gas, the applicable regulations also require that a landfill system address NMOCs. To this end, TCEQ rules require that an owner or operator of a MSW landfill shall comply with all provisions specified in 40 CFR Part 60, 60.751-60.759. Under those regulations, the owner or operator of a landfill with a design capacity of greater than 2.5 million megagrams and 2.5 million cubic meters shall either design and install a gas collection system, or perform a calculation demonstrating that the NMOC rate is less than 50 megagrams per year, to be recalculated annually.[287]

The Applicant's proposed landfill has a design capacity of 24 million megagrams, and 22.8 million cubic meters, and thus is subject to this requirement.[288] Yet, the landfill gas management plan has no provision for the installation of a collection system upon construction; nor does the plan require the annual calculation and reporting of the potential NMOC production at the landfill.

Furthermore, the applicable regulations require that a landfill gas collection and control system be installed once the calculated NMOC emission rate exceeds 50 megagrams per year.[289] The landfill gas management plan provides that an active collection system "may be required" should this threshold be reached, but the plan does not ensure the installation of such a system, as is required by the applicable regulations.

The landfill gas management plan is deficient since it does not ensure that the required evaluation of NMOC emission rates will occur, and the plan does not ensure that a landfill gas collection and control system will be installed once the emissions at the facility surpass the regulatory 50 megagrams per year threshold. In fact, the plan contains no monitoring for NMOCs whatsoever.[290]

[287] 40 CFR § 60.752(b).
[288] 130-EP-5, p. 9.
[289] 40 CFR § 60.752(b)(2).
[290] Tr. V. 1, p. 208.

Proposed Special Provisions

The identified deficiencies in the landfill gas management plan warrant denial of the application. But, should the ALJs determine that the application should be granted, then certain special provisions are justified to address the problems created by the landfill gas management plan.

First, Applicant should be required to monitor surface water to detect contamination by landfill gas. The constituents monitored should include VOCs and hazardous air pollutants.

Also, the plan should incorporate a requirement to calculate and report NMOC emission rates as required by 40 CFR § 60.752, and the plan should incorporate a requirement for the design and installation of a landfill gas collection and control system if the calculated NMOC emission rate is equal to or greater than 50 megagrams per year as also required by 40 CFR § 60.752.

<u>14. Endangered and Threatened Species</u>

Halff Associates conducted for 130EP an assessment of threatened and endangered species within the property boundary of the proposed project site. This work was done in June and July of 2013, apparently, simultaneously with the wetlands delineation and identification work discussed in the next section of this argument. The assessment is Appendix IIE to the Application.[291] Based on this work, Halff Associates provided some information to both U.S. Fish and Wildlife Service and Texas Parks and Wildlife Department.[292]

U.S. Fish and Wildlife Service replied with a rubber stamp "no action" notation.[293] Texas Parks and Wildlife Service was somewhat more engaged in its response, recommending various general mitigation measures.[294]

[291] Ex. App. 1, p. 701, et seq.

[292] Ex. App. 1, p. 682 (letter to FWS) and Ex. App. 1, p. 687 (TPWD). Both submissions had attached to them the TPWD Wildlife Habitat Assessment Questionnaire for Threatened and Endangered Species (Ex. App. 1, p. 689, et seq.), which, itself, had attached the aforementioned assessment.

[293] Ex. App. 1, p. 682.

[294] Ex. App. 1, pp. 683-686.

The assessment prepared by Halff also proposed a species protection plan,[295] which included four pages of narrative and miscellaneous attachments.

The problem with the assessment, as Protestants see it, is that field work for it was not conducted in the spring, when one would be most likely to observe migratory wildlife, and field work did not extend beyond the boundaries of the 130EP property,[296] although at least 4 birds and a large mammal were judged by Halff Associates to merit some discussion.[297]

At hearing, Mr. Marusak testified that the Halff team had no discussions with neighbors on adjoining or nearby lands regarding the presence or absence in the area of threatened or endangered species.[298] When queried about one of the state-listed threatened species, the bald eagle, that might be affected by the landfill operation, he could not really say how close to the site bald eagles had been sighted.[299] He had done no research regarding the interactions of bald eagles and landfills elsewhere.[300] He had gathered no information regarding 130EP's plans for control of foraging animals at the landfill. [301]

Under these circumstances, Protestants find it difficult to conclude that adequate attention has been paid by 130EP or regulators to protection of threatened or endangered species. Protestants urge you to recommend, at least, (1) that the permit impose as a term the TPWD recommendation that mature trees removed in the course of the 130EP project be compensated with saplings on a 3:1 ratio and (2) that the ban proposed by 130EP on clearing for the perimeter fence and on clearing of forested areas be extended to include the months of May and June. Related to the second item, it will be necessary to delineate the forested areas more effectively than is done on Figure 3,[302] the figure on which

[295] Ex. App. 1, p. 721, et seq.
[296] Tr. V.5, p. 1104:14-16.
[297] Ex. App. 1, p. 707.
[298] Tr. V.5, 1105:1-6.
[299] Tr. v. 5, 1109:17-1110:14.
[300] Tr. V. 5, 1110:15-18.
[301] Tr. V.5, 1110:19-1111:2.
[302] Ex. App. 1, p. 729.

130EP's species protection plan relies to define the areal extent of the ban 130EP proposes.

15. Wetlands

A permit applicant bears two basic burdens related to wetlands. First, under TCEQ Rule 330.61(m)(2), an applicant is required to make a wetlands determination under both federal and state law, and under local laws, if there are any applicable to wetlands. Second, having determined the presence of wetlands, an applicant that would place waste processing or storage facilities or actual landfill units in a wetland must make certain demonstrations under Rule 330.553. The TCEQ regulations provide that compliance with federal law wetlands requirements as to a particular wetland may be made by evidence of a Corps of Engineers permit authorizing use of the wetland.[303]

Compliance with federal wetlands law.

The Halff Associates prepared for the Corps of Engineers a wetlands determination and identification for the 130EP project. The determination and identification was conducted throughout the area within the property boundary of the proposed 130EP project.[304] That work was documented in an August 2013 report found in the Application at Appendix IID.1.[305] The work was undertaken to secure Corps concurrence that certain wetlands and on-site water bodies were not jurisdictional to the Corps, i.e., were not "waters of the United States."[306] This work was a precursor to an application to the Corps by 130EP for coverage under a "nationwide" permit, NWP #14, for the filling of federally-regulated wetlands and water bodies within the 130EP property boundary. (NWP#14 is for "linear transportation projects," in this case, the entrance road from U.S. Hwy 183 to just outside the footprint of the landfill.) The application for coverage under NWP#14 was submitted in February 2014.[307]

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[303] 30 Tex. Admin. Code § 330.61(m)(2).

[304] App. Ex. 1, p. 317 (IID.1-43).

[305] App. Ex. 1, beginning at p. 275. The August report was actually supplemented in October 2013, but App. Ex. 1, beginning at p. 275, reflects that supplementation.

[306] App. Ex. 1, p. 271.

[307] App. Ex. Marusak 4, pp. 2-40; particularly, pp. 14-15.

The report concluded that the entrance road would impact some federally-regulated wetlands and water bodies, but that nothing else about the proposed project, *e.g.*, the citizen's convenience center or the waste transfer station or the landfill, itself,[308] would have those impacts or require coverage under a Corps permit.[309] The 130EP application for coverage under NWP#14 did not offer to mitigate the lost jurisdictional wetlands or water bodies, either by in-kind mitigation or by the purchase of land-bank credits.[310] The report acknowledged that there are wetlands and water bodies within the proposed landfill footprint and its impact (essentially, drainage) area, but it concluded these are "isolated" and bear insignificant nexuses to waters of the U.S. and, so, are not federally-regulated wetlands and water bodies.[311] The Corps implicitly accepted the report's conclusions and the 130EP decision to forgo mitigation by a "verification letter" of June 20, 2014.[312]

As earlier noted, TCEQ Rule 330.61(m)(2) provides that the wetland determination and discussion under federal law may be "demonstrated" by the fact of a Corps permit. 130EP has a verification letter from the Corps stating that, if the requirements of NWP#14 are followed, the project may proceed. It is Protestants' understanding TCEQ, regardless of one's views of as to whether a particular wetland is in fact "isolated" from federal control and as to whether the Corps should have required mitigation for the federal-jurisdiction wetlands lost, accepts the Corps' verification letter as the functional equivalent of a permit.

Compliance with state wetlands law.

Notwithstanding the directive of Rule 330.61(m)(3), Applicant made no identification wetlands pursuant to state law.

State law defines a wetland as, in relevant part:

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[308] *See* App. Ex. 1, p. 124.

[309] App. Ex. Marusak 4, p. 16.

[310] App. Ex. Marusak 4, p. 20.

[311] App. Ex. Marusak 4, pp. 32-33, depicts the locations of the impacted wetlands and water bodies. The table at App. Ex. Marusak 3, pp. 5-7, lists the various wetlands and water bodies for which 130EP sought and obtained from the Corps a negative jurisdictional (to the Corps) determination.

[312] App. Ex. Marusak 3, pp. 16-17 and 2-3, and Tr. V. 5, 1052:23-25.

> an area (including a swamp, marsh, bog, prairie pothole, or similar area) having a predominance of hydric soils that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and that under normal circumstances supports the growth and regeneration of hydrophytic vegetation.[313]

This definition was the one set forth in the Food Security Act of 1985, 16 U.S.C. § 3801(27)(A), and utilized by the Natural Resources Conservation Service. The Water Code definition is carried over to TCEQ Rule 307.3(49). Both the statutory and regulator definitions go on to define a few of the terms that are used.

Halff Associates used a federal definition of wetlands developed by EPA and the Corps for all its wetlands work for 130EP.[314] This definition is set out in the Corps' regulations at 33 CFR § 328.3(c)(4), which reads:

> those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

This definition was developed by EPA in 1980 and adopted by the Corps of Engineers in 1986.[315]

At the time sec. 11.502 was added to the Water Code, the finer details of the wetland definitions and of the mechanics of wetlands delineation were unsettled at the federal level,[316] and Texas elected to go with the only federal Congressional standard, the one from the Food Security Act.

The result is that the threshold inquiry under state law is whether an area has a predominance of hydric soils, whereas, the threshold inquiry under federal law relied upon by Halff Associates and 130EP is whether the area has a prevalence of hydrophytic

[313] Tex. Water Code § 11.502.

[314] Ex. App. Marusak 1, p. 7:2-6.

[315] 40 CFR § 230.3 and 33 CFR 328.3, respectively.

[316] There is a good bit of law journal writing on this. A comprehensive example is Daryn McBeth, "Wetlands Conservation and Federal Regulation: Analysis of the Food Security Act's 'Swampbuster' Provisions as Amended by the Federal Agriculture Improvement and Reform Act of 1996," 21 Harv. Envl. L. Rev. 201 (1997).

vegetation. Also, note that the state definition does not require, as does the EPA/Corps definition, a prevalence or dominance of hydrophytic vegetation.

In his direct testimony, Mr. Marusak testified that the federal definition "is nearly identical to" the state definition and is "potentially" more inclusive than is the state definition.[317] While he goes on to opine that there is no conflict in the definitions in a situation like that of state permitting of an MSW facility, he offers no basis at all for that opinion (so the opinion, is not, under law, probative evidence[318]). The State Legislature selected a definition for use under state law, and it did not sanction the use of another definition that is "nearly identical" to the one it selected. That the federal definition is "potentially" more inclusive, if that is even a fact (and he offers no reason why that might be a fact), does not rule out the possibility that it is also potentially less inclusive in some instances.

Why the differences make a difference. The difference in the two definitions, *i.e.*, focus on hydric soils vs. focus on hydrophytic vegetation, is of moment in this case. The Halff Associates wetlands delineation report notes that "based on guidance from the [Corps] Fort Worth District, an evaluation of soils and hydrology was not necessary at data points that did not meet hydrophytic vegetation criteria."[319] Mr. Marusak confirmed this in his live testimony.[320] (The data points referred to in the report are the boxes and squares reflected on the transects on Figure B-1 of the Halff Associates wetlands report.[321])

So, if hydric vegetation were dominant in various strata (e.g., at the shrub level or at the tree level) of a site (i.e., a data point), but were not the most dominant of all

[317] Ex. App. Marusak 1, p. 7:7-9.

[318] *City of San Antonio v. Pollock*, 284 S.W.3d 809 (Tex.2009), at 818 ("[I]f no basis for the opinion is offered, or the basis offered provides no support, the opinion is merely a conclusory statement and cannot be considered probative evidence, regardless of whether there is no objection.")

[319] App. Ex. 1, p. 287.

[320] Tr. V. 5, 1064:6-16.

[321] Ex. App. 1, p. 317.

dominant species at the site, Halff made no investigation of the conditions of the soils or of the site's hydrology.[322] The threshold inquiry required under state law was not made.

Halff Associates utilized the Corps' "Great Plains" regional supplement to the Corps' 1987 wetlands delineation manual for all its wetlands work for 130EP.[323] That supplement identifies three site-specific factors that may result in wetlands that, nonetheless, fail to meet the hydrophytic vegetation standard, at least at certain times.[324] These factors are: climate variability, long-term and short-term grazing, and some human land-use practices. Also, the supplement directs that "to the extent possible, the hydrophytic vegetation decision should be based on the plant community that is normally present during the wet portion of the growing season in a normal rainfall year."

Climate variability. Byron Friedrich, an adjacent landowner to the 130 EP property, testified as to local climate variability:

> We'll have a long period of drought, punctuated by very heavy rainfalls, where it can be several inches of rain falling within an hour or two, which causes extreme flooding conditions. And that's exactly what happened. 2011, going back, was one of those years. It probably could be characterized as wet early, and then probably about February the nozzle stopped, and it didn't rain again until probably about October. During 2011, you had extremely high temperatures. I mean, 100-degree-plus days for I think over 100 days in a row. 2012 was -- started out wet, and it also turned out dry. And, then, through the majority of 2013, again it was extremely dry conditions. … And, then, the floods hit October 31st of 2013 ….[325]

Not only is the climate variable, but, at the time of the Halff Associates work, *i.e.*, June and July 2013, the area of the 130EP project had suffered a two-year (and two-growing-season) run of dry and extremely dry conditions. The Corps' 2010 regional supplement cautions: "Lack of hydrophytic vegetation during the dry season, when

[322] The mechanics of determining dominance are easily seen from the data sheets included in the Halff Associates report at pp. 323-656. Mr. Marusak also testified to the process at Tr. V. 5, beginning at p. 1075.

[323] Ex. App. 1, pp. 279 and 672. An excerpt from the Supplement is Ex. P-43.

[324] U.S. Army Corps of Engineers, "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)," at 99 (March 2010). Ex. P-43, p. 99.

[325] Tr. V. 6, 1326:7-24.

warm-season grasses and annuals may dominate many areas, should not immediately eliminate a site from further consideration as a wetland, because the site may have been dominated by wetland species earlier in the growing season. A site qualifies for further consideration, if the plant community at the time of sampling does not exhibit hydrophytic vegetation indicators, but indicators of hydric soil and wetland hydrology are present."[326]

Had the Halff Associates investigations keyed, first, on the hydric soils criterion emphasized by state law, it would have automatically avoided the risk about which the Corps' supplemental delineation manual warns, the improper immediate elimination of a site from further consideration as a wetland. Because of the Corps' concurrence in the Halff Associates shortcut to site sampling, the data presented in the Halff Associates report for the Corps are incomplete, for the most part, regarding site-specific soils data. Occasionally, however, the soils and hydrology data were entered on data sheets for which the dominance analysis failed to show hydrophytic vegetation. In at least two instances,[327] the data sheets show an absence of hydric vegetation but the presence of both hydric soils and wetland hydrology; this exactly the combination of characteristics the Corps supplemental manual says qualifies – not for immediate elimination but, rather – for further wetlands consideration. These sites are well within the permit boundary and appear to be within the landfill impact area.

(The numbered data points on the Halff Associates transect map, Figure B-1,[328] are the only points for which data sheets are provided in the report. They look to be fewer than half the data points on the transect map. If one is interested in an unnumbered data point, the legend[329] on the map directs one to look to a numbered data point of the same vegetation type on the same or a neighboring transect. Five or six unnumbered "mesquite grassland mosaic" data points surround one of the numbered "mesquite

[326] U.S. Army Corps of Engineers, "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)," at 100 (March 2010). Ex. P-43, p. 100.

[327] Data sheets for transect 8, data point 3, and for transect 9, data point 7. These are at Ex. App. 1, pp. 461 and 481.

[328] Ex. App. 1, p. 317.

[329] Ex. App. 1, p. 318.

grassland mosaic" data points described in the preceding paragraph – a data point with both hydric soil and wetlands hydrology but that was, nonetheless, immediately eliminated from further consideration. So, while several data deficiencies make it impossible to confidently quantify the number of immediately-eliminated sites that merited further wetlands consideration, there could clearly be quite a few of them.)

Gazing and human land-use practices. As earlier noted, the presence or absence of hydrophytic vegetation can be altered by long- and short-term grazing and human land use practices. The Halff Associates report characterized the eastern half or so of the 130EP site as "open pasture land with some apparent terracing of hillside slopes readily observable."[330] The terraces were discussed briefly in live testimony, and Mr. Marusak noted, in response to a question as to the sources of the terraces, "If I go back to my grandfather's farm, I can recall – and professional experiences, I'd have to think back to a range of projects –it's not unusual to encounter [terraces], especially in areas where there's a lot of "ag." He went on to agree terraces of this type are not the work of nature.[331]

The aerial photos,[332] below, excerpted from the Halff Associates report, show the pasture land and the terraces on it pretty clearly. Particularly the area of the landfill footprint has been grazed and terraced, and, thereby, likely had its natural plant communities altered.

[330] Ex. App. 1, p. 282.
[331] Tr. V.5, 1061:22-1062:7
[332] Ex. App. 1. pp. 313 and 314.

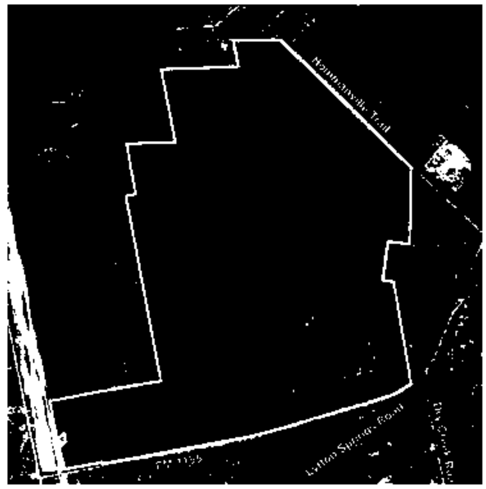

Fig. A-4 excerpt (2010)

Fig A-3 excerpt (1996)

In conclusion, regarding state law wetlands delineation and identification. Applicant did not delineate wetlands anywhere or identify wetlands within the permit boundary using the wetlands formulation adopted by state law. Some unknown number of sites on the property and within the permit boundary were immediately eliminated from further wetlands investigations – among them, the hydric soils investigation – because the Corps allowed this shortcut to the delineation and identification of wetlands under the Corps/EPA formulation of the term. Plant communities at the 130EP site are subject to at least three of the impacts that make reliance on hydrologic vegetation improper as a screening factor: the area has great climate variability, the area has been used as pasture land for years, and the area has been re-configured by the hand of man to create terraces. Additionally, the wetlands delineation and identification made by Halff Associates relied primarily on vegetation data collected in June and July 2013, a time (and two growing seasons) preceded by at least two years of abnormally dry and very dry conditions that likely rendered the vegetation wildly atypical of wet or growing season vegetation. Collectively, these failings in the delineation and identification of state-law wetlands deprives the evidence presented by Applicant, the party with the burden of proof, of credibility.

Wetlands Demonstrations

TCEQ Rule 330.553 requires of an applicant a number of demonstrations regarding the impacts of a landfill operation on wetlands. It also requires that, to the extent required by law, demonstrations be made to show attempted compliance with federal and state "no net loss of wetlands" standards.

In summary, Applicant's view is that either the facts of the project do not bring it within the scope of the required demonstration, or that the demonstration has been made elsewhere in the permit application, or that the waters and wetlands to be affected by the project are so few in acreage and function as to make their loss insignificant. As to the "no net loss of wetlands" demonstration, Applicant says it has made its demonstration under federal law (witness, the Corps' verification letter) and that there is no such demonstration required under state law.

Initially, note that, as explained at length in the preceding pages, because Applicant has not delineated or identified wetlands under state law, it has no foundation from which to analyze the acreages, functions or locations of state-law wetlands that might be impacted by its landfill project. Because of its deficiencies in the state-law delineation and identification phase, it is unable to make a number of the demonstrations required by Rule 330.553.

Significantly and in addition to that problem, Applicant is mistaken that Texas has no "no net loss of wetlands" regulation. TCEQ Rule 279.2(b) provides, "It is the policy of the [TCEQ] to achieve no overall net loss of the existing wetlands resource base with respect to wetlands functions and values in the State of Texas." When the Commission proposed this regulation in 1994, it disconnected the "no net loss of wetlands" standard from, as previously had been the case, only those Commission actions that were reviews of proposed federal permits.[333] The Commission explained or re-iterated in its preamble to proposed rule that "[t]he Commission's policy of no overall net loss of wetland functions and values is incorporated into the rule."[334] When the rule was adopted, the Commission responded to public comments, not all of them favorable, about the proposed rule but retained the text as proposed.[335]

In conclusion, regarding wetlands demonstrations. Applicant has failed to delineate and identify wetlands under state law standards within its property boundary and within its permit boundary. Therefore, it has not met the requirements of TCEQ Rule 330.63(m)(2 and 3). Because it did not do that, it has no foundation from which to present most of the demonstrations required by Rule 330.553, and it has not done so. Additionally, Applicant has failed to make the Rule 330.553 demonstrations, because it has mistakenly determined that the TCEQ has no "no net loss of wetlands" regulation.

[333] 19 Tex. Reg. 10309, at 10311 (Dec. 27, 1994).
[334] 19 Tex. Reg. 10309, at 10310 (Dec. 27, 1994).
[335] 20 Tex. Reg. 4693, at 4694 (June 1995).

16. Surface Water & Drainage

Protestants agree with and incorporate by reference the arguments presented by Caldwell County and PCCD on this issue, and will not repeat them here.

17. Floodplains

Protestants agree with and incorporate by reference the arguments presented by Caldwell County on this issue, and will not repeat them here.

18. Local Regulations/Approvals

Protestants agree with and incorporate by reference the arguments presented by Caldwell County on this issue, and will not repeat them here.

19. Waste Acceptance Rates

There is no evidence of a valid and accurate waste acceptance plan, as required by section 330.61 of the TCEQ regulations.

A so-called waste acceptance plan was sealed by Mr. Maroney, but he appeared to have little understanding of it and did not know the source of these waste acceptance rate projections and did nothing to verify these projections himself. These projections were simply handed over to him by a different consulting engineer, Mr. William Hodges.[336] Mr. Hodges runs a separate consulting firm, and was not presented as an expert witness despite being one of the primary engineers from the beginning of the application process.

Applicant tried to provide an evidentiary basis for the projections and numbers given in this waste acceptance plan by presenting expert testimony by a Mr. Hobby, a Mississippi engineer ,who testified that the waste acceptance plan need not be accurate and that the numbers in the plan were "reasonable."[337] According to Mr. Hobby, information submitted by an Applicant in a permit need not be accurate.

> Q. Do TCEQ's MSW rules require a permit application to include accurate or precise information on waste acceptance rate at [sic] and traffic to be generated by a landfill?

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336 Tr. V. 9, p. 2084.

337 Vol. 7, Applicant's Exhibit Hobby-1, p.5, lines 43-46. Tr. 1793, lines 7-13.

A. No.[338]

Cross-examination contained the following exchange:

Q. Is it accurate to say that your testimony is that these TCEQ rules do not, quote, "Require a permit application to include accurate information on waste acceptance rates?

A. Accurate.

Q. Isn't that what your testimony is right there?

A. Yes, sir.[339]

In fact, TCEQ Rules 330.59(g) and 305.44(b) not only require that all information in the Application be "accurate and complete," but they also require that a statement certifying to the accuracy and completeness of the application be included in the Application, and that such statement be authorized by the owner or operator.

The waste acceptance plan must further identify "the sources and characteristics of waste" the landfill will be accepting.[340] In depositions and in the Application, Applicant has consistently refused to identify any sources that could amount to the huge waste acceptance rate projections contained in the waste acceptance plan.[341] Despite what Applicant's expert Hobby says, these estimates of acceptance rates are an important part of the Application. The waste acceptance rate provides the basis for information in the Application as to the number, size, type and function of the equipment used at the landfill in the site operating plan.[342]

Submitting an inaccurate waste acceptance plan and asserting speculative waste acceptance rates without identifying sources of this projected waste should be grounds for rejecting the Application of 130 Environmental Park. Garbage in, garbage out.

20. Site Operating Plan

There are no detailed general rules to guide the daily operation of a municipal solid waste plant. The Commission has rejected a one-size-fits-

[338] Applicant's Exhibit Hobby-1, p.5, lines 43-46.
[339] Tr. V. 8, p. 1793, ll. 7-13.
[340] 30 Tex. Admin. Code § 330.61(b)(1).
[341] Tr. V. 9, p. 2083: 15-17
[342] 30 Tex. Admin. Code § 330.127(2). Tr. V. 8, p. 1795, lines 13-17.

all approach to regulation, in favor of individual site operating plans tailored to meet specific locations. Each site operating plan must therefore provide specific, enforceable procedures to govern the daily operation of a specific landfill. The exact level of detail required of each individual section of a plan is a matter of agency discretion – but, at a minimum, a plan must set out enforceable procedures and be more detailed than the general rules that it implements.[343]

Furthermore, TCEQ rules require enforceable site operating plans to guide daily operation:

> Part IV of the application contains the site operating plan that shall discuss how the owner or operator plans to conduct daily operations at the facility. Part IV shall consist of the documents required in §330.65 of this title (relating to Contents of Part IV of the Application).[344]
>
> and
>
> The approved site development plan, the site operating plan . . . and all other documents and plans required by this chapter shall become operational requirements and shall be considered a part of the operating record of the facility. Any deviation from the permit and incorporated plans or other related documents associated with the permit is a violation of this chapter.[345]

The rules on Site Operating Plans add more specifics.

> A site operating plan must include provisions for site management and the site operating personnel to meet the general and site-specific requirements of this subchapter . . . A site operating plan must include the following:
>
> (1) a description of functions and minimum qualifications for each category of key personnel to be employed at the facility and for the supervisory personnel in the chain of command; . . .
>
> (2) a description, including the minimum number, size, type, and function, of the equipment to be utilized at the facility based on the estimated waste acceptance rate and other operational requirements, and a description of

[343] *BFI Waste Systems of North America, Inc. v. Martinez Environmental Group*, 93 S.W.3d 570, 579 (Tex. App.—Austin 2002, pet. denied).

[344] 30 Tex. Admin. Code § 330.57(c)(4).

[345] 30 Tex. Admin. Code § 330.121(a).

the previsions for back-up equipment during periods of breakdown or maintenance of this listed equipment;

(3) a description of the general instructions that the operating personnel shall follow concerning the operational requirements of this subchapter;

(4) identification of applicable training requirements under §335.586(a) and (c) of this title (relating to Personnel Training) that shall be followed;

(5) procedures for the detection and prevention of the disposal of prohibited wastes, including regulated hazardous waste as defined in 40 Code of Federal Regulations (CFR) Part 261 . . .

(6) general instructions required to be included in the site operating plan by other sections of this chapter.[346]

It is clear from the rules and the court of appeals' opinion, quoted above, that the contents of the Site Operating Plan must be specific and enforceable. They must be more specific and detailed than mere repetition of the language in the rules. They cannot be promises to plan or plans to plan. A Site Operating Plan that promises to plan does not allow any real or meaningful enforcement of the rules.

The discussion below outlines some of the many inadequacies in Applicant's Site Operating Plan. The failure of Applicant to provide operating plans that comply with TCEQ rules and the decision of the Austin Court of Appeals justifies, and arguably requires, the denial of its permit application.

Water supply issue

Applicant's Site Operating Plan includes various procedures that cumulatively require an estimated 350,000 gallons of water per month. [347] However, Applicant has not yet secured access to such a large amount of water, though it promises it will do so. In other words, significant portions of the Site Operating Plan are based on a promise to plan, making the Site Operating Plan inadequate and not fully developed. Not only is this a promise to plan, it is a promise that Applicant has no means of fulfilling without the

[346] 30 Tex. Admin. Code § 330.127.
[347] Tr. V. 9, 2099:16-21.

ability, willingness, and cooperation of Polonia Water Supply Corporation (Polonia), an entity over which Applicant has no control. As articulated above, a Site Operating Plan may not be based on a promise to plan. The Site Operating Plan cannot be complete unless Applicant is able to demonstrate that it will have access to the 350,000 gallons of water per month that it needs.

Among the many procedures in the Site Operating Plan that rely on water that Applicant has yet to secure access to are: sanitary facilities, an adequate supply of water for firefighting purposes, periodic spraying for dust control, and a truck wheel wash. In an attempt to demonstrate that it has secured its water requirements, Applicant has offered as evidence a one-sentence letter from Polonia that states, "The 130 Environmental Park development is in the Polonia Water Supply Corporation CCN, and Polonia will service the development when all conditions of the tariff have been met." While Polonia may have indicated its willingness to service the landfill, Polonia has not agreed to service Applicant with 350,000 gallons of water per month, a very large amount of water by any standard. This one-sentence letter is not a contract and it does not demonstrate that Applicant has secured the amount of water it will need for daily operations. Without access to this water, the procedures in the Site Operating Plan that rely upon the water are meaningless. Applicant's Site Operating Plan is deficient, because it is premised on assumptions that have yet to, and may never, materialize.

Access road enforcement and flooding issue

TCEQ imposes certain requirements regarding wet weather, dust, and litter as they pertain to site access roads, and requires that the site operating plan contain the precise methods for achieving those requirements.[348] The wet-weather rule states, "All-weather roads must be provided from the facility to access public roads and within the facility to the unloading area(s) designated for wet-weather operation . . . The methods for controlling mud and associated debris tracked onto public roadways must be specified in the site operating plan."[349]

[348] 30 Tex. Admin. Code § 330.153.
[349] 30 Tex. Admin. Code § 330.153(a).

The site entrance road is listed as a support facility in the Site Operating Plan.[350] However, the portion of the site access road that would connect the facility to State Highway 183N extends beyond the permit boundary of the facility and would also traverse a floodplain. These factors present serious problems that the Site Operating Plan has failed to account for. Moreover, as described above, because the site access road is not included in the permit boundary, Applicant could revise its proposed access route, without even seeking an amendment to its permit.

The fact that the road would be situated over a floodplain raises legitimate flooding concerns. However, the Site Operating Plan does not contain any measures to be employed in the event of dangerous conditions during flooding events. In addition, the fact that this most flood-vulnerable portion of the road would lie beyond the permit boundary makes it unclear whether Applicant even plans to ensure that this portion of the road meets the rules' wet-weather requirements. Furthermore, it calls into question whether TCEQ would even have the authority to take any enforcement action should any dangerous conditions materialize on the road.

The Site Operating Plan is thus deficient because (1) a vulnerable portion of the road would lie outside the permit boundary and possibly outside of TCEQ jurisdiction, and (2) the Site Operating Plan fails to articulate the precise methods for ensuring that the entire stretch of the road, including the portion lying outside the permit boundary, is all-weather and clear of mud and associated debris.

Operating hours

The rules require a Site Operating Plan to state its operating hours, a rule clearly created to prevent nuisance conditions to nearby landowners.[351] The Site Operating Plan states that it is authorized to operate 24 hours per day, seven days per week and that "[s]ite operations include construction, earthmoving, monitoring, transportation of

[350] App. Ex. 5, p. 105.
[351] 30 TAC 330.135(a).

construction materials, heavy equipment operation, and other non-waste acceptance operations."[352]

Mr. Welch, the principal engineer for Parts I and II of the application, stated that the operation would generate noise and light during evening hours and that such noise and light could be incompatible with residents who live near the landfill.[353] The Site Operating Plan is deficient because it fails to demonstrate compatibility with nearby landowners, and operations would result in disruptive light and noise nuisance conditions to neighboring residents. The operating hours should therefore be revised to account for these conditions.

Alternative daily cover

The Site Operating Plan states:

> 130 Environmental Park plans to use alternate daily cover material (ADC) in the future. There are no ADC materials included in the application; the operator may propose ADC in the future. Before a specific ADC is used at the site, the operator will seek authorization from the TCEQ.[354]

The proposed landfill is expected to reach heights of up to roughly 170 feet. A landfill of this height must be covered with adequate soils to reduce odors and windblown waste. Allowing the potential use of alternative daily cover will result in nuisance conditions to nearby residents. Thus, this provision of the SOP should be revised to stated that no ADC will be allowed without a major amendment to the permit.

Windblown waste

"Windblown waste and litter at the working face must be controlled by using engineering methods or measures . . . A site operating plan must specify the means for confining windblown waste and litter."[355] The Site Operating Plan states, "Daily cover or alternative cover will be applied to assist with the control of windblown waste."[356] As

[352] App. Ex. 5, p. 139.
[353] Tr. V. 6, 1217:9-25.
[354] App. Ex. 5, p. 148-149.
[355] 30 Tex. Admin. Code § 330.139(1).
[356] App. Ex. 5, p. 139.

discussed above, no alternative daily cover should be allowed at a landfill that is proposed to be as high as this one. Windblown waste will not be adequately controlled by the use of ADC.

Similarly, the Site Operating Plan states that it plans to use litter control fences of "sufficient height" to control windblown waste, but does not indicate what this height may be.[357]

Visual screening

The Site Operating Plan states that it will mitigate the visual effects of landfill activity by the use of screening with fencing, constructed berms, planted vegetation, and natural vegetation in the buffer zone.[358] However, the Site Operating Plan does not explain how Applicant's clearing of forested areas and perimeter fencing during the months of June, July, and August would affect the visual screening.[359] This results in a plan for visual screening that is incomplete and not adequately specific or enforceable.

Vector control and scavenging

"A site operator shall control on-site populations of disease vectors using proper compaction and daily cover procedures, and the use of other approved methods when needed."[360] In addition, a landfill operation must include measures to prevent scavenging.[361] The Site Operating Plan includes provisions for site security, vector control, and scavenging, which include perimeter fencing of "barbed wire, woven wire, wooden fencing, plastic fencing, pipe fencing, or other suitable material" and "a gate constructed of suitable fencing materials."[362] However, at no point does the Site Operating Plan outline provisions for preventing scavenging and the spreading of disease vectors by feral hogs, which are known to be present in the area. Mr. Friedrich, a neighboring landowner who has lived in the area for many years and who has many years experience dealing with feral hogs, testified:

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[357] App. Ex. 5, p. 139.
[358] App. Ex. 5, p. 152.
[359] Tr. V. 6, 1230:5-19.
[360] 30 Tex. Admin. Code § 330.151.
[361] 30 Tex. Admin. Code § 330.155.
[362] App. Ex. 5, p. 136, 144, 145.

> Feral hogs are a persistent and serious problem in this area, capable of doing considerable damage to pasture land overnight. Hogs can be attracted from miles away to the smell of 'food.' The landfill will be a major draw to the hogs. Hogs can work their way through even the best of fences and do considerable damage.[363]

Applicant's fence and gate are simply not adequate controls for feral hogs that can potentially dig into the landfill, open it up for other disease vectors, and carry off wastes.

Missing operational requirements

As explained at the beginning of this section, a site operating plan is intended to be an instruction manual of sorts for the operation of the facility and serves as an enforcement mechanism for TCEQ. As such, the site operating plan must be complete, specific, and enforceable. Applicant has excluded from the Site Operating Plan many operational requirements that are included elsewhere in the application. Neither an operator nor TCEQ would be able to rely on the Site Operating Plan to fully determine what the operational requirements are, which contradicts the purpose of the Site Operating Plan. The Site Operating Plan is deficient because it fails to comprehensively include all of the facility's operating procedures.

In sum, Applicant's Site Operating Plan is deficient for many reasons. TCEQ Rules and the Austin Court of Appeals require the Site Operating Plan to be specific and enforceable, and not merely a reiteration of the language of the rules or a promise to plan. The Site Operating Plan has missed the mark in this regard. This failure to provide an adequate Plan justifies, and even requires, the denial of EP's permit.

21. Odor

TCEQ Rule 330.149 requires the site operating plan to include an odor management plan with several specific components. There is no evidence that the Applicant's odor management plan contains these components. Moreover, although this odor management plan was sealed by Mr. Maroney, he has demonstrated no expertise in this area and gave no testimony in support of the plan.

[363] Protestants' Ex. P-2, p. 15.

The odor management plan must address "the sources of odors." On its face, the odor management plan does not address all the sources of odors, but only addresses some very specific sources. Applicant's expert testified that food, sheetrock and "pretty much anything that's coming in" are capable of producing foul and horrible odors.[364] Sheetrock, for example, can produce intense sulfur or rotton egg smalls.[365] Yet the odor management plan, which is found on 130EP-5, pages 143-144, does not address sheetrock, food and these other regular sources of odors but only "special wastes," which the odor management plan describes as "odor producing wastes," and special problems like ponding, "storage and processing facilities," and a minimum buffer distance.

An adequate odor management plan is essential, considering the height of the proposed landfill and its proximity to nearby residences. One existing home is within 380 feet of the landfill and downwind, and at least eight other residences are within 500 feet and also downwind.[366]

This odor management plan does not satisfy the requirements of Rule 330.149 and would allow the landfill to disrupt the health and safety of area residents in their own homes.

22. Water Supply

In order to construct and operate the Landfill in compliance with regulatory requirements, Applicant will need water for several purposes. These include significant water for soil liner compaction and to achieve the required permeabilities in the soil liners.[367] Furthermore, TCEQ rules require that an adequate supply of water under pressure must be available for firefighting purposes,[368] and the Applicant shall describe how solid waste processing facilities will be designed to facilitate proper cleaning.[369] Moreover, the owner or operator of a landfill shall

[364] Tr. V. 4, p. 982, lines 11-25, 983, lines 1-11.
[365] Tr. V. 4, p. 982, lines 21-25.
[366] Tr.V. 4, p. 1005, line 25 & p. 1006, lines 1-14.
[367] Tr. V. 3, pp. 727-728.
[368] 30 Tex. Admin. Code § 330.221(a).
[369] 30 Tex. Admin. Code § 330.63(b)(3).

provide potable water and sanitary facilities for all employees and visitors.[370] In sum, at the hearing, Mr. Maroney stated that construction and operation of the site will require approximately 250,000 to 350,000 gallons per month.[371]

But, Applicant has not demonstrated that it has an adequate supply of water available in order to comply with these regulatory requirements. Applicant says that it does not intend to use on-site wells as its source of water supply.[372] In fact, the use of groundwater at the site would alter the assumed gradients underpinning Applicant's groundwater monitoring analysis. In an attempt to demonstrate that it has secured its water requirements, Applicant has offered as evidence a one-sentence letter from Polonia that states, "The 130 Environmental Park development is in the Polonia Water Supply Corporation CCN, and Polonia will service the development when all conditions of the tariff have been met."[373] While Polonia may have indicated its willingness to service the landfill, Polonia has not agreed to service Applicant with 350,000 gallons of water per month. There has been no demonstration that Palonia is capable of providing the massive quantities of water required for the landfill.

The Site Operating Plan states that the water required for fire protection will come from the above ground water storage tank located at the transfer station.[374] However, the transfer station is not included in the Site Operating Plan's list of support facilities. In addition, Applicant has submitted an independent and separate Site Operating Plan for the transfer station. Applicant treats the landfill and the transfer station as two independent and separate facilities and yet requires TCEQ to rely on its promise that the transfer station will be constructed and available so that the landfill can meet its fire protection requirements.

In addition, the Application provides that bottled water will be utilized to provide for the potable water needs at the facility. Applicant's reliance on bottled water to serve

[370] 30 Tex. Admin. Code § 330.249.
[371] Tr. V. 9, 2099:16-21.
[372] Tr. V. 1, p. 147.
[373] Ex. 130EP-48.
[374] App. Ex. 5, p. 133

this need is unreasonable. Applicant has in no way quantified the potable water needs of the facility, nor has it demonstrated that such an amount can be reasonably provided via bottled water. In addition, potable water is required for use not only for drinking purposes, but also for emergency personnel cleaning equipment such as chemical eye-washes, in addition to handwashing purposes. Simply having bottled water available at the facility does not adequately address these potable water needs.

If a permit is issued, then the draft permit should contain a special provision that prohibits the use of on-site groundwater as a water source at the facility, since the use of such groundwater would influence the groundwater gradients at the facility in a manner that has not been analyzed. Furthermore, since the landfill operations depend on the transfer station as the source of water for fire-fighting purposes, a special condition should be added that requires construction of the proposed transfer station prior to construction of the landfill. If the transfer station is not constructed, then, the landfill cannot be constructed.

23. Buffer Zones

Other than the arguments that have already been raised in this brief that include buffer zones, Protestants offer no further arguments on this issue.

24. Screening

Other than the arguments that have already been raised in this brief that include screening, Protestants offer no further arguments on this issue.

25. Permit Duration

There are several factors that support the inclusion of a limited permit duration, if this requested permit is granted. Perhaps the most pressing issue of concern is the floodplain and the Site 21 dam. Caldwell County has experienced a number of extreme weather events. Based on the history of these weather events and on increased development in the area, it is likely that the floodplain boundaries will be impacted. Further, increased run-off is likely to impact the Site 21 reservoir and high hazard dam.

Accordingly, in order to ensure the protection of human health and the environment, if this permit is issued, it should be issued for a period of no longer than 5 years. After 5 years, Applicant should be required to renew the application and demonstrate that the proposed landfill has not resulted in adverse drainage patterns, and that the floodplain boundaries remain the same.

26. Closure Plan

Other than the arguments that have already been raised in this brief, Protestants offer no further arguments on this issue.

27. Post-Closure Plan

Other than the arguments that have already been raised in this brief, Protestants offer no further arguments on this issue.

28. Financial Assurance

Other than the arguments that have already been raised in this brief, Protestants offer no further arguments on this issue.

29. Impacts on health, welfare, environment, or physical property of nearby residents and property owners

Based on the discussions above, Applicant has failed to meet this requirement. This is particularly true with regard to PCCD. There is nothing in the application to even suggest that Applicant considered how its proposed application would impact PCCD's property rights.

Moreover, PCCD has authority over both surface water and groundwater. And the proposed landfill poses a threat to both of these resources, as well as to the reservoir and dam under PCCD's responsibility. Because of this utter failure to consider the property rights and the resources for which PCCD is responsible, Applicant has failed to satisfy this requirement.

30. Enforceability of Draft Permit

As discussed in various sections of this brief, the access road that Applicant purports to intend to use to access the site is not included in the draft permit. Thus, TCEQ would not be able to enforce any permit provisions that relate to accessing the site or maintenance of the access road. It is not even clear that TCEQ could prohibit Applicant from changing its proposed access route. And finally, if Applicant were to abandon the landfill, it is unclear whether TCEQ would be able to access the facility, since the private access road is not included in the permit.

31. Special Provisions

Protestants urge that the permit applicant be denied. If the ALJs were to recommend granting the permit, however, then, Protestants have suggested a number of special provisions, throughout this brief, that should be added to the requested permit. Among those are: (1) amend the application to include the access road; (2) require Applicant to haul in adequate soils for construction and operation; (3) require Applicant to seek a major amendment before it may be allowed to use ADC; (4) require a minimum of six inches of earthen material suitable for daily cover be used daily, and require that the earthen material be hauled in, in adequate amounts by Applicant, since it has not demonstrated that suitable materials exist on site; (5) prohibit clearing during all months of the year, except 3 summer months; and (6) include a 5-year permit term.

32. Transcript Costs

The assessment of transcript costs is to be addressed in consideration of the factors set forth in TCEQ Rule 80.23(d)(1):

(A) the party who requested the transcript;
(B) the financial ability of the party to pay the costs;
(C) the extent to which the party participated in the hearing;
(D) the relative benefits to the various parties of having a transcript;
(E) the budgetary constraints of a state or federal administrative agency participating in the proceeding;
(F) in rate proceedings, the extent to which the expense of the rate proceeding is included in the utility's allowable expenses; and
(G) any other factor which is relevant to a just and reasonable assessment of costs.

In this proceeding, Applicant has received the most benefits from having a transcript, as it has a direct financial interest in the outcome of this matter. Caldwell County and Plum Creek Conservation District are local governmental entities that are funded by taxpayers and allocating costs to them would shift the burden of transcript costs to the taxpayers of Caldwell County. Meanwhile, EPICC is a citizen-run non-profit organization made up almost entirely of rural landowners without the same financial resources as the Applicant in this matter.

And finally, TJFA has already had to bear the burden of substantial costs associated with drilling borings on the proposed landfill site. Access to the site to conduct a subsurface investigation was necessary because Applicant spoliated all of the evidence that formed the basis for its geology report. And it did so even after Protestants' counsel sent a preservation of evidence letter. TJFA has already expended more than its fair share of resources in this matter, because of Applicant's unethical conduct in discarding evidence. It should not now be required to also pay for transcript costs.

Therefore, Protestants urge the Administrative Law Judges to assess all transcript costs to 130 Environmental Park.

33. Additional Issues

Other than the issues addressed above, Protestants have no other issues to present at this time.

III. Conclusion & Prayer

Because Applicant has failed to demonstrate compliance with a number of TCEQ requirements, Protestants urge the ALJs to issue a Proposal for Decision, recommending denial of the permit application.

Respectfully submitted,

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CERTIFICATE OF SERVICE

By my signature, below, I hereby certify that a true and correct copy of the foregoing document has been served on the following attorneys of record by electronic mail, facsimile, or US Mail on this 24th day of October, 2016.

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