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TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY
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CHIEF CLERKS OFFICE

IN THE MATTER OF SYNAGRO OF § BEFORE THE TEXAS
TEXAS-CDR, INC. FOR § COMMISSION ON
PERMIT NO. WQ0004671000 § ENVIRONMENTAL QUALITY

**SYNAGRO OF TEXAS-CDR, INC.'S REPLY TO PROTESTANTS'
EXCEPTIONS TO THE PROPOSAL FOR DECISION**

**TO THE COMMISSIONERS OF THE TEXAS COMMISSION ON ENVIRONMENTAL
QUALITY:**

Synagro of Texas-CDR, Inc. ("Synagro"), the Applicant, files its Reply to Protestants' Exceptions to the Proposal for Decision in the above-referenced matter and would respectfully show the following:

I. Summary of Arguments

After carefully considering the evidence and arguments of the parties, the Administrative Law Judge ("ALJ") recommends that the Commission should grant Synagro's application to land apply Class B biosolids and issue TCEQ Permit No. WQ0004671000 as drafted by the Executive Director because:

- 1) Synagro's newly proposed agronomic rates have been properly calculated;
- 2) the agronomic rates will have no adverse impact on surface water runoff from the site; and
- 3) the surface water runoff from the site will not adversely impact the Protestants' fishing and wildlife ponds.

In their Exceptions, the Protestants have failed to demonstrate that the ALJ's conclusions are erroneous or her recommendation should not be adopted by the Commission. Consequently, the Protestants' exceptions should be denied.

The Executive Director correctly determined Synagro's application to be administratively complete on August 29, 2003 because Synagro submitted a complete permit application form and the required fees when it submitted its application on August 21, 2003. At that point, the permit application was ready for technical review. The Protestants' argument that the application was not administratively complete until June 8, 2006 is without merit because the new agronomic loading rate calculations submitted on that date were technical in nature. Furthermore, the Commission did not require new notice of the Application when it remanded the Application for consideration of the new agronomic rates. Consequently, the ALJ correctly determined that the rules and law in effect on August 29, 2003 were applicable to Synagro's application.

Contrary to the Protestants' contentions, the ALJ correctly concluded that Synagro's agronomic rates have been properly calculated according to the relevant statutory and regulatory requirements. Synagro's expert, J. Kenneth High, correctly calculated the agronomic rates according to the Commission's form, TCEQ 10451. Mr. High has been involved in 60-65 applications concerning land application of biosolids and has 35 years experience with sewage sludge related activities. In contrast, Protestants expert, Bruce Wiland, has never prepared an application to land apply Class B biosolids. The ALJ correctly found Mr. Wiland's criticisms of the calculations to be unpersuasive.

The ALJ correctly concluded that the new agronomic rates will not have an adverse impact on surface water runoff from the site. As the ALJ found, the Protestants' criticisms of

Synagro's buffer zones are not supported by the Commission's rules and fail to acknowledge that the buffer zones exceed the applicable rules in quantity of the land excluded and quality of the buffer zones themselves. Synagro is extending its buffer zone beyond 200 feet from Gum Tree Branch Creek to encompass the 100 year floodplain. The buffer zones are currently fully vegetated, and the permit requires the vegetation to be maintained. The Protestants failed to present any evidence that the buffer zones would not be effective in removing nutrients and other constituents in runoff from the site.

Finally, the ALJ correctly concluded that the runoff from the site will not adversely impact Protestants fishing and wildlife ponds. In addition to having buffer zones that will be effective in removing nutrients, the great weight and preponderance of the evidence presented by Synagro's expert, William H. Espey, Jr., Ph.D, P.E., demonstrates that it would take a 50 year flood event to overtop the levees on Protestants' ponds. Protestants' contention that their ponds will be impacted by surface water runoff from the site is not based on sound scientific calculations. In contrast, Dr. Espey's findings are based on a flood frequency analysis and a backwater analysis, two classical methods for determining flood conditions and overtopping of levees based on peak flow data and the capacity of the watercourse. Although Protestants challenge certain judgment decisions made by Dr. Espey in performing his analyses, Dr. Espey verified all of his judgment decisions in performing his analyses with FEMA's 100 year floodplain maps. Dr. Espey confirmed that his model mimicked FEMA's findings concerning the extent of the 100 year floodplain without the presence of Protestants' levees. The ALJ correctly found that the Protestants' contentions about flooding of their ponds were refuted by Dr. Espey's analyses. Furthermore, the evidence demonstrates that Protestants' ponds will be

flooded by local site drainage long before any runoff from the site could reach them in a 50 year flood event.

II. Background

On August 21, 2003, Synagro filed its application to land apply Class B biosolids for beneficial use (the "Application") on three fields located within a certain 1134.94 acre tract of land in Wharton County, Texas (the "Site"). The initial agronomic loading rate for each of these fields was 6.18 tons/acre/year. The Commission deemed the Application administratively complete on August 29, 2003. Protestants Bret and Phyllis Hudman protested the Application, and their request for a contested case hearing was granted to determine whether surface water runoff from Synagro's facility will impact or affect fishing and wildlife ponds on adjacent property.

The Application proceeded through the contested case hearing process, and on December 21, 2005, the ALJ issued her proposal for decision ("PFD") recommending that the Commission grant the original draft permit for the Application. After realizing that there was an error with the laboratory data, Synagro voluntarily filed a Motion to Remand requesting that the Application be remanded so that supplemental evidence could be considered regarding whether surface water runoff from the Site, based on Synagro's revised agronomic loading rates, would impact or affect the fishing and wildlife ponds on adjacent property.¹ The Commission granted Synagro's request in an Interim Order issued on April 28, 2006, which also strongly urged the Executive Director to participate in this supplemental contested case hearing.²

On June 8, 2006, Synagro provided its updated and *reduced* agronomic loading rates, which propose the land application of Class B biosolids at a rate of 5.02 tons/acre/year for Fields

¹ Synagro's Motion to Remand.

² Interim Order of the TCEQ, April 28, 2006, at 2.

1 and 2 and at a rate of 4.66 tons/acre/year for Field 3. After the Federal Emergency Management Agency ("FEMA") had released its revised 100 year floodplain map for Wharton County in 2006, Synagro also reduced its land application area from 1134.94 acres to 1073.92 acres.³ A second evidentiary hearing was held in this matter on January 22-24, 2007, and on July 6, 2007, the presiding ALJ issued her PFD on remand, agreeing with the Applicant, the Executive Director, and the Public Interest Counsel, and recommending to the Commission that Permit No. WQ0004671000 as drafted by the Executive Director (the "Draft Permit") should be granted. Specifically, the PFD provides that the Draft Permit contains sufficient provisions to assure that surface water runoff from the facility will not impact or affect fishing and wildlife ponds on adjacent property.⁴

In their exceptions to the PFD, Protestants fail to specifically except to any of the ALJ's Findings of Fact ("FOF") or Conclusions of Law ("COL") and did not provide any alternative FOF or COL. Rather, they generally argue (1) that although the Executive Director deemed the application administratively complete in 2003, the application should be subject to TCEQ rules effective as of June 2006; (2) that the revised agronomic loading rates were not calculated correctly, and (3) that the Protestants' ponds will be adversely impacted by surface water runoff from the land application site.⁵

III. Synagro's Application Was Properly Evaluated By the Statutes and Rules in Effect Before September 1, 2003

Protestants surprisingly claim that the Application should be considered under the Texas Water Code, Texas Health and Safety Code, and Commission Rules in effect *after* September 1, 2003, arguing that the application was not administratively complete until June 8, 2006, and that

³ Exh. A-31; Tr., p. 66, ll. 5-14; Tr., p. 213, l. 16-p. 214, l. 2.

⁴ Proposal for Decision (July 6, 2007), Conclusion of Law No. 5.

⁵ Protestants' Exceptions to Proposal for Decision at 3.

the reduced and revised agronomic rates were substantive changes to the Application. Protestants' position is not supported by the law or the record in this case.

The Application submitted on August 21, 2003 was a complete application, as determined by the Executive Director. Protestants allege that there was "missing information" in the Application. However, Protestants did not present any evidence or testimony to refute the Executive Director's administrative analysis of the Application, much less any testimony demonstrating that the analysis was deficient. Thus, the Executive Director correctly found the Application to be administrative complete as of August 29, 2003.

The Applicant's revised agronomic rates provided also do not constitute substantive changes to the Application. Section 281.23(a) of the Commission's rules applies to this case, which states that:

[n]o amendments to an application which would constitute a major amendment under the terms of § 305.62 of this title (relating to Amendment) can be made by the applicant after the chief clerk has issued notice of the application and draft permit, unless new notice is issued which includes a description of the proposed amendments to the application.⁶

Further, a major amendment is "an amendment that changes a substantive term, provision, requirement, or a limiting parameter of a permit,"⁷ and a minor amendment is "an amendment to improve or maintain the permitted quality...[and] includes any other change to a permit issued...that will not cause or relax a standard or criterion which may result in a potential deterioration of quality of water in the state."⁸

An applicant's voluntary decision to *improve* the scope of a limiting parameter from the original request is not a substantive change, rather it is in the nature of a minor amendment. Here, Synagro is *not* seeking to increase its proposed agronomic rates from the originally

⁶ 30 Tex. Admin. Code § 281.23(a).

⁷ *Id.* § 305.62(c)(1).

⁸ *Id.* § 305.62(c)(2).

requested amounts, but instead is voluntarily lowering its rates from the originally requested amounts of 6.18 to 5.02 dry tons/acre/year for Fields 1 and 2 and 6.18 to 4.66 dry tons/acre/year for Field 3. Additionally, based upon the changes made to the FEMA 100 year floodplain since the initial evidentiary hearing in 2005, Synagro has maintained its commitment to not land apply the biosolids in the floodplain, resulting in a *reduction* of acreage that it will apply the biosolids. Thus, it is no surprise that the Commission did not view these corrections as substantive changes. Further, the Commission's April 28, 2006, Order of remand in this matter neither directed Synagro to re-notice the Application nor order the Executive Director to perform a new administrative review of the Application.⁹ Protestants' inflammatory allegations regarding how Synagro prepared its application are simply not true and not supported by the record.¹⁰

Therefore, pursuant to the Executive Director's decision to declare the Application administratively complete on August 29, 2003, to the Commission's April 28, 2006 Order, to the ALJ's Order No. 9, and to Synagro's reduced agronomic loading rates, the Application has been correctly evaluated based upon the statutes and Commission rules in effect before September 1, 2003.

IV. Synagro's June 8, 2006 Reduced Agronomic Rates Are Correctly Calculated According to the Statutes and Rules in Effect Before September 1, 2003

Protestants' Exceptions fail to provide credible evidence in the record that supports their contention that Synagro's reduced and revised agronomic rates have not been correctly calculated. Mr. High, the Applicant's expert witness, calculated (i) the yield goal for the crop,

⁹ Interim Order of the TCEQ, April 28, 2006.

¹⁰ Additionally, it should be noted that Protestants' have incorrectly represented Synagro's position regarding incorporation of the biosolids. Synagro has not reversed its position regarding incorporation of the biosolids. Synagro's original and revised agronomic rates were calculated using a volatilization factor of .5, representing that the sludge would not be incorporated in the soil. Exh. A-14, Appendix A; Ex. A-19, p. 10, 13, and 16. Despite Protestants' partial quotation in its Exceptions, Synagro's consistent position is supported by testimony at both the initial hearing and supplemental hearing. Exh. A-28, p. 15, ll. 3-6; Exh. A-15, p. 22; Exh. ED-11, p. 16 (Special Provision XIV.E); Tr., p. 31, ll. 11-17; Tr., p. 337, ll. 12-16; Tr., p. 340, l. 21-p. 341, l. 9; p. 341, ll. 13-20.

(ii) the nitrogen requirements for the agronomic loading rate, and (iii) the plant available nitrogen. His calculations are based on his knowledge and experience in preparing these applications in the region¹¹ and site specific research-based articles that are relied upon by experts in the field, such as publications by the Texas A & M University Agricultural Extension Service¹² and the National Resource Conservation Service (“NRCS”).¹³ As a foundation for analyzing the agronomic loading rate calculations, the record is uncontroverted that the sludge samples and their chemical compositions are accurate, the soil samples were taken correctly, the grass samples were taken correctly, and the laboratory’s findings of the compositions of the grass and soil samples are accurate.¹⁴ Further, the rules applicable to Synagro’s Application do not require phosphorus to be considered in its agronomic rate calculations.¹⁵

A. Synagro’s Projected Nitrogen Demand to Meet Its Yield Goal Has Been Accurately Calculated

None of the Protestants’ three bases for arguing that Synagro’s nitrogen demand calculations exceed the nitrogen required to meet the proposed crop yield merit amending the PFD, FOF, or COL. Specifically, Synagro’s agronomic loading rate calculations of the nitrogen demand for the proposed crop yield are based upon site specific data and scientific principles relied upon by experts in the field and take into consideration any nitrogen that may return to the field.

¹¹ Tr., p. 476, l. 23–p. 479, l. 11.

¹² Exhs. A-51 and A-52.

¹³ Tr., p. 482, l. 13–p. 484, l. 5; Tr., p. 518, l. 17–p. 520, l. 25; Exh. A-28, p. 9, ll. 17–18; Exh. A-19, pp. 6, 7, 18–20; Exhs. A-51, A-52, A-55, and A-57.

¹⁴ Exhs. A-26 and A-27; Exh. A-18, p. 9, l. 12–p. 10, l. 11; Applicant’s Closing Argument, Sections II.A. and II.B, at 9–12.

¹⁵ Tr., p. 422, l. 18–p. 423, l. 4; Tr., p. 432, ll. 17–23. Furthermore, even in the current rules, phosphorus is a limiting factor only if the biosolids application site is located in a sole-source impairment zone. 30 Tex. Admin. Code § 312.11(k) (2007). Mr. Wiland acknowledged that the Site is not a sole-source impairment zone. Tr., p. 330, ll. 18–23.

1. Nitrogen Demand for the Bermuda Grass

After calculating a reasonably achievable yield goal for the Bermuda grass crop at the Site, Mr. High determined the amount of nitrogen that would be necessary to achieve the projected yield goal. In their criticism of Mr. High's calculations, Protestants rely upon a NRCS spreadsheet contained in Exh. P-2C, which states that the nitrogen requirement for common grazing grass for 1 animal unit per 4 acres is 140 pounds of nitrogen.¹⁶ However, the record reflects that the values in this spreadsheet are independent of a specific crop yield and are not site specific to Wharton County or its Edna and Crowley soils.¹⁷ Mr. High's calculations for nitrogen needed to meet the yield goal look to the *site specific range production data* contained in the NRCS Web Soil Survey for Wharton County.¹⁸ As provided in Applicant's Exhibit A-19, pp. 3-5, Mr. High multiplied those yields by 1.88%, a percentage which Mr. High consistently found in published articles as representing the concentration of nitrogen in common Bermuda grass, including the Protestants' Exhibit P-2C;¹⁹ and then he reduced the amount of nitrogen required for the first biosolids application by the nitrogen in the soil and reduced the amount of nitrogen for the second biosolids application by the amount that will return to the soil from the shredded grass, using the nitrogen concentration in the actual grass samples taken from the Site.²⁰

Protestants further criticize Mr. High's reliance on Exhibit A-55 stating that his usage of the 1.88% factor is irrelevant because the Site will be grazed and not harvested. This argument is misleading and demonstrates that Protestants do not even understand what the 1.88% factor represents. First, as testified to by Mr. High, the 1.88% factor is the amount of nitrogen in the

¹⁶ Exh. P-2C.

¹⁷ Tr., p. 485, l. 21-p. 486, l. 11.

¹⁸ Exh. A-19, pp. 3-5, 20.

¹⁹ Tr., p. 478, l. 18-p. 479, l. 3; Exh. A-19, pp. 4-5; Exh. A-55, p. 3.

²⁰ Exh. A-19, pp. 3-5; Exh. A-55, p. 3.

grass itself, which in turn also represents the amount of nitrogen required to grow that Bermuda grass crop based upon the total yield goal weight.²¹ Regardless of whether the grass is harvested, grazed, or removed, the percentage of nitrogen present in the grass, which is also the amount of nitrogen needed, is the same. This percentage is a consistent value reported for Bermuda grass.²² Second, Synagro's agronomic rate calculations take into account the nitrogen that will return to the soil after shredding. In fact, Synagro has conservatively estimated the amount nitrogen that will return to the soil after shredding, utilizing the nitrogen content in the actual grass samples as calculated by the laboratory.²³

Further, Protestants' citation to evidence from the first evidentiary hearing regarding nitrogen demand is again misleading and not relevant here. Synagro's evidence supporting the reduced agronomic rates demonstrates that Synagro plans to have two applications of biosolids, and the Site will have low erosion because it will have fully vegetated and maintained buffer zones.²⁴

2. Nitrogen Returned to the Site from Animal Wastes

Protestants ignore crucial portions of Mr. High's testimony when they argue that Synagro has not considered the impact of urine and manure from the grazing cattle on the nitrogen returning to the soil. While Mr. High indeed states that he did not consider how nitrogen removed through grazing by cattle might be offset by the nitrogen returned to the soil through manure, he more importantly testified that the initial and subsequent annual soil samples reflect any nitrogen returned to the soil from waste deposits from the grazing cattle.²⁵ Because the annual soil samples are used to calibrate how much nitrogen can be applied to the fields at the

²¹ Tr., p. 478, l. 12–p. 481, l. 1.

²² Tr., p. 478, l. 18–p. 480, l. 19.

²³ Exh. A-19, p. 2.

²⁴ Protestants' Closing Argument, Sec. I.C.2.(i), p. 11; Exh. A-15, p. 27; Exh. A-19, p. 6.

²⁵ Tr., p. 524, l. 21–p. 525, l. 10; Tr., p. 491, l. 24–p. 492, l. 17. See also, Exh. A-6, pp. 4, 5, 10, 13, and 16 (reducing the amount of nitrogen required by the crop as a result of the nitrogen in the soil sample).

Site for next year, which cannot be higher than the initial agronomic rate, the impact of nitrogen contained in the waste deposited from grazing cattle is considered in Synagro's rate calculations.²⁶ Therefore, fatal to Protestants' position, because cattle are already grazing on the Site, the nitrogen from their waste deposits have been taken into consideration in Synagro's agronomic rate calculations even before Synagro's initial application of biosolids at the Site.²⁷

3. Nitrogen Returned to the Site from Shredding

Protestants still mistakenly and generally contend that Synagro's calculations assume that shredding the grass on the site will remove the nitrogen from the field. This is clearly wrong. Synagro's evidence demonstrates that its calculations are based upon the premise that 100% of the nitrogen of the shredded portion of the grass will remain on the Site and that the shredded portion of the grass is only 33.333% of the original, pre-grazed height of the grass.²⁸

Therefore, unlike the basis of Protestants' criticisms, Synagro's nitrogen demand calculations are founded upon the most accurate and site specific data contained in the record and are thorough in the consideration of how nitrogen will be returned to the soil at the Site.

B. Synagro's Revised Agronomic Rates Properly Compute the Plant Available Nitrogen ("PAN") in the Biosolids

Contrary to Protestants' contention, Synagro has not made a "mistake" in calculating the PAN. Synagro correctly followed the directions in Step 3.A. of TCEQ 10451. In making their argument on this issue, Protestants have misrepresented the testimony of Executive Director's witness, Dr. Askenasy, and only presented half of the facts regarding the formula. First, they have mistakenly alleged that Dr. Askenasy "testif[ied] on Applicant's behalf." As evidenced by their April 28, 2006 Interim Order, the Commissioners of the TCEQ requested the Executive

²⁶ Tr., p. 491, l. 24-p. 492, l. 11.

²⁷ *Id.*; Exh. A-19, pp. 4-5, 10, 13, and 16; Exh. A-22.

²⁸ Exh. A-19, pp. 3-5; Tr., p. 486, l. 19-p. 487, l. 25.

Director to participate in this contested case hearing.²⁹ Further, while the Executive Director agrees that Synagro has correctly completed Step 3 of TCEQ 10451, the Applicant has provided its own testimony and exhibits to meet its burden in this contested case hearing.

Second, the Protestants incorrectly summarize the testimony of Dr. Askenasy. Specifically, Protestants contend that Dr. Askenasy took the position that he “could not consider any technical flaws that were inherent to the form itself,” citing page 427, lines 13–19 of the transcript.³⁰ However, the actual dialogue between Mr. Allmon and Dr. Askenasy for these seven lines is as follows:

Q: Do you agree with Mr. Wiland’s discussion of the difference between total nitrogen and total Kjeldahl nitrogen on Pages 9 and 10?

A: I think it’s a very interesting question, but the application itself does not allow me to even entertain this type, of whether or not the difference does exist.³¹

Obviously, nothing in this testimony even remotely constitutes a statement by the Executive Director’s expert witness that a mistake exists on TCEQ 10451.

As stated by Protestants and Synagro in their respective Closing Arguments and in Protestants’ Exceptions, Step 3A of TCEQ 10451 calls for the following data: “Organic Nitrogen = Total N – (NH₄-N) – (NO₃-N).”³² However, Protestants have omitted from their argument the fact that TCEQ 10451 directs the applicant to “[u]se the values for Total N, NH₄-N, and NO₃-N from Step 1.”³³ To this end, Synagro placed its Step 1 values for “Total N (TKN),” “Ammonium (NH₄-N),” and “Nitrate (NO₃-N)” in the proper placeholders in Step 3 for each field at the Site.³⁴

²⁹ Interim Order of the TCEQ, April 28, 2006, at 2.

³⁰ Protestants Exceptions to Proposal for Decision, p. 7-8.

³¹ Tr., p. 427, ll. 13–19.

³² Synagro’s Closing Argument, Sec. II.C., pp. 18–19; Protestants Exceptions to Proposal for Decision, p. 7; Exh. A-19, pp. 10, 13 and 16.

³³ Exh. A-19, pp. 10, 13, and 16.

³⁴ Exh. A-19, pp. 9, 10, 13, and 16.

As mentioned above, it is uncontroverted that Synagro's computations with those numbers from Step 1 were properly executed.

V. Synagro's June 8, 2006 Revised Agronomic Rates Will Not Cause Surface Water Runoff From The Site That Would Adversely Affect Protestants' Ponds

Because Synagro's revised agronomic rates are based upon sound data, a reasonably achievable yield goal, a proper determination of the amount of nitrogen required to meet that yield goal, and a mandatory calibration of the data on an annual basis pursuant to TCEQ rules, the amount of nutrients applied at the Site will coincide with the amount of nutrients that are used by the Bermuda grass. However, even in the event that the nutrients applied exceed the amount of nutrients needed, Synagro's designation of buffer zones as set forth in the Site Management Plan, which has been incorporated into the Draft Permit, exceed the Commission's required level of protection to prevent runoff of nutrients. Further, according to the *site specific* NRCS data, the permeability of Crowley and Edna soils at the Site are suitable for the land application of biosolids, which will reduce the likelihood of runoff of nutrients. Then, in the event that nutrients did runoff from the Site, they would not overtop Protestants levees and spill into their fishing and wildlife ponds except for the rainfall event in the magnitude of a 50 year flood.

In their Exceptions, the Protestants fail to demonstrate that Synagro has not complied with the Commission's rules regarding buffer zones, disregard the NRCS site specific data for Wharton County regarding the permeability of the soil and instead rely upon the NRCS's national data, and mischaracterize the amount of phosphorus that would leave the Site. Additionally, while Protestants contend that their ponds are "within the floodplain," Dr. Espey, an expert hydrologist appointed by the United States to investigate the overtopping of the levees from Hurricane Katrina, determined through classical hydrologic analyses relied upon by experts

in the field that Protestants' ponds would only be overtopped in a 50 year flood event. In essence, the Protestants contend that the Commission should not grant an application to land apply Class B biosolids that has buffer zones more protective of the environment than the Commission's rules require and that has only a very remote possibility of impacting a pond. To deny this Application on these grounds would render it impossible for any applicant to obtain a permit to land apply Class B biosolids.

A. Synagro's Buffer Zones Exceed The Commission's Requirements

While Protestants take issue with the effectiveness of the buffer zones when inundated with water or when grazed by cattle and the ability of buffer zones in general to remove nutrients, they do not provide a basis to reject the ALJ's recommendation because Synagro's vegetated buffer zones exceed the Commission's requirements for buffer zones. To this end, Section 312.44 of the Commission's rules provides a laundry list of mandatory distances that must be established as buffer zones between the land application area and the area to be separated, such as a surface water body, water well, or property boundary line.³⁵ Second, while the Commission's buffer zones rules prohibit applicants from land applying Class B biosolids in the floodway, they *are* allowed by rule to apply in the floodplain.³⁶ Last, the Commission's rules *do not require* the buffer zones to be vegetated.³⁷ Here, Synagro has committed in its Site Management Plan, which has been incorporated in the Draft Permit, to voluntarily extend its buffer zone *beyond the required 200 feet* from Gum Tree Branch Creek so as to *encompass and not* land apply in the entire 100 year floodplain as designated by FEMA and *maintain* vegetated

³⁵ See Exh. A-30, pp. 1977-1978 (citing 30 Tex. Admin. Code § 312.44.44(d)(2003)).

³⁶ *Id.* (citing 30 Tex. Admin. Code § 312.44(c)-(d)(2003) (discussing buffer zone requirements)).

³⁷ *Id.*

buffer zones.³⁸ *These facts are not disputed by the Parties.*³⁹ Further, regardless of whether the maintained and vegetated buffer zones meet each and every prerequisite for “filter strips,” expert witnesses on behalf of the Applicant and Protestants testified that vegetated buffer zones reduce the movement of constituents.⁴⁰

1. Buffer Zones Are Only Inundated in Extreme Conditions

With respect to Protestant’s specific concerns with the buffer zones, Protestants’ argument that the likelihood of runoff will be enhanced “during times of rainfall” as the buffer zones will be underwater is based on false premises. The argument fails to acknowledge the highly infrequent circumstances in which the buffer zones will be inundated with water. Because Synagro has buffered out the 100 year floodplain, the buffer zones will only be inundated with water during the 100 year flood, the occurrence of which is only likely to occur once in 100 years, or 1% chance in a given year.⁴¹ Also, as testified by Dr. Espey, after 30 days from the date of application, the biosolids have become encapsulated in the root system of the grass and would not be subject to being transported offsite by runoff.⁴² Consequently, for the buffer zones to be inundated, a 100 year flood event must occur within 30 days of the actual land application of the biosolids,* which will not occur during every rainfall event as Protestants’ argument implies. Thus, the likelihood that the buffer zones would be underwater is highly unlikely.

2. No Commission Prohibition on Cattle Grazing in the Buffer Zones

Although cattle may graze in the buffer zones, no Commission rule prohibits this action. However, the buffer zones will not be fertilized, and logic dictates that cattle would seek the

³⁸ See Exh. A-30, p. 1977 (30 Tex. Admin. Code § 312.44(i)(6)(2003)); Exh. A-15, p. 27; Exh. ED-11, Sec. XIV.E., p. 16.

³⁹ Tr., p. 392, l.14– p. 393, l. 7; Tr., p. 442, ll. 10–20; Exh. A-19; Exh. A-31.

⁴⁰ Tr., p. 76, ll. 3–10; p. 98, ll. 14–19; p. 188, ll. 14–17; p. 270, l. 18–p.271, l. 7; p. 362, l. 25–p. 363, ll.5 and 13–15.

⁴¹ Exh. A-15, p. 27; Exh. ED-11, Sec. XIV.E., p. 16.

⁴² Tr., p. 271, l. 19– p. 272, l. 10.

higher quality forage growing in the land application area. The Commission's rules require that the applicant provide flags demarking the buffer zone area, and Synagro is required to follow the Commission's rules.

3. Vegetated Buffer Zones Are Best Practices Strategies

Last, while vegetated buffer zones may not halt the movement of all constituents all of the time, they are certainly a best practices tool to avoid the runoff of nutrients.⁴³ As to the extreme scenarios suggested by the Protestants in their case and Exceptions, Synagro agrees with the sentiment of the Public Interest Counsel, who stated that "[t]he only way to guarantee no impact is by never allowing such permits to be issued."⁴⁴ There is no legislative or Commission intent to take this extreme position.

B. The Permeability of the Soils at the Site Are Conducive to the Application of Class B Biosolids

An examination of Protestants' arguments regarding the soil permeability at the Site reveals that the soil characteristics meet the Commission's soil permeability prerequisites. The soils at the Site exceed the Commission's requirement that 2 feet of permeable soil exist at the Site because the Edna and Crowley soils depths at the Site extend more than 60 inches deep.⁴⁵ Further, while the permeability of the Edna and Crowley soils are described as very slow in general, they are indeed permeable.⁴⁶ The Executive Director has reviewed this Application, and his expert witness evaluating the soil surveys and groundwater impacts for the Site agreed that the Application meets the applicable requirements.⁴⁷ Mr. High also testified that the Texas-specific NRCS Web Soil Survey, Exh. A-57, describes the Crowley and Edna soils as "Not

⁴³ Tr., p. 270, l. 18-p. 271, l. 5.

⁴⁴ OPIC's Closing Argument, Sec. II.2., p. 13.

⁴⁵ Exh. A-14, pp. 13, 16-17; Exh. A-30, p. 1978 (citing 30 Tex. Admin. Code § 312.44(i)(2)(2003)).

⁴⁶ Exh. A-14, pp. 13, 16-17.

⁴⁷ Exh. ED-1, p. 7, ll. 13-16.

Limited” and “Moderately Limited,” respectively.⁴⁸ Further, Mr. High testified that the moisture meters have been installed to monitor soil saturation and that they will be monitored prior to the application of any of the biosolids.⁴⁹ Further, Mr. High stated that biosolids application will not occur when those subsoils are saturated or have heavy moisture.⁵⁰

Thus, the soil characteristics at the Site meet the Commission’s rules for soil permeability, and Synagro also has taken preventative measures to avoid any runoff of nutrients based upon the moisture in the soil. Consequently, there is no credible basis to reject the ALJ’s recommendation based upon soil permeability at the Site.

C. It Is Highly Unlikely That Phosphorus Will Runoff from the Site

Even though the applicable requirements for Synagro’s Application do not require it to consider phosphorus as a limiting factor in its agronomic rate calculations, the testimony and exhibits in the record demonstrate that phosphorus should not be present in surface water runoff from the Site.⁵¹ There is no question that phosphorus will accumulate in the soil over time.⁵² Mr. High testified that a build-up of phosphorus could possibly increase the likelihood that phosphorus would run off the site *if erosion occurred*.⁵³ In fact, particulate phosphorus, which is phosphorus that is associated with soil particles, is the major portion of phosphorus that is transported from land subject to erosion.⁵⁴ To this end, Mr. High testified that he observed no

⁴⁸ Tr., p. 499, l. 13–p. 500, l. 1; Exh. A-57, p. 3.

⁴⁹ Tr., p. 83, ll. 11–22.

⁵⁰ Tr., p. 81, l. 17–p. 82, l. 6.

⁵¹ Tr., p. 422, l. 18–p. 423, l. 4; Tr., p. 432, ll. 17–23. Furthermore, even in the current rules, phosphorus is a limiting factor if the biosolids application site is located in a sole-source impairment zone. 30 Tex. Admin. Code § 312.11(k) (2007). Mr. Wiland acknowledged that the Site is not a sole-source impairment zone. Tr., p. 330, ll. 18–23.

⁵² Tr., p. 537, ll. 23–25.

⁵³ Tr., p. 538, ll. 1–4; Tr., p. 542, ll. 18–22.

⁵⁴ Exh. A-53, p. 2

erosion on the Site from his site visits, and that if any erosion occurred, it would be less than 2 tons per acre per year.⁵⁵ This amount of erosion is considered very low.⁵⁶

As to the Executive Director's authority under 30 Tex. Admin. Code § 312.6, the provisions of the Draft Permit reflect that he did not determine that additional requirements were needed to further control phosphorus. The Executive Director's agronomist-expert witness, Dr. Askenasy, provided in his prefiled testimony that he reserved the right to propose additional changes if he found that the evidence supports those changes.⁵⁷ At the hearing, Dr. Askenasy considered the impacts of phosphorus and testified that he would not change his recommended agronomic loading rate because the current phosphorus level in the soil at the Site is very low.⁵⁸ Further, pursuant to the Draft Permit and contrary to Protestants' understanding of the Commission's rules, Synagro will provide the Commission with annual reports on the concentration of phosphorus in the soil at the Site.⁵⁹ Therefore, it is unlikely that phosphorus would leave the Site, as the erosion for the Site is low, the phosphorus in the soil at the Site is low, and Synagro will be required to report the phosphorus levels in its annual soil sample reports.

VI. Surface Water Runoff From The Application Site Will Not Adversely Impact Protestants' Ponds

Protestants have failed to provide persuasive evidence that contradicts the findings from Dr. Espey's flood frequency analysis and backwater analysis that the levees of Protestants' ponds will not be overtopped with water from Gum Tree Branch Creek except in the event of a 50 year flood event.

⁵⁵ Tr., p. 542, l. 23-p. 543, l. 8; Exh. A-19, p. 8.

⁵⁶ Exh. A-19, p. 8.

⁵⁷ Exh. ED-3, p. 6, l. 18-p. 7, l. 3.

⁵⁸ Tr., p. 432, l. 24-p. 433, l. 11.

⁵⁹ Exh. ED-11, Sec. XII, p. 14

A. The Alleged Flood Events Are Not Supported by the Evidence

The Protestants failed to present any credible evidence to support their contention that the ponds have been flooded at least fifteen times in ten years.⁶⁰ As discussed in Synagro's Closing Argument and Response, Mr. Hudman's allegation that his ponds have been flooded by water from Gum Tree Branch Creek at least fifteen times over the past ten years is unsupported. Mr. Hudman provided no documentation to support this contention, made several prior inconsistent statements under oath, and in one instance misrepresented facts in a sworn affidavit.⁶¹ Further, while Protestants' expert witness, Mr. Slade, testified at the hearing that he observed possible damage to the western edge of the 51-acre duck pond, he also testified in his deposition that he had walked around the same 51-acre pond and that he did not witness any evidence of scouring or damage to the levees surrounding that pond.⁶² Despite changing his answer at the hearing, Mr. Slade did not provide any additional evidence of the alleged damaged area on Protestants' property to support his changed position. Additionally, Dr. Espey testified that when he walked around Protestants' levees, including the same 51-acre duck pond, he did not see any evidence of flooding or flood damage to those levees or any low spot in the levee, which as Mr. Slade contended would represent half the height of the levee.⁶³ Thus, the record does not contain reliable or credible evidence that water from Gum Tree Branch Creek overtops the levees and enters into the Protestants' ponds with the regularity alleged by Mr. Hudman.

B. Mr. Slade's Analysis Is Invalid Because It Is Based Upon An Unsubstantiated Number of Flood Events

Mr. Slade's "analysis" is not based upon scientific fact but, instead, is based upon the unproven allegation by Mr. Hudman that his ponds have been flooded by water from Gum Tree

⁶⁰ Exh. P-1, p. 4, ll. 5-9.

⁶¹ Tr., p. 126, l. 21-p.127, l. 5; p.152, ll. 22-25; p.154, ll.15-23; p.145, ll.1-8; p. 127, ll. 17-25; p. 122, l. 2-p. 125, l. 13; p. 121, ll. 4-12; Exhs. A-34 and A-35.

⁶² Tr., p. 181, l. 7-p. 182, l. 18.

⁶³ Tr., p. 243, l. 9-p. 244, l. 15; Tr., p. 272, ll. 11-15; Tr., p. 274, ll. 13-25.

Branch Creek at least fifteen times in the past ten years.⁶⁴ Mr. Slade's entire analysis *assumes* that these events occurred. Thus, if Protestants' ponds have been flooded less than fifteen times, his entire analysis is flawed. Here, Dr. Espey, a registered professional engineer who has been hand selected by the United States Government to analyze the overtopping of the levees in the Hurricane Katrina disaster, performed his flood frequency analysis and backwater analysis for Gum Tree Branch Creek and Protestants' ponds.⁶⁵ Based upon his findings from these classical studies using peak stream flow data from the same gage used by Mr. Slade,⁶⁶ Dr. Espey disagreed with Mr. Hudman's alleged flood frequency and determined that the levees of the ponds would only be overtopped with water from Gum Tree Branch Creek in a 50 year or greater flood event.⁶⁷ Further, Dr. Espey also found that Protestants' ponds are often inundated with water draining into the creek from the southeast side of Protestants' property, an area of approximately 150 to 200 acres.⁶⁸ Thus, the findings of Mr. Slade's analyses are flawed because his underlying premise is not supported by the scientific evidence in the record.

C. Dr. Espey's Analysis Is Consistent with FEMA's Floodplain Designations

Protestants' challenge to Dr. Espey's findings fails because the results of his analyses have been verified and found to be consistent with the FEMA 100 year floodplain area. Protestants raise questions regarding Dr. Espey's judgment in performing his analysis, such as normalizing the flow data, considering the partial clogging of the creek, applying a skew coefficient, and assuming one-dimensional flow. However, Dr. Espey has performed water flood analyses for decades,⁶⁹ and in performing his analyses in this contested case hearing, his

⁶⁴ Exh. P-3, p. 6, l. 44-p. 7, l. 4; Tr., p. 166, ll. 9-15.

⁶⁵ Tr., p. 233, l. 8-p. 234, l. 19; Tr., p. 238, l. 12-p. 240, l. 20; Exh. A-39.

⁶⁶ Tr., p. 245, ll. 4-15; Tr., p. 247, l. 19-p. 248, l. 2.

⁶⁷ Tr., p. 237, l. 13-p. 238, l. 11.

⁶⁸ Tr., p. 268, l. 2-p. 269, l. 9.

⁶⁹ Exh. A-39.

decisions were matters of judgment as an expert.⁷⁰ While Protestants raise these issues as to whether they would impact the accuracy of his findings, Dr. Espey testified that he verified all his decisions of judgment in his analyses with FEMA maps.⁷¹ Specifically, Dr. Espey testified that:

[i]n the objective of trying to do whatever we could possibly do to confirm our analysis, we took the existing FEMA map, that is, a FEMA map that shows the floodplain, and we ran the hundred-year discharge. It shows the area of inundation of the hundred-year floodplain.⁷²

In other words, Dr. Espey confirmed that when taking the 100 year discharge of 5,410 cubic feet per second, and looking at the area inundated by water without the presence of Protestants' levees, his model mimicked FEMA's findings.⁷³ Thus, because Dr. Espey's findings regarding the area of inundation from flooding are consistent with FEMA's official floodplain map, Dr. Espey's decisions regarding skew, one dimensional flow, the normalization of the Red Gate gage data, and partial clogging of the creek are correct exercises in professional judgment.

VII. Conclusion

Synagro has met its burden of proof. Synagro has proven by a preponderance of the evidence that the agronomic rates for the Site have been correctly calculated in accordance with TCEQ 10451 and that its Site Management Plan exceeds the Commission's applicable requirements to be protective of the water in the state. Also, Synagro has proven that the Protestants' adjacent ponds will not be impacted by surface water runoff from the Site. The Executive Director's Draft Permit reflects these agronomic rates and incorporates Synagro's Site Management Plan in its Special Provisions. After an initial and supplemental evidentiary hearing for the Application, the ALJ, Executive Director, and PIC agree with Synagro and

⁷⁰ Tr., p. 299, ll. 10-12; Tr., p. 314, ll. 4-15.

⁷¹ Tr., p. 253, l. 10-p. 254, l. 16.

⁷² *Id.*

⁷³ *Id.*

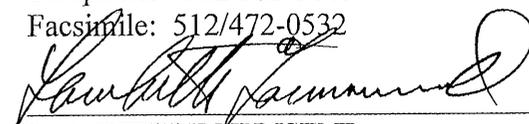
support issuance of the Draft Permit for the Application. Protestants' criticisms of the Application are without merit and do not warrant denial or modification of the Draft Permit because they are not supported by reliable evidence or by the applicable rules. Therefore, Synagro requests that the Commission adopt the ALJ's recommendation to grant the Draft Permit for the Application and enter the Findings of Fact and Conclusions of Law proposed by the ALJ.

VIII. Prayer

Synagro respectfully requests that the Commission deny Protestants' Exceptions to the Proposal for Decision and, instead, adopt the Administrative Law Judge's Proposal for Decision, Findings of Fact, and Conclusions of Law that recommend granting Permit No. 0004671000, Exh. ED-11, without revision.

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CERTIFICATE OF SERVICE

I hereby certify that on this the 6th day of August, 2007 a true and correct copy of the foregoing document has been sent via facsimile, first class mail, Federal Express overnight delivery, or hand delivery to the following:

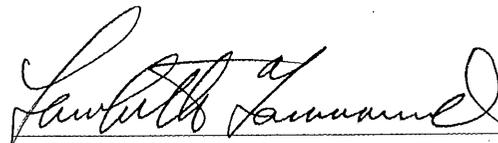
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