Texas Commission on Environmental Quality

Waste Permits Division Correspondence Cover Sheet

Date: September 22, 2025
Facility Name: BASF Agricultural Solutions US LLC
Permit or Registration No.: 50219

Nature of Correspondence:
☒ Initial/New
☐ Response/Revision to TCEQ Tracking No.: _____ (from subject line of TCEQ letter regarding initial submission)

Affix this cover sheet to the front of your submission to the Waste Permits Division. Check appropriate box for type of correspondence. Contact WPD at (512) 239-2335 if you have questions regarding this form.

Table 1 - Municipal Solid Waste Correspondence

Applications	Reports and Notifications
☐ New Notice of Intent	☐ Alternative Daily Cover Report
☐ Notice of Intent Revision	☐ Closure Report
☐ New Permit (including Subchapter T)	☐ Compost Report
☐ New Registration (including Subchapter T)	☐ Groundwater Alternate Source Demonstration
☐ Major Amendment	☐ Groundwater Corrective Action
☐ Minor Amendment	☐ Groundwater Monitoring Report
☐ Limited Scope Major Amendment	☐ Groundwater Background Evaluation
☐ Notice Modification	☐ Landfill Gas Corrective Action
☐ Non-Notice Modification	☐ Landfill Gas Monitoring
☐ Transfer/Name Change Modification	☐ Liner Evaluation Report
☐ Temporary Authorization	☐ Soil Boring Plan
☐ Voluntary Revocation	☐ Special Waste Request
☐ Subchapter T Disturbance Non-Enclosed Structure	☐ Other:
☐ Other:	

Table 2 - Industrial & Hazardous Waste Correspondence

Applications	Reports and Responses
☐ New	☐ Annual/Biennial Site Activity Report
☒ Renewal	☐ CPT Plan/Result
☐ Post-Closure Order	☐ Closure Certification/Report
☐ Major Amendment	☐ Construction Certification/Report
☐ Minor Amendment	☐ CPT Plan/Result
☐ CCR Registration	☐ Extension Request
☐ CCR Registration Major Amendment	☐ Groundwater Monitoring Report
☐ CCR Registration Minor Amendment	☐ Interim Status Change
☐ Class 3 Modification	☐ Interim Status Closure Plan
☐ Class 2 Modification	☐ Soil Core Monitoring Report
☐ Class 1 ED Modification	☐ Treatability Study
☒ Class 1 Modification	☐ Trial Burn Plan/Result
☐ Endorsement	☐ Unsaturated Zone Monitoring Report
☐ Temporary Authorization	☐ Waste Minimization Report
☐ Voluntary Revocation	☐ Other:
☐ 335.6 Notification	
☐ Other:	

GSI Job No. 10426

22 September 2025

Vahab Haghighatian
IHW Permits Section, MC-130
Texas Commission on Environmental Quality
12100 Park 35 Circle
Austin, TX 78753

Re: RCRA Permit Renewal Application
BASF Agricultural Solutions US LLC Facility, Beaumont, Jefferson County, Texas
Hazardous Waste Permit No. 50219
CN605566066 / RN100634922

Dear Mr. Vahab,

On behalf of BASF Agricultural Solutions US LLC (BASF), GSI Environmental Inc. (GSI) is submitting the updated renewal application for Hazardous Waste Permit No. 50219 for the Beaumont, Texas facility. Please find enclosed an original hard copy and one electronic copy of the complete application with all updated documents from the Administrative and Technical Notice of Deficiencies (NODs).

Should you have any questions concerning this renewal application, please contact either Kendra Derrick of BASF at [redacted] or 409-249-8574 or me at [redacted] or 832-721-6595.

Sincerely,

James “Jim” McDade, P.E.
Vice President & Principal Engineer

cc: Kendra Derrick, BASF Agricultural Solutions US LLC
Caitlin Wilding, BASF Agricultural Solutions US LLC
David King, TCEQ Region 10

HAZARDOUS WASTE PERMIT RENEWAL APPLICATION

Hazardous Waste Permit No. 50219

Issued: **14 April 2025**

Prepared for: **BASF Beaumont Agro Plant**
Beaumont, Texas

Prepared by: **GSI ENVIRONMENTAL INC.**
2211 Norfolk Street, Suite 1000
Houston, Texas 77098
713.522.6300
www.gsienv.com

GSI Job No.: **10426**

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

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GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part A Application

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- Part A, Attachment E: Process Flow Diagram / Description

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part A Application Form with Signature Page

Texas Commission on Environmental Quality
Instructions and Procedural Information
for Filing a Permit Application for a
Hazardous Waste Storage, Processing, or Disposal Facility

Part A

[**Form Availability**: This form, as well as other Industrial and Hazardous Waste documents, is available on the Internet World Wide Web, Industrial and Hazardous Waste home page at address https://www.tceq.texas.gov/permitting/waste_permits/ihw_permits]

General Instructions

1. A person (individual, corporation or other legal entity) who stores, processes or disposes of hazardous waste (except where such storage and/or processing is excluded from permit requirements in accordance with 30 Texas Administrative Code (TAC) Section 335.2) must obtain a permit pursuant to the Texas Health and Safety Code. In applying to the Texas Commission on Environmental Quality, hereafter referred to as the Commission, the applicant shall follow the procedures outlined below, on the application and in the Rules of the Commission.

2. The application (one original plus three (3) complete copies[1]) should be mailed to:

   Texas Commission on Environmental Quality
   Attention: Waste Permits Division, MC126
   P. O. Box 13087
   Austin, Texas 78711-3087

3. Signature on Application [30 TAC 305.44]. The application shall be signed by the owner and operator or by a duly authorized agent, employee, officer, or representative of the owner or operator and shall be verified before a notary public. When another person signs on behalf of the owner and operator, this person's title or relationship to the owner or operator should be shown. In all cases, the person signing the form should be authorized to do so by the owner or operator (the Commission may require a person signing on behalf of an owner or operator to provide proof of authorization). An application submitted for a corporation must be signed by (or the signatory must be authorized by) a responsible corporate officer such as a president, secretary, treasurer, vice-president, or designated manager; or for a partnership or sole proprietorship, by a general partner or the proprietor, respectively. In the case of a municipal, state, federal, or other public facility, the application shall be signed by either a principal executive

[1] The third copy may optionally consist of paper copies of all plans and maps and a computer diskette of the remaining document. The document should be formatted in Word processing software up to and including version 6.1 or a 100% compatible format. Files may be compressed using PKZIP Ver. 2 or a 100% compatible program.

officer or ranking elected official.

4. An application will not be processed until all information required to properly evaluate the application has been obtained. When an application is severely lacking in detail and/or the applicant fails to submit additionally requested information in a timely manner, the application will not be considered to be "filed in accordance with the rules and regulations of the Commission."

   Please submit any application revisions with a revised date and page numbers at the bottom of the page(s).

5. Fees and Costs

   a. The fee for filing an application is discussed in Section XII of Part B, form number TCEQ-0376.

   b. The applicant for a permit is required to bear the cost of publication of notice of the application in a newspaper as prescribed by 30 TAC Section 39.405(f).

6. A person may not commence operation of a hazardous waste management facility until the Commission has issued a permit to authorize the storage, processing, or disposal of hazardous waste, except with the approval of the Commission.

7. Designation of Material as Confidential

   The designation of material as confidential is frequently carried to excess. The Commission has a responsibility to provide a copy of each application to other review agencies and to interested persons upon request and to safeguard confidential material from becoming public knowledge. Thus, the Commission requests that the applicant (1) be prudent in the designation of material as confidential and (2) submit such material only when it might be essential to the staff in their development of a recommendation.

   The Commission suggests that the applicant NOT submit confidential information as part of the permit application. However, if this cannot be avoided, the confidential information should be described in non-confidential terms throughout the application, and submitted as a document or binder, and conspicuously marked "CONFIDENTIAL."

   Reasons of confidentiality include the concept of trade secrecy and other related legal concepts which give a business the right to preserve confidentiality of business information to obtain or retain advantages from its right in the information. This includes authorizations under 18 U.S.C. 1905 and special rules cited in 40 CFR Chapter I, Part 2, Subpart B.

   Section 361.037 of the Texas Health and Safety Code does not allow an applicant for an industrial and hazardous waste permit to claim as confidential any record pertaining to the characteristics of the industrial solid waste.

   The applicant may elect to withdraw any confidential material submitted with the application. However, the permit cannot be issued, amended, or modified if the application is incomplete.

Part II

Procedural Information

After the submittal of Parts A and B of the application, the TCEQ will provide public notice of receipt of the application. The Executive Director's staff will review the application for completeness of information submitted. During the review, the applicant may be contacted for clarification or additional information. When all pertinent information is present, the application or a summary of its contents will be forwarded for review by other state agencies and local governmental entities interested in water quality control and solid waste management. After technical evaluation, opportunity for public hearing will be afforded.

Note that for facilities which had "commenced on-site storage, processing, or disposal of hazardous waste" [see 30 TAC Section 335.43(b)] on or before the date such waste is identified or listed as hazardous by EPA, the Texas Health and Safety Code provides in Section 361.082(f) that these facilities may continue to manage hazardous waste until such time as the Commission approves or denies the application, provided that the applicant has filed the permit application in accordance with the rules and regulations of the Commission.

The Commission may act upon an application for a permit, permit amendment, permit modification, or renewal of a permit without the necessity of holding a public hearing:

1. (a) When notice of the application has been mailed to persons possibly affected by the proposed permit; and

   (b) When notice has been published at least once in a newspaper regularly published or circulated within each county where the proposed facility is located; and

   (c) Within forty-five (45) days following publication of the Commission's notice, a Commissioner, the Executive Director or an affected person has not requested a public hearing; or

2. For a Class 1 or a Class 2 permit modification or a minor amendment to a permit. The Commission may, in certain cases, hold a public hearing for a Class 2 permit modification or a minor amendment.

A public hearing may be scheduled on an application for a RCRA hazardous waste permit when requested by a Commissioner, the Executive Director, or an affected person within forty-five (45) days following the newspaper publication.

Requirements of Giving Notice of the Application:

1. By the Applicant: Every applicant for a permit, permit amendment, permit modification, or permit renewal shall publish notice (see note below) of the application at least once in a newspaper regularly published or circulated within each county where the proposed facility is located. Where a public hearing has been requested, notice will be mailed to the applicant in ample time for publication, which shall be not less than thirty (30) days prior to the date set for the hearing. Except in the case of a notice of a permit modification request, the Commission will mail the appropriate notice and instructions for publication to the applicant.

   NOTE: Additional publication and direct mail notice to affected persons will result if a public hearing is requested following newspaper publication of the notice of application. The cost of providing this additionally required publication and service of notice to affected persons will be assumed by the applicant.

2. By the Texas Commission on Environmental Quality: The Commission will mail notice of

the application (except for permit modifications) to affected persons and certain governmental entities. The notice will be mailed at the same time instructions for newspaper publications are mailed to the applicant.

3. Bilingual Notice Instructions:

   For certain permit applications, public notice in an alternate language is required. If an elementary school or middle school nearest to the facility offers a bilingual program, notice may be required to be published in an alternative language. The Texas Education Code, upon which the TCEQ alternative language notice requirements are based, requires a bilingual education program for an entire school district should the requisite alternative language speaking student population exist. However, there may not be any bilingual-speaking students at a particular school within a district which is required to offer the bilingual education program. For this reason, the requirement to publish notice in an alternative language is triggered if the nearest elementary or middle school, as part of a larger school district, is required to make a bilingual education program available to qualifying students and either the school has students enrolled at such a program on-site, or has students who attend such a program at another location to satisfy the school's obligation to provide such a program.

   If it is determined that a bilingual notice is required, the applicant is responsible for ensuring that the publication in the alternate language is complete and accurate in that language. Electronic versions of the Spanish template examples are available from the TCEQ to help the applicant complete the publication in the alternative language.

Bilingual Notice Application Form:

Bilingual notice confirmation for this application:

1. Is the school district of the elementary or middle school nearest to the facility required by the Texas Education Code to have a bilingual program?

   ☒YES ☐ NO

   (**If NO**, alternative language notice publication not required)

2. **If YES** to question 1, are students enrolled in a bilingual education program at either the elementary school or the middle school nearest to the facility?

   ☒ YES ☐ NO

   (**If YES** to questions 1 and 2, alternative language publication is required; **If NO** to question 2, then consider the next question)

3. **If YES** to question 1, are there students enrolled at either the elementary school or the middle school nearest to the facility who attend a bilingual education program at another location?

   ☒ YES ☐ NO

   (**If Yes** to questions 1 and 3, alternative language publication is required; **If NO** to question 3, then consider the next question)

4. **If YES** to question 1, would either the elementary school or the middle school nearest to the facility be required to provide a bilingual education program but for the fact that it secured a waiver from this requirement, as available under 19 TAC 89.1205(g)?

   ☒ YES ☐ NO

(**If Yes** to questions 1 and 4, alternative language publication is required; **If NO** to question 4, alternative language notice publication not required)

If a bilingual education program(s) is provided by either the elementary school or the middle school nearest to the facility, which language(s) is required by the bilingual program? _____**Spanish**_____

Consideration of the Permit Application by the Commission:

The applicant will be notified by the Commission when the application is set for final consideration. If the Commission issues the permit, the applicant will be mailed a copy of the permit by the TCEQ Office of the Chief Clerk within one (1) month following Commission approval. (NOTE: Only one copy is mailed to the applicant and that copy will be sent to the official mailing address of the applicant as shown on the permit application form.)

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Texas Commission on Environmental Quality
Permit Application for a Hazardous Waste Storage/Processing/Disposal Facility
Part A - Facility Background Information

I. General Information

A. Facility Name: **BASF Agricultural Solutions US LLC**

(Individual, Corporation, or Other Legal Entity Name)

TCEQ Solid Waste Registration No: **30053** EPA I.D. No.: **TXD067261412**

Street Address (If Available): **14385 West Port Arthur Road**

City: **Beaumont**, State: **TX** Zip Code: **77705**

County: **Jefferson**

Telephone Number: **409-981-5052** Charter Number: **803002582**

If the application is submitted on behalf of a corporation, please identify the Charter Number as recorded with the Office of the Secretary of State for Texas.

B. Facility Contact

1. List those persons or firms who will act as primary contact for the applicant during the processing of the permit application. Also indicate the capacity in which each person may represent the applicant (engineering, legal, etc.). The person listed first will be the primary recipient of correspondence regarding this application. Include the complete mailing addresses and phone numbers.

Brenda Neely – Site Director
BASF Agricultural Solutions US LLC
14385 West Port Arthur Road
Beaumont, TX 77705
Phone: 409-981-5139
Email: [redacted]

Kendra Derrick – EHS Specialist
BASF Agricultural Solutions US LLC
14385 West Port Arthur Road
Beaumont, TX 77705
Phone: 409-249-8574
Email: [redacted]

2. If the application is submitted by a corporation or by a person residing out of state, the applicant must register an Agent in Service or Agent of Service with the Texas Secretary of State's office and provide a complete mailing address for the agent. The agent must be a Texas resident.

C.T. Corporation
1999 Bryan Street, Suite 900
Dallas, TX 75201-3136
214-979-1172

C. Operator[2]: Identify the entity who will conduct facility operations.

Operator Name: **BASF Agricultural Solutions US LLC**

Address: **2 TW Alexander Drive**

[2] The operator has the duty to submit an application if the facility is owned by one person and operated by another [30 TAC 305.43(b)]. The permit will specify the operator and the owner who is listed on this application [Section 361.087 Texas Health and Safety Code].

City: **Research Triangle Park**, State: **NC** Zip Code: **27713**

Telephone Number: **984-287-2800** Charter Number: **803002582**

D. Owner

1. Indicate the ownership status of the facility:

   a. Private **X**

      (1) **X** Corporation
      (2) _____ Partnership
      (3) _____ Proprietorship
      (4) _____ Non-profit organization

   b. Public _____

      (1) _____ Federal
      (2) _____ Military
      (3) _____ State
      (4) _____ Regional
      (5) _____ County
      (6) _____ Municipal
      (7) _____ Other (specify)

2. Does the operator own the facility units and facility property?

   ☒ Yes ☐ No

   If you checked "no",

   a. Submit as "Attachment A" a copy of the lease for use of or the option to buy said facility units and/or facility property, as appropriate; and

   b. Identify the facility units' owner(s) and/or facility property owner(s). Please note that the owner(s) is/are required to sign the application on page 5.

Owner Name: **BASF Agricultural Solutions US LLC**

Address: **2 TW Alexander Drive**

City: **Research Triangle Park**, State: **NC** Zip Code: **27713**

Telephone Number: **984-287-2800**

Owner Name: _____

Address: _____

City: _____, State: _____ Zip Code: _____

Telephone Number: _____

E. Type of Application Submittal:

Initial _____ or Revision __**X (Renewal Application)**_____

F. Registration and Permit Information

Indicate (by listing the permit number(s) in the right-hand column below) all existing or pending State and/or Federal permits or construction approvals which pertain to pollution control or industrial solid waste management activities conducted by your plant or at your location. Complete each blank by entering the *permit number*, or the *date of application*, or *"none"*.

	Relevant Program and/or Law	Permit No.	Agency*
1.	Texas Solid Waste Disposal Act	**SWR 30053**	**TCEQ**
2.	Wastewater disposal under the Texas Water Code	**WQ0001169000**	**TCEQ**
3.	Underground injection under the Texas Water Code	**WDW-155, WDW-201 WDW-301, WDW-302 WDW-433, WDW-434 PIU-30053**	**TCEQ**
4.	Texas Clean Air Act	**20057, 978B, 113174, 151935, 152562, 157151, 157585, 158173, 158481, 164582, 173963, JE0113D**	**TCEQ**
5.	Texas Uranium Surface Mining & Reclamation Act	**None**	
6.	Texas Surface Coal Mining & Reclamation Act	**None**	
7.	Hazardous Waste Management program under the Resource Conservation and Recovery Act	**50219** **TXD067261412**	**TCEQ** **EPA**
8.	UIC program under the Safe Drinking Water Act	**None**	
9.	TPDES program under the Clean Water Act	**TX0003671**	**EPA**
10.	PSD program under the Clean Air Act	**None**	
11.	Nonattainment program under the Clean Air Act	**None**	
12.	National Emission Standards for Hazardous Pollutants (NESHAP) Pre-construction	**None**	

approval under the Clean Air Act

13. Ocean dumping permits under the Marine Protection Research and Sanctuaries Act **None**

14. Dredge or fill permits under section 404 of the Clean Water Act **None**

15. Other relevant environmental permits **None**

*Use the following acronyms for each agency as shown below:

TCEQ	= Texas Commission on Environmental Quality
TRC	= Texas Railroad Commission
TDH	= Texas Department of Health
TDA	= Texas Department of Agriculture
EPA	= U.S. Environmental Protection Agency
CORPS	= U.S. Army Corps of Engineers

G. Give a brief description of the nature of your business.

Manufacture of agricultural chemicals.

H. TCEQ Core Data Form

The TCEQ requires that a Core Data Form (Form 10400) be submitted on all incoming applications. For more information regarding the Core Data Form, call (512) 239-1575 or go to the TCEQ website at http://www.tceq.texas.gov/permitting/central_registry/guidance.html.

See Attachment 1 – Core Data Form

Signature Page

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Operator Signature: Brenda Neely Date: 9/11/25

Name and Official Title (type or print): **Brenda L Neely, Site Director**

Operator Signature: _____ Date: _____

Name and Official Title (type or print): _____

Operator Signature: _____ Date: _____

Name and Official Title (type or print): _____

Owner Signature: _____ Date: _____

Name and Official Title (type or print): _____

To be completed by the operator if the application is signed by an authorized representative for the operator

I, _____ hereby designate _____
(operator) (authorized representative)
as my representative and hereby authorize said representative to sign any application, submit additional information as may be requested by the Commission; and/or appear for me at any hearing or before the Texas Commission on Environmental Quality in conjunction with this request for a Texas Water Code or Texas Solid Waste Disposal Act permit. I further understand that I am responsible for the contents of this application, for oral statements given by my authorized representative support of the application, and for compliance with the terms and conditions of any permit which might be issued based upon this application.

_____
Printed or Typed Name of Operator or Principal Executive Officer

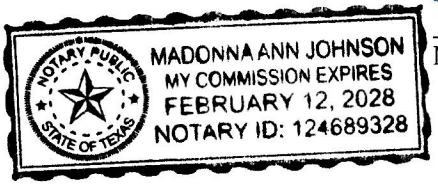
_____
Signature

(Note: Application Must Bear Signature & Seal of Notary Public)

Subscribed and sworn to before me by the said **Brenda L Neely** on this

11th day of September, 2025.

My commission expires of the 12th day of February, 2028



Madonna Ann Johnson
Notary Public in and for Jefferson County, Texas

II. Facility Background Information

A. Location of Facility for which the application is submitted

1. Give a description of the location of the facility site with respect to known or easily identifiable landmarks.

Approximately two miles (straight distance) northwest of the Jefferson County Airport on West Port Arthur Road.

2. Detail the access routes from the nearest U.S. or State Highway to the facility.

Entry to the facility is off of the west side of West Port Arthur Road approximately 2.5 miles north of the intersection of Highway 365 and West Port Arthur Road.

3. Enter the geographical coordinates of the facility:

Latitude: __**29**_____ deg __**58**_____ min ___**18**____ sec

Longitude: _**94**_____ deg __**03**_____ min ___**13**____ sec

4. Is the facility located on Indian lands?

☐ Yes ☒ No

B. Legal Description of Facility

Submit as "Attachment B" a legal description(s) of the tract or tracts of land upon which the waste management operations referred to in this permit application occur or will occur. Although a legal description is required, a metes and bounds description is not necessary for urban sites with appropriate "lot" description(s). A survey plat or facility plan drawing which shows the specific points referenced in the survey should also be included in Attachment B.

See Attachment B

C. SIC Codes

List, in descending order of significance, the four digit standard industrial classification (SIC) codes which best describe your facility in terms of the principal products or services you produce or provide. Also, specify each classification in words. These classifications may differ from the SIC codes describing the operation generating the hazardous wastes.

4-digit SIC Code	Description
2869	**Industrial Organic Chemicals**
2879	**Pesticides and Agricultural Chemicals**

SIC code numbers are descriptions which may be found in the Standard Industrial Classification Manual prepared by the Executive Officer of the President, Office of Management and Budget, which is available from the Government Printing Office, Washington, D.C. Use the current edition of the manual.

III. Wastes and Waste Management

A. Waste Generation and Management Activities

Is any hazardous waste [see Title 40, Code of Federal Regulations (CFR), Part 261] presently or proposed to be generated or received at your facility?

☒ Yes ☐ No

If no, skip to question Number 2 below.

If yes, answer the following question.

1. Are you presently registered with TCEQ as a solid waste generator?

   ☒ Yes ☐ No ☐ Pending

   If no, contact the Industrial and Hazardous Waste Division of TCEQ in Austin, Texas to obtain registration information. Also, continue with the application form (go to Number 2 below).

   If yes, go to Section I of your TCEQ Notice of Registration, determine which of your wastes are hazardous, and list these wastes (and mixtures) in Table III-1 (see Number 2 below).

2. Complete Table III-1, Hazardous Wastes and Management Activities, below, listing all hazardous wastes, all mixtures containing any hazardous wastes, and hazardous debris which were, are presently, or are proposed to be handled at your facility in interim status or permitted units. See 40 CFR 261 and 268.2, attaching additional copies as necessary.

   Note that Table III-1 includes only the waste codes for the wastes managed in the existing and active permitted tanks listed in Table III-2. The facility manages other hazardous and non-hazardous wastes as listed on the facility's Notice of Registration; however, hazardous wastes are only managed in permit-exempt units and not in permitted units. Note that the existing and active permitted tanks listed in Table III-2 only manage non-hazardous wastes.

   Guidelines for the Classification & Coding of Industrial Wastes and Hazardous Wastes, TCEQ publication RG-22, contains guidance on how to properly classify and code industrial waste and hazardous waste in accordance with 30 TAC 335.501-335.515 (Subchapter R).

   If you are not registered with TCEQ, enter "NA" for TCEQ Waste Code Number.

   For the EPA Hazardous Waste Numbers, see 40 CFR 261.20-33. For annual quantity, provide the amount in units of pounds (as generated and/or received) for each waste and/or waste mixture.

B. Waste Management Units Summary

1. For each waste and waste mixture listed in Table III-1 that is stored, processed, and/or disposed on-site (except where such storage and/or processing is excluded from permit requirements in accordance with Texas Administrative Code (TAC) Section 335), complete Table III-2, Hazardous

Waste Management Unit Checklist, and enter the name of each hazardous waste management unit (Note: Please make copies of Table III-2 if necessary).

Give the design capacity of each hazardous waste management unit in any of the units of measure shown. In the case of inactive or closed units for which design details are unavailable, an estimate of the design capacity is sufficient.

Please provide a description for each waste management unit described in your own words on the line provided for "Waste Management Unit."

2. Has the applicant at any time conducted the on-site disposal of industrial solid waste now identified or listed as hazardous waste?

   ☐ Yes ☒ No

   If yes, complete Table III-2 indicating the hazardous waste management units which were once utilized at your plant site but are no longer in service (i.e., inactive or closed facility units).

   If no, and if no hazardous waste is presently or proposed to be stored [for longer than 90 days (see 30 TAC Section 335.53)], processed, or disposed of at your facility, then you need not file this permit application. Otherwise proceed with the application form.

3. Provide an estimate of the total weight (lbs) of hazardous waste material that has been disposed of and/or stored within your site boundaries and not removed to another site.

C. Location of Waste Management Units

1. Submit as "Attachment C" a drawn-to-scale topographic map (or other map if a topographic map is unavailable) extending one mile beyond the facility boundaries, depicting the following:

   a. The approximate boundaries of the facility (described in Section II.B) and within these boundaries, the location and boundaries of the areas occupied by each active, inactive, and proposed hazardous waste management unit (see Table III-2). Each depicted area should be labeled to identify the unit(s), unit status (i.e., active, inactive, or proposed), and areal size in acres.

   b. The overall facility and all surface intake and discharge structures;

   c. All on-site injection wells where liquids are injected underground;

   d. All known monitor wells and boreholes within the property boundaries of the facility; and

   e. All wells, springs, other surface water bodies, and drinking water wells listed in public records or otherwise known to the applicant within the map area and the purpose for which each water well is used (e.g., domestic, livestock, agricultural, industrial, etc.).

2. Submit as "Attachment D" photographs which clearly delineate all hazardous waste management storage, processing, and disposal units, as well as sites of future storage, processing and disposal units.

D. Flow Diagram/Description

Show as "Attachment E" process flow diagrams and step-by-step word descriptions of the process flow, depicting the handling, collection, storage, processing, and/or disposal of each of the hazardous wastes previously listed in this application.

The flow diagrams or descriptions should include the following information:

1. Originating point of each waste and waste classification code;
2. Means of conveyance utilized in every step of the process flow;
3. Name and function of each facility component through which the waste passes;
4. The ultimate disposition of all wastes (if off-site, specify "off-site") and waste residues.

IV. Index Of Attachments

List and index below all attachments to this application and indicate if included or not included:

Item	Attachments	Attachment	Included	Not Included
I.D.2.a	Lease/Option to buy	A		**X**
II.B	Site legal description	B	**X**	
III.C.1	Facility boundaries and adjacent waters map	C	**X**	
III.C.2	Photographs	D	**X**	
III.D	Process flow diagram/description	E	**X**	

Table III-1 – Hazardous Wastes and Management Activities

Verbal Description of Waste	TCEQ Waste for Code and Classification Code	EPA Hazardous Waste Number	Storage[1] of Wastes Received from Off-Site	Processing[2] of Wastes Received from Off-Site	Disposal of Wastes Received from Off-Site	Storage[1] of Wastes Generated On-Site	Processing[2] of Wastes Generated On-Site	Disposal of Wastes Generated On-Site	Annual Quantity Generated and/or Received
DMTA Unit Wastewater	20002071	NA				X	X	X	<1000 T
Wastewater from Dicamba processing unit	70011011	NA		X		X	X	X	<1000 T
Wastes below were previously managed in closed permitted units.[3]									
Acute Lab Packs	0001004H	D001, D001, P005, P024, P030, P106, P119, P120				X			<0.1 T
Contaminated Xylene-DCP Process Stream	1004203H	D001, F003				X			<1000 T
Methanol and TCB	1004203H	D001				X			<1000 T
Flammable mixture containing DEK, Methanol, MEK, HMP, Propanic Acid	2001203H	D035, D001				X			0
MPP Lab Waste	2020201H	D001, F003, F005				X			0
MPP Organic Waste	3025201H	D001, D002, D003, F003, F005				X			0

[1] "Storage" means the holding of solid waste for a temporary period, at the end of which the waste is processed, disposed of, or stored elsewhere.

[2] "Processing" means the extraction of materials, transfer, volume reduction, conversion to energy, or other separation and preparation of solid waste for reuse or disposal, including the treatment or neutralization of hazardous waste, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material from the waste or so as to render such waste non-hazardous or less hazardous; safer for transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume. The "transfer" of solid waste for reuse or disposal as used above, does not include the actions of a transporter in conveying or transporting solid waste by truck, ship, pipeline, or other means. Unless the Executive Director determines that regulation of such activity is necessary to protect human health or the environment, the definition of "processing" does not include activities relating to those materials exempted by the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq., as amended.

[3] Wastes listed were previously managed in closed permitted units.

Verbal Description of Waste	TCEQ Waste for Code and Classification Code	EPA Hazardous Waste Number	Storage[1] of Wastes Received from Off-Site	Processing[2] of Wastes Received from Off-Site	Disposal of Wastes Received from Off-Site	Storage[1] of Wastes Generated On-Site	Processing[2] of Wastes Generated On-Site	Disposal of Wastes Generated On-Site	Annual Quantity Generated and/or Received
Toluene Contaminated Absorbents	3027403H	F005, U161, U220				X			0
Waste Corrosive Chemicals	4001105H	D002				X			<1 T
Frontier Liquid Organic Waste	5001219H	D001, U122				X			0
HMP/DMTA Tars	5010219H	D001				X			0
Lab Packs	6012003H	D001, D002, D003, D008, D018, U001, U188				X			<1 T
Sample Waste (lab analytical waste)	6027201H	D001, D002, D018, D022, F003, F005				X			<1 T
Flammable Liquids, including haz. Tank bottoms	9036219H	D001, D018, F003, F005				X	X		<100 T
Other Waste Inorganic Solids	9037319H	D009				X			<0.1 T
Elemental Mercury	9042319H	D009				X			<0.1 T
Out-Dated Chemicals	9045203H	D001				X			<0.1 T
Waste Gas Cylinders	9046801H	D001				X			<0.1 T
Aerosols	9047219H	D001, D003				X			<1000 T
Old Akzo Nobel C5809	9048219H	D001				X			<0.1 T
MPP Organic Wastewater	9063219H	D001				X			0
Hydrogen Peroxide	9096105H	D001, D002				X			<0.1 T
Thionic waste from DMTA Unit	9087204H	D001				X			<100 T
Waste Dimethylamine	9121219H	D001, D002				X			<100 T
Waste Neutral Oils	9125609H	D001, D002				X			<10 T
Hazardous DCP Production Waste	9128208H	D041, D042				X			<2000 T

Verbal Description of Waste	TCEQ Waste for Code and Classification Code	EPA Hazardous Waste Number	Storage[1] of Wastes Received from Off-Site	Processing[2] of Wastes Received from Off-Site	Disposal of Wastes Received from Off-Site	Storage[1] of Wastes Generated On-Site	Processing[2] of Wastes Generated On-Site	Disposal of Wastes Generated On-Site	Annual Quantity Generated and/or Received
Hazardous Contaminated Soil from Spill Cleanup	9129409H	D018				X			<100 T
Waste Diesel Material	9156219H	D001				X			<10 T
MPP and DMTA High TDS Wastewater	113H	D001, D002, F003, F005				X			<1000 T
DMTA and Dicamba Acidic Wastewater	105H	D001, D002				X			<1000 T
DCP Isomers	1001208H	U081				X (inactive)	X (inactive)		0
Heptane/Dienochlor Organic Waste	2017219H	D001, U130				X (inactive)			0
Chlorinated Acrylonitrile Waste	2018219H	D001, U009				X (inactive)			0
Aqueous Waste with Cyanides	2019102H	D003				X (inactive)			0
Discarded Chemicals	2021207H	D001, D002				X (inactive)			0
Toluene	2023203H	D001, U220				X (inactive)			0
Sulfuric Acid	3001104H	D002				X (inactive)			0
Solvent Mixture Contaminated with Pesticides & Herbicides	3026204H	D001, D002, U220				X (inactive)			0
Organic Mixture from MPP Line Clean Out	3034219H	D001				X (inactive)			0
Methyl Tert Butyl Ether and Methanol	3039219H	D001				X (inactive)			0
Fiber Filters Containning Hydrazinehydrate	3040405H	D002, D003				X (inactive)			0
Used Hydrazine Hydrate Solution	3041119H	D002, U133				X (inactive)			0
MPP Filter Socks	3042108H	D002				X (inactive)			0
Contaminated Water	4002102H	D035, F003, F005, U002,				X (inactive)	X (inactive)		0

Verbal Description of Waste	TCEQ Waste for Code and Classification Code	EPA Hazardous Waste Number	Storage[1] of Wastes Received from Off-Site	Processing[2] of Wastes Received from Off-Site	Disposal of Wastes Received from Off-Site	Storage[1] of Wastes Generated On-Site	Processing[2] of Wastes Generated On-Site	Disposal of Wastes Generated On-Site	Annual Quantity Generated and/or Received
		U081, U159, U220, U226, U239							
HMK Waste	5002219H	D001				X (inactive)			0
Storage Tank Rinse Water	5009219H	D018				X (inactive)			0
Treatment Chemicals	7009110H	D001, D002				X (inactive)			0
Paint Thinner or Petroleum Distillates	8013211H	D001, D035, F003, F005				X (inactive)			0
Non-Halogenated Solvents	8036203H	D001				X (inactive)			0
Paint – Ink Remover	8038112H	D007				X (inactive)			0
Halogenated/Non-Halogenated Solvent Mixture	9023204H	D001, D035, F003, F005, U154, U220, U239				X (inactive)			0
Off-Spec Herbicide Product	9040402H	U240				X (inactive)			0
Concrete Piping Debris	9041319H	D009				X (inactive)			0
Out Dated Tetra Methoxypropane	9044203H	D001				X (inactive)			0
DMA Waste	9052219H	D001, D002				X (inactive)			0

Table III-2 – Hazardous Waste Management Unit Checklist

Waste Management Unit	TCEQ N.O.R. Unit #	Status[1]	Design Capacity[2]	Number of Years Utilized	Date in Service
Tank J-516	032	Closed	20,000 gallons	13	1990 to 2003
Tank J-519	033	Closed	6,000 gallons	10	1993 to 2003
Tank B-521	034	Closed	2,000 gallons	13	1990 to 2003
Tank B-503	035	Closed	1,000 gallons	13	1990 to 2003
Thermal Process Unit H-507	036	Closed	15 x 10^6 BTUs/hr	13	1990 to 2003
Tank F-414A	042	**Active**[3]	196,202 gallons	35	1990 to present
Tank WB-1767	061	**Active**[3]	150,000 gallons	35	1990 to present
Tank F-414B	042	**Active**[3]	197,000 gallons	35	1990 to present
Tank F-414C	069	**Active**[3]	197,000 gallons	35	1990 to present
Tank WB-502A	073	**Active**[3]	1,000,000 gallons	35	1990 to present
Tank WB-502B	074	**Active**[3]	1,000,000 gallons	35	1990 to present
Tank WB-1765	071	**Active**[3]	1,000,000 gallons	35	1990 to present

[1] Indicate only one of the following: Active, Inactive, Closed, or Proposed
[2] Cubic yards, gallons, pounds, gallons/minute, pounds/hour, BTUs/hour, etc.
[3] **Tank is in non-hazardous waste service associated with a UIC pre-injection unit.**

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part A, Attachment 1: Core Data Form

TCEQ Use Only

TCEQ Core Data Form

For detailed instructions on completing this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for Submission *(If other is checked please describe in space provided.)*

☐ New Permit, Registration or Authorization *(Core Data Form should be submitted with the program application.)*

☐ Renewal *(Core Data Form should be submitted with the renewal form)*

☒ Other **Legal intity change**

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	**3. Regulated Entity Reference Number** *(if issued)*
CN 605566066		**RN 100634922**

SECTION II: Customer Information

4. General Customer Information	**5. Effective Date for Customer Information Updates** (mm/dd/yyyy)	11/1/2025

☒ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)*	*If new Customer, enter previous Customer below:*
BASF Agricultural Solutions US LLC	BASF Corporation

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** *(if applicable)*
0803002582	32067010002		11-683-3577

11. Type of Customer: ☐ Corporation ☐ Individual Partnership: ☒ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees	**13. Independently Owned and Operated?**
☐ 0-20 ☐ 21-100 ☒ 101-250 ☐ 251-500 ☐ 501 and higher	☐ **Yes** ☒ **No**

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☐ Owner ☐ Operator ☒ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant ☐ Other:

15. Mailing Address:	2TW Alexander Drive							
	City	Research Triangle Park	**State**	NC	**ZIP**	27713	**ZIP + 4**	

16. Country Mailing Information *(if outside USA)*	**17. E-Mail Address** *(if applicable)*

18. Telephone Number	**19. Extension or Code**	**20. Fax Number** *(if applicable)*

(984) 287-2800		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

☐ New Regulated Entity ☐ Update to Regulated Entity Name ☒ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

BASF Beaumont Agro Plant

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	14385 West Port Arthur Rd							
	City	Beaumont	**State**	TX	**ZIP**	77705	**ZIP + 4**	9290
24. County	Jefferson							

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:					
26. Nearest City			**State**		**Nearest ZIP Code**

Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).

27. Latitude (N) In Decimal:	29.971667		**28. Longitude (W) In Decimal:**	-94.053611	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
2879	2869	325320	325199

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

Chemical manufacturing of ag products

34. Mailing Address:	**14385 West Port Arthur Rd**							
	City	**Beaumont**	**State**	**TX**	**ZIP**	**77705**	**ZIP + 4**	**9290**
35. E-Mail Address:	**brenda.neely@basf.com**							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(409) 981-5000	**5139**	( ) -

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☒ Emissions Inventory Air	☒ Industrial Hazardous Waste
			JE0113D	TXD067261412, 50219, 30053
☐ Municipal Solid Waste	☒ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
	20057, 978B, 113174, 151935, 152562, 157151, 157585, 158173, 158481, 164582, 173963, 177952			
☐ Sludge	☒ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
	TXR05DA48			
☐ Voluntary Cleanup	☒ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☒ Other: UIC
	TX0003671, WQ0001169000			WDW155, WDW201, WDW301, WDW302, WDW433, WDW434

SECTION IV: Preparer Information

40. Name:	Kendra Derrick	**41. Title:**	EHS Specialist

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(409) 249-8574		( ) -	kendra.derrick@basf.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	BASF Agricultural Solutions US LLC	**Job Title:**	Site Manager
Name *(In Print):*	Brenda L Neely	**Phone:**	(409) 981- **5139**
Signature:	Brenda Neely	**Date:**	9/11/25

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part A, Attachment B: Site Legal Description

Attachment B.1 - Legal Description

Attachment B.2 – Plat Map

LEGAL DESCRIPTION OF PROPERTY

Tract I:

BEING a 200.00 acre tract, more or less, out of and a part of property conveyed to Socony Mobil Oil Company, Inc., by instruments recorded in Vol. 1255 page 168 and Vol. 1349 page 3, both of Deed Records of Jefferson County, Texas, and as shown on map or plat showing a survey of said property by Matt Racki, dated June 1960, said property being located in the W.N. SIGLER SURVEY, Abstract No. 48, Jefferson County, Texas, the said 200.00 acre tract being more fully described by metes and bounds as follows, to-wit:

FOR A LOCATIVE CORNER: an iron bolt in concrete in the Westerly right-of-way line of the West Port Arthur Road said point being the Northeast corner of that certain 210.60 acre tract conveyed to Louis M. Hebert by Deed recorded in Vol. 142 page 279 Deed Records of Jefferson County, Texas, being also the Northeast corner of that certain 41.35 acre tract described as "Second Tract" in the Deed from James P. Lee to Socony Mobil Oil Company, Inc. recorded in Vol. 1255 page 168 Deed Records of Jefferson County, Texas, and as shown on the map recorded in Vol. 1255 page 167 Deed Records of Jefferson County, Texas;

THENCE along the Westerly line of the West Port Arthur Road, South 27 deg. 30 min. East 1521.30 feet to a copper rod at the POINT OF BEGINNING for the 200.00 acre tract herein described;

THENCE North 89 deg. 59 min. West 2061.50 feet to an iron stake;

THENCE continuing North 89 deg. 59 min. West an additional 1024.20 feet to an iron stake for the Northwest corner of the 200.00 acre tract herein described;

THENCE parallel to the West Port Arthur Road, South 27 deg. 30 min. East 3183.40 feet to an iron stake for the Southwest corner of the 200.00 acre tract herein described, said point being 308.00 feet distant, measured at right angles from the Southerly line of a 341 .17 acre tract out of the Seth Hebert 699.01 acres shown as Block 1 of the Hebert partition recorded in Vol. 519 page 573 Deed Records of Jefferson County, Texas, said 341.17 acre tract being described as "First Tract" in the said Deed from James P. Lee to Socony Mobil Oil Company, Inc. recorded in Vol. 1255 page 168 of said Deed Records of Jefferson County, Teas, and as shown on the map recorded in Vol. 1255 page 167 Deed Records of Jefferson County, Texas.

THENCE South 89 deg. 59 min. East 3085.70 feet to an iron stake in the Westerly line of the West Port Arthur Road, the Southeast corner of the 200.00 acre tract herein described, said point being 300.00 feet distant, measured at right angles, from the South line of that certain 30.59 acre tract described as "Seventh Tract" in the abovementioned Deed from James P. Lee to Socony Mobil Oil Company, Inc.;

THENCE along the Westerly line of said West Port Arthur Road, North 27 deg. 30 min. West 3183.40 feet to the PLACE OF BEGINNING;

LEGAL DESCRIPTION OF PROPERTY
(Continued)

SAVE AND EXCEPT that certain 0.0122 acre tract conveyed to Jefferson County by Deed dated 9-27-96 filed 10-10-96 under County Clerk's File No. 9631255 Official Public Records of Real Property of Jefferson County, Texas.

Tract II:

BEING that certain 290.577 acre tract out of the W.N. SIGLER LEAGUE, Abstract No. 48, Jefferson County, Texas, and being a part of the 341.17 acre "First Tract" and the 30.59 acre "Seventh Tract" of the Deed from James P. Lee to Socony Mobil Oil Company, Inc. as recorded in Vol. 1255 page 168 Deed Records of Jefferson County, Texas, said 290.577 acre tract being more fully described by metes and bounds as follows, to-wit:

COMMENCING at the Northwest corner of the W.N. Sigler League, Abstract No. 48;

THENCE East 30.00 feet to the East right-of-way line of Hebert Road (60.00 feet rightof-way);

THENCE South along said East right-of-way line 39 55.00 feet to a 1-1/2 inch pipe found for the Northwest corner of said 290.577 acre tract and said 341.17 acre "First Tract" and being the POINT OF BEGINNING;

THENCE North 84 deg. 43 min. 29 sec. East along the North line of the 341.17 acre "First Tract" and the South line of the Clarfey J. Hebert 210.60 acre tract which is described in the Deed from J.M. Hebert to Clarfey J. Hebert recorded in Vol. 142 page 327 Deed Records of Jefferson County, Texas, a distance of 2890.35 to a 1-1/2 inch pipe found for corner;

THENCE South 19 deg. 59 min. 29 sec. East a distance of 952.91 feet to a 5/8ths inch iron rod set for corner, said corner being on the Northerly line of a 200.00 acre tract Deed to Velsicol Chemical Company by Mobil Oil Corporation as recorded in Vol. 1811 page 458 Deed Records of Jefferson County, Texas;

THENCE along said Northerly line North 89 deg. 59 min. 00 sec. West a distance of 1024.20 feet to a 5/8ths iron rod set for corner, said corner being the Northwest corner of said 200.00 acre tract;

THENCE South 27 deg. 30 min. 00 sec. East along the Westerly line of said 200.00 acre tract, a distance of 3181.93 feet to a 5/8ths iron rod set for corner, said corner being the Southwest corner of said 200.00 acre tract;

THENCE South 89 deg. 59 min. 00 sec. East along the Southerly line of said 200.00 acre tract, a distance of 3085.70 feet to a 5/8ths inch iron rod found for corner, said corner being the Southeast corner of said 200.00 acre tract and being on the Westerly right-of-way of West Port Arthur Road (80.00 feet right-of-way) and the Easterly line of said 30.59 acre "Seventh Tract";

LEGAL DESCRIPTION OF PROPERTY (Continued)

THENCE South 27 deg. 30 min. 00 sec. East along the Westerly right-of-way of West Port Arthur Road a distance of 337.68 feet to a 1-1/2 inch pipe found for corner, said corner being the Southeast corner of said 290.577 acre tract and the Southeast corner of said 30.59 acre "Seventh Tract";

THENCE South 89 deg. 53 min. 46 sec. West along the Southerly line of said 290.577 acre tract and the Southerly line of said 30.59 acre "Seventh Tract", a distance of 2371.83 feet to a 1-1/2 inch ,pipe found for the Southwest corner of said 30.59 acre "Seventh Tract" and continuing along said bearing and Southerly line of said 290.577 acre tract for a total distance of 6889.99 feet to a 1-1/2 inch pipe found for the Southwest corner of said 290.577 acre tract, said corner also being the Southwest corner of said 341.17 acre "First Tract" and being on the Easterly right-of-way line of Hebert Road (60.00 feet right-of-way);

THENCE North 00 deg. 01 min. 23 sec. West along said Easterly right-of-way line of Hebert Road and the Westerly line of said 341.17 acre "First Tract" a distance of 3766.54 feet to the POINT OF BEGINNING and containing 290.577 acres, more or less.

NOTE: THE COMPANY DOES NOT REPRESENT THAT THE ABOVE ACREAGE OR SQUARE FOOTAGE CALCULATIONS ARE CORRECT.

Permit No. 50219
Attachment A

ATTACHMENT A
SITE LEGAL DESCRIPTION

First Tract: Being a 41.35 acre tract of land out of the Northern portion of the Louis M. Hebert 210.6 acre tract which was conveyed by deed to Louis M. Hebert by J. M. Hebert, recorded in Volume 142, page 279, Deed Records, Jefferson County, Texas, and being a part of the W. W. Sigler, Abstract 43 League just south of Spindletop near Beaumont, Jefferson County, Texas, said 41.35 acre tract being more fully described as follows:

Beginning at three-quarter inchbolt set in concrete in the west right-of-way line of the West Port Arthur Road, an 80 foot wide right-of-way, said bolt being the northeast corner of the said 210.6 acre tract and also the southeast corner of the Magnolia Pipeline Co. tract as conveyed by Mario Bordages et al by deed recorded in Volume 634, page 212, Deed Records, Jefferson County, Texas;

Thence South 27 degrees 30 minutes 30 seconds East along the east line of the 210.6 acre tract and the west right-of-way line of the West Port Arthur Road a distance of 870.05 feet to a point for corner, said corner being the Northeast corner of the tract of land conveyed to Louis M. Hebert, Jr. by Louis M. Hebert, by deed recorded in Volume 869, page 240, Deed Records, Jefferson County, Texas;

Thence South 74 degrees 58 minutes 26 seconds West along the north line of the Louis M. Hebert, Jr. tract across the said 210.6 acre tract a distance of 1697.62 feet to a point for corner in the west line of the 210.6 acre tract; said corner being in the east line of the McFaddin and Wells Irrigation canal right-of-way as described in a deed recorded in Volume 61, page 205 and again in Volume 1175, page 575, Deed Records of said county, said corner also being in the east line of the Goth Hebert 879.01 acre tract known as Block 1 of the Hebert Partition as recorded in Volume 527, page 573, Deed Records of said county;

Thence North 20 degrees 05 minutes 20 seconds West along the west line of the 210.6 acre tract and the east line of the 879.01 acre tract and the east line of the canal right-of-way, a distance of

SITE LEGAL DESCRIPTION
(Cont'd)

675.8 feet to an ell point;

Thence North 14 degrees 06 minutes 43 seconds West continuing along the common line of the 210.6 acre tract and the 699.01 acre tract and the canal right-of-way a distance of 347.19 feet to point for corner and the northeast corner of the 699.01 acre tract;

Thence South 84 degrees 17 minutes 29 seconds West along the north line of the 699.01 acre tract and across the aforementioned canal right-of-way a distance of 191.45 feet to a point for corner, said corner being the Northerly southwest corner of the Louis M. Hebert 210.6 acre tract and the southeast corner of the Clarley J. Hebert 210.6 acre tract as described in deed from J. M. Hebert, to Clarley J. Hebert, recorded in Volume 142, page 327, Deed Record Jefferson County;

Thence North 11 degrees 56 minutes 52 seconds west along the east line of the Clarley J. Hebert 210.6 acre tract and the west line of the Louis M. Hebert 210.6 acre tract a distance of 445.27 f to a point for corner which is the Northwest corner of the Louis M. Hebert 210.6 acre tract and the southwest corner of the aforementioned Magnolia Pipeline Co. tract;

Thence South 89 degrees 58 minutes 35 seconds East along the north line of the Louis M. Hebert Tract and the south line of the Magnolia Pipeline Co. tract crossing the aforementioned canal right-of-way a distance of 1781.93 feet to the place of beginning containing in area 41.35 acres of land, more or less.

Second Tract: Being a 33.34 acre tract of land out of the Northern portion of the Louis M. Hebert 210.6 acre tract which was conveyed by deed to Louis M. Hebert by J. M. Hebert, recorded in Volume 142, page 279, Deed Records, Jefferson County, Texas, and being the same tract of land conveyed to Louis M. Hebert, Jr. by Louis M. Hebert as recorded in Volume 869, page 240, Deed Records, Jefferson County, Texas, and being a part of the W. H. Butler Leagues Abstract 43, Jefferson County, Texas, said 33.34 acre tract being more fully fully described as follows:

Beginning at a three-quarter inch bolt set in concrete in the West right-of-way line of the West Port Arthur Road, an 80 foot wide right-of-way, said bolt being the northeast corner of the said 210.6 acre tract and the northeast corner of the Louis M. Hebert Estate 41.35 acre tract and also the southeast corner of the Magnolia Pipeline Co. tract as conveyed by Marie Mordagne et al by deed recorded in Volume 634, page 212, Deed Records, Jefferson County, Texas;

Thence South 27 degrees 30 minutes 36 seconds West along the east line of the 210.6 acre tract and the west right-of-way line of the West Port Arthur Road and along the east line of the Louis M Hebert Estate 41.35 acre tract a distance of 870.06 feet to a point for corner at the southeast corner of the 41.35 acre tract and the beginning and northeast corner of the tract herein described;

Thence South 27 degrees 30 minutes 36 seconds East along the east line of the 210.6 acre tract and the west right-of-way line of West Port Arthur Road a distance of 448.24 feet to a point for corner at the northeast corner of a tract of land as conveyed by Louis M. Hebert to Rita Marie Hesse by deed recorded in Volume 866, page 63 Deed Records, Jefferson County, Texas;

Thence South 74 degrees 54 minutes 15 seconds West along the north line of the Hesse tract and across the 210.6 acre tract a distance of 1867.59 feet to a point for corner in the west line of the 210.6 acre tract, said corner being in the east line of the Neches and Wolf's Irrigation canal right-of-way as described in a deed recorded in Volume 61, page 205 and again in Volume 1175, page 505, Deed Records of said county, and said corner also being in the east line of the Seth Hebert 699.01 acre tract known as Block 1 of the Hebert Partition as recorded in Volume 521, page 573, Deed Records of said County;

Thence north 20 degrees 05 minutes 20 seconds west along the west line of the 210.6 acre tract and the east line of the 699.01 acre tract and the east line of the canal right-of-way a distance of [illegible] feet to a point for corner at the southwest corner of the aforemont

SITE LEGAL DESCRIPTION
(Cont'd)

61.35 acre tract and also the southeast corner of the Magnolia Pipeline Co. tract as conveyed by Mario Bordages et al by deed recorded in Volume 634, page 212, Deed Records, Jefferson County, Texas;

Thence South 27 degrees 30 minutes 36 seconds East along the east line of the 210.6 acre tract and the west right-of-way line of the West Port Arthur Road and along the east line of the Louis M. Hebert Estate 61.35 acre tract and the Louis M. Hebert, Jr. 33.34 acre tract and the Rita Mario Bosse 33.16 acre tract a distance of 2523.90 feet to a point for corner at the southeast corner of the 33.16 acre tract and the beginning and northeast corner of the tract herein described;

Thence South 27 degrees 30 minutes 36 seconds East along the east line of the 210.6 acre tract and the west right-of-way line of the West Port Arthur Road a distance of 749.75 feet to a point for corner at the northeast corner of the Louis M. Hebert estate 27.39 acre tract of land;

Thence South 74 degrees 54 minutes 55 seconds West along the north line of the Hebert Estate Tract and across the 210.6 acre tract a distance of 2009.5 feet to a point for corner in the west line of the 210.6 acre tract, said corner being in the east line of the McFaddin and Ward Irrigation canal right-of-way as described in a deed recorded in Volume 61, page 205 and again in Volume 1175, page 595, Deed Records of said County, and said corner also being in the east line of the Seth Hebert 699.01 acre tract known as Block 1 of the Hebert Partition as recorded in Volume 529, page 573, Deed Records of said County;

Thence North 20 degrees 05 minutes 20 seconds West along the west line of the 210.6 acre tract and the east line of the 699.01 acre tract and the east line of the canal right-of-way a distance of 744.9 feet to a point for corner at the southwest corner of the aforementioned Rita Mario Bosse 33.16 acre tract;

Thence North 74 degrees 53 minutes 43 seconds East across the 210.6 acre tract and along the south line of the said 33.16 acre tract a distance of 1910.73 feet to the place of beginning containing in area 33.43 acres of land, more or less.

Fifth Tract: Being a 27.39 acre tract of land out of the south central portion of the Louis M. Hebert 210.6 acre tract which was conveyed by deed to Louis M. Hebert by J. S. Hebert, recorded in Volume 142, page 279, Deed Records, Jefferson County, Texas, and being a part of the W. H. Sigler League, Abstract 41 just south of Spindletop Road Beaumont, Jefferson County, Texas, said 27.39 acre tract being more fully described as follows:

Beginning at a three-quarter inch bolt set in concrete in the west right-of-way line of the West Port Arthur Road, an 80 foot wide right-of-way, said bolt being the northeast corner of the said 210.6 acre tract and the northeast corner of the Louis M. Hebert Estate 61.35 acre tract and also the southeast corner of the Magnolia Pipeline Co. tract as conveyed by Mario Bordages et al by deed recorded in Volume 634, page 212, Deed Records, Jefferson County, Texas;

Thence South 27 degrees 30 minutes 36 seconds east along the east line of the said 210.6 acre tract and the west right-of-way line of West Port Arthur Road and along the east line of the Louis M. Hebert Estate 61.35 acre tract, the Louis M. Hebert, Jr. 33.34 acre tract, the Rita Mario Bosse 33.16 acre tract and the Nuna V. Hebert 33.43 acre tract, a distance of 3274.65 feet to the southeast corner of the said Nuna V. Hebert 33.43 acre tract and the northeast and beginning corner of the tract herein described;

Thence South 27 degrees 30 minutes 36 seconds east continuing along the west right-of-way line of the West Port Arthur Road and the east line of the said 210.6 acre tract a distance of 80.91 feet to a point for corner at the northeast corner of the 10 acre tract of land conveyed to Jefferson County, Texas, by Louis M. Hebert by deed recorded in Volume 556, page 474, Deed Records, Jefferson County, Texas;

Thence South 62 degrees 17 minutes zero seconds West along the north line of the Jefferson County 10 acre tract a distance of 349.

SITE LEGAL DESCRIPTION
(Cont'd)

right-of-way and the west line of the 210.6 acre tract a distance of 620.3 feet to a point for corner at the southwest corner of the Lou[illegible]. Mowery Jones 27.49 acre tract;

Thence North 89 degrees 44 minutes 2 seconds East along the s[illegible] line of the said 27.49 acre tract a distance of 1082.69 feet to a point for corner at the westerly southeast corner of said 27.49 acr[illegible] tract in the west line of the Jefferson County 10 acre tract conve[illegible] by Louis M. Mowery to Jefferson County by deed recorded in Volume 5[illegible] page 478, Deed Records, Jefferson County, Texas;

Thence South 13 degrees 51 minutes 05 seconds east along the west line of the said 10 acre tract a distance of 287.1 feet to the southwest corner of said Jefferson County tract;

Thence North 62 degrees 17 minutes zero seconds East along the south line of the Jefferson County tract a distance of 576.13 feet to a point for corner in the east line of the 210.6 acre tract and t[illegible] west right-of-way of the west Fort Arthur Road and the southeast corner of the Jefferson County tract;

Thence South 27 degrees 30 minutes 36 seconds East along the east line of the 210.6 acre tract and the west line of the West Fort Arthur Road a distance of 753.79 feet to the place of beginning containing in area 30.59 acres of land, more or less,

said lands being herein sometimes called the "subject property";

3085.70 feet to . 5/8" iron rod found for corner said corner being the southeast corner of said 200 acre tract and being on the westerly right-of-way of West Port Arthur Road (80' right-of-way) and the easterly line of said 30.59 acre seventh tract;

THENCE, South 27 deg. 30 min. 00 sec. East along the westerly right-of-way of West Port Arthur Road a distance of 337.68 feet to a 1 1/2" pipe found for corner, said corner being the southeast corner of said 290.577 acre tract and the southeast corner of said 30.59 acre seventh tract;

THENCE, South 89 deg. 53 min. 46 sec. West along the southerly line of said 290.577 acre tract and the southerly line of said 30.59 acre seventh tract, a distance of 2371.83 feet to a 1 1/2" pipe found for the southwest corner of said 30.59 acre seventh tract and continuing along said bearing and southerly line of said 290.577 acre tract for a total distance of 6889.99 feet to a 1 1/2" pipe found for the southwest corner of said 290.577 acre tract, said corner also being the southwest corner of said 341.17 acre first tract and being on the easterly right-of-way line of Hebert Road (60' right-of-way);

THENCE North 00 deg. 01 min. 23 sec. West along said easterly right-of-way line of Hebert Road and the westerly line of said 341.17 acre first tract a distance of 3766.54 feet to the POINT OF BEGINNING and containing 290.577 acres more or less.

This conveyance is made and accepted subject to all valid mineral reservations, restrictions, easements and condition of record in the office of the County Clerk of Jefferson County, Texas, affecting or relating to said property.

TO HAVE and TO HOLD the above described premises, together with all and singular the rights and appurtenances thereto in anywise belonging, unto the said grantee, its successor and assigns forever; and grantor does bereby bind itself, its successors and assigns to WARRANT AND FOREVER DEFEND all and singular the said premises unto the said grantee, its successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof, by, through or under the Grantor, but none other.

EXECUTED this 27th day of October, 1989.

MOBIL OIL CORPORATION

By: R. H. Gardner

Its: R. H. GARDNER TREASURER

$SHEETSIZE$

$DATE$

UNCONTROLLED IF PRINTED 24HRS AFTER

D-SIZE BORDER - SCALE FOR 24"x36" PLOT ONLY

BASF PROPERTY LINE — 2890.35 — N84°43'29"E

PIPE VENTS

COLONIAL PIPELINES

PIPE VENT

UTILITY POLE

S24°59'29"E 952.18

BASF PROPERTY LINE — N0°12'W 3766.54

OUTFALL SLUDGE LAND SPREADING AREA

#2A WASTE WATER

OLD SANDCO PROPERTY LINE

490.577 ACRES

(TOTAL ACREAGE)

BARBED WIRE FENCE

16" UNITED GAS PIPELINE
C-C APPROX. COVER

OUTFALL 002

OUTFALL 001

OUTFALL 004

SEWER PLANT

OUTFALL 003

SHELL PARKING

EXISTING CHAIN LINK FENCE

S 3120.13
E 1625.02

S61°29'30"E 331.08

BASF PROPERTY LINE — 6889.99 — S89°53'46"W

N

NOTES

PLANT N.E. CORNER COORDINATE VALUES*

PLANT NO/SO. (+/-) COORD. = 0
PLANT EA/WE. (+/-) COORD. = 0
DECIMAL DEGREES LAT. = 29° 54' 22.5"
DECIMAL DEGREES LAT. = 29.906239°
DEG. WEST LONGITUDE = 94° 3' 13.9"
DECIMAL DEGREES LONGITUDE = 94.053861°
*Coordinates Universal Transverse Mercator:
Easting - 398325
Northing - 3310705

LEVELS TURNED OFF FOR CLARITY: GRID LEVEL - 15
SMALL TEXT LEVEL - 4

REV.	DESCRIPTION	BY	ENG.	DATE
12	GENERAL UPDATE	DLL	CG	01/14/;
11	UPDATED PER EPD	DLL	NC	10/21/;
10	TCN UPDATE	DLL	CEG	10/15/;
9	GENERAL UPDATE	JPM		3/10/06
8	GENERAL UPDATE	JPM		3/27/06
7	GENERAL UPDATE	JPM		8/24/05
6	FENCE UPDATE	TLB		10/3/12
5	GENERAL UPDATE	JPM		5/10/06
4	GENERAL UPDATE	JPM		3/27/06
3	GENERAL UPDATE	JPM		8/24/05
2	ADDED COORD. CONVERSIONS	TFS	JPM	4/19/05
1	SYMBOLOGY UPDATE	TLB	TFS	3/21/01

NC UPDATED 976-WPP-21-0053 JMS CB 10/11/21

200' 100' 100'
SCALE

REV.	DESCRIPTION	BY	ENG.	DATE
3	REVISED ACREAGE TOTAL	--	JPM	9/27/06
2	SYMBOLOGY UPDATE	TLB	TFS	3/21/01
1	ATTACHED BMT-G-4027	TFS		5/25/00
0	ISSUED TO MASTER	JCW		5/1/98

PROJECTS IN PROGRESS

PROJECT	DATE	REV	ISSUED-TO

ORIGINAL FILE: CHECKED DATE

CONFIDENTIAL
THIS DOCUMENT IS THE PROPERTY OF BASF CORP. AND THE INFORMATION CONTAINED HEREIN IS CONSIDERED CONFIDENTIAL. THIS DOCUMENT IS NOT TO BE USED, REPRODUCED, OR DISCLOSED IN WHOLE OR IN PART WITHOUT THE PRIOR WRITTEN PERMISSION OF BASF CORP.

BASF
We Create Chemistry

BEAUMONT, TEXAS
PROPERTY BOUNDARY

DRAWN	JCW	DATE	4/28/98	SCALE	1"=200'
PROJ.		DRAWING NO.	BMT-G-4104	REV.	3

GSI Job No. 10426

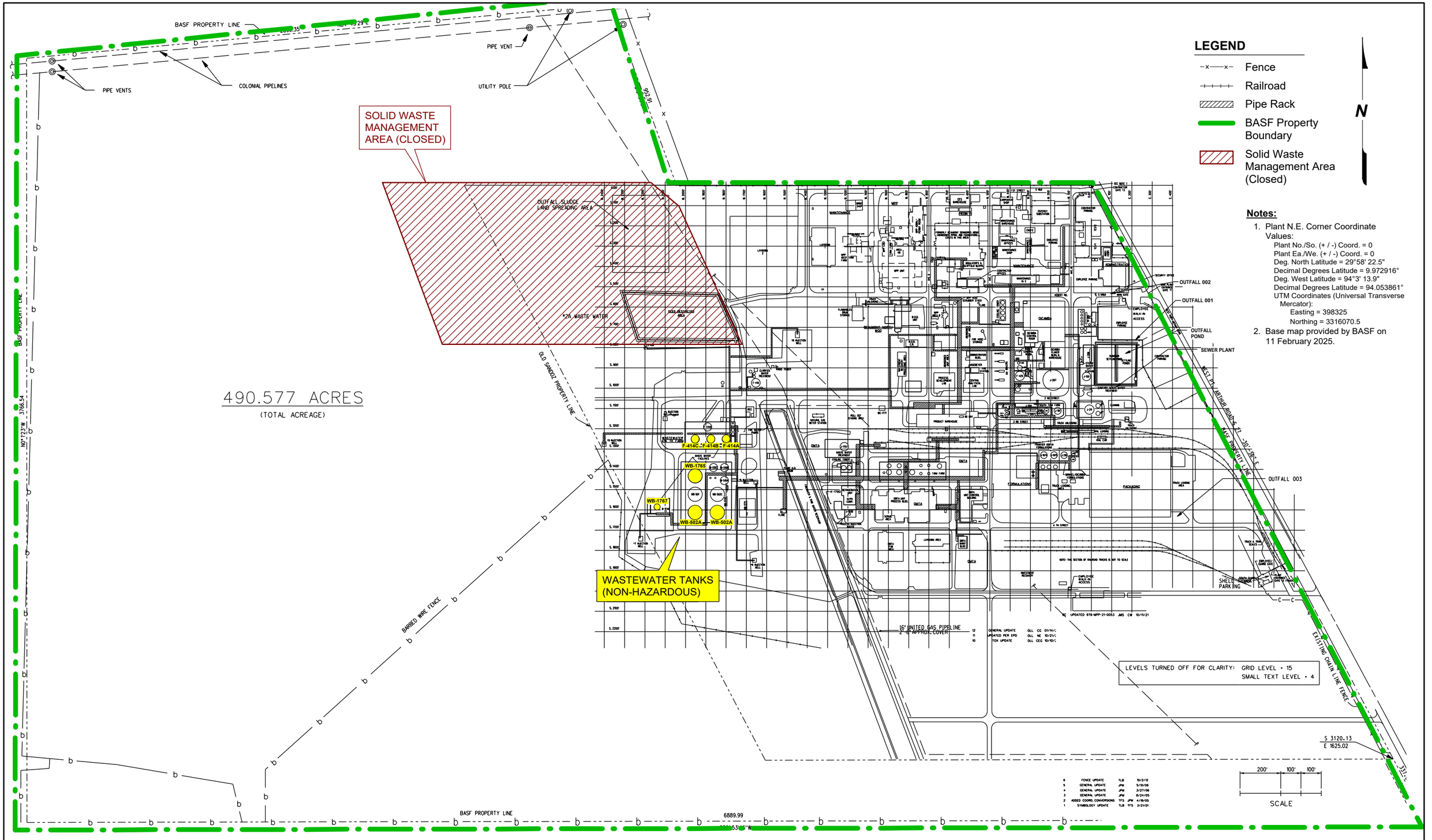
Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part A, Attachment C: Facility Boundaries and Adjacent Waters Maps

Maps and Supporting Information

- Attachment C.1 – Location of Waste Management Units
- Attachment C.2 – Regional Site Topographic Map
- Attachment C.3 – Plant Drainage and Control Structure Map
- Attachment C.4 – Location of Monitoring and Injection Wells
- Attachment C.5 – Location of Water Wells within One-Mile Radius of Facility



Notes:

1. Plant N.E. Corner Coordinate Values:
   Plant No./So. (+ / -) Coord. = 0
   Plant Ea./We. (+ / -) Coord. = 0
   Deg. North Latitude = 29°58' 22.5"
   Decimal Degrees Latitude = 9.972916°
   Deg. West Latitude = 94°3' 13.9"
   Decimal Degrees Latitude = 94.053861°
   UTM Coordinates (Universal Transverse Mercator):
   Easting = 398325
   Northing = 3316070.5
2. Base map provided by BASF on 11 February 2025.

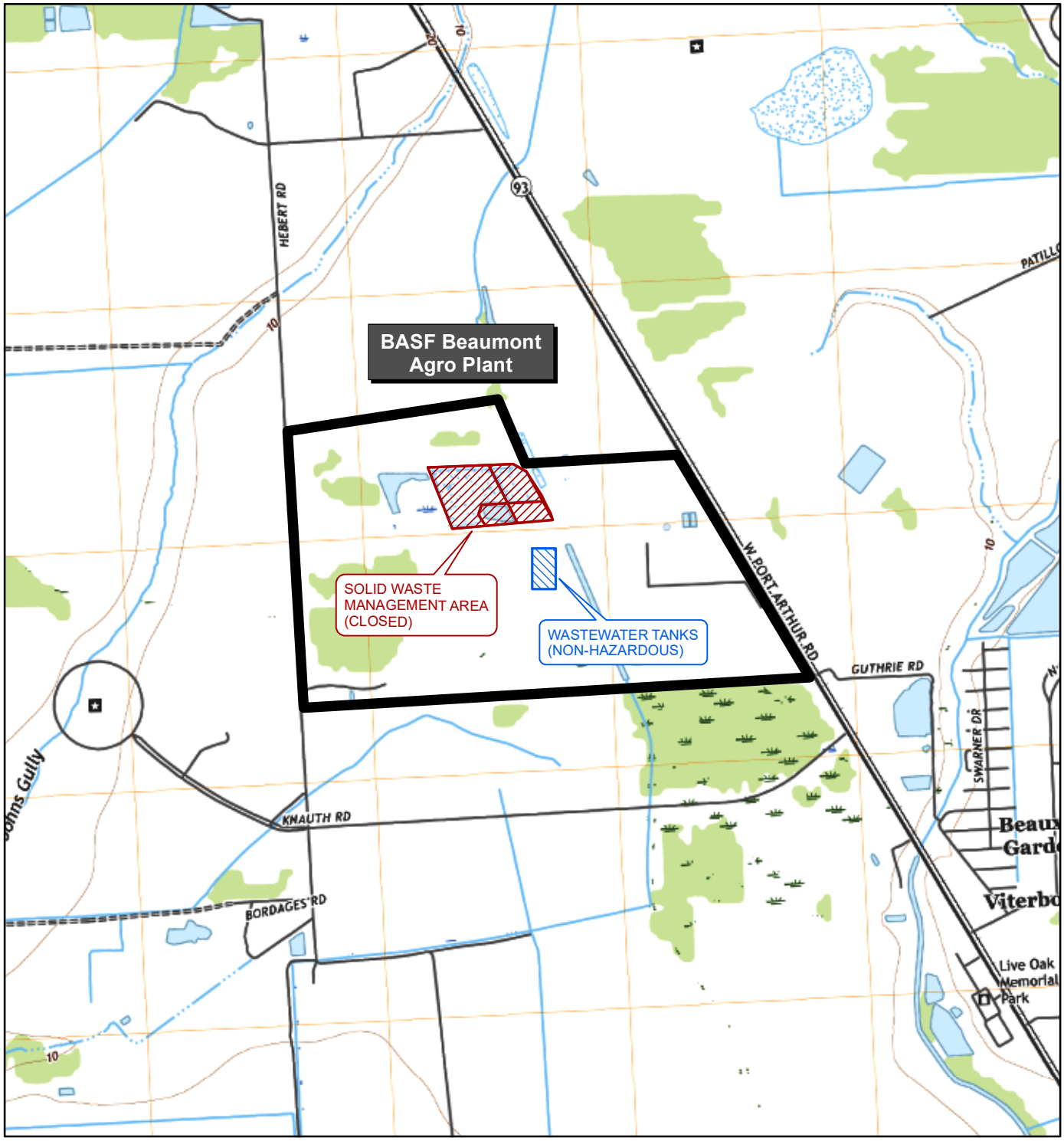
No.			
12	GENERAL UPDATE	DLL	CG 01/14/;
11	UPDATED PER EPD	DLL	NE 10/21/;
10	TCM UPDATE	DLL	CEG 10/15/;
9	UPDATED 976-NPP-21-0053 JMS CW 10/11/21		
8	FENCE UPDATE	TLB	10/2/12
5	GENERAL UPDATE	JPW	5/12/06
4	GENERAL UPDATE	JPW	3/27/06
3	GENERAL UPDATE	JPW	9/24/05
2	ADDED COORD. CONVERSIONS	TFS	JPW 4/19/05
1	SYMBOLOGY UPDATE	TLB	TFS 3/21/01

GSI ENVIRONMENTAL
Texas Registration Number: F-1198

GSI Job No.	10426	Drawn By:	CDM
Map ID:	000_01	Chk'd By:	MW
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	As Shown	**ATTACHMENT C.1**	

LOCATION OF WASTE MANAGEMENT UNITS

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas



U.S. Geological Survey Map
Port Acres Quadrangle - 2022
Texas - Jefferson County
7.5 - Minute Series (1:24,000)

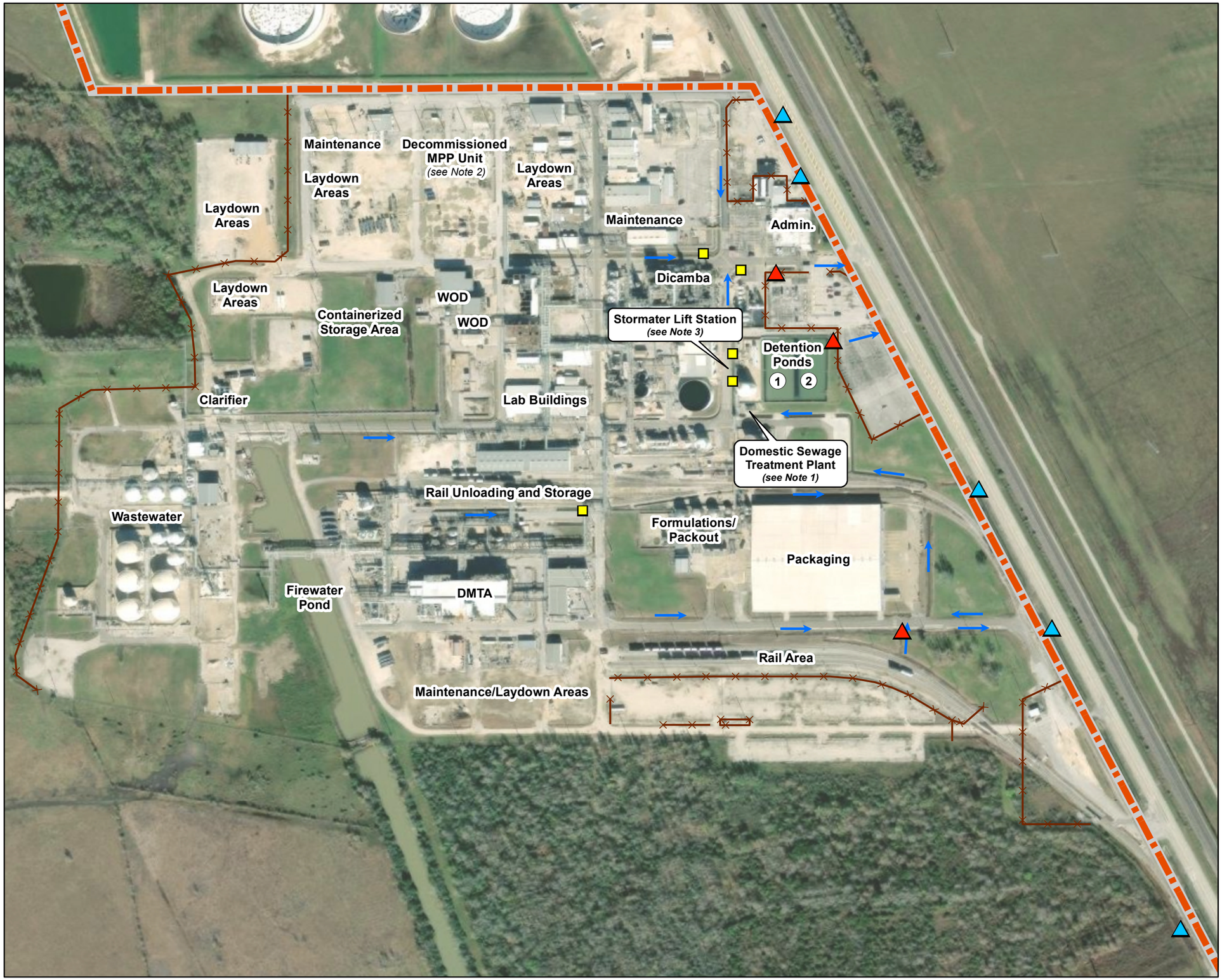
SCALE (ft)
0 1000 2000

GSI ENVIRONMENTAL
Texas Registration Number: F-1198

GSI Job No.	10426	Drawn by:	CDM
Map ID:	000_02	Chk'd by:	MW
Issued:	14-Apr-2025	Aprv'd by:	JMM
Scale:	As Shown	**ATTACHMENT C.2**	

REGIONAL SITE TOPOGRAPHIC MAP

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas



N

LEGEND

- Wastewater Outfalls
- Stormwater MSGP Outfalls
- Stormwater Gate
- Flow direction within the Stormwater Drainage Ditches
- BASF Property Boundary
- Fence

Notes

1. Domestic sewage treatment plant effluent discharges to site deep well injection system.
2. MPP is a non-process area. The unit was shut down, cleaned, and decommissioned in 2016.
3. The Stormwater Lift Station has the optional capability to pump stormwater to the deep well injection system.
4. Background Imagery: ESRI World Imagery - 1m Color InfraRed NAIP imagery last modified 8/16/2023. Source: Esri, DigitalGlobe, USGS, and the GIS User Community, et al.

Feet
0 150 300

Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N (meters)

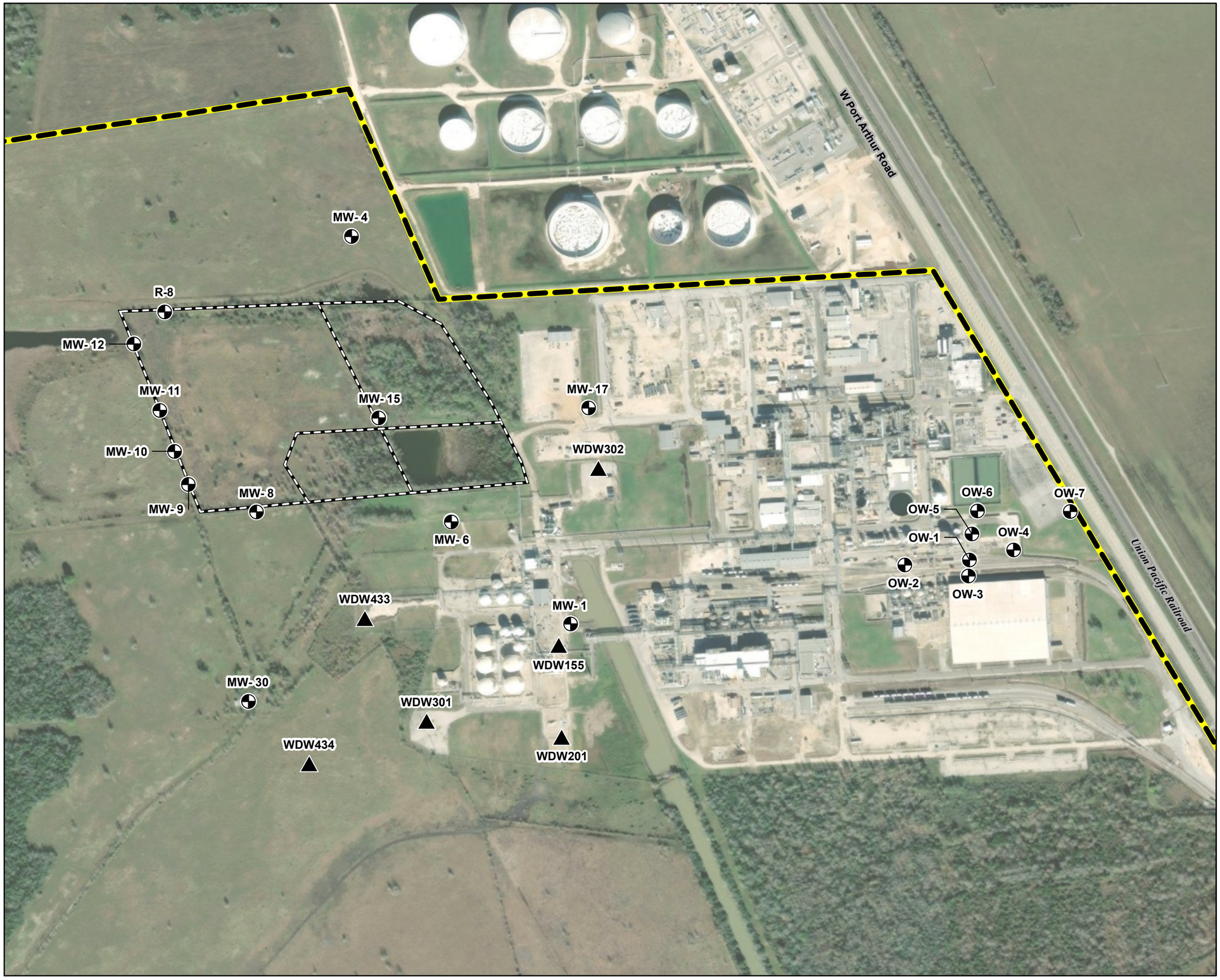
GSI ENVIRONMENTAL
Texas Registration Number: F-1198

PLANT DRAINAGE AND CONTROL STRUCTURE MAP

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No.	10426	Drawn By:	CDM
Issued:	14-Apr-2025	Chk'd By:	MW
Map ID:	**000_03**	Appv'd By:	JMM

ATTACHMENT C.3



LEGEND

- Shallow Monitoring Well
- UIC Class I Non-Hazardous Injection Well
- BASF Corporation Property Boundary
- Former Pond Boundary

Notes

1. The monitoring wells associated with the former Solid Waste Management Area will be plugged and abandoned in 2025.
2. Background Imagery: ESRI World Imagery - 1m Color InfraRed NAIP imagery last modified 8/16/2023. Source: Esri, DigitalGlobe, USGS, and the GIS User Community, et al.

Feet
0 200 400

Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N (meters)

GSI ENVIRONMENTAL
Texas Registration Number: F-1198

LOCATION OF MONITORING AND INJECTION WELLS

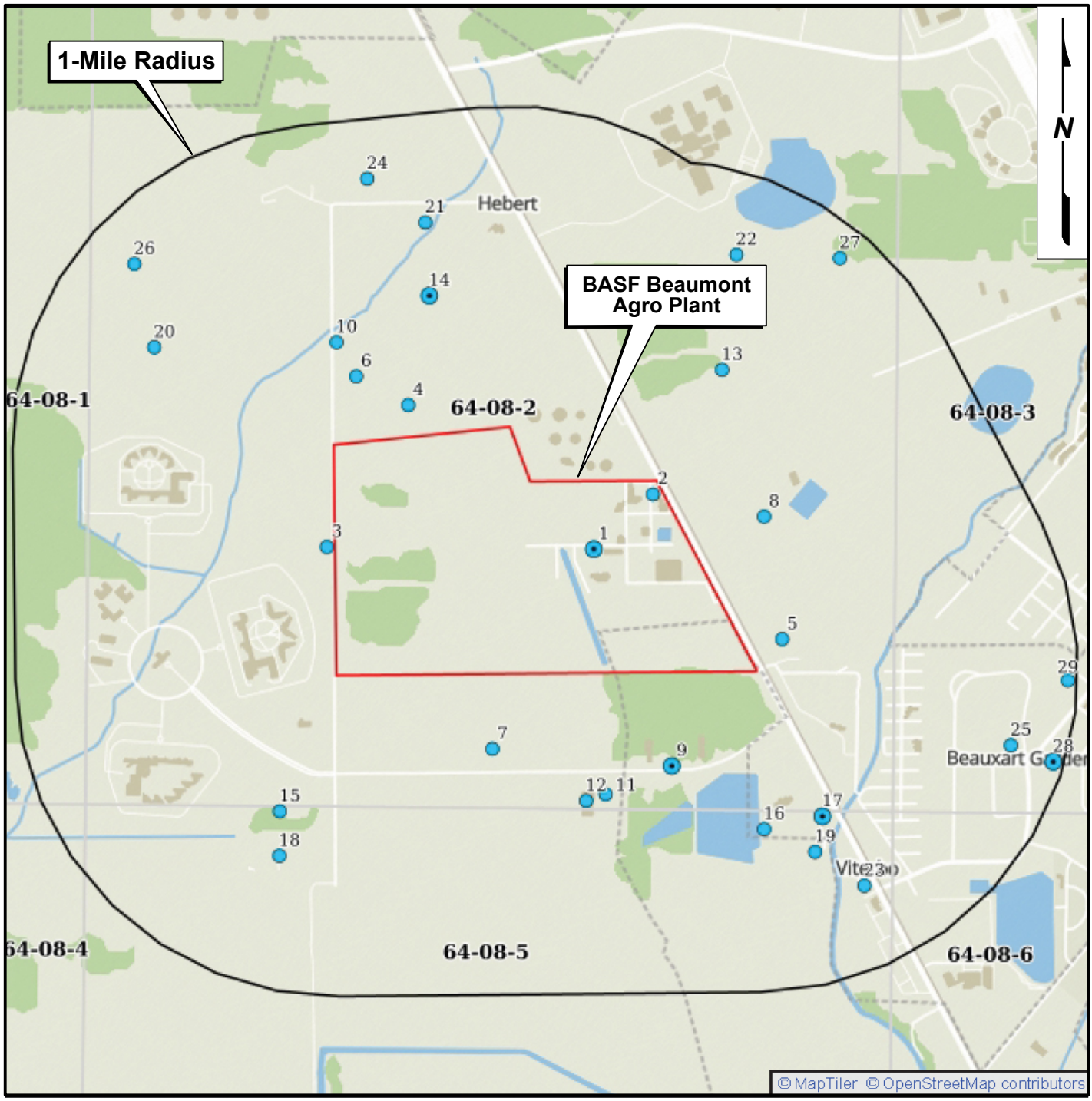
Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No.	10426	Drawn By:	CDM
Issued:	14-Apr-2025	Chk'd By:	MW
Map ID:	**000_04**	Appv'd By:	JMM

ATTACHMENT C.4

Summary Map - 1.0 Mile Radius

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP



BASF Corporation - Beaumont, TX

0' 1583' 3167'

Single Water Well | Water Well Cluster

US WW,TX GWS,TX HIST,TX PWS
TX SDR

Subject Site
Search Buffer
Texas Quad Index

NAD83 / UTM Zone 15N
North American Datum 1983
Western Meridian: 96 0' 00" West
Eastern Meridian: 90 0' 00" West
Latitude of Origin: 0 0' 00" North

1:28500
1 in = 2375 ft
1 in = 0.450 mi
1 cm = 285 m
1 cm = 0.285 km

GSI ENVIRONMENTAL
Texas Registration Number: F-1198

GSI Job No.	10426	Drawn By:	CDM
Map ID:	000_05	Chk'd By:	WMC
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	As Shown	**ATTACHMENT C.5**	

LOCATION OF WATER WELLS WITHIN ONE-MILE RADIUS OF FACILITY

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No. 10426

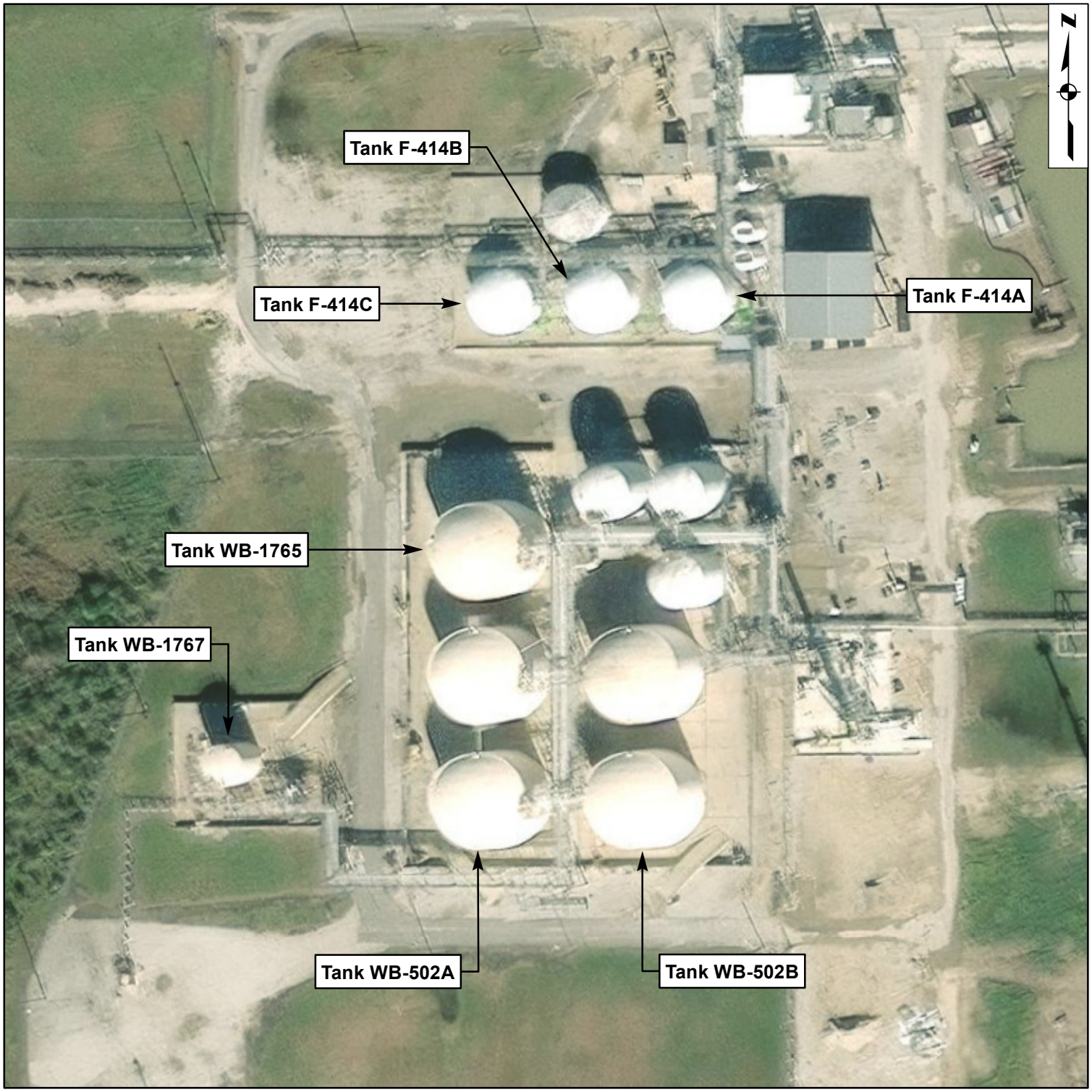
Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part A, Attachment D: Photographs

Maps and Supporting Information

- Attachment D – Waste Management Unit Photographs



Feet
0 50 100

Notes

1. Background Imagery: ESRI World Imagery - 1m Color InfraRed NAIP imagery last modified 1/29/2025. Sources: Esri, USGS, the GIS User Community, et al.
2. Projected Coordinate System: NAD 1983; UTM: Zone 15N (meters).

GSI ENVIRONMENTAL

Texas Registration Number: F-1198

WASTE MANAGEMENT UNIT PHOTOGRAPHS

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No.: 10426	Drawn by: CDM	**ATTACHMENT D**
Date: 14-Apr-2025	Chk'd by: MW	
Revised:	Appv'd by: JMM	Map ID: 000_07

GSI Job No. 10426

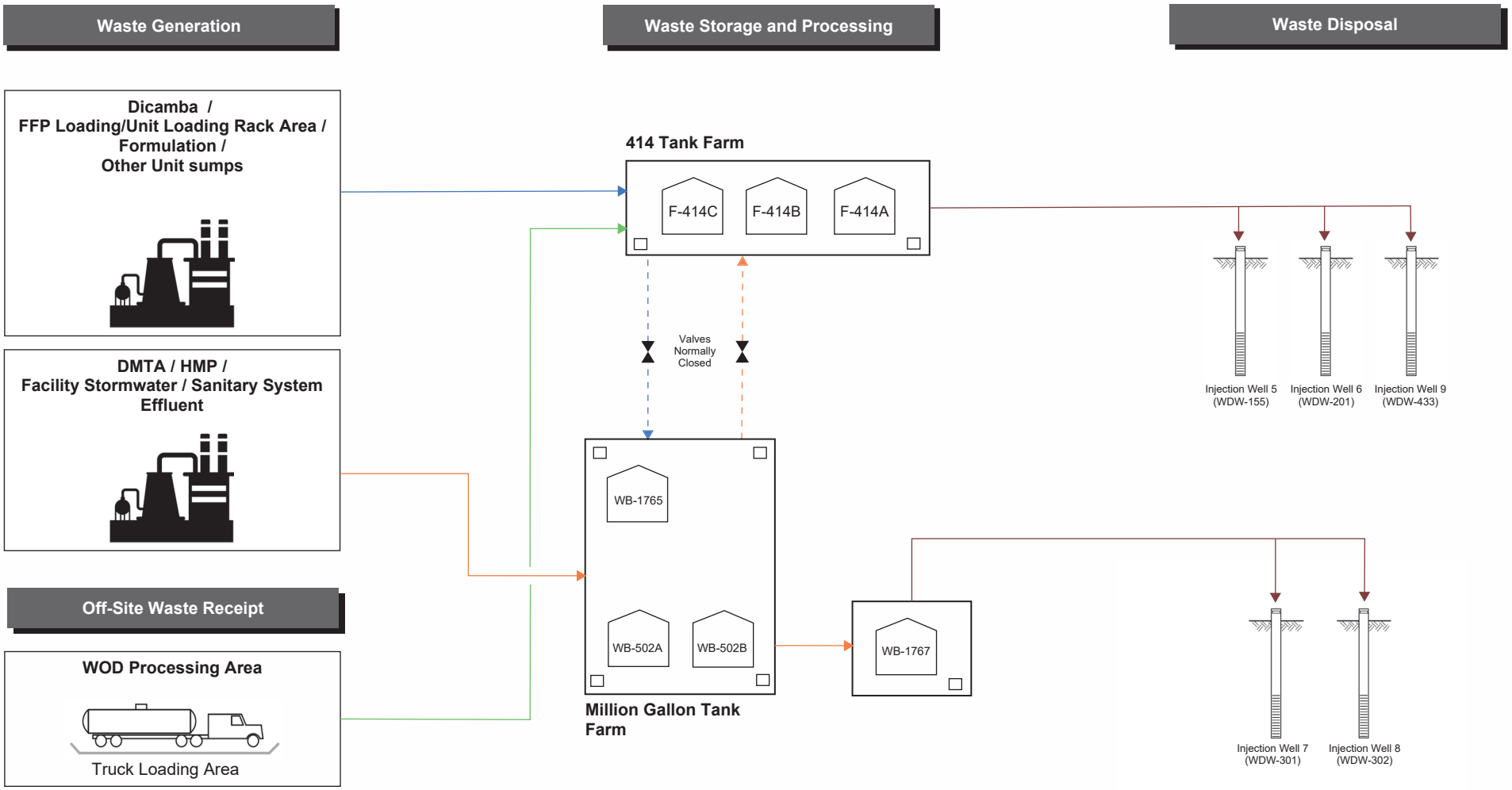
Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part A, Attachment E: Process Flow Diagram / Description

Waste Flow Diagrams

- Attachment E.1 - Waste Flow Diagram
- Attachment E.2 - Notes to Waste Flow Diagram



LEGEND

- Facility wastewater and stormwater, except DMTA Unit
- Dicamba wastewater recirculation to Million Gallon Tank Farm (Tanks WB-502 A/B)
- DMTA wastewater
- DMTA wastewater recirculation to 414 Tank Farm
- Off-site waste from Tolling facility
- Waste to Injection Well
- Active UIC pre-injection tank
- Sump
- Valve

Notes:

1) See Attachment E.2 for notes to this waste flow diagram.
2) Only active Underground Injection Control (UIC) pre-injection tanks are shown in this waste flow diagram.
3) The UIC pre-injection tanks are used to store nonhazardous waste only for less than 90 days prior injection in UIC-permitted disposal wells.
4) The BASF Beaumont facility occasionally receives wastewater from other BASF facilities and a tolling facility (Jawhawk, Galena, Kansas) located more than 50 miles from the BASF Beaumont Agro Plant. That tolling facility processes BASF intermediate products and ships associated wastewater back to BASF via trucks in accordance with their agreement/contract without fee.

GSI ENVIRONMENTAL
Texas Registration Number: F-1198

GSI Job No.:	10426	Drawn By:	KCN
Issued:	14-Apr-2025	Chk'd By:	KCN
Revised:	4-Sep-2025	Aprv'd By:	JMM
Scale:	Not to scale	**ATTACHMENT E.1**	

WASTE FLOW DIAGRAM

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

ATTACHMENT E.2
NOTES TO WASTE FLOW DIAGRAM

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

1.0 414 TANK FARM

1.1 Tanks F-414B and F-414C

Tanks F-414B and F-414C serve primarily as the first stage storage of the Dicamba commingled wastewater. This wastewater is sourced primarily from the Dicamba process unit, FFP loading rack, formulations, the WOD processing area (which also receives off-site wastewater), and the containment sumps at the F-414 Tank Farm. Water from tanks F-414B and F-414C is pumped through the WC-505 filters and to F-414A for storage before disposal via the Underground Injection Control (UIC)-permitted injection wells. Additionally, the F-414 tanks are configured such that wastewater can be recirculated between the tanks.

F-414A, F-414B and F-414C are registered on the facility's Notice of Registration (NOR) as wastewater storage tanks under the UIC program.

1.2 Tank F-414A

F-414A serves as the final wastewater storage tank prior to injection in UIC-permitted waste disposal wells WDW-155, WDW-201, and WDW-433 (also known as Injection Wells 5, 6, and 9, respectively). F-414A can also receive wastewater from Dicamba's main neutralization sump, B-248 if bypassing F-414B and C is needed.

2.0 MILLION GALLON TANK FARM

2.1 Tank WB-501 (Not Permitted)

WB-501 serves primarily as the first stage of storage for DMTA Unit wastewater generated in tank B-1757 and containment sumps at the Million Gallon Tank Area. Wastewater overflow from WB-501 is pumped to tank WB-502A or/and WB-502B (via overflow from WB-502A) for additional storage before disposal.

WB-1765, WB-501, WB-502A, and WB-502B are registered on the facility's NOR as elementary neutralization units.

2.2 Tanks WB-502A and WB-502B

WB-502A and WB-502B receive DMTA wastewater from tank WB-501. WB-502A and WB-502B are interconnected, allowing the co-mingling of wastewater between the two tanks. In the event that additional storage space is necessary due to an upset at the facility,

liquids are transferred to WB-502B. The wastewater from WB-502A and WB-502B is pumped to the WB-1765 outlet, and then to tank WB-1767 for final storage before disposal via injection wells.

2.3 Tank WB-1765

WB-1765 is used to collect wastewater before it is filtered and pumped to tank WB-1767, which serves as the final wastewater storage. WB-1765 is fed primarily from tank WB-501; however, WB-1765 can also receive aqueous waste from DMTA tank WB-1757. The tank also receives wastewater from containment sump WB-1747, as well as filter backwash stored in B-1746 via pump WA-1746.

3.0 TANK WB-1767

WB-1767 serves as the final DMTA wastewater storage tank and includes ancillary injection pumps A-1767A and A-1767B that feed UIC-permitted injection wells WDW-301 and WDW-302, which are also known as Injection Wells 7 and 8. The wastewater is produced mainly from the DMTA process and containment sumps at the Million Gallon Tank Area.

DMTA wastewater is pumped from the unit to WB-501. Overflow from WB-501 is pumped to WB-502A through the WC-501 filters, then to WB-1765, and finally pumped to WB-1767.

WB-1767 is listed on the facility's NOR as an injection well head tank under the UIC program.

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Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B - Application Information

Contents

- TCEQ Administrative and Technical Evaluation Checklist for the RCRA Part B Application (electronic only on USB)
- Bilingual Notice Confirmation Form
- Plain Language Summary – English
- Plain Language Summary – Spanish
- Public Involvement Plan

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Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

TCEQ Administrative and Technical Evaluation Checklist for the RCRA Part B Application (electronic only on USB)

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Hazardous Waste Permit Renewal Application
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Bilingual Notice Confirmation Form

Bilingual Notice Instructions:

For certain permit applications, public notice in an alternate language is required. If an elementary school or middle school nearest to the facility offers a bilingual program, notice may be required to be published in an alternative language. The Texas Education Code, upon which the TCEQ alternative language notice requirements are based, requires a bilingual education program for an entire school district should the requisite alternative language speaking student population exist. However, there may not be any bilingual-speaking students at a particular school within a district which is required to offer the bilingual education program. For this reason, the requirement to publish notice in an alternative language is triggered if the nearest elementary or middle school, as part of a larger school district, is required to make a bilingual education program available to qualifying students and either the school has students enrolled at such a program on-site, or has students who attend such a program at another location to satisfy the school's obligation to provide such a program.

If it is determined that a bilingual notice is required, the applicant is responsible for ensuring that the publication in the alternate language is complete and accurate in that language. Electronic versions of the Spanish template examples are available from the TCEQ to help the applicant complete the publication in the alternative language.

Bilingual notice confirmation for this application:

1. Is the school district of the elementary or middle school nearest to the facility required by the Texas Education Code to have a bilingual program?

   ■ Yes ☐ No

   (**If No**, alternative language notice publication not required)

2. **If Yes** to question 1, are students enrolled in a bilingual education program at either the elementary school or the middle school nearest to the facility?

   ■ Yes ☐ No

   (**IF Yes** to questions 1 and 2, alternative language publication is required; **If No** to question 2, then consider the next question)

3. **If Yes** to question 1, are there students enrolled at either the elementary school or the middle school nearest to the facility who attend a bilingual education program at another location? ☐ Yes ☐ No

   (**If Yes** to questions 1 and 3, alternative language publication is required; **If No** to question 3, then consider the next question)

4. **If Yes** to question 1, would either the elementary school or the middle school nearest to the facility be required to provide a bilingual education program but for the fact that it secured a waiver from this requirement, as available under 19 TAC 89.1205(g)?

   ☐ Yes ☐ No

   (**If Yes** to questions 1 and 4, alternative language publication is required; **If No** to question 4, alternative language notice publication not required)

If a bilingual education program(s) is provided by either the elementary school or the middle school nearest to the facility, which language(s) is required by the bilingual program?

Spanish

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Hazardous Waste Permit No. 50219

Plain Language Summary - English

Texas Commission on Environmental Quality

Plain Language Summary

Industrial and Hazardous Waste Permit Applications

Instructions: Complete this form and submit with any industrial hazardous waste, or industrial solid waste, permit application that is subject to 30 Texas Administrative Code §39.405(k) [applications for a Class 3 permit modification, permit amendment, permit renewals, and for a new permit]. Please be concise.

Application Information

Purpose of application: ☐New ☒Renewal ☐Modification/Amendment	
Date Submitted to TCEQ: April 14, 2025	
Customer Name: BASF Corporation	
Facility Name: BASF Beaumont Agro Plant	
CN: 600124895	**RN:** 100634922
Permit Number: 50219	**Solid Waste Registration Number:** 30053
Facility Street Address: 14385 West Port Arthur Road	
Weblink to Street Address: https://www.bing.com/maps?cp=29.96778%7E-94.051187&lvl=16.0	

Facility Information *(check all that apply)*

What is the primary type of business?	☒Chemical manufacturing ☐ Oil refinery ☐ Treatment, storage or disposal facility plant ☐Other **If other, enter description:**
What does the facility produce?	☒Chemicals ☐Fuels / lubricants ☐No products ☐Other **If other, enter description:**

Waste Management Information *(check all that apply)*

What types of wastes are managed?	☒Nonhazardous industrial ☐Hazardous ☐Other **If other, enter description:**
Where does the waste come from?	☒Off-site source ☒On-site source
How is the waste managed?	☒Storage ☒Process / Treatment ☒Disposal ☐Other **If other, enter description:**
What type of units manage the waste?	☒Active ☐Post-Closure **Type and count:** 7 tanks (only manage non-haz wastes; however, tanks are permitted because they accept non-hazardous waste from off-site)
What happens to waste managed at the facility?	☒Transported off-site ☒Disposed on-site ☐Other **If other, enter description:**

Pollution Control Methods *(check all that apply)*	
How will the facility prevent spills, leaks, and releases?	☒Routine inspections ☐Engineered liner systems ☒Spill containment ☒Proper waste handling ☐Operations in enclosed buildings ☐Groundwater monitoring ☐Other **If other, enter description:**
How will the facility clean up spills, leaks, and releases?	☒Spill clean-up supplies ☒Decontamination equipment ☐Other **If other, enter description:**
How will the facility prevent / minimize air emissions?	☒Air monitoring / control systems ☒Filters / scrubbers ☒Routine inspections ☒Proper waste handling ☐Operations in enclosed buildings ☐Other **If other, enter description:**

Description of Update *(for Class 3 Modifications and Amendments only)*

List and explain any changes this modification or amendment would make to the two sections above—**Waste Management Information** and **Pollution Control Methods**.

The facility is submitting this permit renewal application, with no changes or updates to the permit since the last modification (Class 3 permit modification, approved by TCEQ on 15 January 2025).

Clear Form

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Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Plain Language Summary - Spanish

Comisión de Calidad Ambiental de Texas

Resumen en Lenguaje Sencillo

Solicitudes de Permisos de Desechos Industriales y Peligrosos

Instrucciones

Complete este formulario y envíe con cualquier solicitud de permiso de desechos industriales peligrosos, o desechos sólidos industriales, que esté sujeta al Código Administrativo de Texas 30 §39.405 (k) [es decir, solicitudes para una modificación de permiso de Clase 3, enmienda de permiso, renovaciones de permisos y para un nuevo permiso].

Sea conciso: toda la información debe caber en dos páginas.

Información de la Solicitud

Propósito de la solicitud:	☐Nuevo	☒Renovación	☐Modificación/Enmienda

Sometido a TCEQ: 14 Abril 2025

Nombre del Cliente: BASF Corporation

Nombre de la Instalación: BASF Beaumont Agro Plant

CN: 600124895	**RN:**100634922
Número de Permiso:50219	**Número de Registro de Desechos Sólidos:** 30053

Dirección de la Instalación: 14385 West Port Arthur Road

Enlace Web a la Dirección Postal: https://www.bing.com/maps?cp=29.96778%7E-94.051187&lvl=16.0

Información de la Instalación *(marque todas lo que correspondan)*

¿Cuál es el tipo principal de negocio?	☒Planta de manufactura química ☐Refinería de aceite ☐ Instalación de tratamiento, almacenamiento o eliminación ☐Otro **Si es otro, introduzca la descripción:** Introduzca la descripción
¿Qué produce la instalación?	☒Químicos ☐Combustibles / lubricantes ☐Sin productos ☐Otro **Si es otro, introduzca la descripción:** Introduzca la descripción

Información sobre la Gestión de Desechos *(marque todas las que correspondan)*

¿Qué tipos de desechos se gestionan?	☒Industrial no peligroso ☒Peligroso ☐Otro **Si es otro, introduzca la descripción:** Introduzca la descripción
¿De dónde provienen los desechos?	☒Fuente externa ☒Fuente interna
¿Cómo se gestionan los desechos?	☒Almacenar ☒Procesar / Tratar ☒Eliminación ☐Otro **Si es otro, introduzca la descripción:** Introduzca la descripción

¿Qué tipo de unidades gestionan los desechos?	☒ Activo ☐ Postcierre **Teclee y cuente:** 7 tanques (solo manejan residuos no peligrosos; sin embargo, los tanques están permitidos porque aceptan residuos no peligrosos de fuera del sitio).
¿Qué sucede con los desechos gestionados en la instalación?	☒Transportados fuera del sitio ☒Eliminado en el sitio ☐Otro **Si es otro, introduzca la descripción:**

Métodos de Control de la Contaminación *(marque todos los que correspondan)*			
¿Cómo evitará la instalación derrames, fugas y liberaciones?	☒Inspecciones de Rutina	☐Sistemas de revestimiento de ingeniería	☒Contención de derrames
	☒Manejo adecuado de desechos	☐Operaciones en edificios cerrados	☐Monitoreo de aguas subterráneas
	☐Otro **Si es otro, introduzca la descripción:** Introduzca la descripción		
¿Cómo limpiará la instalación los derrames, fugas y liberaciones?	☒Suministros de limpieza de derrames	☒Equipos de descontaminación	
	☐Otro **Si es otro, introduzca la descripción:** Introduzca la descripción		
¿Cómo evitará / minimizará la instalación las emisiones atmosféricas?	☒Sistemas de monitoreo / control de aire	☒Filtros / depuradores	☒Inspecciones de rutina
	☒Manejo adecuado de desechos	☐Operaciones en edificios cerrados	
	☐Otro **Si es otro, introduzca la descripción:** Introduzca la descripción		

Descripción de la Actualización (*solo para Modificaciones y Enmiendas de Clase 3)*

Liste y explique cualquier cambio que esta modificación o enmienda haría a las dos secciones anteriores: **Información de Gestión de Desechos** y **Métodos de Control de la Contaminación**.

La instalación está entregando esta solicitud de renovación de permiso sin cambios ni actualizaciones al permiso desde la última modificación del permiso (modificación de Clase 3 del permiso, aprobada por TCEQ el 15 de enero de 2025).

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Hazardous Waste Permit Renewal Application
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Hazardous Waste Permit No. 50219

Public Involvement Plan

Texas Commission on Environmental Quality

Public Involvement Plan Form for Permit and Registration Applications

The Public Involvement Plan is intended to provide applicants and the agency with information about how public outreach will be accomplished for certain types of applications in certain geographical areas of the state. It is intended to apply to new activities; major changes at existing plants, facilities, and processes; and to activities which are likely to have significant interest from the public. This preliminary screening is designed to identify applications that will benefit from an initial assessment of the need for enhanced public outreach.

All applicable sections of this form should be completed and submitted with the permit or registration application. For instructions on how to complete this form, see TCEQ-20960-inst.

Section 1. Preliminary Screening

☐ New Permit or Registration Application

☒ New Activity – modification, registration, amendment, facility, etc. (see instructions)

If neither of the above boxes are checked, completion of the form is not required and does not need to be submitted.

Section 2. Secondary Screening

☒ Requires public notice,

☐ Considered to have significant public interest, **and**

☐ Located within any of the following geographical locations:

- Austin
- Dallas
- Fort Worth
- Houston
- San Antonio
- West Texas
- Texas Panhandle
- Along the Texas/Mexico Border
- Other geographical locations should be decided on a case-by-case basis

If all the above boxes are not checked, a Public Involvement Plan is not necessary. Stop after Section 2 and submit the form.

☐ Public Involvement Plan not applicable to this application. Provide **brief** explanation.

Section 3. Application Information

Type of Application (check all that apply):

Air ☐ Initial ☐ Federal ☐ Amendment ☐ Standard Permit ☐ Title V

Waste ☐ Municipal Solid Waste ☒ Industrial and Hazardous Waste ☐ Scrap Tire
☐ Radioactive Material Licensing ☐ Underground Injection Control

Water Quality

☐ Texas Pollutant Discharge Elimination System (TPDES)

☐ Texas Land Application Permit (TLAP)

☐ State Only Concentrated Animal Feeding Operation (CAFO)

☐ Water Treatment Plant Residuals Disposal Permit

☐ Class B Biosolids Land Application Permit

☐ Domestic Septage Land Application Registration

Water Rights New Permit

☐ New Appropriation of Water

☐ New or existing reservoir

Amendment to an Existing Water Right

☐ Add a New Appropriation of Water

☐ Add a New or Existing Reservoir

☐ Major Amendment that could affect other water rights or the environment

Section 4. Plain Language Summary

Provide a brief description of planned activities.

The facility is submitting this permit renewal application for Hazardous Waste Permit No. 50219, with no changes since the Class 3 permit modification was approved on 15 January 2025.

Section 5. Community and Demographic Information

Community information can be found using EPA's EJ Screen, U.S. Census Bureau information, or generally available demographic tools.

Information gathered in this section can assist with the determination of whether alternative language notice is necessary. Please provide the following information.

Beaumont

(City)

Jefferson

(County)

Census Tract 113.04

(Census Tract)

Please indicate which of these three is the level used for gathering the following information.

☐ City ☐ County ☒ Census Tract

(a) Percent of people over 25 years of age who at least graduated from high school

81.2%

(b) Per capita income for population near the specified location

$85,814 (Average income per household) / 2.33 (Average household size) = $38,482

(c) Percent of minority population and percent of population by race within the specified location

White: 72.6%; Black: 11.5%; American Indian: 0.7%; Asian: 2.5%; Hawaiian/Pacific Islander: 0.0%; Other race: 5.1%; Two or more races: 7.7%

(d) Percent of Linguistically Isolated Households by language within the specified location

29.3%

(e) Languages commonly spoken in area by percentage

English: 70.7%; Spanish: 23.5%; Other Indo-European: 2.8%; Asian and Pacific Isaland: 1.9%; Other Non-English: 1.0%

(f) Community and/or Stakeholder Groups

Surrounding landowners

(g) Historic public interest or involvement

Section 6. Planned Public Outreach Activities

(a) Is this application subject to the public participation requirements of Title 30 Texas Administrative Code (30 TAC) Chapter 39?

☒ Yes ☐ No

(b) If yes, do you intend at this time to provide public outreach other than what is required by rule?

☐ Yes ☒ No

If Yes, please describe.

If you answered "yes" that this application is subject to 30 TAC Chapter 39, answering the remaining questions in Section 6 is not required.

(c) Will you provide notice of this application in alternative languages?

☒ Yes ☐ No

Please refer to Section 5. If more than 5% of the population potentially affected by your application is Limited English Proficient, then you are required to provide notice in the alternative language.

If yes, how will you provide notice in alternative languages?

☑ Publish in alternative language newspaper

☐ Posted on Commissioner's Integrated Database Website

☐ Mailed by TCEQ's Office of the Chief Clerk

☐ Other (specify)

(d) Is there an opportunity for some type of public meeting, including after notice?

☐ Yes ☒ No

(e) If a public meeting is held, will a translator be provided if requested?

☒ Yes ☐ No

(f) Hard copies of the application will be available at the following (check all that apply):

☐ TCEQ Regional Office ☐ TCEQ Central Office

☑ Public Place (specify) Marion Hughes Library

Section 7. Voluntary Submittal

For applicants voluntarily providing this Public Involvement Plan, who are not subject to formal public participation requirements.

Will you provide notice of this application, including notice in alternative languages?

☐ Yes ☐ No

What types of notice will be provided?

☐ Publish in alternative language newspaper

☐ Posted on Commissioner's Integrated Database Website

☐ Mailed by TCEQ's Office of the Chief Clerk

☐ Other (specify)

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B Section I – General Information

Contents

- Part B Application Form, Section I
- Part B, Section I: Signature Page
- Part B, Section I: Table I
- Part B, Section I: Table I.1
- Part B, Section I: Figure and Adjacent Property Owner Mailing Labels

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Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B Application Form, Section I

Texas Commission on Environmental Quality
Industrial & Hazardous Waste Part B Permit Application

I. General Information

Provide all Part B responsive information in Appendix I. When preparing the physical format organize your submittal using the Format of Hazardous Waste permit Application and Instructions.

Provide responsive information in Appendix I.

a. Complete Table I - General Information

b. For all incoming New, Renewal, Class 3 Permit Modification, and Major Amendment applications, the TCEQ requires that a Core Data Form (CDF) be submitted whether or not a change has occurred in the previously submitted form.
For Minor Amendment, Class 1, Class 1[1] , and Class 2 Permit Modification applications, the TCEQ requires that the CDF be only submitted if a change in any information in the previously submitted form has occurred at the time of the application submittal.
For more information regarding the Core Data Form, call (512) 239 1575 or go to the TCEQ Web site at https://www.tceq.texas.gov/permitting/central_registry/guidance.html

c. Signature on Application
It is the duty of the operator to submit an application for a permit. The person who signs the application form will often be the operator himself; when another person signs on behalf of the applicant, his title or relationship to the applicant will be shown. In all cases, the person signing the form must be authorized to do so by the applicant. An application submitted by a corporation must be signed by a responsible corporate officer such as a president, secretary, treasurer, vice president, or by his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the activity described in the form originates. In the case of a partnership or a sole proprietorship, the application must be signed by a general partner or the proprietor, respectively. In the case of a municipal, state, federal, or other public facility, the application must be signed by a principal executive officer, a ranking elected official, or another duly authorized employee. A person signing an application on behalf of an applicant must provide notarized proof of authorization.

d. Complete Interim Status Land Disposal Unit(s) Certification, as applicable

e. Submit List and Map of Adjacent Landowners List, as applicable.

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Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

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Part B, Section I: Signature Page

Signature Page

I, Brenda L Neely, Site Director,
(Operator) *(Title)*

certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Brenda Neely Date: 9/11/25

- -

To be completed by the Operator if the application is signed by an Authorized Representative for the Operator

I, _____, hereby designate _____
[Print or Type Name] *[Print or Type Name]*

as my representative and hereby authorize said representative to sign any application, submit additional information as may be requested by the Commission; and/or appear for me at any hearing or before the Texas Commission on Environmental Quality in conjunction with this request for a Texas Water Code or Texas Solid Waste Disposal Act permit. I further understand that I am responsible for the contents of this application, for oral statements given by my authorized representative in support of the application, and for compliance with the terms and conditions of any permit which might be issued based upon this application.

_____
Printed or Typed Name of Operator or Principal Executive Officer

_____
Signature

- - - - - - - - - - - - - - - - - - - -

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section I: Table I

Table I: General Information

A. Applicant: Facility Operator

Name[1]	BASF Agricultural Solutions US LLC
Address[2]	14385 West Port Arthur Road
City, State[2]	Beaumont, Texas
Zip Code[2]	77705
Telephone Number	409-981-5052
Alternate Telephone Number	
TCEQ Solid Waste Registration No.	30053
EPA I.D. No.	TXD067261412
Permit No.	50219
County	Jefferson
Regulated Entity Name	BASF Beaumont Agro Plant
Regulated Entity Reference Number (RN)	100634922
Customer Name[2]	BASF Agricultural Solutions US LLC
Customer Reference Number:	605566066
Charter Number[3]	803002582
Previous or Former Names of the Facility (if applicable)	

B. Facility Owner: Identify the Facility Owner if different than the Facility Operator[4]

☑ Same as Facility Operator?

Name	BASF Agricultural Solutions US LLC
Address	14385 West Port Arthur Road
City, State	Beaumont, Texas
Zip Code	77705
Telephone Number	409-981-5052
Alternate Telephone Number	

C. Facility Contact

1. Persons or firms who will act as primary contact:

Name, Title:	Brenda Neely, Site Director
Address	14385 West Port Arthur Road
City, State:	Beaumont, Texas
Zip Code	77705
Telephone Number	409-981-5139
Alternate Telephone Number	
E-mail	[redacted]

Persons or firms who will act as primary contact (if more than one):

Name, Title:	Kendra D Derrick, EHS Specialist
Address	14385 West Port Arthur Road
City, State:	Beaumont, Texas
Zip Code	77705
Telephone Number	409-249-8574
Alternate Telephone Number	
E-mail	[redacted]

2. Agent in Service or Agent of Service (if you are an out-of-state company)[5]:

Name, Title:	C.T. Corporation
Address	1999 Bryan Street, Suite 900
City, State:	Dallas, Texas
Zip Code	75201

3. Individual responsible for causing notice to be published:

Name:	Kendra D Derrick, EHS Specialist
Address	14385 West Port Arthur Road
City, State:	Beaumont, Texas
Zip Code	77705
Telephone Number	409-249-8574
Alternate Telephone Number	
E-mail	[redacted]

4. Public place in county where application will be made available[6]:

Name	Marion and Ed Hughes Public Library
Address	2712 Nederland Avenue
City, State	Nederland, Texas
Zip Code	77627

D. Application Type and Facility Status

1. **Application Type**

☑ **Permit**	☑ **Amendment**	☐ **Modification**
☐ New	☑ Major	☐ Class 3
☑ Renewal	☐ Minor	☐ Class 2
☐ Interim Status		☐ Class 1[1]
☐ Compliance Plan		☐ Class 1
☐ RD&D		

2. **Part of a Consolidated Permit Processing request?** [30 TAC Chapter 33] No

3. **Does the application contain confidential material?**[7] No

4. **Facility Status. Check all that apply**

☐ Proposed	☑ On-Site
☑ Existing	☐ Off-site
	☐ Commercial
	☐ Recycle
	☐ Land Disposal
	☐ Areal or capacity expansion
	☑ Compliance plan

5. **Is the facility within the Coastal Management Program boundary?** Yes

6. **Description of Application Changes**
   Complete Table I.1 - Description of Proposed Application Changes
   Note: List all changes requested in Table. Unlisted requests risk remaining unaddressed or possibly denied if brought to the permit application reviewer's attention at a later time.

7. **Total acreage of the facility being permitted:** 490

8. Identify the name of the drainage basin and segment where the facility is located[8]

River Segment	Taylor Bayou
River Basin	Neches-Trinity Coastal Basin

E. Facility Siting Summary:

Is the facility located or proposed to be located:

1. Within a 100-year floodplain?	No
2. in wetlands?	Yes
3. In the critical habitat of an endangered species of plant or animal?	No
4. On the recharge zone of a sole-source aquifer?	No
5. In an area overlying a regional aquifer?	Yes
6. Withing 0.5 mile (2,640 feet) of an established residence, church, school , day care center, surface water body used for public drinking water supply, or dedicated public park?[9] [30 TAC 335.202] If Yes: the TCEQ shall not issue a permit for this facility.	No
7. In an area in which the governing body of the country or municipality has prohibited the processing or disposal of municipal hazardous waste or industrial solid waste? If yes: provide a copy of the ordinance or order.	No

F. Wastewater and Stormwater Disposition

1. Is the disposal of any waste to be accomplished by a waste disposal well at this facility?	Yes
If Yes: List WDW Permit No(s):	155, 201, 301, 302, 433, 434
2. Will any point source discharge of effluent or rainfall runoff occur as a result of the proposed activities?	No

3. If Yes, is this discharge regulated by a TPDES or TCEQ permit?

☐ Yes

TCEQ Permit No.

TDPES Permit No.

☐ No

Date TCEQ discharge permit application filed:

Date TPDES discharge application filed:

G. Information Required to Provide Notice

State Officials List [30 TAC 39]

State Senator

Name:	Robert Nichols [redacted]
Address	329 Neches Street
City, State:	Jacksonville, Texas
Zip Code:	75766

State Representative

Name:	Dade Phelan [redacted]
Address	812 North 16th Street
City, State:	Orange, Texas
Zip Code	78768

Local Officials List [30 TAC 39]

Mayor

Name:	Roy West [redacted]
Address	801 Main Street
City, State:	Beaumont, Texas
Zip Code	77701

Local Health Authority

Name:	Kenneth Coleman, Sr. [redacted]
Address	3040 College Street
City, State:	Beaumont, Texas
Zip Code	77701

County Judge

Name:	Jeff Branick [redacted]
Address	1149 Pearl Street
City, State:	Beaumont, Texas
Zip Code	77701

County Health Authority

Name:	Ezea Ede [redacted]
Address	740 Hospital Dr. #230
City, State:	Beaumont, Texas
Zip Code	77701

Based on the questions in the Bilingual Notice Instructions for this form, are you required to make alternate (Bilingual) notice for this application?	Yes
Bilingual Language(s):	Spanish
TCEQ Core Data Form Submitted?(Required)	Yes
Has any information changed on the TCEQ Core Data Form since the last submittal?	No
Signature on Application Submitted? (see Section I Instructions, Item c)	Yes

1. Individual, Corporation, or Other Legal Entity Name on the Permit - must match the Secretary of State's database records for the Facility).
2. The legal name and address must match the Core Data Form.
3. If the application is submitted on behalf of a corporation, please identify the Charter Number as recorded with the Office of the Secretary of State for Texas.
4. The operator has the duty to submit an application if the facility is owned by one person and operated by another [30 TAC 305.43(b)]. The permit will specify the operator and the owner who is listed on Part A of this application [Section 361.087, Texas Health and Safety Code].
5. If the application is submitted by a corporation or by a person residing out of state, the applicant register an Agent in Service or Agent of Service with the Texas Secretary of State's office and provide a complete mailing address for the agent. The agent must be a Texas resident.
6. For applications for new permits, renewals, major amendments and Class 3 modifications a copy of the administratively complete application must be made available at a public place in the county where the facility is, or will be, located for review and copying by the public. Identify the public place in the county (e.g., public library, county court house, city hall), including the address, where the application will be made available for review and copying by the public.
7. For confidential information cross-reference the confidential material throughout the application to Section XIII: Confidential Material, and submit as a separate Section XIII document or binder conspicuously marked "CONFIDENTIAL".
8. Use the segments line map created by TCEQ GIS Team to find the Segment Name and Basin Name.
9. Use only for a new commercial hazardous waste management facility or areal expansion of an existing hazardous waste management facility or unit of that facility as defined in 30 TAC 335.202.

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section I: Table I.1

Table I.1-Description of Proposed Application Changes

Permit/Compliance Plan Application Appendix/Section	Brief Description of Proposed Change	Modification or Amendment Type	Supporting Regulatory Citation
Part A; Part B, Section II; Part B Section V; Part B Section VI; and Part B All Sections	Part A and Part B Administrative and Informational Changes	Minor Amendment	30 TAC 305.62
Part B, Section III	Inspection, Security, Personnel Training, and Contingency Plans	Major Amendment	30 TAC 305.62
Part A and Part B, Section I	Update the facility contact person and transfer the facility owner and operator from BASF Corporation to BASF Agricultural Solutions US LLC.	Class 1-1 modification / Minor Amendment	30 TAC 305.69(k)(a)(7) / 30 TAC 305.62

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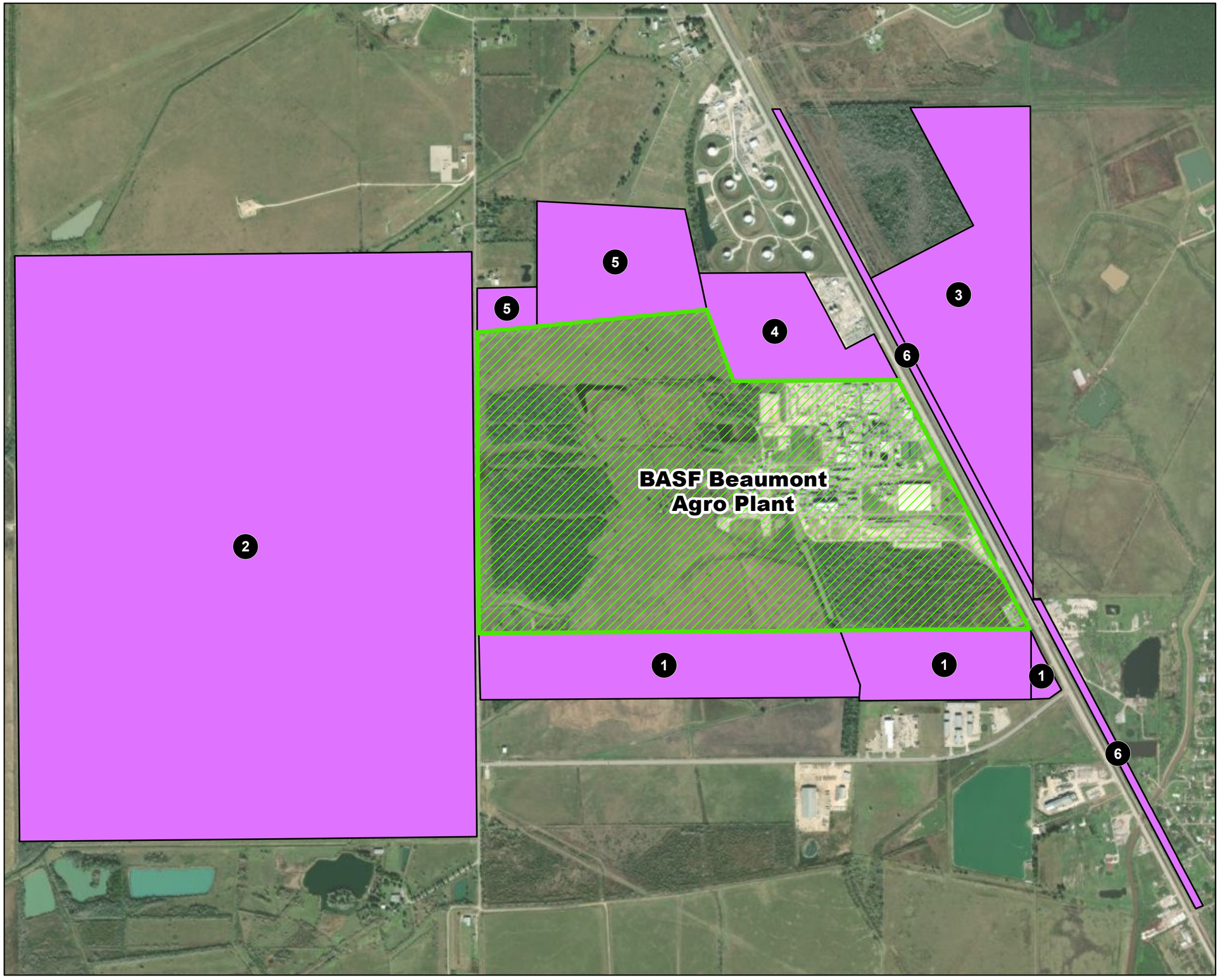
Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section I: Figure and Adjacent Property Owner Mailing Labels



N

LEGEND

- BASF Beaumont Agro Plant Property Boundary
- Adjacent Landowners
- 1 — Landowner ID, see attached table

Notes

1. Parcel information was obtained from Jefferson County Appraisal District on 2/11/2025.
2. Background Imagery: ESRI World Imagery - 1m Color InfraRed NAIP imagery last modified 8/16/2023. Source: Esri, DigitalGlobe, USGS, and the GIS User Community, et al.

Feet
0 600 1,200

Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N (meters)

GSI ENVIRONMENTAL
Texas Geoscience Firm Registration Number: 50243

ADJACENT LANDOWNERS MAP

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No.	10426	Drawn By:	CDM
Issued:	14-Apr-2025	Chk'd By:	MW
Map ID:	**001_01**	Appv'd By:	JMM

FIGURE I.1

GSI ENVIRONMENTAL

ATTACHMENT I.1
ADJACENT LANDOWNERS LIST

Hazardous Waste Permit Renewal Application

BASF Beaumont Agro Plant, Beaumont, Texas
Hazardous Waste Permit No. 50219

Map ID	Property Owner	Address	City	State	Zip
1	Roy L Breaux	665 W Kitchen Dr	Port Neches	TX	77651
2	Department of Justice - Federal Bureau of Prisons	320 1st Street NW #754	Washington	DC	20534
3	Diamond M Cattle & Exotics LP	7064 Patillo Rd	Beaumont	TX	77705
4	Exxon Mobil Corporation	PO Box 64106	Spring	TX	77387
5	Hebert Martin R III & Beverly B	2395 Hebert Rd	Beaumont	TX	77705
6	Valero Partners Lucas LLC	1 Valero Way	San Antonio	TX	78249

Notes:
1. Property owners listed above were obtained from the Jefferson County Appraisal District website, accessed on 21 February 2025.

ROY L BREAUX
665 W KITCHEN DR
PORT NECHES TX 77651

DEPARTMENT OF JUSTICE
FEDERAL BEUREAU OF PRISONS
320 1ST STREET NW #754
WASHINGTON DC 20534

DIAMOND M CATTLE & EXOTICS LP
7064 PATILLO RD
BEAUMONT TX 77705

EXXONMOBIL CORPORATION
PO BOX 64106
SPRING TX 77387

HEBERT MARTIN R III & BEVERLY B
2395 HEBERT RD
BEAUMONT TX 77705

VALERO PARTNERS LUCAS LLC
1 VALERO WAY
SAN ANTONIO TX 78249

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B Section II – Facility Siting Criteria

Contents

- Part B Application Form, Section II
- Part B, Section II: Table II
- Part B, Section II: Appendix II.1 – Site Selection Report

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B Application Form, Section II

II. Facility Siting Criteria

Provide all Part B responsive information in Appendix II. When preparing the physical format organize your submittal using the Format of Hazardous Waste permit Application and Instructions.

For all new hazardous waste management facilities or areal expansions of existing hazardous waste management facilities provide a report which includes all applicable information regarding Unsuitable Site Characteristics found in 30 TAC Chapter 335, Subchapter G. The report must address each requirement applicable to the type of activity submitted in the application. Reference specific rule numbers whenever possible. Supporting information may be cross-referenced to other parts of this application such as Section V - Engineering Report or Section VI - Geology Report, but information submitted in previous applications must be fully reproduced herein. In addition, provide the information in Table II, as applicable.

For permit renewals provide a report which includes all applicable information regarding Unsuitable Site Characteristics found in 30 TAC Chapter 335, Subchapter G. In addition, provide the information in Table II, as applicable. The applicant may resubmit the information submitted with the original permit application provided this information has not changed. For a renewal this information is necessary to ensure a complete application is received.

For capacity expansions of existing facilities, please provide information in Table II, as applicable. Please note however, that additional technical information may be requested to address any facility siting characteristics noted in Table I, under Facility Siting Summary.

> **NOTE:** The standards contained in §335.204(a)(6) - (9), (b)(7) - (12), (c)(6) - (11), (d)(6) - (11), and (e) (8) - (13) are not applicable to facilities that have submitted a notice of intent to file a permit application pursuant to §335.391 of this title (relating to Pre-Application Review) prior to May 3, 1988, or to facilities that have filed permit applications pursuant to §335.2(a) of this title which were submitted in accordance with Chapter 305 of this title and that were declared to be administratively complete pursuant to §281.3 of this title (relating to Initial Review) prior to May 3, 1988.[30 TAC 335.201(b)]

A. Requirements for Storage or Processing Facilities, Land Treatment Facilities, Waste Piles, Storage Surface Impoundments, and Landfills.

   Complete Table II.A-Requirements for Storage or Processing Facilities, Land Treatment Facilities, Waste Piles, Storage Surface Impoundments, and Landfills.

B. Additional Requirements for Land Treatment Facilities [30 TAC 335.204(b)]

   Complete Table II.B.-Additional Requirements for Land Treatment Facilities [30 TAC 335.204(b)

C. Additional Requirements for Waste Piles [30 TAC 335.204(c)]

   Complete Table II.C.-Additional Requirements for Waste Piles [30 TAC 335.204(c)]

D. Additional Requirements for Storage Surface Impoundments [30 TAC 335.204(d)]

   Complete Table II.D.- Additional Requirements for Storage Surface Impoundments [30 TAC 335.204(d)]

E. Additional Requirements for Landfills (and Surface Impoundments Closed as Landfills with

wastes in place)

Complete Table II.E. - Additional Requirements for Landfills (and Surface Impoundments Closed as Landfills with wastes in place)

F. Flooding

1. Identify whether the facility is located within a 100-year flood plain [40 CFR 270.14(b)(11)(iii)]. This identification must indicate the source of data for such determination and include a copy of relevant documentation (e.g., flood maps, if used and/or calculations). The boundaries of the hazardous waste management facility must be shown on the flood plain map. If the facility is not subject to inundation as a result of a 100-year flood event, indicate that the facility is not within the 100-year flood plain, and do not complete the remainder of the Flooding section in Table II. An applicant for a proposed hazardous waste landfill, areal expansion of a hazardous waste landfill, or a commercial hazardous waste land disposal unit may not rely solely on flood plain maps prepared by the Federal Emergency Management Agency (FEMA) or a successor agency for this determination.

2. If the facility is located within the 100-year flood plain the applicant must provide information detailing the specific flooding levels and other events (e.g., Design Hurricane projected by Corps of Engineers) which impact the flood protection of the facility. Information shall also be provided identifying the 100-year flood level and any other special flooding factors (e.g., wave action) which must be considered in designing, construction, operating, or maintaining the facility to withstand washout from a 100-year flood.

3. State whether any flood protection devices exist at the facility (e.g., flood walls, dikes, etc.), designed to prevent washout from the 100-year flood.

   a. If Yes: provide in Section V an engineering analysis to indicate the various hydrodynamic and hydrostatic forces expected to result at the facility as a consequence of a 100-year flood. [40 CFR 270.14(b)(11)(iv)(A)]

   Include structural or other engineering studies showing the design of operational units (e.g., tanks, incinerators) and flood protection devices (e.g., flood walls, dikes) at the facility and how these will prevent washout. [40 CFR 270.14(b)(11)(iv)(B)]

   b. If No: the applicant shall provide in Section V a plan for constructing flood protection devices and a schedule including specific time frames for completion. Provide engineering analyses to indicate the various hydrodynamic and hydrostatic forces expected to result at the facility as a consequence of a 100-year flood. [40 CFR 270.14(b)(11)(iv)(A)]

   Include structural or other engineering studies showing the design of operational units (e.g., tanks, incinerators) and flood protection devices (e.g., flood walls, dikes) at the facility and how these will prevent washout. [40 CFR 270.14(b)(11)(iv)(B)]

4. If applicable, and in lieu of the flood protection devices from above, provide a detailed description of the procedures to be followed to remove hazardous waste to safety before the facility is flooded. [40 CFR 270.14(b)(11)(iv)(c)] The

procedures should include:

a. Timing of such movement relative of flood levels, including estimated time to move the waste, to show that such movement can be completed before flood waters reach the facility. Indicate which specific events shall be use to begin waste movement (e.g., Hurricane warning, Flash Flood watch, etc.);

b. A description of the location(s) to which the waste will be moved and a demonstration that these facilities will be eligible to receive hazardous waste in accordance with appropriate regulations (i.e., a permitted facility);

c. The planned procedures, equipment, and personnel to be used and the means to ensure that such resources will be available in time for use; and

d. The potential for accidental discharges of the waste during movement and precautions taken to preclude accidental discharges.

G. Additional Information Requirements

1. For a new hazardous waste management facility, include a map of relevant local land-use plans and descriptions of the major routes of travel in the vicinity of the facility to be used for the transportation of hazardous waste to and from the facility covering at least a five (5)-mile radius from the boundaries of the facility. [30 TAC 305.50(a)(10)(A)&(D)]

2. For a new commercial hazardous waste management facility as defined in 30 TAC 335.202 or the subsequent areal expansion of such a facility or unit of that facility, indicate on the map the nearest established residence, church, school, day care center, surface water body used for a public drinking water supply, and dedicated public park.

3. For new commercial hazardous waste management facilities, submit the following: [30 TAC 305.50(a)(12)(A)]

   a. the average number, gross weight, type, and size of vehicles used to transport hazardous waste;

   b. the major highways nearest the facility irrespective of distance; and

   c. the public roadways used by vehicles traveling to and from the facility within a minimum radius of 2.5 miles from the facility.

4. Include the names and locations of industrial and other waste-generating facilities within 0.5 miles for a new on-site hazardous waste management facility and the approximate quantity of hazardous waste generated or received annually at those facilities. [30 TAC 305.50(a)(10)(B)&(C)]

5. Include the names and locations of industrial and other waste-generating facilities within 1.0 miles for a new commercial hazardous waste management facility and the approximate quantity of hazardous waste generated or received annually at those facilities. [30 TAC 305.50(a)(10)(B)&(C)]

6. For existing land disposal facility units provide documentation that the information required by 30 TAC 335.5 has been placed in the county deed records. If previously submitted, please reference the submittal by date and registration number.

7. If a surface impoundment or landfill (including post-closure) is to be permitted, provide exposure information to accompany this application and in accordance

with 30 TAC 305.50(a)(8) and 40 CFR 270.10(j). This information will be considered separately from the TCEQ application completeness determination.

8. For a hazardous waste management facility requesting a capacity expansion of an existing hazardous waste management facility, please provide in Section VI.A.1.a the requested fault delineation information. [30 TAC 305.50(a)(4)(D)]

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Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section II: Table II

Table II

Table II contains the following: Table II.A, Table II.B, Table II.C, Table II.D, Table II.E and Flooding from Section II. F of the Part B Application

Table II.A - Requirements for Storage or Processing Facilities, Land Treatment Facilities, Waste Piles, Storage Surface Impoundments, and Landfills

Is the facility located or proposed to be located[1]:

In wetlands? [as applicable: 30 TAC 335.204(a)(2), (b)(2), (c)(2), (d)(2), and/or (e)(2)	No
If Yes: the TCEQ shall not issue a permit for a new hazardous waste management facility or areal expansion of an existing facility into wetlands, pursuant to 30 TAC 335.205(a)(1).	
In the critical habitat of an endangered species of plant or animal?[6] [as applicable: 30 TAC 335.204(a)(8), (b)(10), (c)(9), (d)(9), and/or (e)(11)]	No
If Yes: submit in Section V information demonstrating that design, construction, and operational features will prevent adverse effects on such critical habitat.	
On the recharge zone of a sole-source aquifer?2 [30 TAC 335.204(a)(3), (b)(3), (c)(3), (d)(3), and/or (e)(3)]	No
If Yes: then for storage and processing facilities (excluding storage surface impoundments), submit in Section V information demonstrating that secondary containment is provided to preclude migration to groundwater from spills, leaks, or discharges.	
In an area overlying a regional aquifer? [as applicable: 30 TAC 335.204(a)(4), (b)(4), (c)(4), (d)(4), and/or (e)(4)]	Yes, see below
If Yes: submit site-specific information in Section V and/or Section VI demonstrating compliance with 30 TAC 335.205(a)(1).	
In areas where soil unit(s) are within five feet of the containment structure, or treatment zone, as applicable, that have a Unified Soil Classification of GW, GP, GM, GC, SW, SP, or SM, or a hydraulic conductivity greater than 10-5 cm/sec? [as applicable: 30 TAC 335.204(a)(5), (b)(5), (c)(5), (d)(5), and/or (e)(5)]	No
If Yes: provide additional information in Sections V and/or Section VI demonstrating compliance with 30 TAC 335.205(a)(1)	
In areas of direct drainage within one mile of a lake at its maximum conservation pool level, if the lake is used to supply public drinking water through a public water system?[6] [as applicable: 30 TAC 335.204 (a)(6), (b)(7), (c)(6), and/or (e)(8)].	No
If Yes: provide information in Section V demonstrating compliance with 30 TAC 335.205(a)(1).	

In areas of active geologic processes, including but not limited to erosion, submergence, subsidence, faulting, karst formation, flooding in alluvial flood wash zones, meandering river bank cuttings, or earthquakes?[6] [as applicable: 30 TAC 335.204(a)(7), (b)(8) ,(c)(7), (d)(7), and/ or (e)(9)]	No
Within 30 feet of the upthrown side or 50 feet of the downthrown side of the actual or inferred surface expression of a fault that has reasonably been shown to have caused displacement of shallow Quaternary sediments or of man-made structures?[6] [as applicable: 30 TAC 335.204(a)(9), (b)(12) ,(c)(11), (d)(11), and/or (e)(13)]	No

If Yes: specify in Section V the design, construction, and operational features that will prevent adverse effects resulting from any fault movement.

If a fault is found to be present, the width and location of the actual or inferred surface expression of the fault, including both the identified zone of deformation and the combined uncertainties in locating a fault trace, must be determined by a qualified geologist or geotechnical engineer and reported in Section VI.

Table II.B. - Additional Requirements for Land Treatment Facilities [30 TAC 335.204(b)]:

Is the land treatment facility located or proposed to be located:

Within 1000 feet of an established residence, church, school, day care center, surface water body used for a public drinking water supply, or dedicated public park which is in use at the time the notice of intent to file a permit application is filed with the commission, or which is in use at the time the permit application is filed with the commission?	Not Applicable
If Yes: the TCEQ shall not issue a permit for a new hazardous waste land treatment unit or an areal expansion of an existing land treatment unit, pursuant to 30 TAC 335.204(b)(6) and 335.205(a).	
Within 1000 feet of an area subject to active coastal shoreline erosion even though the area is protected by a barrier island or peninsula?	Not Applicable
If Yes: submit in Section V.F design, construction, and operational features which will prevent adverse effects resulting from storm surge and erosion or scouring by water.	
Within 5000 feet of a coastal shoreline subject to active shoreline erosion and which is unprotected by a barrier island or peninsula.	Not Applicable
If Yes: submit Section V.F design, construction and operational features, which will prevent adverse effects resulting from storm surge and erosion or scouring by water.	
On a barrier island or peninsula?	Not Applicable
If Yes: the TCEQ shall not issue a permit for a new hazardous waste land treatment unit or an areal expansion of an existing land treatment unit, pursuant to 30 TAC 335.204(b)(11) and 335.205(a)(1).	

Table II.C. - Additional Requirements for Waste Piles [30 TAC 335.204(c)]

Is the waste pile located or proposed to be located:

Within 1000 feet of an area subject to active coastal shoreline erosion even though the area is protected by a barrier island or peninsula?	No
If Yes: submit in Section V.E design, construction, and operational features on the facility which will prevent adverse effects resulting from storm surge and erosion or scouring by water.	
Within 5000 feet of a coastal shoreline subject to active shoreline erosion and which is unprotected by a barrier island or peninsula.	No
If Yes: submit Section V.E design, construction, and operational features which will prevent adverse effects resulting from storm surge and erosion or scouring by water.	
On a barrier island or peninsula?[6]	No
If Yes: the TCEQ shall not issue a permit for a new hazardous waste pile or an areal expansion of an existing waste pile, pursuant to 30 TAC 335.204(c)(10) and 335.205(a)(1).	

Table II.D. - Additional Requirements for Storage Surface Impoundments [30 TAC 335.204(d)]

Is the land treatment facility located or proposed to be located:

Within 1000 feet of an area of active coastal shoreline erosion even though the area is protected by a barrier island or peninsula	Not Applicable
If Yes: submit in Section V.D design, construction, and operational features of the facility which will prevent adverse effects resulting from storm surge and erosion or scouring by water.	
Within 5000 feet of a coastal shoreline subject to active shoreline erosion and which is unprotected by a barrier island or peninsula.	Not Applicable
If Yes: then submit in Section V.D design, construction, and operational features which will prevent adverse effects resulting from storm surge and erosion or scouring by water.	
On a barrier island or peninsula?[6]	Not Applicable
If Yes: the TCEQ shall not issue a permit for a new hazardous waste storage surface impoundment or an areal expansion of an existing storage surface impoundment, pursuant to 30 TAC 335.204(d)(10) and 335.205(a)(1).	

Table II.E. - Additional Requirements for Landfills (and Surface Impoundments Closed as Landfills with wastes in place)

Is the landfill located or proposed to be located:

Within 1000 feet of an established residence, church, school, day care center, surface water body used for a public drinking water supply, or dedicated public park which is in use at the time the notice of intent to file a permit application is filed with the commission, or which is in use at the time the permit application is filed with the commission?	Not Applicable
If Yes: the TCEQ shall not issue a permit for a new hazardous waste landfill or an areal expansion of an existing landfill, pursuant to 30 TAC 335.204(e)(6) and 335.205(a)(1).	
(For commercial hazardous waste landfills) in the 100-year flood plain of a perennial stream that is delineated on a flood map adopted by the Federal Emergency Management Agency after September 1, 1985, as zone A1-99, VO, or V1-30?	Not Applicable
If Yes: the TCEQ shall not issue a permit for a new hazardous waste landfill or an areal expansion of an existing landfill, pursuant to 30 TAC 335.204(e)(7) and 335.205(a)(1).	
Within 1000 feet of an area subject to active coastal shoreline erosion even though the area is protected by a barrier island or peninsula?	Not Applicable
If Yes: then submit in Section V.G design, construction, and operational features which will prevent adverse effects resulting from storm surge and erosion or scouring by water.	
Within 5000 feet of a coastal shoreline subject to active shoreline erosion and which is unprotected by a barriers island or peninsula.	Not Applicable
If Yes: then submit in Section V.G design, construction, and operational features which will prevent adverse effects resulting from storm surge and erosion or scouring by water.	
On a barrier island or peninsula?	Not Applicable
If Yes: the TCEQ shall not issue a permit for a new hazardous waste landfill or an areal expansion of an existing landfill, pursuant to 30 TAC 335.204(e)(12) and 335.205(a)(1).	

Flooding (see Section II Instructions, Item F)

Is the facility within a 100-year flood plain?	No
Has a flood plain map been provided?	Yes
Has information about flooding levels and events, and other special flooding factors, been provided?[3]	No
Do any flood protection devices exist at the facility (e.g., flood walls, dikes, etc.) designed to prevent washout from the 100-year flood?[3]	Not Applicable
If Yes: provide in Section V an engineering analysis to indicate the various hydrodynamic and hydrostatic forces expected to result at the facility as a consequence of a 100-year flood. [40 CFR 270.14(b)(11)(iv)(A)][4]	
If No: the applicant shall provide in Section V a plan for constructing flood protection devices and a schedule including specific time frames for completion. Provide engineering analyses to indicate the various hydrodynamic and hydrostatic forces expected to result at the facility as a consequence of a 100-year flood. [40 CFR 270.14(b)(11)(iv)(A)][5]	
If applicable, and in lieu of the flood protection devices from above, was a detailed description of the procedures to be followed to remove hazardous waste to safety before the facility is flooded provided?[3, 6]	Not Applicable
Additional Information Requirements (see Section II instructions, Item G): Submitted?	

1. Provide the source of information for all questions in the appendix.
2. Note: Land treatment facilities, waste piles, storage surface impoundments, and landfills may not be located on the recharge zone of a sole-source aquifer.
3. Only required to be submitted if the facility is subject to inundation as a result of a 100-year flood event.
4. Include structural or other engineering studies showing the design of operational units (e.g., tanks, incinerators) and flood protection devices (e.g., flood walls, dikes) at the facility and how these will prevent washout. [40 CFR 270.14(b)(11)(iv)(B)]
5. Include structural or other engineering studies showing the design of operational units (e.g., tanks, incinerators) and flood protection devices (e.g., flood walls, dikes) at the facility and how these will prevent washout. [40 CFR 270.14(b)(11)(iv)(B)]
6. The standards contained in §335.204(a)(6) - (9), (b)(7) - (12), (c)(6) - (11), (d)(6) - (11), and (e) (8) - (13) are not applicable to facilities that have submitted a notice of intent to file a permit application pursuant to §335.391 of this title (relating to Pre-Application Review) prior to May 3, 1988, or to facilities that have filed permit applications pursuant to §335.2(a) of this title which were submitted in accordance with Chapter 305 of this title and that were declared to be administratively complete pursuant to §281.3 of this title (relating to Initial Review) prior to May 3, 1988.[30 TAC 335.201(b)]

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section II: Appendix II.1 - Site Selection Report

APPENDIX II.1
SITE SELECTION REPORT

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

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APPENDIX II.1
SITE SELECTION REPORT

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

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Figure II.1.5 Regional Sediment Characteristics and Fault Map

GSI Job No. 10426

SITE SELECTION REPORT CERTIFICATION STATEMENT

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

I, Wynne Casteel, a registered professional geoscientist in the State of Texas, certify that the Siting Selection Report in the Hazardous Waste Permit Renewal Application for the BASF Beaumont Agro Plant facility in Beaumont, Texas, has been prepared under my direction and supervision. Geoscience-related material was prepared in accordance with generally accepted geoscience principles and practices. The report was prepared to address the requirements of the TCEQ RCRA Permit Application (TCEQ-00376 Revised 1 March 2023).

14 April 2025

Wynne Casteel, P.G.
State of Texas Registration No. 15539
GSI Environmental Inc.
Registered Geoscience Firm No. 50243

1.0 SCOPE AND OBJECTIVES

This site selection report for the BASF Beaumont Agro Plant (BASF) facility in Beaumont, Texas, has been prepared to document that the facility meets the site location criteria specified in 30 TAC 335 Subchapter G for the safe management of hazardous wastes. Provisions of 30 TAC 335.204 establish factors to be evaluated for the location of facilities used for the storage or processing of hazardous waste, including the proximity of the facility to the following:

- Floodplains;
- Wetlands;
- Recharge zones of sole-source aquifers;
- Areas overlying regional aquifers;
- Shallow soil characteristics;
- Direct drainage to lakes used to supply public drinking water;
- Active geologic processes, including faulting;
- Critical habitat of endangered plant or animal species;
- Established residences and other public areas;
- Coastal shoreline erosion; and
- Barrier islands and peninsulas.

The following sections provide information to demonstrate that the BASF facility is in compliance with applicable regulatory requirements of 30 TAC 335 Subchapter G with regard to site selection.

2.0 GENERAL SITE DESCRIPTION

2.1 Overview of the BASF Facility

The BASF facility is located at 14385 West Port Arthur Road, in Beaumont, Jefferson County, Texas. The plant is an agricultural chemical manufacturing facility situated on approximately 490 acres of the Coastal Prairie portion of the Gulf Coast Physiographic Province. The area is characterized by tall grasslands and/or woods. Regional topography in the facility area is typical of the Gulf Coastal Plain, a nearly flat terrain sloping gently to the south across this region. The average annual rainfall for Jefferson County is 53 inches and the mean annual temperature is 69°F (The Texas State Handbook Online, 2020).

The BASF facility is bordered by the following types of properties:

- North: Industrial facility, agricultural property, and residential property.
- East: West Port Arthur Road, railroad tracks, and an agricultural property.
- South: Agricultural/undeveloped properties.
- West: U.S. Department of Justice correctional facility.

The northeastern and central portions of the BASF facility, encompassing approximately 150 acres, includes the areas of active plant operations which involve the manufacture of agricultural chemicals. The developed area of the plant contains pavement, buildings,

roadways, equipment storage, pipelines, railways, manufacturing units and waste processing and storage areas.

Manufacturing operations at the BASF facility began in 1963 and continue to present day. The BASF facility was initially permitted as a hazardous industrial solid waste management site in November 1986.

2.2 Waste Management Units at BASF

No hazardous waste management units are currently present at the BASF facility. However, several permitted non-hazardous waste storage tanks associated with a UIC pre-injection unit are in operation.

Exhibit 1: Summary of Active and Post-Closure Hazardous Waste and Permitted Non-hazardous Waste Management Areas

Hazardous Waste Management Unit	Permit Unit No.	Service Life (years)
Tank J-516	032	1990 to 2003
Tank J-519	033	1993 to 2003
Tank B-521	034	1990 to 2003
Tank B-503	035	1990 to 2003
Thermal Process Unit H-507	036	1990 to 2003
Tank F-414A*	042	1990 to present
Tank WB-1767*	061	1990 to present
Tank F-414B*	042	1990 to present
Tank F-414C*	069	1990 to present
Tank WB-502A*	073	1990 to present
Tank WB-502B*	074	1990 to present
Tank WB-1765*	071	1990 to present

* - Tank is in non-hazardous waste service associated with a UIC pre-injection unit.

3.0 FLOODPLAIN

3.1 Regulatory Requirements

"A storage or processing facility (excluding storage surface impoundments) may not be located in the 100-year floodplain unless it is designed, constructed, operated, and maintained to prevent physical transport of any hazardous waste by a 100-year flood event." (30 TAC 335.204(a)(1))

3.2 Flood Elevations

The BASF facility is not located in the 100-year floodplain, as indicated by Flood Insurance Rate Maps 480385 Panel 280 and 480385 Panel 285 prepared by the Federal Emergency Management Agency (FEMA, 1991; see Figure II.1.1).

Finding: The BASF facility is not located within the 100-year floodplain.

4.0 WETLANDS

4.1 Regulatory Requirements

"A storage or processing facility (excluding storage surface impoundments) may not be located in wetlands." (30 TAC 335.204(a)(2))

4.2 Wetland Locations at the BASF Facility

Several wetlands are apparent on the BASF facility property according to the National Wetlands Inventory (U.S. Fish and Wildlife Service (USFWS, 2025a)). However, the waste management units in operation at the facility are not located in the wetland area. The wetland that appears to be located within a portion of the closed SWMA (PSS1C, a Freshwater Forested/Shrub Wetland) is actually one of the ponds associated with the former solid waste management area (SWMA – Ponds 1A, 1B, 2A, and 2B). An up-to-date wetland map for the BASF facility with data from the U.S. Fish and Wildlife Service (USFWS, 2025a) is provided in Figure II.1.2.

Finding: The current waste management units and the closed SWMA unit are not located in wetlands.

5.0 RECHARGE ZONE OF SOLE-SOURCE AQUIFER

5.1 Regulatory Requirements

"A storage or processing facility (excluding storage surface impoundments) may not be located on the recharge zone of a sole-source aquifer unless secondary containment is provided to preclude migration to groundwater from spills, leaks or discharges." (30 TAC 335.204(a)(3))

5.2 Chicot Aquifer Recharge Zone

No recharge zones of sole-source aquifers are located near the BASF facility. The nearest sole-source aquifer to the BASF facility is the portion of the Chicot Aquifer located in southwest Louisiana (USEPA, 2025). The recharge zone for this portion of the Chicot Aquifer occurs more than 12 miles east of the BASF facility, extending from the Texas-Louisiana state line eastward to Alexandria, Louisiana.

Finding: The BASF facility is not in the recharge zone of a sole-source aquifer.

6.0 AREA OVERLYING REGIONAL AQUIFERS

6.1 Regulatory Requirements

"A storage or processing facility (excluding storage surface impoundments) may not be located in areas overlying regional aquifers unless (A) the regional aquifer is separated from the facility by a minimum of ten feet of material with a hydraulic conductivity toward the aquifer not greater than 10-7 centimeters per second (cm/sec), or a thicker interval of more permeable material which provides equivalent or greater retardation to pollutant

migration; or (B) secondary containment is provided to preclude migration to groundwater from spills, leaks or discharges." (30 TAC 335.204(a)(4))

6.2 Aquifers Underlying the BASF Facility

As described in the Geology Report, Section VI of this renewal application, the Gulf Coast Aquifer is the only regional aquifer underlying the BASF facility. In the vicinity of the BASF Facility in Jefferson County, the Gulf Coast Aquifer is subdivided into two aquifers capable of producing fresh water: the Chicot Aquifer (divided into the upper Chicot and lower Chicot units) and the Evangeline Aquifer (primarily made up of the upper Fleming Formation and Goliad Sand). The Chicot Aquifer overlies the Evangeline and is approximately 1,600 feet thick in the area of the BASF facility (Young et al., 2012; see Figure II.1.4).

Site investigations have confirmed that soils underlying the BASF facility to a depth of at least 10 feet are generally classified as either high plasticity or low plasticity clay (CH or CL) in accordance with the Unified Soil Classification System (USCS; BASF, 1998). Near-surface stratigraphy beneath the BASF facility includes approximately 15 to 20 feet of clay or silty clay, followed by a 3- to 10-foot-thick sand or silty sand which forms an aquifer and is present at depths of approximately 15 to 25 feet below ground surface (bgs). Finally, a thick, laterally continuous clay or silty clay is present beneath the sand aquifer (BASF, 1998; GSI, 2024).

6.3 Prevention of Releases to Groundwater

6.3.1 Prevention of Releases to Groundwater from Storage and Processing Units

The waste management units at the BASF facility have been constructed with secondary containment in accordance with federal and Texas regulatory requirements for tanks to prevent a release of constituents to groundwater. These units are inspected on a regular basis for evidence of spills, leaks, and deterioration as required by the provisions of the facility's Hazardous Waste Permit.

BASF remedies any deterioration or malfunction of equipment or structures, which the inspection reveals on a schedule that ensures the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action will be taken as soon as practicable.

Finding: Waste management units at the BASF facility have been designed and/or constructed with secondary containment to prevent the release of hazardous constituents to groundwater and are generally separated from the uppermost GWBU by at least 10 feet of surficial clay. A groundwater corrective action program has been successfully implemented to address a release to groundwater from the Closed SWMA Surface Impoundments. The facility meets the criteria of 30 TAC 335.204(a)(4).

7.0 SHALLOW SOIL CHARACTERISTICS

7.1 Regulatory Requirements

"A storage or processing facility (excluding storage surface impoundments) may not be located in areas where soil unit(s) within five feet of the containment structure have a Unified Soil Classification of GW, GP, GM, GC, SW, SP, or SM, or a hydraulic conductivity greater than 1E-05 cm/sec unless: (A) secondary containment is provided to preclude migration to groundwater or surface water from spills, leaks or discharges; or (B) the soil unit is not sufficiently thick and laterally continuous to provide a significant pathway for waste migration." (30 TAC 335.204(a)(5))

7.2 Waste Storage and Shallow Stratigraphy

Site investigations have confirmed that soils underlying the BASF facility to a depth of at least 10 feet are generally classified as either high plasticity or low plasticity clay (CH or CL) in accordance with the USCS (BASF, 1998).

Additionally, as noted in Section 6.3 above, waste management units (e.g., the non-hazardous waste tanks associated with UIC pre-injection) are located among or near the manufacturing areas within the developed portion of the facility. These units have been constructed with secondary containment that precludes the migration of constituents to groundwater or surface water from potential leaks or spills. No active hazardous land-based units are present at the BASF facility.

Finding: In general, waste management units are underlain by at least 10 feet of surficial clay. Waste processing and storage units have been constructed with secondary containment that precludes the migration of constituents to groundwater or surface water from potential leaks or spills, thereby meeting the criteria of 30 TAC §335.204(a)(5).

8.0 LAKES USED FOR PUBLIC WATER SUPPLIES

8.1 Regulatory Requirements

"A storage or processing facility (excluding storage surface impoundments) may not be located in areas of direct drainage within one mile of a lake at its maximum conservation pool level, if the lake is used to supply public drinking water through a public water system, unless the design, construction, and operational features of the facility will prevent adverse effects resulting from a release in such areas." (30 TAC 335.204(a)(6))

8.2 Public Water Supplies Near the BASF Facility

No lakes or other surface water bodies used for public drinking water supply are located within one mile of the BASF facility (see Figure II.1.2). Public water supply systems in Jefferson County, Texas, obtain drinking water from groundwater and purchased surface water systems including the Lower Neches Valley Authority (from Sam Rayburn/BA Steinhagen reservoirs), Neches River, and Gulf Coast Aquifer (Region I East Texas Regional WPG, 2020).

Finding: The BASF facility is not located within one mile of a lake used to supply public drinking water, and therefore the waste management units meet the criterion of 30 TAC 335.204(a)(6).

9.0 ACTIVE GEOLOGIC PROCESSES

9.1 Regulatory Requirements

"A storage or processing facility (excluding storage surface impoundments) may not be located in areas of active geologic processes unless the design, construction, and operational features of the facility will prevent adverse effects resulting from the geologic processes." (30 TAC 335.204(a)(7))

Active geological processes in the region that could hypothetically impact the waste management units at the BASF facility include the following: erosion, subsidence and submergence, faulting associated with sediment loading/gravity tectonics or salt domes, and earthquakes. As documented below, none of these geologic processes will adversely impact the capacity of the BASF waste management units to prevent a release of constituents of concern.

9.2 Erosion

The potential for erosion by surface runoff is considered negligible, since the surface in the vicinity of and within the waste management units is covered by concrete surfaces, roads, vegetation, and/or clayey soils that diminish the effects of erosion. Regular maintenance of concrete surfaces, roads, and secondary containment areas ensure that erosion continues to be negligible. No streams are located in the vicinity of the facility and the surface relief is nearly flat, limiting the potential for surface runoff to cause erosion.

Finding: The potential for surficial erosion at the BASF facility is considered negligible.

9.3 Subsidence and Submergence

Investigations conducted near the BASF facility suggest that little subsidence has occurred in the vicinity of the facility. Less than 0.5 feet of subsidence was reported in the area of the BASF facility in the 59-year period from 1918 to 1977 (Ratzlaff, 1980). Consequently, effects from subsidence are not expected to impact the waste management units at the BASF facility.

Land surface subsidence in the broader Gulf Coast Region has primarily been a consequence of the groundwater pumping and withdrawal that began mostly in the early twentieth century, as well as from the withdrawal of oil and gas and associated groundwater. Several areas in Jefferson County experienced larger amounts of subsidence during the 1918-1977 period including the Spindletop Dome and the Port Acres areas which have subsided up to 15 feet and 3 feet, respectively over multi-decade periods (Ratzlaff, 1980). However, regional subsidence is not anticipated to impact the BASF facility's waste management units.

Finding: Subsidence is not expected to impact the BASF facility's waste management units.

9.4 Faulting

As discussed in the Geology Report (Section VI) of this application, no evidence of surface or near-surface faulting has been identified at the BASF facility. Although some lineaments have been mapped crossing near the BASF facility (Fisher et al., 1973; Figure II.1.5), none of these features have been documented as faults.

Faulting in the Texas Gulf Coast region are typically products of either i) the upward movement of salt domes, or ii) growth faults associated with depositional loading of older, poorly consolidated strata and the dipping and gulfward creep of the sediment mass (BASF, 1998; Aronow, 1971). The BASF facility is located approximately 3 miles south of the Spindletop Salt Dome, 8 miles southwest of the Port Neches Salt Dome, and 13 miles northeast of the Fannett Dome (Seni et al., 1984). No other salt domes or their associated faulting are known to be present near the BASF facility.

In order to confirm the presence or absence of such surface or near-surface faulting, investigations were conducted at the BASF facility that consisted of: i) reviewing electric well logs; ii) reviewing aerial photographs; iii) field inspections of the plant area for evidence of faulting; and iv) a review of published literature sources (Jeffrey, 1994). These investigations concluded that there is no evidence of surface or near-surface faulting at the BASF facility (Jeffery, 1992; Jeffrey, 1994; RSP, 2014). The closest fault found to the BASF site is located approximately 2.5 miles from the facility and is an extension of a fault associated with the Spindletop Salt Dome (Jeffery, 1992). Evidence of displacement for this fault only exists in sediments of the Lower Miocene and older (approximately 5,000 feet bgs and deeper). Subsurface faults located in the top of the Frio Formation and base of the Miocene Formation were mapped in an addendum to the January 1992 Geology Report submitted as part of the 1998 permit application (Hill Country Environmental, 1998).

Finding: No evidence of active faulting has been identified sufficiently close to the BASF facility to adversely affect the waste management units.

9.5 Earthquakes

The Texas coastal plain is classified as a Seismic Design Category A (i.e., lowest hazard) per the National Earthquake Hazards Reduction Program (NEHRP, 2023). Faults in the Texas coastal plain generally do not release measurable amounts of seismic energy due to the lack of stress build-up in the rocks on opposing sides of faults. Consequently, there is little potential energy to be released in an earthquake, and consequently low seismic hazard risk. A review of seismic activity from 1 January 1976 through 3 February 2025, confirmed that no earthquakes above magnitude 2.5 were detected in Jefferson County during this historical period (USGS, 2025).

Finding: There is little or no potential energy to be released when movement occurs along Gulf Coast faults in the vicinity of the BASF facility; therefore, no earthquake risk is present to the BASF waste management units.

10.0 CRITICAL HABITAT

10.1 Regulatory Requirements

"A storage or processing facility may not be located in the critical habitat of an endangered species of plant or animal unless the design, construction, and operational features of the facility will prevent adverse effects on the critical habitat of the endangered species." (30 TAC 335.204(a)(8))

10.2 Critical Habitat at the BASF Facility

No critical habitat has been identified on the BASF facility (USFWS, 2025b). Critical habitats are areas identified by the U.S. Fish & Wildlife Service as specific geographic areas that contain features essential for the conservation of a threatened or endangered species, and that require special management and protection. Additionally, no record of threatened or endangered species were located within a 1-mile radius of the BASF facility (TPWD, 2025). Land use in the vicinity of the BASF facility is shown on Figure II.1.3.

As described above, waste processing and storage units are located among or near the manufacturing areas within the developed central portion of the facility. No threatened or endangered species have been observed in this area.

Finding: No critical habitat has been identified on the BASF facility. The waste management units present at the BASF facility are not located in critical habitat and therefore meet the criterion of 30 TAC §335.204(a)(8).

11.0 FAULTS

11.1 Regulatory Requirements

"A storage or processing facility may not be located within 30 feet of the upthrown side or 50 feet of the downthrown side of the actual or inferred surface expression of a fault that has reasonably been shown to have caused displacement of shallow Quaternary sediments or of man-made structures, unless the design, construction, and operational features of the facility will prevent adverse effects resulting from fault movement. The presence, and if a fault is found to be present, the width and location of the actual or inferred surface expression of a fault, including both the identified zone of deformation and the combined uncertainties in locating a fault trace, shall be determined by a licensed professional geoscientist or geotechnical engineer. For purposes of fault assessment under this paragraph, depths of shallow sediments to be considered could be as little as 100 feet (for older, slowly accumulated sediments), or as great as 300 feet (for younger, rapidly accumulated sediments). The fault study should include analyses of any electric logs developed for any required subsurface characterization of the site, interpretation of available aerial photographs, study of available maps, logs, and documents that may indicate fault locations at the surface and in the subsurface, and a visual observation of the proposed site." (30 TAC 335.204(a)(9))

11.2 Faulting at the BASF Facility

As described in Section 9.4, no evidence of active faulting has been identified sufficiently close to the BASF facility to adversely affect the waste management units. A fault study has previously been conducted for the facility (Jeffery, 1992; Jeffery, 1994).

Finding: No evidence of active faulting has been identified sufficiently close to the BASF facility to adversely affect the waste management units. The facility therefore meets the criterion of 30 TAC §335.204(a)(9).

12.0 REFERENCES

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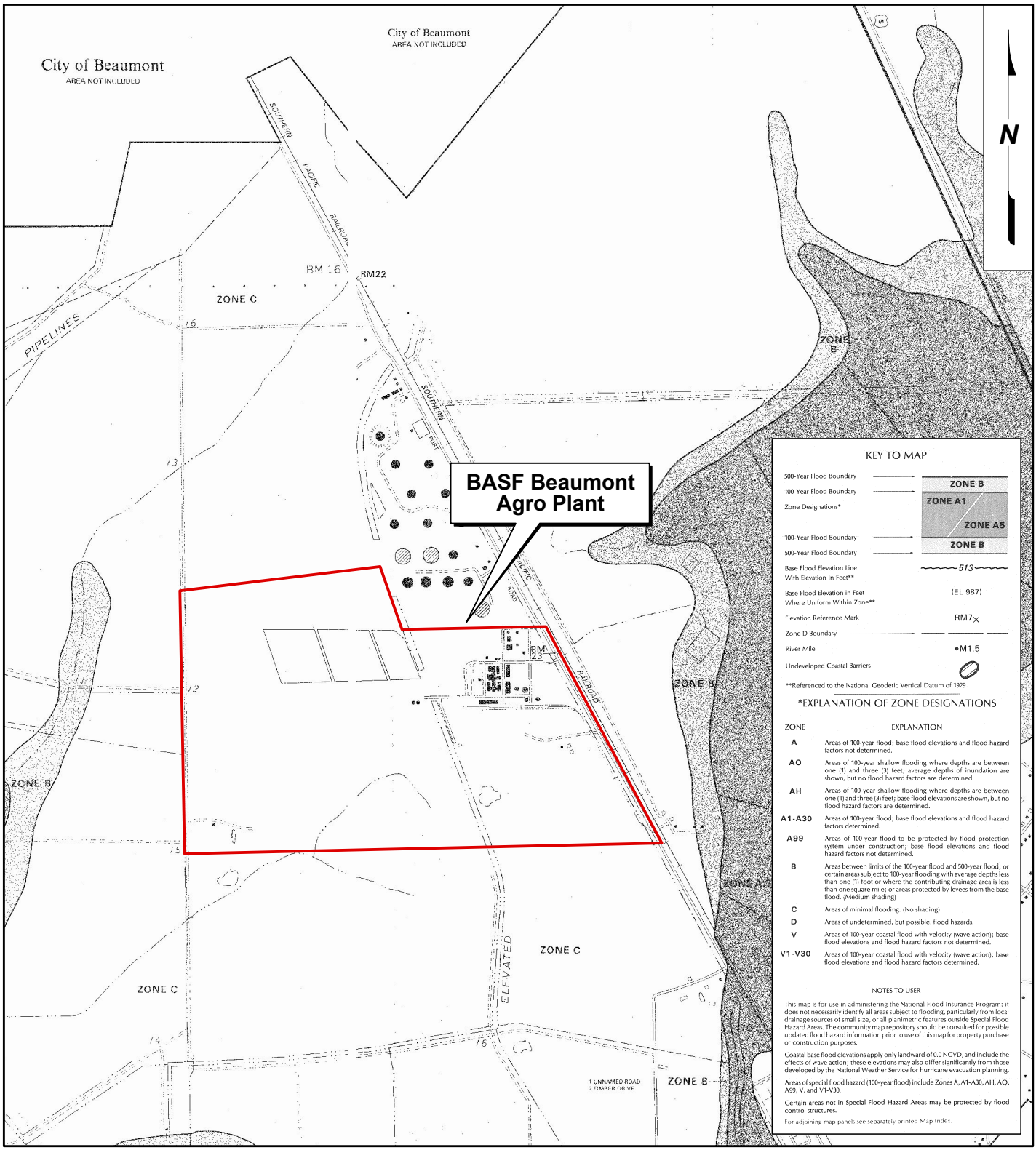
APPENDIX II.1
SITE SELECTION REPORT

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

FIGURES

Figure II.1.1 Location of 100-Year Floodplain
Figure II.1.2 Location of Wetlands and Surface Water Bodies
Figure II.1.3 Land Use in Vicinity of BASF Beaumont Agro Plant
Figure II.1.4 Hydrogeologic Dip Cross Section 3-3'
Figure II.1.5 Regional Sediment Characteristics and Fault Map



Notes:

1. Floodplain map from Federal Emergency Management Agency FIRM Community Panels 480385 0285C and 480385 0280C, Revised November 20,1991.
2. Zone A3 = Area of 100-year flood; base flood elevations and flood hazard factors determined.
3. Zone B = Area between the limits of the 100-year flood and 500-year flood. Moderate flood hazard.
4. Zone C = Areas of minimal flooding; minimal flood hazard.
5. Map Reference: FEMA, Flood Insurance Rate Map, Jefferson County, Texas, and Incorporated Areas, Panel 280 of 600, Map Number 4803850280C, and Panel 285 of 600, Map Number 4803850285C, Federal Emergency Management Agency, 20 November 1991.

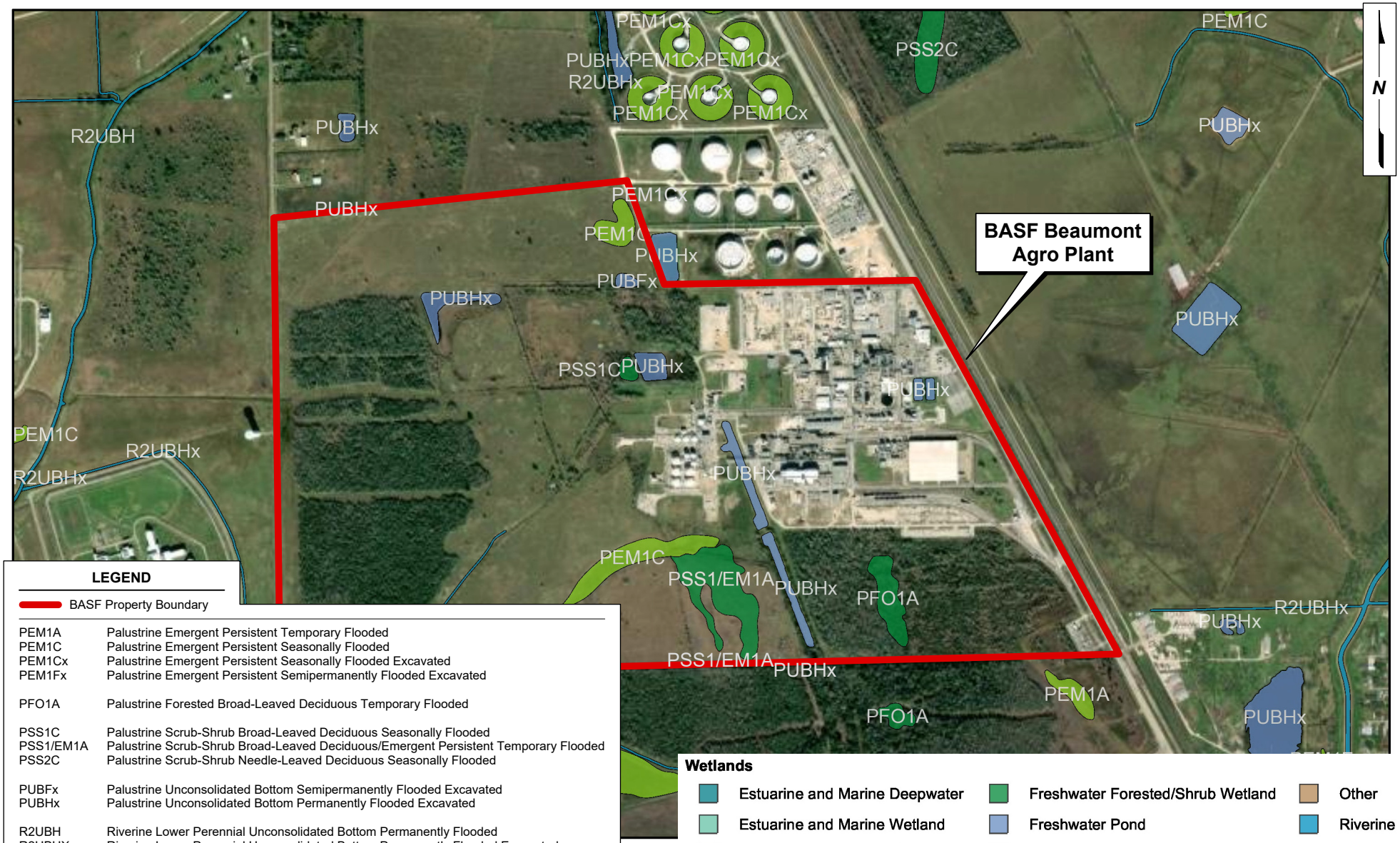
SCALE (ft.)
0 1000 2000

GSI ENVIRONMENTAL
Texas Geoscience Firm Registration Number: 50243

LOCATION OF 100-YEAR FLOODPLAIN

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No:	10426	Drawn By:	CDM
Map ID:	002_01	Chk'd By:	WMC
Issued	14-Apr-2025	Appv'd By:	JMM
Scale:	As Shown	**Figure II.1.1**	



LEGEND

BASF Property Boundary

PEM1A	Palustrine Emergent Persistent Temporary Flooded
PEM1C	Palustrine Emergent Persistent Seasonally Flooded
PEM1Cx	Palustrine Emergent Persistent Seasonally Flooded Excavated
PEM1Fx	Palustrine Emergent Persistent Semipermanently Flooded Excavated
PFO1A	Palustrine Forested Broad-Leaved Deciduous Temporary Flooded
PSS1C	Palustrine Scrub-Shrub Broad-Leaved Deciduous Seasonally Flooded
PSS1/EM1A	Palustrine Scrub-Shrub Broad-Leaved Deciduous/Emergent Persistent Temporary Flooded
PSS2C	Palustrine Scrub-Shrub Needle-Leaved Deciduous Seasonally Flooded
PUBFx	Palustrine Unconsolidated Bottom Semipermanently Flooded Excavated
PUBHx	Palustrine Unconsolidated Bottom Permanently Flooded Excavated
R2UBH	Riverine Lower Perennial Unconsolidated Bottom Permanently Flooded
R2UBHX	Riverine Lower Perennial Unconsolidated Bottom Permanently Flooded Excavated

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

SCALE (mi.)

0 0.125 0.25

Map Reference: USFWS, 2024. National Wetlands Inventory, U.S. Fish and Wildlife Survey, Internet, https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/, accessed by Banks Environmental Data 13 May 2024.

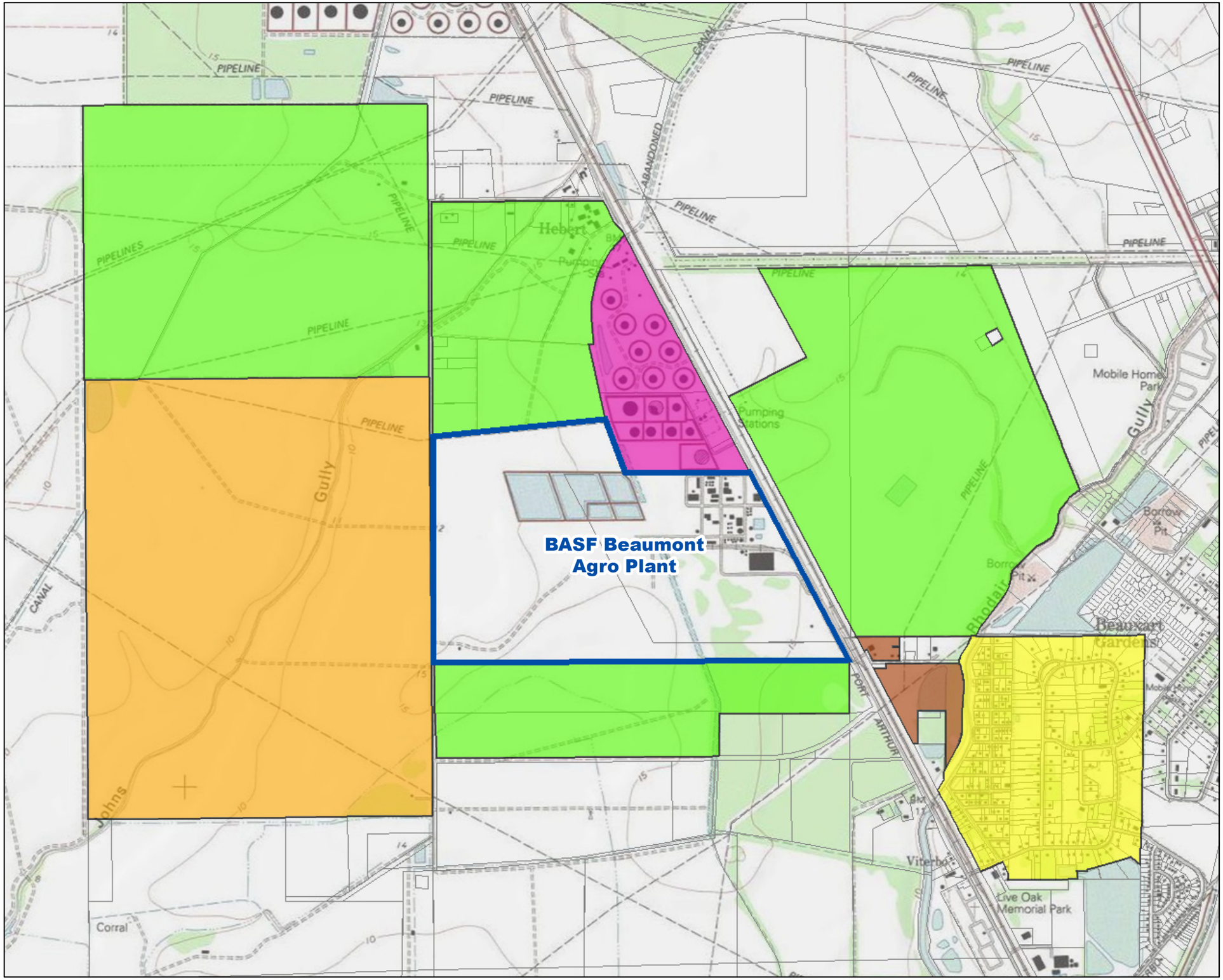
GSI ENVIRONMENTAL

Texas Geoscience Firm Registration Number: 50243

GSI Job No.	10426	Drawn By:	CDM
Map ID:	002_02	Chk'd By:	MW
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	As Shown	**Figure II.1.2**	

LOCATION OF WETLANDS AND SURFACE WATER BODIES

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas



LEGEND

- Department of Justice Land
- Agriculture Land Use
- Residential Land Use
- Industrial Land Use
- Commercial Land Use
- BASF Beaumont Agro Plant Property Boundary

Notes

1. Parcel information was obtained from Jefferson County Appraisal District on 2/11/2025.
2. Background imagery provided by ESRI Online: USGS Topo Maps (Map Service - FDEPOpen Data Portal, 11/28/2018).

Feet
0 800 1,600

Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N (meters)

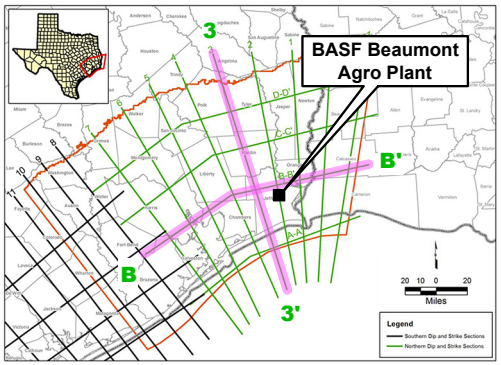
GSI ENVIRONMENTAL
Texas Geoscience Firm Registration Number: 50243

LAND USE IN VICINITY OF BASF BEAUMONT AGRO PLANT

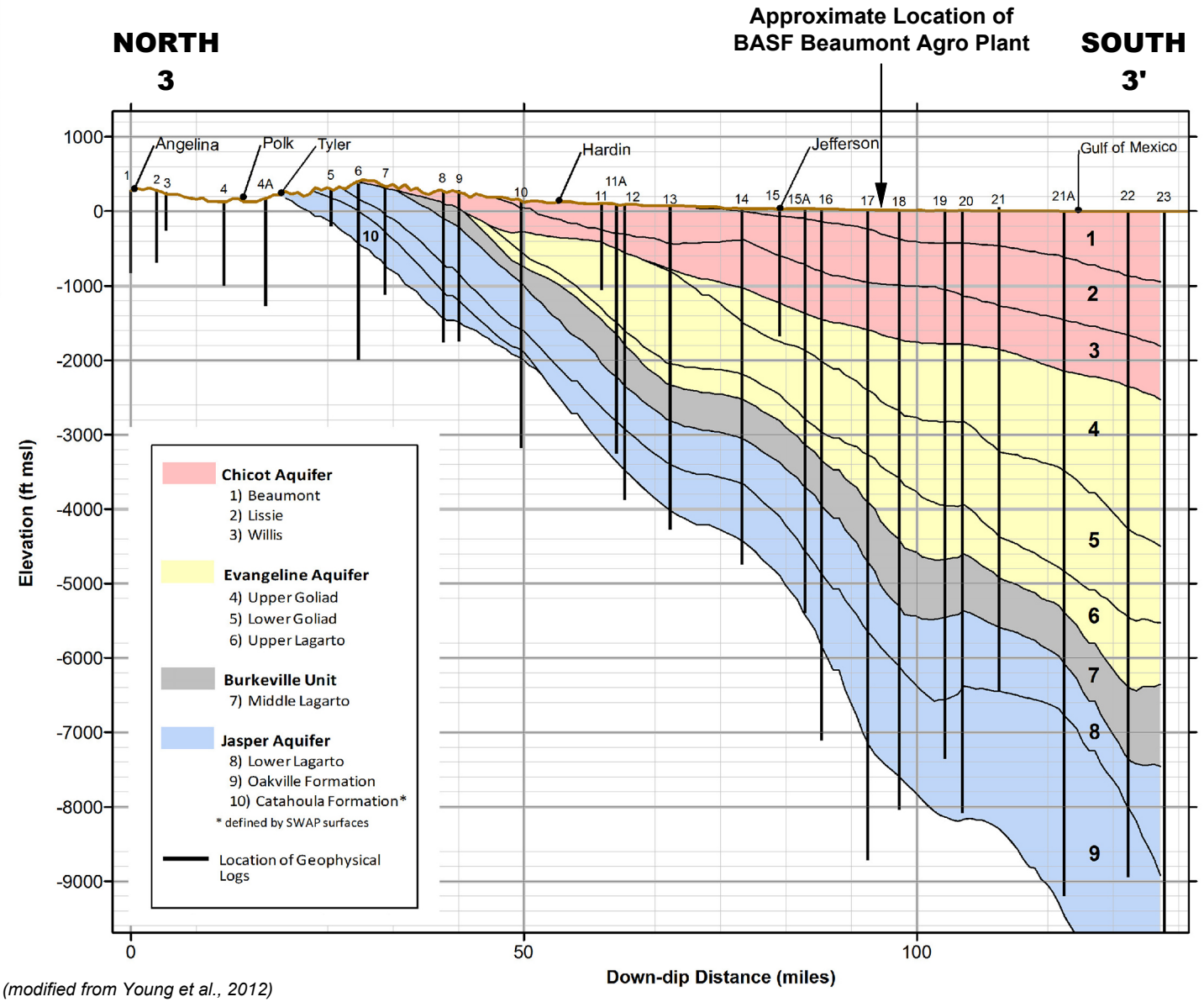
Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No.	10426	Drawn By:	CDM
Issued:	14-Apr-2025	Chk'd By:	MW
Map ID:	**002_03**	Appv'd By:	JMM

FIGURE II.1.3



(modified from Young et al., 2012, Figure 1-1)



(modified from Young et al., 2012)

GSI ENVIRONMENTAL
Texas Geoscience Firm Registration Number: 50243

GSI Job No.	10426	Drawn By:	CDM
Map ID:	002_04	Chk'd By:	WMC
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	As Shown	**FIGURE II.1.4**	

HYDROGEOLOGIC DIP CROSS-SECTION 3-3'

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

BASF Beaumont Agro Plant

2.5-mile radius

N

Scale (mi.)

0 2.5 5

(modified from Fisher et al, 1973)

EXPLANATION

CATEGORIES

GROUP I.

Dominantly clay and mud, low permeability, high water-holding capacity, high compressibility, high to very high shrink-swell potential, poor drainage, level to depressed relief, low shear strength, high plasticity
Geologic units include interdistributary muds, barrier-strandplain-chenier swales, channel-fill muds, overbank fluvial muds, mud-filled coastal lakes

GROUP II.

Dominantly sand, high to very high permeability, low water-holding capacity, low compressibility, low shrink-swell potential, good drainage, low ridge and depressed relief, high shear strength, low plasticity
Geologic units include beach, foredunes, barrier-strandplain-chenier vegetated flats, Pleistocene barrier and strandplain sands

GROUP III.

Dominantly clayey sand and silt, moderate permeability and water-holding capacity, low to moderate compressibility and shrink-swell potential, moderate drainage, level relief with local mounds and ridges, high shear strength
Geologic units include meanderbelt sands, alluvium, levee, crevasse splay, distributary sands, bay-margin sand and mud, Pleistocene fluvial and distributary sands

GROUP IV.

Coastal and estuarine marshes, very low permeability, high water-holding capacity, very poor drainage, depressed relief, low shear strength, high plasticity, high organic content, subject to salt-water flooding
Geologic units include coastal and estuarine marshes, fresh to brackish

GROUP V.

Inland swamp and marsh, permanently high water table, very low permeability, high water-holding capacity, very poor drainage, very poor load-bearing strength, high organic content, subject to frequent flooding
Geologic units include swamp, inland marsh, marsh-filled barrier-strandplain-chenier swales and abandoned channel and course.

GROUP VI.

Tidal flat and salt marsh, subject to frequent tidal inundation, properties similar to Group V
Geologic units include tidal flat, salt marsh

GROUP VII.

Made land and spoil, properties highly variable, mixed mud, silt, sand, reworked spoil commonly sandy and moderately sorted with properties similar to Group III
Geologic units include subaerial spoil heaps or mounds, subaerial reworked spoil, subaqueous spoil, made land

Refer to tables in text for land-use evaluation such as engineering, solid-waste disposal, and other functional categories based on physical properties and other parameters

- Pit or quarry, commonly in fluvial deposits
- Sludge pit or miscellaneous waste disposal site, may be abandoned
- Sewage disposal site, liquid effluent, normally treated
- Solid-waste disposal site, sanitary land fills, and open dumps
- Salt dome, shallow piercement, projected outline (approximate) of dome, normally surface expression
- Active or potentially active fault, based on lineament or grain displayed on aerial photographs

Sources of data given in text

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Texas Geoscience Firm Registration Number: 50243

REGIONAL SEDIMENT CHARACTERISTICS AND FAULT MAP

Hazardous Waste Permit Renewal Application
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GSI Job No.	10426	Drawn By:	CDM
Map ID:	002_05	Chk'd By:	WMC
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	As Shown	**FIGURE II.1.5**	

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B Section III – Facility Management

Contents

- Part B Application Form, Section III
- Part B, Section III: Appendix III.A - Compliance History and Applicant Experience
- Part B, Section III: Table III.D - Inspection Schedule
- Part B, Section III: Figure III.E.1 – Emergency Equipment Locations and Evacuation Routes

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

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Part B Application Form, Section III

III. Facility Management

Provide all Part B responsive information in Appendix III. When preparing the physical format organize your submittal using the Format of Hazardous Waste permit Application and Instructions.

A. Compliance History and Applicant Experience

1. Provide listings of all solid waste management sites in Texas owned, operated, or controlled by the applicant as required by 30 TAC 305.50(a)(2).

2. For a new commercial hazardous waste management facility, provide a summary of the applicant's experience in hazardous waste management as required by 30 TAC 305.50(a)(12)(F).

B. Personnel Training Plan

Provide an outline of the facility training plan which includes all the information required by 40 CFR 264.16. Indicate which training will be repeated annually.

C. Security

Describe how the facility complies with the security requirements of 40 CFR 264.14 or submit a justification demonstrating the reasons for requesting a waiver of these requirements.

D. Inspection Schedule

Describe summary of inspection schedule and Table III.D in Appendix III.D in accordance with instructions below.

Provide an inspection schedule summary for the facility which reflects the requirements of 40 CFR 264.15(b), 264.33 and, where applicable, the specific requirements in 40 CFR 264.174, 264.193(i), 264.195, 264.226, 264.254, 264.273, 264.303, 264.347, 264.552, 264.574, 264.602, 264.1033(f), 264.1034, 264.1052, 264.1053(e), 264.1057, 264.1058, 264.1063, 264.1084, 264.1085, 264.1086, 264.1088, 264.1101(c)(4) and 270.14(b)(5). The inspection schedule should reflect the requirements described below. The schedule should encompass each type of hazardous waste management (HWM) unit (i.e., facility component) and its inspection requirements. For incorporation into a permit, complete Table III.D. - Inspection Schedule for all units to be permitted.

The owner or operator must inspect the facility for malfunctions and deterioration, operator errors, and discharges which may be causing or may lead to the release of hazardous waste constituents to the environment or which may pose a threat to human health. The owner or operator must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.

The owner or operator must develop and follow a written schedule for inspecting other basic elements such as monitoring equipment, safety and emergency equipment, security devices, the presence of liquids in leak detection systems, where installed, and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards.

If the owner or operator of a facility which contains a waste pile wishes to pursue an exemption from the groundwater monitoring requirements for that waste management unit, the inspection schedule must include examination of the base for cracking,

deterioration, or other conditions that may result in leaks. The frequency of inspection must be based on the potential for the liner (base) to crack or otherwise deteriorate under the conditions of operation (e.g., waste type, rainfall, loading rates, and subsurface stability).

E. Contingency Plan (Not Applicable to Permits for Post-Closure Care Only)

If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan or some other emergency or contingency plan, he need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of this section. Provide a Contingency Plan which includes all the information required by 40 CFR Part 264 Subparts C and D, except for 40 CFR 264.56(d)(1) and 30 TAC 335.153(2). This plan must also include a drawing of the facility which shows the location of all emergency equipment. In addition, complete the following tables to summarize information expressed in more detail in the plan.

1. Arrangements with Local Authorities
Complete Table III.E.1. - Arrangements With Local Authorities to indicate arrangements (if made) with local authorities to familiarize local fire and police departments, local hospitals, equipment suppliers, and local and State emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to and roads inside the facility, and possible evacuation routes. Provide documentation of the attempts and any arrangements made with local authorities and emergency response teams.

2. Emergency Coordinator's List
For inclusion into a permit, list in Table III.E.2. - Emergency Coordinators the persons qualified to act as emergency coordinator. List the alternates in the order in which they will assume responsibility.

3. Emergency Equipment List
For inclusion into a permit, list in Table III.E.3. - Emergency Equipment all types of emergency equipment at the facility [such as fire-extinguishing systems, spill-control equipment, communications and alarm systems (internal and external), and decontamination equipment], if this equipment is required. Briefly outline the equipment capabilities.

4. Waiver from Preparedness and Prevention Requirements
If the owner or operator wishes to request a waiver from any of the preparedness and prevention requirements, he must submit a justification demonstrating the reasons for requesting the waiver, as discussed below.

F. Emergency Response Plan

For a new commercial hazardous waste management facility, the application shall contain evidence sufficient to demonstrate that emergency response capabilities are available or will be available before the facility first receives waste. An emergency response plan must be provided which satisfies the requirements of 30 TAC 305.50(a)(12)(C) and (D). This plan must show that the proposed facility has sufficient emergency response capabilities for managing a reasonable worst-case emergency condition associated with the operation of the facility. (For financial assurance requirements associated with the emergency response activities, please see Section

VIII.C.3.)

1. Practice Drills

   In addition to the contingency plan required under 40 Code of Federal Regulations Part 270.14(b)(7), provisions specifying procedures and timing of practice facility evacuation drills are required. Provide a description and a frequency for facility evacuation drills.

2. If a private corporation, municipality or county group will provide emergency response actions at the proposed facility, include a copy of the contract for this type of agreement with this application or state that documentation will be submitted before the facility accepts wastes.

3. Historical weather data for the area should be documented and submitted. Information regarding how emergency response operations may be affected by weather conditions should be included. (Local rainfall extremes, average rainfall amounts, average wind speeds and directions, potential for major weather events such as hurricanes, tornados, icy conditions, flash flooding etc., should be addressed.)

4. A definition of a worst-case emergency for the proposed facility should be described in the application. This worst-case emergency should take into account the possible complications involved with a facility emergency compounded by adverse weather conditions. It should also detail spills, fires, explosions, etc. This worst case scenario should be developed with the help of local governmental entities where possible. Emergency planning should include both unexpected emergencies and emergencies occurring as a result of a predictable event such as a flood or hurricane. For areas which are prone to hurricanes and flash flooding, the worst case which allows for a realistic situation should be used. For example, response teams should be well versed in reacting to events such as a 100-year flood.

5. A training program for personnel who will respond to these types of emergencies must be provided and must include the requirements described in OSHA Federal Register 1910 and EPA Federal Register 311, the Texas Hazard Communication Act, SARA Title III 302, 304, 311, 312, and 313. If emergency response actions are contracted out, the contracted employees must be properly trained and documentation of this training must be maintained on-site. All responders to emergencies at the proposed facility must be involved in training and drills at the facility in order to be thoroughly familiar with the facility and its operations.

6. The application must include a description and identification of first-responders (i.e. all pertinent facility personnel, local responders, and contractors). The duties of the facility employee who is to be the on-scene coordinator (OSC) must be described. Additional information must be provided detailing the OSC's role in the emergency response activities. This person must have the authority to commit the resources needed to carry out the Emergency Response Plan. His duties must be thoroughly described so that it is clear whether he will remain in control once the emergency response team arrives or whether he will relinquish control to another incident commander upon that person's arrival on the scene. Additionally, there must be a qualified OSC on-site or on call 24 hours a day. The name, address and phone numbers (home and work) of the OSC(s) must be listed in the Emergency Response Plan. Where more than one person is listed, one must be named as the primary OSC and others must be listed in the order

in which they will assume responsibility as alternates.

7. Local or regional emergency medical services or hospitals which have experience in hazardous materials training must be identified in the application. The names, addresses and phone numbers of the hospitals or medical centers should be listed here and updated as necessary. Additionally, maps showing the quickest routes to the medical services must be provided. A description of decontamination procedures for injured personnel prior to transport to medical services must also be provided. The decontamination and transport of injured people to appropriate medical centers must be included in the emergency evacuation training and drills.

8. A pre-disaster plan which includes training drills must be included in the application. This plan should include a schedule for staging evacuations of the facility and for emergency response training drills. At least two evacuations and two emergency response drills should occur annually. The plan should also include additional drills for responding to "predictable" emergencies such as floods and hurricanes. The plan must include the following (or must reference applicable sections of the Contingency Plan): a description of arrangements already in place with local authorities; emergency phone numbers; internal communication or alarm systems and proper alarm codes; a list of all types of emergency equipment at the facility, including a physical description and the capabilities of each item on the list, and the location of each item (a map would be useful here); a description of decontamination equipment; an evacuation plan including signals, evacuation routes and alternate evacuation routes; listing of pertinent first responder emergency phone numbers, and codes for other types of communication devices; and a description of actions that will be performed in the event that a "predictable" emergency occurs.

9. Describe the mechanism which will be used to notify first responders and appropriate local governmental entities that an emergency has occurred. Also describe the mechanism which will be used to notify all applicable governmental agencies when an incident occurs (i.e., TCEQ, Texas Parks and Wildlife, General Land Office, TCEQ Office of Air Quality, Texas Department of Health, and the Texas Railroad Commission).

10. Evidence must be provided that shows coordination with the Local Emergency Planning Committee (LEPC) and any local comprehensive emergency management plan. The applicants should be able to show compliance with SARA Title III.

11. Any medical response capabilities proposed for the facility property must be detailed in the application.

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BASF Beaumont Agro Plant, Beaumont, Texas

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Part B, Section III: Appendix III.A - Compliance History and Applicant Experience

APPENDIX III.A
COMPLIANCE HISTORY AND APPLICANT EXPERIENCE

Hazardous Waste Permit Renewal Application
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BASF Beaumont Agro Facility, Beaumont, Texas

Below is a list of all active solid waste management sites in Texas owned, operated, or controlled by BASF Corporation.

RN Number	Regulated Entity Name	County	Location	Role
RN100600527	AGRI EMPRESA MIDLAND SITE	MIDLAND	6001 W INDUSTRIAL AVE MIDLAND, TX 79706 2841	OWNER OPERATOR
RN100660216	ATHLON SOLUTIONS BAYPORT FACILITY	HARRIS	11200 BAY AREA BLVD PASADENA TX 77507 1714	OWNER OPERATOR
RN111384780	BASF AT KATY	HARRIS	27000 FM 529 RD KATY TX 77493 7868	OWNER OPERATOR
RN100634922	BASF BEAUMONT AGRO PLANT	JEFFERSON	14385 W PORT ARTHUR RD BEAUMONT TX 77705 9290	OWNER OPERATOR, RESPONSIBLE PARTY
RN108024985	BASF BISHOP PLANT	NUECES	5738 COUNTY ROAD 4 BISHOP TX 78343 3308	OWNER OPERATOR
RN105460158	BASF CALDWELL	BURLESON	1112 INDUSTRIAL BLVD CALDWELL TX 77836 1059	OWNER OPERATOR
RN101619690	BASF FREEPORT HARBOR TERMINAL	BRAZORIA	LOCATED E OF FM 1495 AND APPROX 100 FT S OF INTX OF FM 1495 AND SH 288	OWNER OPERATOR
RN100218049	BASF FREEPORT SITE	BRAZORIA	602 COPPER RD FREEPORT TX 77541 3001	OWNER OPERATOR, RESPONSIBLE PARTY
RN100614528	BASF HOUSTON URETHANES	HARRIS	1703 CROSSPOINT AVE HOUSTON TX 77054 3707	OWNER OPERATOR
RN102157294	BASF PALMER LOGISTICS	TARRANT	2710 REGENCY DR STE 100 GRAND PRAIRIE TX 75050 7964	OWNER OPERATOR
RN106902489	BASF PALMER LOSISTICS	HARRIS	1040 LOCKWOOD DR HOUSTON TX 77020 7302	OWNER OPERATOR

APPENDIX III.A
COMPLIANCE HISTORY AND APPLICANT EXPERIENCE

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Facility, Beaumont, Texas

RN Number	Regulated Entity Name	County	Location	Role
RN100225689	BASF PASADENA	HARRIS	4403 LAPORTE HWY 225 PASADENA TX 77501	OWNER OPERATOR, RESPONSIBLE PARTY
RN100641802	BASF ZUNIGA LOGISTICS	WEBB	12013 SARA RD LAREDO TX 78045 1913	OWNER OPERATOR
RN100223379	GRACE PASADENA CATALYST SITE	HARRIS	10001 CHEMICAL RD PASADENA TX 77507 1607	OWNER OPERATOR
RN105514145	HENIFF TRANSPORTATION SYSTEMS	ELLIS	4300 N IH 35 E WAXAHACHIE TX 75165 6617	OWNER OPERATOR
RN105286884	KINGHAM DALTON WILSON BEST TRANSPORTATION	HARRIS	13225 BAYPARK RD PASADENA TX 77507 1107	OWNER OPERATOR
RN101698520	LAKE CREEK RANCH	MCLENNAN	4278 W LAKE CREEK RD RIESEL TX 76682 3503	OWNER OPERATOR
RN100887298	SIKA MBCC US	HARRIS	7100 WRIGHT RD HOUSTON TX 77041 2416	OWNER OPERATOR
RN101625721	TICONA POLYMERS BISHOP FACILITY	NUECES	5738 COUNTY ROAD 4 BISHOP TX 78343 3308	OWNER OPERATOR
RN100660612	TRECORA WAX PASADENA	HARRIS	12500 BAY AREA BLVD PASADENA TX 77507 1308	OWNER OPERATOR

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Administrative NOD Response
Hazardous Waste Permit Renewal Application

BASF Beaumont Agro Plant, Beaumont, Texas
Hazardous Waste Permit No. 50219

Part B Section III Appendix III.B – Personnel Training Plan

GSI Job No. 10426

APPENDIX III.B
PERSONNEL TRAINING PLAN

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

APPENDIX III.B
PERSONNEL TRAINING PLAN

Hazardous Waste Permit Renewal Application

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BASF Beaumont Agro Plant, Beaumont, Texas

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1.0 SCOPE AND OBJECTIVES

1.1 Basis for Personnel Training Plan

This plan provides an overview of training conducted at the BASF Beaumont Agro Plant (BASF) facility. Note that the permitted units in this Hazardous Waste Permit Application only manage non-hazardous waste. Therefore, this Personnel Training Plan has been prepared using the requirements in Subpart B of the 40 Code of Federal Regulations (CFR) Part 264 regulations as a general guideline for training requirements.

1.2 Overview of Personnel Training Plan

This plan describes the training program developed by BASF that teaches employees to perform their duties in a way that ensures general safe practices and handling of materials. The training program is directed by BASF management or designees trained or experienced in waste management and is designed to teach facility personnel waste management procedures and safety practices relevant to the positions in which they are employed.

2.0 TRAINING OUTLINE

The BASF training program is designed to ensure that facility personnel can perform their duties safely and respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems. Training may be provided by classroom, computer-based, or on-the-job instruction. Specific topics selected for training are tailored to job requirements. Training topics may include the following:

1. *Emergency response procedures*, including i) using, inspecting, repairing, and replacing facility emergency and monitoring equipment; ii) shutting down equipment during emergency conditions; iii) operating communications or alarm systems; iv) responding to fires or explosions; v) responding to spills or process upsets; and vi) shutting down operations under scheduled or non-emergency conditions.

2. *Contingency Plan* implementation.

3. Hazardous waste management procedures relevant to the positions in which staff are employed, e.g.:

    - Selection and use of personal protective equipment (PPE);
    - Waste Analysis (e.g., waste acceptance process);
    - Safe Handling of Waste (e.g., sampling procedures, treatment/storage/disposal requirements, container management procedures);
    - and Chemical Safety;

3.0 TRAINING SCHEDULE

3.1 Initial Training

Facility personnel must successfully complete job-specific training within six months after the date of their employment or assignment to a new position, whichever is later. The training is pertinent to the personnel's responsibilities regarding the management of waste in their own work area.

3.2 Annual Review

BASF institutes an annual retraining program in which job-specific training topics are reviewed. Annual training may be administered in the classroom or through computer-based training.

An eight-hour Occupational Safety and Health Administration (OSHA) refresher will also be completed annually for emergency response personnel and Site Shift Supervisors.

Note: Facility employees may receive emergency response training pursuant to OSHA regulations [29 CFR 1910.120(p)(8) and 1910.120(q)]. If this is the case, separate emergency response training is not required under this training plan.

4.0 JOB POSITION REQUIREMENTS AND TRAINING DOCUMENTATION

BASF maintains the following documents and records:

- Job titles for each position at the facility related to waste management and the name of the employee filling each job;
- Written job descriptions for each position with a listed job title. The description includes the skill level, education, or qualifications required, as well as duties assigned to each position;
- A written description of the type and amount of both introductory and continuing training that will be given to each person filling a listed job position; and
- Records documenting that the training or job experience requirements have been met by facility personnel.

Training records on current personnel will be kept until closure of the facility. Training records on former employees will be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

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Part B Section III Appendix III.C – Security Plan

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APPENDIX III.C
SECURITY PLAN

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

APPENDIX III.C
SECURITY PLAN

Hazardous Waste Permit Renewal Application

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1.0 BASIS FOR SECURITY PLAN

This plan provides a description of the security plan for the BASF Beaumont Agro Plant (BASF) facility. Note that the permitted units in this Hazardous Waste Permit Application only manage non-hazardous waste. Therefore, this Security Plan has been prepared using the requirements in Subpart B of the 40 CFR Part 264 regulations, 40 CFR 270.14, and 30 Texas Administrative Code (TAC) 335.152(a) as general guidelines for security plans and procedures to be implemented to protect public health, safety, and the environment. Plans must be in place at each hazardous waste management facility to prevent access of unauthorized persons to the facility.

2.0 SECURITY PROCEDURES

BASF implements site security measures to prevent inadvertent or unauthorized entry by persons or livestock to the facility, in general accordance with 40 CFR 264.14, as adopted by 30 TAC 335.152(a)(1). Site security is maintained by means of security fencing, warning signs, access controls, and inspections, as described below.

- *Access Controls:* Access to the facility is controlled by means of a fence and locked gates. The entrance is monitored 24 hours per day to prevent unknowing entry to the facility and to minimize the possibility of unauthorized entry (except during periods of evacuation, such as for a major hurricane). Visitors must register with the guard posted at the gate and obtain permission prior to entering the facility.

- *Security Fencing:* The BASF facility is surrounded by a six-foot high chain link security fence. There are two gates located along West Port Arthur Road that are used to access the facility. One gate is located in the northern portion of the facility, and the other gate is located in the southern portion of the facility. The northern gate is manned 24-hours per day and serves as the main access to the facility. The southern gate is manned when in-use. Several other gates for personnel entry and exit are kept locked when not in use.

- *Warning Signs:* Warning signs are posted at each entrance and spaced along the fence line so that they can be seen from any approach to the active facility. The legend on the signs indicates that only authorized personnel are allowed to enter, and that entry can be dangerous (e.g., “Danger – Unauthorized Personnel Keep Out”). The legend on each sign is written in English and Spanish and signs are visible from a distance of at least twenty-five feet.

- *Inspections:* The perimeter fence and warning signs are inspected on a regular basis as specified in the BASF Inspection Plan and Table III.D.

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Part B Section III Appendix III.D – Inspection Plan

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APPENDIX III.D
INSPECTION PLAN

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APPENDIX III.D
INSPECTION PLAN

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Table

Table III.D Inspection Schedule

1.0 SCOPE AND OBJECTIVES

1.1 Basis for Inspection Plan

This plan describes inspection procedures for waste management unit equipment, structural components, and safety equipment at the BASF Beaumont Agro Plant (BASF) facility. Note that the permitted units in this Hazardous Waste Permit Application only manage non-hazardous waste. Therefore, this Inspection Plan has been prepared using the requirements in Subpart B of the 40 CFR Part 264 regulations, 40 CFR 270.14, and 30 Texas Administrative Code (TAC) 335.152(a) as general guidelines for inspection plans and procedures to be implemented to protect public health, safety, and the environment.

1.2 Overview of Inspection Plan

This plan describes the inspection procedures employed at the BASF. The purpose of the inspection plan is to identify operator oversights, structure or equipment malfunctions and deterioration, and discharges which may be causing or lead to a release of waste constituents to the environment or a threat to human health or the environment.

2.0 INSPECTION ACTIVITIES

BASF personnel, or other designated persons, inspect units and equipment associated with hazardous waste management, at a minimum, at frequencies specified in Table III.D. Items for inspection and possible problems to evaluate during the inspections are also summarized in Table III.D.

If problems are identified during the inspections, BASF remedies the problems (e.g., deterioration or malfunction of equipment or structures) on a schedule which ensures that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action is taken immediately or as soon as safely feasible.

Relevant items are inspected in accordance with the schedule provided on Table III.D, as follows:

- Non-hazardous waste tanks listed on the Hazardous Waste Permit;
- Piping and valves;
- Site security devices including fencing, warning signs, and gates;
- Dike walls and berms; and
- Safety and emergency equipment.

3.0 RECORDKEEPING

BASF personnel, or other designated persons, who conduct the inspections will record them in an inspection log or summary. Inspection records are kept for at least three

years from the date of the inspection. At a minimum, inspection records include the date and time of inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

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APPENDIX III.D
INSPECTION PLAN

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TABLE

Table III.D Inspection Schedule

Table III.D- Inspection Schedule

Facility Unit(s) and Basic Elements	Possible Error, Malfunction, or Deterioration	Frequency of Inspection
Fence integrity	damaged or broken fencing	Weekly
Sign appearance, integrity	Missing or illegible signs	Weekly
Gates - integrity, operations, locks	Gates fail to close or lock	Weekly
Alarms and Telephone operation	Alarms and telephones not functioning	Weekly
Radio operations	Radios not functioning	Weekly
Spill control equipment	Missing or deteriorated condition	Weekly
Fire control equipment	Equipment missing or not working properly	Weekly
Tanks F-414A, F-414B, F-414C, WB-502A, WB-502B, WB-1765, WB-1767	Integrity of the tanks, ancillary equipment, and secondary containment are inspected for signs of corrosion, leaks, and/or other damage	As Needed

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Part B Section III Appendix III.E – Contingency Plan

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APPENDIX III.E
CONTINGENCY PLAN

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GSI ENVIRONMENTAL

APPENDIX III.E
CONTINGENCY PLAN

Hazardous Waste Permit Renewal Application

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1.0 SCOPE AND OBJECTIVES

1.1 Basis for Contingency Plan

This Contingency Plan provides information on emergency response plans and capabilities at the BASF Beaumont Agro Plant (BASF) facility. Note that the permitted units in this Hazardous Waste Permit Application only manage non-hazardous waste, and the BASF facility has an Emergency Action Plan with detailed instructions for responding to a variety of contingencies. Therefore, this Contingency Plan has been prepared using the requirements in 40 CFR 270.14 and 30 Texas Administrative Code (TAC) 335.152(a) as a general guideline to protect public health, safety, and the environment and prevent releases of wastes or waste constituents to the environment. The facility's Emergency Action Plan is a more detailed and comprehensive set of emergency responses; however, its fundamental objective aligns with that of this Contingency Plan.

1.2 Overview of Contingency Plan

This Contingency Plan describes actions to be taken in response to hazardous waste and other waste emergencies at the BASF facility. Implementing this plan will serve to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of waste or waste constituents (hazardous or non-hazardous) to air, soil, or surface water. In the event that one of these occurrences could threaten human health or the environment, the provisions of this plan will be carried out immediately or as soon as safely feasible.

1.3 Contingency Plan Organization and Maintenance

Key components of this plan include:

Topic	Location
Emergency procedures for waste management	Section 4.0 of this plan
Arrangements with local authorities	Table III.E.1
BASF emergency coordinators	Table III.E.2
BASF emergency equipment	Table III.E.3, Figure III.E.1
BASF evacuation plan and routes	Section 4.0, Figure III.E.1

Copies of the contingency plan and revisions to the plan will be maintained at BASF. Local Emergency Planning Committee and fire department have a copy of the Emergency Action Plan, which contains all the components of this Contingency Plan. Also, the contingency plan will be reviewed and amended as necessary, when one of the following events occurs:

- The facility permit is revised;
- The plan fails in an emergency;
- The facility changes its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions

or other releases of hazardous waste constituents, or changes the response necessary in an emergency;

- The list of emergency coordinators changes (see Table III.E.2); or
- The list of response agencies changes (see Table III.E.1).

2.0 PREPAREDNESS AND PREVENTION

2.1 Facility Design and Operation

BASF is authorized by TCEQ to manage a variety of wastes, including hazardous wastes. However, the permitted units included in this application only manage non-hazardous wastes. Additionally, the non-hazardous waste permitted tanks are situated within concrete secondary containment areas which are surrounded by curbs or dikes to prevent the release of waste.

BASF operations include activities such as loading and unloading, storing, and processing wastes. Precautions are taken during hazardous and non-hazardous waste management to maintain and operate the facility to minimize the possibility of fires, explosions, or any unplanned sudden or non-sudden releases of hazardous waste or hazardous waste constituents to air, soil, or surface water, which could threaten human health or the environment. Example precautions include the following:

- Personnel training on waste handling and testing, as well as hazard recognition and reporting. Employees will receive initial training on the BASF Beaumont Site Emergency Action Plan, refresher training annually. Initial training and refresher training will be tracked using the Learning Management System. Other training will be tracked in the production areas when an employee transfers between jobs.
- Loading and unloading bulk wastes only in concrete pad areas with curbs and/or dikes and/or sloped to drain to sumps;
- Fire prevention and housekeeping programs;
- A personnel training program to train staff on location and proper operation equipment (see Appendix III.B – Personnel Training Plan);
- Inspections to verify that equipment is in good working order (see Appendix III.D - Inspection Plan);
- Maintenance of safety and alarm systems;
- Immediate access to internal alarm or emergency communication device(s) for personnel involved in hazardous waste handling operations;
- Selection and use of personal protective equipment (PPE).

2.2 Required Equipment

The BASF facility is equipped with various types of emergency equipment and systems, including internal and external communication systems, alarm systems, fire control equipment with water at adequate volume and pressure to supply the water hose streams, fire extinguishers, and spill control and decontamination equipment.

The approximate locations of emergency equipment are shown in Figure III.E.1.

2.3 Testing and Maintenance of Equipment

BASF communications and alarm systems, fire protection equipment, spill control equipment, and decontamination equipment are tested and maintained to ensure proper operation at the time of an emergency. Equipment inspections and frequency are outlined in Table III.D in Appendix III.D - Inspection Plan of this hazardous waste permit application.

2.4 Arrangements with Local Authorities

In order to coordinate with local authorities, BASF has provided organizations that could potentially be involved in emergency response with information regarding facility operations, as summarized in Table III.E.1. The local police and fire departments, hospitals and emergency care centers, hazardous material response team, and the sheriff's department have been provided with a copy of the facility's Emergency Action Plan, which includes the information contained in the Contingency Plan (and any updates) and other relevant information to provide familiarity with the following:

- ***Facility Access:*** The layout of the facility including places where facility personnel would normally be working, entrances to and roads inside the facility, and possible evacuation routes.

- ***Hazards Associated with Wastes Managed On Site:*** Volumes of hazardous and non-hazardous waste handled at the facility and potential hazards associated with the wastes handled at the facility, including:

    - The types of injuries or illnesses which could result from fires, explosions, or releases at the facility; and
    - Physical properties of wastes (e.g., reactive, corrosive, etc.) and precautions that may be needed when responding to emergencies.

Note that only a single police department and a single fire department would respond to an emergency (i.e., Jefferson County Sheriff's Office or Beaumont Fire Department); therefore, no designation of primary emergency authority is necessary as referenced in 40 CFR 264.37(a)(2).

3.0 PERSONNEL AND RESPONSIBILITIES

3.1 BASF Emergency Coordinators

The designated emergency coordinators are thoroughly familiar with all aspects of the contingency plan for the facility, operations and activities at the facility, the location and characteristics of waste handled, the location of records within the facility, and the facility layout.

At all times, there will be at least one employee on the facility premises or on call (available to respond to an emergency by reaching the facility within a short period of time) with the

responsibility for coordinating emergency response measures, as specified in 40 CFR 264.55.

Table III.E.2 lists the names of the BASF Emergency Coordinator and at least two alternatives.

3.2 BASF Personnel

Facility personnel are trained in aspects of the contingency plan relevant to their job duties, as indicated in the facility training plan (see Appendix III.B – Personnel Training Plan).

4.0 EMERGENCY PROCEDURES

4.1 Overview

BASF has instituted a number of measures to prevent emergency situations; however, if such an event occurs, BASF implements a pre-planned response, as described in the Emergency Action Plan for the facility. The BASF Emergency Coordinator, or designee, takes all reasonable measures to ensure that fires, explosions, spills, and air releases do not occur, recur, or spread to other locations as required by 40 CFR 264.56(e).

4.2 Response Actions

If the BASF Emergency Coordinator, or designee, determines that the fire, spill, or air release is not resolved after the initial discovery and response actions described in Sections 4.2, then the following actions will be taken. In the cases described below the Emergency Coordinator is also referred to as the Incident Commander in the Emergency Action Plan. For the purpose of this Contingency Plan the two terms are interchangeable.

4.2.1 Evaluate and Assess Incident

- *Evaluate Magnitude of Incident:* The BASF Emergency Coordinator, or designee, evaluates fire, spill, or air release to determine whether an actual or imminent emergency is occurring as follows:
  - If the incident is localized and has been effectively managed by the initial response conducted under Section 4.2, then proceed to Section 4.4.
  - If an emergency is imminent or actual, then the BASF Emergency Coordinator, or designee, proceeds with the following actions.

- *Assess Character of Incident:* The BASF Emergency Coordinator, or designee, identifies the character, source, amount, and extent of released materials, if any, by observation or review of facility records, manifests, or chemical analysis.

- *Assess Hazards of Incident:* The BASF Emergency Coordinator, or designee, assesses possible hazards to human health or the environment that may result from the fire, spill, or air release. Also, both the direct and indirect effects are considered for the fire or explosion.

4.2.2 Gather at Assembly Points

If an emergency is imminent or actual, then the BASF Emergency Coordinator, or designee, will contact the Main Gate, and the security officer at the Main Gate activates the Site alarm system to alert all facility personnel. In the event that the Main Gate is involved in the emergency, then the emergency notification system can be activated remotely from several locations around the Site.

- Personnel proceed to Assembly Area;
- Personnel remain at the Assembly Area until a headcount is completed, the head count is provided to the facility's Emergency Response Team representative, and further instructions are received from the BASF Emergency Coordinator, or designee.

4.2.3 Monitor

If BASF stops operations in response to a fire, spill, or air release, the BASF Emergency Coordinator, or designee, will monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment. Monitoring will only be conducted from a safe location by instrumentation or visual observation. If the facility must be evacuated (see Section 4.3.5), then monitoring will be discontinued.

4.2.4 Notify Local Agencies

If an emergency is imminent or actual, then the BASF Emergency Coordinator, or designee, notifies local agencies for assistance. Local authorities who may be contacted in an emergency are listed on Table III.E.1.

4.2.5 Evacuate Facility

If necessary, as indicated by the character and hazard of the incident, the BASF Emergency Coordinator, or designee, calls for evacuation of all or part of facility via evacuation routes shown on Figure III.E.1.

4.2.6 Determine if Local Areas Should be Evacuated [30 TAC 335.153(1)]

- First, the BASF Emergency Coordinator, or designee, determines if the fire, spill, or release threatens human health and the environment outside the facility.
- If yes, then the BASF Emergency Coordinator, or designee, determines if the evacuation of local areas is advisable.
- If yes, then the BASF Emergency Coordinator, or designee, immediately notifies the local authorities listed on Table III.E.1 of the need to evacuate local areas.
- The BASF Emergency Coordinator, or designee, remains available to help local authorities to decide whether local areas should be evaluated.

4.3 Notifications for Regulatory Agencies

The BASF Emergency Coordinator, or designee, determines which of the following categories the emergency falls into:

1. For a release which could threaten human health or the environment outside the facility, see Section 4.4.1.
2. For a release of a reportable quantity, see Section 4.4.2.
3. For an incident for which the Contingency Plan is implemented, but the area outside the facility is not threatened and the release is not a reportable quantity, see Section 4.4.3.

4.3.1 Releases Which Could Threaten Human Health or the Environment Outside the Facility

As soon as possible, but no later than 24 hours after discovery, the BASF Emergency Coordinator, or designee, notifies the National Response Center at 1-800-424-. The notification includes the following information:

- Name and telephone number of reporter;
- Name and address of the facility;
- Time and type of incident (e.g., release, fire);
- Name and quantity of material(s) involved, to the extent known;
- The extent of injuries, if any; and
- The possible hazards to human health, or the environment, outside the facility, where this is applicable.

4.3.2 Releases of Reportable Quantities

As soon as possible, but not later than 24 hours after the discovery, the BASF Emergency Coordinator, or designee, notifies the State of Texas Spill-Reporting Hotline at 1-800-832-8224 per 30 TAC 327.3. Note that a reportable discharge or spill is a discharge or spill of oil, petroleum product, used oil, hazardous substances, industrial solid waste, or other substances into the environment in a quantity equal to or greater than the reportable quantity listed in 30 TAC 327.4 in any 24-hour period. The notification includes the following information:

- Name, address and telephone number of the person making the report;
- The names, addresses, and telephone numbers of the responsible person and the contact person at the location of the discharge or spill, if different than the person making the report;
- Date, time, and location of the spill or discharge;
- A specific description or identification of the oil, petroleum product, hazardous substances or other substances discharged or spilled;
- An estimate of the quantity discharged or spilled;

- Duration of the incident;
- Name of the surface water or a description of the waters in the state affected or threatened by the discharge or spill, if any;
- Source of the discharge or spill;
- A description of the extent of actual or potential water pollution or harmful impacts to the environment, if any, and an identification of any environmentally sensitive areas or natural resources at risk;
- A description of any actions that have been taken, are being taken, and will be taken to contain and respond to the discharge or spill;
- Any known or anticipated health risks;
- Identity of any governmental representatives, including local authorities or third parties, responding to the discharge or spill; and
- Any other information that may be significant to the response action.

4.3.3 Incident for which Contingency Plan is implemented, but area outside the facility is not threatened and is not a reportable release:

The BASF Emergency Coordinator, or designee, will determine whether the Contingency Plan has been implemented for each incident that is not considered i) a release which could threaten human health or the environment outside the facility, or ii) a reportable release as defined under 30 TAC 327.3 and.4. If the Contingency Plan is determined to have been implemented, the BASF Emergency Coordinator, or designee, will submit a written report to the TCEQ Executive Director. The report will be submitted within 15 days of the incident and will contain the following information:

- Name, address and telephone number of owner or operator;
- Name, address and telephone number of the facility;
- Date, time, and type of incident (e.g., release, fire);
- Name and quantity of material(s) involved;
- The extent of injuries, if any;
- An assessment of the actual or potential hazards to human health, or the environment, outside the facility, where this is applicable; and
- Estimated quantity and disposition of recovered material that resulted from the incident.

4.4 Remedial Actions

The BASF Emergency Coordinator, or designee, will implement measures as soon as practicable after an emergency to treat, store, and/or dispose recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility. The BASF Emergency Coordinator, or designee, will also ensure, that in the affected area(s) of the facility:

- No waste that may be incompatible with the released material will be treated, stored, or disposed until clean-up procedures are completed; and
- All emergency equipment used during the incident will be cleaned and suitable for potential use before operations are resumed.

4.5 Waste Management

Spill cleanups will be managed in accordance with the nature of the contaminant. Wash water used to clean equipment or impacted areas during or after the incident will be managed appropriately (e.g., pumped into an aboveground storage tank for treatment and disposal via deep well injection). BASF will demonstrate whether the recovered material is hazardous or non-hazardous in accordance with applicable regulatory standards.

4.6 Follow-up Reporting for Reportable Releases

Within 30 working days of the discovery of a reportable discharge or spill as defined under 30 TAC 327.3 and 4, the BASF Emergency Coordinator, or designee, will submit written documentation detailing the incident and the adequacy of the response action to the TCEQ Region 12 Manager in accordance with 30 TAC 327.5(c).

4.7 Recordkeeping

The date, time, and details of any incident that requires implementing the Contingency Plan will be noted in the facility operating record.

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APPENDIX III.E
CONTINGENCY PLAN

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

TABLES

Table III.E.1 Arrangements with Local Authorities
Table III.E.2 Emergency Coordinators
Table III.E.3 Emergency Equipment

Table III.E.1- Arrangements with Local Authorities

Police

Address	Jefferson County Sheriff's Office 1001 Pearl St #103, Beaumont, Texas 77701
Person Contacted	Sheriff Zena Stephens
Phone Number	(409) 835-8411
Agreed Arrangements	Will provide information as required by Emergency Action Plan

Fire

Address	Jefferson County Emergency Services District #3 3554 S. Pine Island Rd., Beaumont, Texas 77713
Person Contacted	President, Doug Saunders
Phone Number	(409) 735-2419
Agreed Arrangements	Will provide information as required by Emergency Action Plan

Hospital

Address	Christus St. Elizabeth Hospital 2830 Calder Ave., Beaumont, Texas 77702
Person Contacted	Emergency Room Manager
Phone Number	(409) 892-7171
Agreed Arrangements	Will provide information as required by Emergency Action Plan

Other

Organization Name	Department of Homeland Security
Address	620 Esplanade St. Stage, Lake Charles, Louisiana 70607
Person Contacted	Emergency Operator
Phone Number	(337) 477-2112
Agreed Arrangements	Will provide information as required by Emergency Action Plan

Other

Organization Name	Federal Aviation Administration
Address	8410 Lockheed Ave., Houston, Texas 77061
Person Contacted	Emergency Operator
Phone Number	(713) 847-1400
Agreed Arrangements	Will provide information as required by Emergency Action Plan

Other

Organization Name	Federal Bureau of Investigation
Address	2615 Calder Ave. #320, Beaumont, Texas 77702
Person Contacted	Emergency Operator
Phone Number	(409) 832-8571
Agreed Arrangements	Will provide information as required by Emergency Action Plan

Table III.E.2 - Emergency Coordinators

Name	Home Address	Office Phone(s) and/or Pager	Home Phone(s)
Primary			
Primary Brenda L. Neely	Available upon request, BASF Staff have this info available	409-981-5139 (office) 979-292-5782 (cell)	No home phone

Name	Home Address	Office Phone(s) and/or Pager	Home Phone(s)
Alternate Kendra Derrick	Available upon request, BASF Staff have this info available	409-981-5184 (office) 409-249-8574 (cell)	No home phone
Alternate Sheryl Kavetza	Available upon request, BASF Staff have this info available	513-675-4908 (office / cell)	No home phone

Table III.E.3- Emergency Equipment

Equipment	Location	Physical Description	Capability
Spill Control Equipment	Areas where non-hazardous wastes are unloaded, stored and/or processed	Secondary Containment: Sumps and dikes or curbs. Sumps constructed of concrete and equipped with pumps. Dike wall heights vary. Curbs and dikes are of concrete construction.	Contain potential releases from tanks or containers.
Spill Control Equipment	Facility-wide	Pumps	Pump rate varies.
Spill Control Equipment	Facility-wide	Absorbent material (cat litter or vermiculite); absorbent booms, socks, or snakes.	Absorb liquid spills.
Emergency Response/ Alarms	Critical equipment related to personnel operations	Emergency Alarm System manual is located at the Main Gate	Activated manually and can be heard anywhere in the facility to alert facility personnel of an emergency situation and issue emergency instructions.
Emergency Response/ Alarms	Facility-wide	Communication Systems: Telephones and two-way radios.	Provide communication between buildings and personnel.
Fire Response	Facility-wide	Fire Extinguishers	Extinguish small fires.
First Aid	Facility-wide	Safety Showers/Eye Wash Stations.	Available for immediate use to externally flush eyes and other body parts of individuals who may be splashed with chemicals.
First Aid	Maintenance and Control Room	Defibrillator.	Administers electric shock to the heart through the chest wall in the event of cardiac arrest.

Equipment	Location	Physical Description	Capability
First Aid	Administration Building, Maintenance, and Control Room	First Aid Kits: Typically includes bandages, burn and cut antiseptic medication, icepacks, pain medication, tourniquets, and first aid guide.	Minor first aid treatment for sickness and injury such as bruises, minor burns, and lacerations.
Personal Protection Equipment	HAZMAT Trailer and Emergency Response Vehicles	Self-contained Breathing Apparatus (SCBA): Portable breathing air cylinder and respirator.	Provide respiratory protection in oxygen deficient and other atmospheres.

APPENDIX III.E
CONTINGENCY PLAN

Hazardous Waste Permit Renewal Application

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FIGURE

Figure III.E.1 Emergency Equipment Locations and Evacuation Routes

MUSTER STATIONS LOCATION
1 Fire Station Reporting
2 Mobile Muster Stations
18 Muster Stations Total

SEVERE WEATHER SHELTERS
1. Administration Building
2. Maintenance Lunch Room
3. I/E Shop Lunch Room
4. Packout Lunch Room
5. Beaumont North Control Room
6. Beaumont North Office Building
7. Gate 2 Guard House
8. DMTA Control Room
9. P.I.L. Lab Building
10. Central Lab Building
11. WOD Control Room

EVACUATION MUSTER LOCATION
1. Administration Building
2. Gate 2 Guard House
3. Waste Well Data Room

WIND SOCKS

EVACUATION ROUTES

LANDING ZONE

LEGEND

- Fence
- Railroad
- Pipe Rack
- BASF Property Boundary

N

Notes:

1. Plant N.E. Corner Coordinate Values:
   Plant No./So. (+ / -) Coord. = 0
   Plant Ea./We. (+ / -) Coord. = 0
   Deg. North Latitude = 29°58' 22.5"
   Decimal Degrees Latitude = 9.972916°
   Deg. West Latitude = 94°3' 13.9"
   Decimal Degrees Latitude = 94.053861°
   UTM Coordinates (Universal Transverse Mercator):
   Easting = 398325
   Northing = 3316070.5
2. Base map provided by BASF on 14 April 2025.

GSI ENVIRONMENTAL
Texas Geoscience Firm
Registration Number: 50243

GSI Job No.	10426	Drawn By:	CDM
Map ID:	003_01	Chk'd By:	MW
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	Not to Scale	**FIGURE III.E.1**	

EMERGENCY EQUIPMENT LOCATIONS AND EVACUATION ROUTES

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Part B Section IV – Wastes and Waste Analysis

Contents

- Part B Application Form, Section IV
- Part B, Section IV: Tables
- Part B, Section IV: Appendix IV.D - Waste Analysis Plan

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Part B Application Form, Section IV

IV. Wastes and Waste Analysis

Provide all Part B responsive information in Appendix IV. When preparing the physical format organize your submittal using the Format of Hazardous Waste permit Application and Instructions.

A. Waste Management Information

For a new hazardous waste management facility or for a facility hazardous waste management capacity expansion, complete Table IV.A. - Waste Management Information for each waste, source, and volume of waste to be stored, processed, or disposed of in the facility units to be permitted as required by 30 TAC 305.50(a)(9). For on-site facilities, list "on-site" for the waste source. For off-site facilities, list the source of the waste. If unknown, identify potential sources (e.g., industries/processes to be serviced).

B. Waste Managed In Permitted Units

For all hazardous waste management facilities and for inclusion into a permit, complete Table IV.B. - Wastes Managed In Permitted Units for each waste and debris to be managed in a permitted unit. Provide a description, EPA waste codes, and TCEQ waste form codes and classification codes. Guidelines for the Classification & Coding of Industrial Wastes and Hazardous Wastes, TCEQ publication RG-22, contains guidance for how to properly classify and code industrial waste and hazardous waste in accordance with 30 TAC 335.501-335.515 (Subchapter R).

Applicants need not specify the complete 8-digit waste code formulas for their wastes but must include the 3-digit form codes and 1-digit classification codes. This allows the applicant to specify major categories of wastes in an overall manner without having to list all the specific waste streams as generated.

C. Sampling and Analytical Methods

For inclusion into a permit, complete Table IV.C. - Sampling and Analytical Methods for each waste and debris proposed to be sampled and analyzed and include sampling location, sampling method, sample frequency, analytical method, and desired accuracy level for each waste and debris to be managed in a permitted, storage, processing, or disposal unit at the facility.

D. Waste Analysis Plan

The Waste Analysis Plan must address the requirements of 40 CFR §264.13 and §268.7. The Plan should include supplemental and coordinating information on how the facility will analyze wastes and debris (as listed in Table IV.B) to be managed in permitted units. The plan must address the determination of land disposal restrictions. Generators must determine and certify with the manifest the land disposal restriction status of a waste, even if the waste or debris is not intended for land disposal. Land disposal treatment facilities must identify the treatment process and analytical procedures to be used, and include them in the waste analysis plan. Land disposal restriction records must be maintained at the facility until closure of the facility [40 CFR §264.73(b)]. Landfill facilities must determine through the Paint Filter Liquids Test (SW-846 Method 9095) if there is free liquid in a bulk or containerized waste to be landfilled. If so, it must be stabilized; adding adsorbents alone is not acceptable, even for containerized waste.

For off-site facilities the waste analysis plan must specify procedures which will be used to inspect and, if necessary, analyze each movement of industrial and hazardous waste or hazardous debris received at the facility to ensure it matches the identity of

the waste designated on the accompanying shipping ticket. The plan must describe methods which will be used to determine the identity of each movement of waste and debris managed at the facility and sampling method used if the identification method includes sampling in order to store, process, or dispose of the wastes and debris in accordance with 40 CFR Parts 264 and 268 and any abnormal characteristics which may upset further treatment or processing operations. Include rejection criteria for shipments of waste and debris received at the facility

For on-site facilities the waste analysis plan must specify the normal characteristics of the waste (including EPA hazardous waste codes, EPA hazard codes, and 40 CFR Part 261, Appendix VIII Hazardous Constituents) which must be known to store, process, or dispose of the wastes and debris in accordance with 40 CFR Parts 264 and 268 and any abnormal characteristics which may upset further treatment or processing operations.

The methods and equipment used for sampling waste materials will vary with the form and consistency of the waste materials to be sampled. Those sampling methods listed in 40 CFR Part 261 Appendix I, for sampling waste with properties similar to the indicated materials, or equivalent sampling methods approved by EPA under 40 CFR §260.20 and §260.21, will be considered by the TCEQ to be acceptable.

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Part B, Section IV: Tables

Contents

- Table IV.A – Waste Management Information
- Table IV.B – Wastes Managed in Permitted Units
- Table IV.C – Sampling and Analytical Methods

Table IV.A. - Waste Management Information

Waste Type(s)	Source	Volume (tons/year)
Not Applicable - facility is not a new hazardous waste facility and there is no facility expansion		

Table IV.B. - Wastes Managed In Permitted Units

No.	Waste	EPA Hazardous Waste Numbers	TCEQ Waste Form Codes and Classification Codes
1	DMTA Unit Wastewater	-	20002071
2	Wastewater from Dicamba processing unit	-	70011011

Notes:

1. Waste data provided above obtained from the TCEQ Notice of Registration dated 25 February 2025 for the BASF Beaumont Agro Plant in Beaumont, Texas.

Table IV.C - Sampling and Analytical Methods

Waste No.[1]	Sampling Location	Sampling Method[2]	Frequency	Parameters	Test Methods[2]	Desired Accuracy Level[3]
1	Sample ports of DMTA Clear Water Tank 1767	SW-846; dipper or equivalent device	Continuously or once per day by grab sample	pH	SW846 9040C	+/- 0.1 units
			Initially and will review or sample when facility processes change, process upset occurs, or every 3 years	Volatile Organic Compounds	SW846 8260C	Method Detection Limit
				Semi Volatile Organic Compounds	SW846 8270E	Method Detection Limit
				Total Petroleum Hydrocarbon	TCEQ TX 1005	Method Detection Limit
				Metals	SW846 6010D	Method Detection Limit
				Mercury	SW846 7470A	Method Detection Limit
				Cyanide, Reactive	SW846 9012	Method Detection Limit
				Sulfide, Reactive	SW846 9034	Method Detection Limit
				Flashpoint	SW846 1010	</> 140˚F
				Corrosivity	EPA 940	No numerical criteria specified by regulation
				Specific Gravity	ASTM 4052-96	No numerical criteria specified by regulation

Table IV.C - Sampling and Analytical Methods

Waste No.[1]	Sampling Location	Sampling Method[2]	Frequency	Parameters	Test Methods[2]	Desired Accuracy Level[3]
2	Sample ports of Dicamba Clear Water Tank 414A	SW-846; dipper or equivalent device	Continuously or once per day by grab sample	pH	SW846 9040C	+/- 0.1 units
			Initially and will review or sample when facility processes change, process upset occurs, or every 3 years	Volatile Organic Compounds	SW846 8260C	Method Detection Limit
				Semi Volatile Organic Compounds	SW846 8270E	Method Detection Limit
				Total Petroleum Hydrocarbon	TCEQ TX 1005	Method Detection Limit
				Metals	SW846 6010D	Method Detection Limit
				Mercury	SW846 7470A	Method Detection Limit
				Cyanide, Reactive	SW846 9012	Method Detection Limit
				Sulfide, Reactive	SW846 9034	Method Detection Limit
				Flashpoint	SW846 1010	</> 140°F
				Corrosivity	EPA 940	No numerical criteria specified by regulation

1 from Table IV.B, first column.

2 Sampling and Test/Analysis methods should be specified in enough detail to allow determination of whether they are suitable and correct for the purpose indicated while allowing flexibility in selection and future updates to the specified method. Standard methods, such as those from SW-846, will generally require no further submittal. Non-standard and proprietary methods may require additional information to determine suitability. ASTM methods may require submittal of a copy of the specified method.

3 Desired Accuracy Level should provide a specified numeric minimum performance level (maximum acceptable reporting limit) for method detection and quantitation limits that will be accepted from the laboratory performing the analysis and must ensure that reported data will allow determinations of compliance with regulatory limits for the parameter tested.

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Hazardous Waste Permit Renewal Application

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Part B, Section IV: Appendix IV.D - Waste Analysis Plan

PART B APPLICATION
ATTACHMENT IV.D – WASTE ANALYSIS PLAN

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

Note that Table III-1 of Part A application and Table IV.B of Part B application include only the waste codes for the wastes managed in the existing and active permitted tanks listed in Table III-2 of Part A application. The facility manages other hazardous and non-hazardous wastes as listed on the facility's Notice of Registration; however, hazardous wastes are only managed in permit-exempt units and not in permitted units. Note that the existing and active permitted tanks listed in Table III-2 only manage non-hazardous wastes.

GSI Job No. 10426
Issued: 4 September 2025

APPENDIX IV.D
WASTE ANALYSIS PLAN

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

1.0 INTRODUCTION AND FACILITY OVERVIEW

The BASF Beaumont Agro Plant (BASF Beaumont) facility utilizes five permitted Class I injection wells for the disposal of non-hazardous industrial process wastewater: Well Nos. 5, 6, 7, 8, and 9 (WDW-155, -201, -301, -302, and -433, respectively). Injection primarily occurs into the permitted Lower Miocene formation and the Frio formation, at depths ranging from approximately 3,800 feet to 8,250 feet below ground surface.

2.0 WASTE GENERATION AND SOURCES

The BASF Beaumont facility is authorized to inject non-hazardous aqueous liquid wastes generated primarily from the manufacturing processes of herbicides, specifically from the Dicamba and Dimethenamid (DMTA) units. Waste streams originate from various points within these processes where contact with raw materials, intermediates, or products may occur.

Additional authorized waste sources include:

- The Formulations, Filling, and Packaging (FFP) unit, which processes final products and generates wastewater from cleanups and loading/unloading activities.
- General plant operations (e.g., tank farms, utilities wastewater).
- Non-hazardous wash waters and cleaning solutions for process equipment.
- Compatible, non-hazardous streams received from off-site BASF facilities (e.g., Hannibal, Missouri; Total Petrochemical, Port Arthur, Texas) and approved third-party facilities (e.g., Jayhawk, Galena, Kansas) since 2018. Note that the Jayhawk facility produces a formulation for BASF, using BASF technology, and only sends the non-hazardous wastes generated from this specific process to BASF for disposal. As part of this arrangement, BASF pays Jayhawk to formulate the product and assumes the disposal costs.

3.0 WASTE MANAGEMENT AND PROCESSING

Wastewater streams are collected and managed in designated tank systems before injection, including:

- The “414 Tank Farm” (Tanks F-414A, F-414B, and F-414C) receiving Dicamba, FFP, and off-site wastes, typically feeding Wells 5, 6, and 9.
- DMTA wastes from Tanks WB-502A, WB-502B, WB-1765, and WB-1767 typically feeding Wells 7 and 8.

While streams can be commingled for pH management, the facility maintains operational flexibility to route compatible waste streams to active injection well as needed.

4.0 WASTE CLASSIFICATION AND CHARACTERISTICS

All injected waste streams are classified as non-hazardous industrial wastes under Texas Commission on Environmental Quality (TCEQ) regulations, as listed in Table IV.B. Consequently, the wastes do not carry U.S. Environmental Protection Agency (EPA) hazardous waste codes.

Key characteristics of the composite waste stream include:

- Chemically stable, clear to amber liquid
- Permitted pH range: > 2.0 to < 12.5
- Permitted Specific Gravity: < 1.20 g/ml at 20°C
- Estimated Viscosity: 1 centipoise at 68°F
- No radioactive elements

5.0 WASTE ANALYSIS AND MONITORING PLAN

The sampling and analysis information are summarized in Table IV.C.

6.0 OFF-SITE GENERATED NON-HAZARDOUS WASTES

Prior to bringing any new waste stream to BASF Beaumont, each off-site location must provide documentation of the hazardous waste determination for the waste stream to the BASF Beaumont Environmental Health & Safety (EHS) Group for approval. Documentation must consist of waste analysis or appropriate process knowledge as described under 40 Code of Federal Regulations (CFR) 261.

Prior to accepting a tank truck, the off-site generator must also provide a 1-quart jar for testing in the BASF Beaumont Quality Assurance (QA) laboratory. Parameters to be analyzed include the following:

- Flash point	> 150F
- Specific gravity	>0.99 to <1.20
- pH	>2.0 to <12.5
- Compatibility at 1:1 ratio	No exothermic reaction, precipitant forming, or off gassing

The unloading location will be at: i) B-548 sump, which is located north of the DCSA roll-off staging area; ii) B-514, which is located south of the roll-off staging area; or iii) S-440 sump, which is located at sand filter area. BASF will stop all transfers if there are any indications of leaks or unusual odors. When unloading off-site wastes from a truck, the site-specific check sheet, including waste manifest and testing results verification, must be used and turned in with truck paperwork to BASF Beaumont supervision.

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Part B Section V – Engineering Reports

Contents

- Part B Application Form, Section V
- Part B, Section V: Appendix V.A - General Engineering Report
- Part B, Section V: Appendix V.C.1 – Engineering Report for Tanks F-414A, F-414B, and F-414C
- Part B, Section V: Appendix V.C.2 – Engineering Report for Tank WB-1767
- Part B, Section V: Appendix V.C.3 – Engineering Report for Tanks WB-502A, WB-502B, and WB-1765
- Part B, Section V: Appendix V.C.4 – Secondary Containment Calculation for Permitted Tanks

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Hazardous Waste Permit No. 50219

Part B Application Form, Section V

V. Engineering Reports

Provide all Part B responsive information in Appendix V. When preparing the physical format organize your submittal using the Format of Hazardous Waste permit Application and Instructions.

For multiple units provide an include all Part B responsive information in a separate Appendix for each unit.

The engineering report represents the conceptual basis for the storage, processing, or disposal units at the hazardous waste management (HWM) facility. It should include calculations and other such engineering information as may be necessary to follow the logical development of the facility design. Plans and specifications are an integral part of the report. They should include construction procedures, materials specifications, dimensions, design capacities relative to the volume of wastes (as appropriate), and the information required by 40 CFR 270.14(b)(8), 270.14(b)(10). Since these reports may be incorporated into any issued permit, the report should not include trade names, manufacturers, or vendors of specific materials, equipment, or services unless such information is critical to the technical adequacy of the material. Technical specifications and required performance standards are sufficient to conduct a technical review. For landfills, surface impoundments, and waste piles, a Construction Quality Assurance Plan, which considers the guidance in EPA publication 530-SW-85-014, Minimum Technology Guidance on Double Liner Systems for Landfills and Surface Impoundments; Design, Construction, and Operation, and/or EPA/600/R-93/182, Quality Assurance And Quality Control For Waste Containment Facilities, should be submitted.

For facilities which will receive wastes from off-site sources, the engineering report must also contain information on the units which will manage these off-site wastes in accordance with 30 TAC 335.45(a).

Certain ancillary components or appurtenant devices must be addressed in the Part B application. These include but are not limited to sumps, pipelines, ditches, and canals. The technical information and the level of detail required will vary with the nature, scope, and location of the ancillary component. At a minimum they should be included in descriptions of piping and process flow. More information may be required. A single area containing a large number of ancillary components or a remote appurtenant device in an unusually sensitive location may warrant some specific permit requirements. All ancillary components must be included in calculating closure cost estimates.

In each of the unit-specific sections, describe precautions taken to prevent accidental commingling of incompatible wastes. If reactive or ignitable wastes are to be managed, or if incompatible wastes are deliberately commingled, provide information to ensure that precautions are taken to avoid danger due to:

- generation of extreme heat or pressure, fire, explosion, or violent reaction;
- production of uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health;
- production of uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosion;
- damaging the structural integrity of the device or facility containing the waste; or
- threatening human health or the environment by any other means.

Comprehensive consideration should be given to ensure that the facility is designed in accordance with good public health and hazardous waste management practices. The application will be evaluated primarily for the aspects of design covered by the regulations. Nothing in any approval is intended to relieve the facility owner or operator of any liabilities or responsibilities with respect to the design, construction, or operation of the project.

A. General Engineering Reports

1. General Information

Complete Table V.A. - Facility Waste Management Handling Units listing all past, current or proposed units. *[Indicate units' status as* Active, Closed, Inactive *(built but not yet managing waste)*, Proposed *(not yet built)*, Never Built, Transferred, or Post-Closure*. Indicate appropriate units for Capacity information.]* **Note for renewals and modifications involving adding or dropping units from the permit:** List all TCEQ Permit Unit Numbers that have been assigned previously as in a current permit Attachment D -Authorized Facility Units table and do not reuse or reassign permit numbers for units that have been replaced, closed, removed from the permit, or transferred to other ownership. All Notice of Registration (NOR) Numbers must match the State of Texas Environmental Electronic Reporting System (STEERS) and may not be reused for replacement units.

Provide an overall plan view of the entire facility. Identify each hazardous or industrial solid waste management unit (container storage area, tank, incinerator, etc.) to be permitted in relation to its location and the type of waste managed in that unit. Also provide a plan view at an appropriate scale to clearly show the location of all hazardous waste management units to be permitted on one or more 8 1/2" x 14" sheets. Indicate on this plan view how the design or operation provides for buffer zones or waste segregation as appropriate for incompatible, ignitable, or reactive wastes.

Submit a topographic map or maps of the facility which clearly shows the information specified in 40 CFR 270.14(b)(19), 270.14(c)(3), and 270.14(d)(1)(i) (for large HWM facilities, the TCEQ will allow the use of other scales on a case-by-case basis). Please note that the term "facility" includes all contiguous land, structures, other appurtenances, and improvements on the land for storing, processing, or disposing of hazardous and industrial solid waste.

2. Features to Mitigate Unsuitable Site Characteristics

For all new hazardous waste management storage and/or processing facilities or areal expansions of existing hazardous waste management storage and/or processing facilities, include in the engineering report design, construction, and operational information specified in 30 TAC 335.204(a)(1) and (a)(3) through (9).

3. Construction Schedules

a. In order to meet the required design standards, extensive retrofitting of some facilities may be required. In the worst case, the applicant may elect to close certain operations rather than comply with the RCRA standards. Thus, the permit may specify a schedule of compliance requiring the accomplishment of given tasks within specific time frames. As required, indicate an appropriate schedule(s) of compliance in this application. The schedule should provide for facility compliance as soon as possible and in accordance with 40 CFR 270.33(a)(2) and 270.33(b).

b. For commercial hazardous waste management facilities, permit applications (new, renewal, or interim status applications), major amendments, and Class 3 modifications must include a construction schedule. A construction schedule must be submitted even if the application does not include an addition of units or a revision to permitted units. This schedule should comply with the requirements of 30 TAC 305.149.

4. Provide detailed plans and specifications which when, accompanied by the engineering report, will be sufficiently detailed and complete to allow the Executive Director to ascertain whether the facility will be constructed and operated in compliance with all pertinent permitting requirements. Engineering plans and specifications must be prepared under the supervision of and sealed by a licensed Professional Engineer, with current license, along with the Registered Engineering Firm's name and Registration Number as required by the Texas Engineering Practice Act. For some facilities, plans in the form of a standard piping and instrumentation diagram will be sufficient. Overall dimensions and materials of construction must be shown.

B. Container Storage Areas

1. Provide an engineering report which includes all of the information specified in 40 CFR 264.170-264.173, 264.175-264.177, and 270.15.
Complete Table V.B - Container Storage Areas and list the container storage areas covered by this application to be permitted. List the N.O.R. unit number, the rated capacity or size of each unit (including the maximum number of each type of container to be stored at each unit and total maximum capacity of all types wastes stored in the unit), the areal dimensions, containment volume, aisle space requirements, whether ignitable, reactive, or incompatible waste will be stored in each unit, and whether processing will occur within the unit.

2. Container storage areas must have a containment system that is capable of collecting and holding spills, leaks, and precipitation. In addition to the requirements of 40 CFR 270.15, the design report should include the following:

a. Capacity of the containment relative to the number and volume of containers to be stored; in addition, for unenclosed areas, the amount of rainfall collected prior to removal. The TCEQ recommends using a 25-year, 24-hour rainfall event for this extra capacity; and

b. Run-on into the containment system must be prevented, or a collection system with sufficient excess capacity must be provided. If run-on is collected within the containment system, delineate the area(s) from which run-on is collected. The 25-year, 24-hour rainfall event should be used to calculate the excess capacity.

3. Wastes Containing No Free Liquids
With the exception of 40 CFR 264.175(d), storage areas that hold only wastes that do not contain free liquids need not have a containment system, provided that compliance with 40 CFR 264.175(c) is demonstrated. This demonstration must be submitted as part of the application and must include:

a. test procedures and results or other documentation or information to show that the wastes do not contain free liquids; and

b. a description of how the storage area is designed or operated to drain and remove liquids or how containers are kept from contact with standing

liquids.

4. Managing Ignitable or Reactive Wastes

   If a container storage area will manage ignitable or reactive waste, as indicated on Table V.B, provide in the engineering report drawings demonstrating compliance with the buffer zone requirement of 40 CFR 264.17 and 264.176.

5. Managing Incompatible Wastes

   If a container storage area will manage incompatible waste, as indicated on Table V.B, provide in the engineering report a description of the procedures used to ensure compliance with 40 CFR 264.17 and 264.177.

6. Managing Nonhazardous Wastes and/or Universal Wastes

   If a container storage area will manage nonhazardous wastes, and/or universal wastes in addition to hazardous waste, provide a description of all types of wastes managed in the engineering report and procedures used to ensure compliance with 40 CFR 264 Subpart I.

C. Tanks and Tank Systems

Provide an engineering report which includes all of the information specified in 40 CFR 264.190-264.194, 264.196, 264.198-264.199, and 270.16.

1. For inclusion into a permit, complete Table V.C - Tanks and Tank Systems and list the tanks covered by this application to be permitted. List the N.O.R. unit number, whether the unit is for storage and/or processing, the waste managed in each unit, the rated capacity of each unit, overall dimensions of each unit, containment volume, and whether ignitable, reactive, or incompatible waste will be stored in each unit.

2. For inclusion into a permit, complete Table V.C - Tanks and Tank Systems and list the tanks covered by this application to be permitted. List the N.O.R. unit number, whether the unit is for storage and/or processing, the waste managed in each unit, the rated capacity of each unit, overall dimensions of each unit, containment volume, and whether ignitable, reactive, or incompatible waste will be stored in each unit.

3. If a tank will manage incompatible waste, as indicated on Table V.C, describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.17 and 264.199.

4. Submit written assessments that were reviewed and certified by an independent, qualified licensed Professional Engineer that attests to the structural integrity and suitability of handling the hazardous waste for each tank system, as required under 40 CFR 264.191-264.192 for existing tanks which do not have secondary containment meeting the standards of 40 CFR 264.193. The engineer signing the written assessment must make the certification specified in 40 CFR 270.11(d). The certification must be sealed by a licensed Professional Engineer, with current license, along with the Registered Engineering Firm's name and Registration Number as required by the Texas Engineering Practice Act.

5. If a tank has been de-rated or if the permitted capacity is otherwise different from the design capacity, specify any such change(s) in the engineering report.

Provide in the report any additional information for tanks and tank systems as specified in the above regulatory citations including: specifics of leak, spill, and unfit for use systems responses; assessments of tank systems; new tank systems or components; overfill control and prevention; special requirements for ignitable and/or reactive wastes; incompatible wastes; air emissions control; detection of leaks into secondary containment; ancillary equipment; and plans and specifications individually sealed by a licensed professional engineer with current Texas registration with the Registered Engineering Firm's name and Registration number.

D. Surface Impoundments

For Surface Impoundments Closed as a Landfill

1. Provide as-built plans and specifications for the final cover system, individually for each unit that is sealed, signed and dated by a licensed professional engineer with current Texas registration along with the Registered Engineering Firm's name and Registration Number would satisfy this requirement; Other as-built plans and specifications for the unit may be submitted upon request.

2. Complete Table V.D.1 - Surface Impoundments and list the surface impoundments, covered by this application, to be permitted. List the waste(s) managed in each unit and the rated capacity or size of each unit.

3. Complete Table V.D. 6. - Surface Impoundment Liner System for each surface impoundment to be permitted.

For Proposed or Active Surface Impoundments

Provide an engineering report which includes all of the information specified in 30 TAC 305.50(a)(6), 335.168, 335.169, and 40 CFR 264.19, 264.220, 264.221, 264.222, 264.223, 264.226(a) and (c), 264.227, 264.229-264.231, and 270.17.

For storage surface impoundments at a new hazardous waste management facility or which are part of an areal expansion of an existing hazardous waste management facility, include in the engineering report design, construction, and operational information specified in 30 TAC 335.204(d). For any surface impoundment to be closed as a landfill (where wastes will remain after closure of the impoundment) at a new hazardous waste management facility or which are part of an areal expansion of an existing hazardous waste management facility, include in the engineering report design, construction, and operational information specified in 30 TAC 335.204(e).

For all impoundments, include in the report the following information.

1. Complete Table V.D.1 - Surface Impoundments and list the surface impoundments, covered by this application, to be permitted. List the waste(s) managed in each unit and the rated capacity or size of each unit.

2. If a surface impoundment will manage ignitable or reactive waste, as indicated on Table V.D.1., describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.17 and 264.229.

3. If a surface impoundment will manage incompatible waste, as indicated on Table V.D.1., describe in the engineering report the procedures used to ensure

compliance with 40 CFR 264.17 and 264.230.

4. If a surface impoundment will manage F020, F021, F022, F023, F026, and F027 waste, as indicated on Table V.D.1, describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.231.

5. Describe the surface impoundment. Detailed plan view and cross-sectional drawings of the surface impoundment should be included with the engineering report.

6. Freeboard
Specify the minimum freeboard to be maintained and the basis of the design to prevent overtopping resulting from normal or abnormal operations; overfilling; wind and wave action; rainfall; run-on; malfunctions of level controllers, alarms, and other equipment; and human error. Show that adequate freeboard will be available to prevent overtopping from a 100-year, 24-hour storm. [40 CFR 264.221(g)]
If the impoundment is inflow sensitive, it should be equipped with a high-level alarm based on a different level sensor than that used for automatic control.

7. Waste Flow
Describe the means that will be used to immediately shut off the flow of waste to the impoundment to prevent overtopping or in the event of liner failure, and include appropriate detailed drawings.
If the surface impoundment is a flow-through facility describe the flow of waste, including a hydraulic profile.

8. Dike Construction

   a. If dikes are used, download the dike design and materials of construction engineering certification from the attachments list the following certification as part of the engineering report:

   b. The structural integrity of the dike system must be certified by a qualified Professional Engineer before a permit is issued. If the impoundment is not being used, the dike licensed system must be certified before it can be put into use. The certification must be sealed by a licensed Professional Engineer, with current license, along with the Registered Engineering Firm's name and Registration Number as required by the Texas Engineering Practice Act.

   c. A report shall accompany the dike certification which summarizes the activities, calculations, and laboratory and field analyses performed in support of the dike certification. Describe the design basis used in construction of the dikes. Provide the following analyses as attachments to the engineering report (A Quality Assurance Project Plan <QAPP> should be included in the report to ensure that each analysis is performed appropriately):

      (1) Slope Stability Analysis
      (2) Hydrostatic and Hydrodynamic Analysis
      (3) Storm Loading
      (4) Rapid Drawdown

   d. Earthen dikes should have a protective cover to minimize wind and water erosion and to preserve the structural integrity of the dike. Describe the

protective cover used and describe its installation and maintenance.

9. Containment System

We suggest that the applicant use available recognized guidance documents, such as EPA publication 530-SW-85-014, which provide design guidance for liner systems. The applicant is strongly encouraged to test each synthetic liner after installation by an electrical leak location test, such as the electric field method described in EPA Technical Guidance Document EPA/600/R-93/182, Quality Assurance and Quality Control for Waste Containment Facilities, or an equivalent method, such as those found in ASTM publications, and approved by the Executive Director. Construction above the liner may not proceed until any detected leaks are sealed.

a. Complete Table V.D. 6. - Surface Impoundment Liner System for each surface impoundment to be permitted.

b. In the engineering report, describe the design, installation and operation of liner and leak detection components. The description must demonstrate that the liner and leak detection system will prevent discharge to the land, and ground and surface water. Include the following analyses as attachments to the engineering report (A QAPP should be included in the report to ensure that each analysis is performed appropriately):

For artificial liners:

(1) Seaming method
(2) Surface preparation method
(3) Tensile Strength
(4) Impact Resistance
(5) Compatibility Demonstration
(6) Foundation Design (including Settlement Potential, Bearing Capacity and Stability, and Potential for Bottom Heave Blow-out)

For soil liners:

(1) Waste Migration Analysis (based on head, porosity, and permeability) for the most mobile and least attenuated waste constituents
(2) Atterberg Limits, % passing a #200 sieve, and Permeability
(3) Moisture Content
(4) Standard Proctor Density, Compaction Data

For leachate collection systems:

(1) Pipe Material and Strength
(2) Pipe Network Spacing and Grading
(3) Collection Sump(s) Material and Strength
(4) Drainage Media Specifications and Performance
(5) Analyses showing that pipe and pipe perforation size will prevent clogging and allow free liquid access to the pipe.
(6) Compatibility Demonstration
(7) Capacity of System
    (a) rate of leachate removal
    (b) capacity of sumps
    (c) thickness of mounding and maximum hydraulic head

c. Specify the liner system installation date and expected lifetime of liner system (years).

d. Specify whether the liner is chemically resistant to the waste and how this resistance was determined. Attach any tests or documentation to the engineering report.

e. Submit a quality assurance/quality control plan for all components to demonstrate that all components will be properly installed and will perform to design specifications.

f. Submit a Response Action Plan that proposes actions to be taken if the Action Leakage Rate for the surface impoundment exceeds. At a minimum the Response Action Plan must include the requirements of 40 CFR 264.223.

10. Surface impoundments that receive waste on or after May 8, 1985 (or for newly-regulated units, the effective date of the new RCRA regulation) into new units and/or lateral expansions or replacements of existing units must meet the minimum technological requirements of the Hazardous and Solid Waste Amendments of 1984, unless an appropriate waiver is granted by the Commission. The owner or operator of each new surface impoundment unit for which the construction commences after January 29, 1992, or each lateral expansion of an existing surface impoundment unit where construction commences after July 29, 1992, or replacement of an existing surface impoundment unit that commence reuse after July 29, 1992 must install two or more liners and leachate collection and removal system unless commission approves alternate design or operating practices. Plans and specifications for both new and existing surface impoundments must demonstrate conformity with 30 TAC 335.168 and 40 CFR 264.221

11. Run-on Diversion

    Describe in detail how the surface impoundment system will manage stormwater run-on away from the surface impoundment. Stormwater run-on must be diverted away from a surface impoundment. Use at least a 100-year, 24-hour rainfall event in the design and analysis of diversion structures. Where dikes are used to divert run-on, they must be protected from erosion. Include all analyses used to calculate run-on volumes.

12. The Commission may approve an alternate design or operating practice for a surface impoundment if the owner or operator demonstrates that such design or operating practices, together with location characteristics [40 CFR 264.221(d)]:

    a. Will prevent the migration of hazardous constituents into the groundwater or surface water at least as effectively as the liners and leachate collection and removal system required by 40 CFR 264.221; and

    b. Will allow detection leaks of hazardous constituents through the top liner at least as effectively.

13. Exemption from Double-Liner Requirements for Monofills [264.221(e)]

    Owners or operators of hazardous waste surface impoundment monofills will be exempted from the double-liner requirements if the Commission finds, based on a demonstration by the owner or operator, that alternative design and

operating practices, together with location characteristics are at least as effective as a double liner in preventing migration of hazardous constituents to the groundwater or surface water. If an exemption is sought, submit detailed plans and engineering and hydrogeologic reports, as appropriate, describing alternate design and operating practices that will, in conjunction with location aspects, prevent the migration of any hazardous constituents into the groundwater or surface water at any future time.

E. Waste Piles

This section applies to owners or operators of industrial solid waste facilities that store or process hazardous waste in piles. A hazardous waste pile that will be closed with wastes left in place must be managed as a landfill. Existing portions of waste piles are those areas that were listed on the original Part A and on which wastes have been lawfully placed.

For Waste Piles Closed as a Landfill

1. Provide as-built plans and specifications for the final cover system, individually for each unit that is sealed, signed and dated by a licensed professional engineer with current Texas registration along with the Registered Engineering Firm's name and Registration Number would satisfy this requirement; Other as-built plans and specifications for the unit may be submitted upon request.
2. Complete Table V.E.1 - Waste Piles and list the waste piles covered by this application. List the waste managed in each unit and the rated capacity or size of the unit.
3. Complete Table V.E. 3 - Waste Pile Liner System and specify the type of containment/ liner system.

   Provide an engineering report which includes all of the information specified in 30 TAC 335.170 and 40 CFR 264.19, 264.250, 264.251, 264.252-264.253, 264.254(a) and (c), 264.256, 264.257, 264.259, and 270.18.

   For waste piles at a new hazardous waste management facility or which are part of any areal expansion of an existing hazardous waste management facility, include in the engineering report design, construction, and operational information specified in 30 TAC 335.204(c).

   For all waste piles, include in the report the following information.

   1. For inclusion into a permit, complete Table V.E.1 - Waste Piles and list the waste piles covered by this application. List the waste managed in each unit and the rated capacity or size of the unit.
   2. If a waste pile will manage ignitable or reactive waste, as indicated on Table V.E.1, describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.17 and 264.256.
   3. If a waste pile will manage incompatible waste, as indicated on Table V.E.1, describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.17 and 264.257.
   4. If a waste pile will manage F020, F021, F022, F023, F026, and F027 waste, as indicated on Table V.E.1, describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.259.

5. Describe the waste pile, including any structure surrounding or enclosing the waste pile.

6. Containment System
We suggest that the applicant use available recognized guidance documents, such as EPA publication 530-SW-85-014, which provide design guidance for liner systems. The applicant is strongly encouraged to test each synthetic liner after installation by an electrical leak location test, such as the electric field method described in EPA Technical Guidance Document EPA/600/R-93/182, Quality Assurance and Quality Control for Waste Containment Facilities, or an equivalent method, such as those found in ASTM publications, and approved by the Executive Director. Construction above the liner may not proceed until any detected leaks are sealed.

   a. For inclusion into a permit, complete Table V.E. 3 - Waste Pile Liner System and specify the type of containment/liner system.

   b. In the engineering report, describe the design, installation, construction, and operation of the liner and leachate collection system. The description must demonstrate that containment systems will prevent discharge to the land, surface water, or groundwater. Include the following analyses as attachments to the engineering report, when applicable to the containment system being described (A QAPP should be included in the report to ensure that each analysis is performed appropriately):

For artificial liners:

(1) Seaming method
(2) Surface preparation method
(3) Tensile Strength
(4) Impact Resistance
(5) Compatibility Demonstration
(6) Foundation Design (including Settlement Potential, Bearing Capacity and Stability, and Potential for Bottom Heave Blow-out)

For soil liners:

(7) Waste Migration Analysis (based on head, porosity, and permeability) for the most mobile and least attenuated constituents.
(8) Atterberg Limits, % passing a #200 sieve, and Permeability
(9) Moisture Content
(10) Standard Proctor Density, Compaction Data

For leachate detection, collection, and removal system:

(11) Capacity of system
   (a) rate of leachate removal
   (b) capacity of sumps
   (c) thickness of mounding and maximum hydraulic head
(12) Pipe Material and Strength
(13) Pipe Network Spacing and Grading
(14) Collection Sump(s) Material and Strength
(15) Drainage Media Specifications and Performance

(16) Analysis showing that pipe and perforation size will prevent clogging and allow free liquid access to the pipe.
(17) Compatibility Demonstration

c. Containment/liner system installation date and expected lifetime of liner system (years).

d. Specify whether the containment/liner system is chemically resistant to the waste and how this resistance was determined. Attach any tests or documentation to the engineering report.

e. Submit a quality assurance/quality control plan for all components to demonstrate that all components will be properly installed and will perform to design specifications.

f. Submit a Response Action Plan that proposes actions to be taken if the Action Leakage Rate for the waste pile exceeds. At a minimum the Response Action Plan must include the requirements of 40 CFR 264.253.

7. Wind Dispersal [30 TAC 335.170(j)]

Waste piles containing hazardous waste which could be subject to dispersal by wind must be covered or otherwise managed so that wind dispersal is minimized. Describe practices to control wind dispersal (e.g., cover or frequent wetting) of the hazardous waste.

8. Run-on Diversion [30 TAC 335.170(g)]

Describe in detail the measures used to control and divert run-on from the unit. The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the pile during peak discharge from at least a 100-year, 24-hour storm.

Include all analyses used to calculate: flow rates; run-on volume and depth; and back-water calculations for the ditches on plant property.

Any tanks or basins associated with the run-on control systems must be emptied or otherwise managed expeditiously after a storm to maintain the design capacity of the system. [30 TAC 335.170(i)]

9. Run-off Control [30 TAC 335.170(h)]

Describe in detail the measures used to control run-off from the unit. Include all analyses used to calculate the run-off volumes.

The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 100-year, 24-hour storm.

Collection and holding facilities (e.g., tanks or basins) associated with the run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain the design capacity of the system. [30 TAC 335.170(i)]

10. Give a description of design and operating procedures to properly manage and/or dispose of any residuals (e.g., leachate) that may be generated during waste management. Describe the management process and any equipment used.

11. Provide a description and list of all equipment and procedures used to place the

waste in or on the waste pile, and how the liner surface will be exposed for inspection, if necessary. A containment system must be protected from plant growth which could puncture any component of the system.

12. Exemption from Liner and Leachate Collection Requirements

The Commission may approve an alternate design or operating practice for a waste pile if the owner or operator demonstrates that such design or operating practices, together with location characteristics [40 CFR 264.251(d)]:

a. Will prevent the migration of hazardous constituents into the groundwater or surface water at least as effectively as the liners and leachate collection and removal system; and

b. Will allow detection leaks of hazardous constituents through the top liner at least as effectively.

13. Exemption from Groundwater Monitoring under 40 CFR 264.250(c)

A waste pile may be exempt from groundwater monitoring if the following standards are met:

a. The waste pile (including its underlying liners) must be located entirely above the seasonal high water table; and

b. The waste pile is inside or under a structure that provides protection from precipitation so that neither run-off nor leachate is generated, provided that:

(1) Liquids or materials containing free liquids are not placed in the pile;

(2) The waste pile is protected from surface water run-on by the structure or in some other manner;

(3) The waste pile is designed and operated to control dispersal of the waste by wind, where necessary, by means other than wetting; and

(4) The waste pile will not generate leachate through decomposition or other reactions; or

c. The waste pile must have a leachate collection and removal system above the top liner; and

d. Underlayment:

(1) either:

(a) The waste pile must be underlain by two liners, which are designed and constructed in a manner that prevents the migration of liquids into or out of the space between the liners and a leak detection system which must be designed, constructed, maintained, and operated between the liners to detect any migration of liquids into the space between the liners; and

(b) A demonstration must be made that there is a low potential for migration of liquid from the waste pile to the uppermost aquifer during the life of the waste pile (including the closure period). The owner or operator must base any predictions made on assumptions that maximize the rate of liquid migration;

(2) or:

(a) The waste pile must be underlain by a liner (base) that is designed, constructed, and installed in a manner that prevents the migration of liquids or waste beyond the liner; and

(b) The wastes in the waste pile must be removed periodically, and the liner must be inspected for deterioration, cracks, or other conditions that may result in leaks. The frequency of inspection will be specified in the inspection plan and must be based on the potential for the liner (base) to crack or otherwise deteriorate under the conditions of operation (e.g., waste type, rainfall, loading rates and subsurface stability).

The liner(s) used to satisfy V.D.13.d. must be of sufficient strength and thickness to prevent failure due to puncture, cracking, tearing, or other physical damage from equipment used to place waste in or on the pile or to clean and expose the liner surface for inspection.

F. Land Treatment Units

Provide an engineering report which includes all of the information specified in 30 TAC 305.50(a)(6), 335.171, 335.172, 40 CFR 264.270-264.272, 264.273, 264.276, 264.278, 264.279, 264.281-264.283, and 270.20 for each land treatment unit.

For land treatment units at a new hazardous waste management facility or which are part of an areal expansion of an existing hazardous waste management facility, include in the engineering report design, construction, and operational information specified in 30 TAC 335.204(b).

For all land treatment units, include in the report the following information.

1. Complete Tables V.F.1 - Land Treatment Units and V.F.2 - Land Treatment Unit Capacity and list the land treatment units covered by this application. List the waste(s) managed in each unit and the rated capacity or size of the unit. If different wastes are placed on separate portions of the land treatment area, each portion is considered a land treatment unit, and requires a separate summary form and engineering report.

   The treatment zone is defined as the soil area of the unsaturated zone of a land treatment unit within which hazardous constituents are degraded, transformed, or immobilized. In this section, specify the depth of the treatment zone. The maximum depth of the treatment zone for new land treatment units must be [40 CFR 264.271(c)]:

   a. No more than 1.5 meters (5 feet) from the surface; and

   b. More than 1 meter (3 feet) above the seasonal high water table.

2. If a land treatment unit will manage ignitable or reactive waste, as indicated on Table V.F.1, describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.17 and 264.281.

3. If a land treatment unit will manage incompatible waste, as indicated on Table V.F.1, describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.17 and 264.282.

4. If a land treatment unit will manage F020, F021, F022, F023, F026 and F027 waste, as indicated on Table V.F.1, describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.283.

5. Describe the land treatment unit. The report shall include all the information requested in this section including drawings. At a minimum, a plan view and cross-section of the unit should be included with the engineering report.

6. Complete Table V.F.3. - Land Treatment Principal Hazardous Constituents and list the wastes for which the treatment demonstration will be made and the principal hazardous constituents in each waste. Specify in the report the data sources to be used to make the demonstration such as laboratory data, field data, operating data, literature, or other.

7. Run-on Diversion
Describe in detail the measures used to control run-on and divert run-on from the unit. Include all the analyses used to calculate the run-on volumes.
The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the land treatment unit during peak discharge from a 100-year, 24-hour storm. [30 TAC 335.171(3)]
Collection holding facilities (e.g., tanks or basins) associated with the run-on control system must be emptied or otherwise managed expeditiously after storms to maintain the design capacity of the system. [30 TAC 335.171(5)].

8. Run-off Control
Describe in detail the measures used to control the run-off from the unit, and minimize hazardous constituents in the run-off, include all the analyses used to calculate the run-off volumes.
The owner or operator must design, construct, operate and maintain a run-off management system to collect and control at least the water volume resulting from a 100-year, 24-hour storm. [30 TAC 335.171(4)]
Collection and holding facilities (e.g., tanks or basins) associated with run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system. [30 TAC 335.171(5)]

9. Wind Dispersal
The owner or operator of a land treatment unit containing hazardous waste which could be subject to dispersal by wind must cover or otherwise manage the land treatment unit so that wind dispersal is minimized. Describe practices to control wind dispersal (e.g., cover or frequent wetting) of the hazardous waste. [30 TAC 335.171(6)]

10. Treatment Demonstration
A description of the treatment demonstration required under 40 CFR 264.272 and 270.20(a) shall be included with the engineering report. If the owner or operator intends to conduct field tests or laboratory analyses in order to make the demonstration, he must obtain a treatment or disposal permit.

11. The owner or operator must establish an unsaturated zone monitoring program in accordance with 40 CFR 264.278 and a detailed monitoring program must be included in the application.

12. Food Chain Crops [40 CFR 264.276]

Several conditions must be satisfied if food-chain crops are to be grown in or on the treatment zone. A demonstration must be prepared similar to the one described in the Treatment Demonstration and submitted at least 90 days prior to the planting of crops. The demonstration need not be submitted with this application. However, a description of the demonstration must be included as part of the engineering report. This demonstration may be combined with the Treatment Demonstration description, as some of the information required is identical.

G. Landfills

For Closed Landfills

1. Provide as-built plans and specifications for the final cover system, individually for each unit that is sealed, signed and dated by a licensed professional engineer with current Texas registration along with the Registered Engineering Firm's name and Registration Number would satisfy this requirement; Other as-built plans and specifications for the unit may be submitted upon request.

2. Complete Table V.G.1 - Landfills and list the landfills (and number of cells, if applicable) covered by this application. List the waste(s) managed in each unit and the rated capacity or size of the unit. If wastes are segregated in some manner, list the cell number in which wastes are placed next to each waste type.

3. Complete Table V.G.3. - Landfill Liner System and specify the type of liner used for the landfill.

4. Complete Table V.G.4. - Landfill Leachate Collection System used for the landfill.

Provide an engineering report which includes all of the information specified in 30 TAC 305.50(a)(5), (6), (9), (10), and (12), 335.173, 40 CFR 264.19, 264.300, 264.301, 264.302, 264.303(a), 264.304, 264.309, 264.312, 264.313, 264.315-264.317, and applicable requirements of 270.21. The text of the report should be written to supplement engineering plans, specifications, and test results necessary to provide a detailed description of how the landfill will comply with these standards.

For landfills at a new hazardous waste management facility or which are part of an areal expansion of an existing hazardous waste management facility, include in the engineering report design, construction, and operational information specified in 30 TAC 335.204(e).

For all landfills, include in the report the following information.

1. Complete Table V.G.1 - Landfills and list the landfills (and number of cells, if applicable) covered by this application. List the waste(s) managed in each unit and the rated capacity or size of the unit. If wastes are segregated in some manner, list the cell number in which wastes are placed next to each waste type.

2. If a landfill will manage ignitable or reactive waste, as indicated on Table V.G.1, describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.17 and 264.312.

3. If a landfill will manage incompatible waste, as indicated on Table V.G.1, describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.17 and 264.313.

4. If a landfill will manage F020, F021, F022, F023, F026, and F027 waste, as indicated on Table V.G.1, describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.317.

5. Describe the landfill. A plan view and cross-section of the landfill should be included with the engineering report. As appropriate, detailed plan, elevation, cross-section of landfill containment facilities shall be included with the report.

6. Containment System
We suggest that the applicant use available recognized guidance documents, such as EPA publication 530-SW-85-014, which provide design guidance for liner systems. The applicant is strongly encouraged to test each synthetic liner after installation by an electrical leak location test, such as the electric field method described in EPA Technical Guidance Document EPA/600/R-93/182, Quality Assurance and Quality Control for Waste Containment Facilities, or an equivalent method, such as those found in ASTM publications, and approved by the Executive Director. Construction above the liner may not proceed until any detected leaks are sealed.

   a. Complete Table V.G.3. - Landfill Liner System and specify the type of liner used for the landfill.

   b. In the engineering report, describe the design, installation, construction, and operation of the liner and leachate collection system. The description must demonstrate that the liner system will prevent discharge to the land, groundwater, and surface water. The following analyses should be included as attachments to the engineering report (A QAPP should be included in the report to ensure that each analysis is performed appropriately):

For artificial liners:

(1) Seaming method
(2) Surface preparation method
(3) Tensile Strength
(4) Impact Resistance
(5) Compatibility Demonstration
(6) Foundation Design (including Settlement Potential, Bearing Capacity and Stability, and Potential for Bottom Heave Blow-out)

For soil liners:

(7) Waste Migration Analysis (based on head, porosity, and permeability) for the most mobile and least attenuated waste constituents
(8) Atterberg Limits, % passing a #200 sieve, and Permeability
(9) Moisture Content
(10) Standard Proctor Density, Compaction Data

For Leachate Collection System

For incorporation into the permit, complete Table V.G.4. - Landfill Leachate Collection System and Table V.G.5 - Landfill Soil Specifications used for the

landfill.

(11) Capacity of the system:
  (a) rate of leachate removal
  (b) capacity of sumps
  (c) thickness of mounding and maximum hydraulic head
(12) Pipe Material and Strength
(13) Pipe Network Spacing and Grading
(14) Collection Sump(s) Material and Strength
(15) Drainage Media Specifications and Performance
(16) Analyses showing that pipe and pipe perforation size will prevent clogging and allow free liquid access to the pipe.
(17) Compatibility Demonstration

c. State whether the liner system components are chemically resistant to the waste and how this resistance was determined. Attach any tests or documentation to the engineering report.

d. Provide a quality assurance/quality control plan for all components to demonstrate that all components will be properly installed and will perform to design specifications.

e. Whether the leachate collection components are chemically resistant to the waste and how this resistance was determined. Attach any tests or documentation to the engineering report.

f. Provide a Response Action Plan that proposes actions to be taken in the case of exceedance of the landfill Action Leakage Rate. At a minimum the Response Action Plan must include the requirements of 40 CFR 264.304.

7. For Dikes:
   a. Slope Stability Analysis;
   b. Hydrostatic and Hydrodynamic Analyses
   c. Ability to withstand scouring from leaking liner.

8. Landfills that receive waste on or after May 8, 1985 (or for newly-regulated units, the effective date of the new RCRA regulation) into new units and/or lateral expansions or replacements of existing units must meet the minimum technological requirements of the Hazardous and Solid Waste Amendments of 1984, unless an appropriate waiver is granted by the Commission. The owner or operator of each new landfill unit for which the construction commences after January 29, 1992, or each lateral expansion of an existing landfill unit where construction commences after July 29, 1992, or replacement of an existing landfill unit that commence reuse after July 29, 1992 must install two or more liners and leachate collection and removal system unless commission approves alternate design or operating practices. Plans and specifications for both new and existing landfills must demonstrate conformity with 30 TAC 335.173 and 40 CFR 264.301(c).

9. Site Development Plan

   Describe the methods used to deposit waste in the landfill. This description should include rate of waste deposition, waste segregation, average lift size, maximum lift, average cell or trench size, maximum cell or trench size, and other information necessary to depict how the landfill will be developed. Do not

include liner or leachate collection system information, closure information, or handling of special wastes. This will be included elsewhere in the report.

10. Run-on Control [30 TAC 335.173(g)]

    The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the landfill during peak discharge from at least a 100-year, 24-hour storm.

    In the engineering report, include the following analyses:

    a. Run-on volume and depth calculations from the peak discharge of the 100-year, 24-hour storm; and

    b. For ditches on the plant property, back-water calculations.

    Collection and holding facilities (e.g., tanks or basins) associated with the run-on control system must be emptied or otherwise managed expeditiously. [30 TAC 335.173(i)]

11. Run-off Control [30 TAC 335.173(h)]

    The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control the water volume resulting from a 100-year, 24-hour storm.

    Include all analyses used to calculate run-off volumes.

    Collection and holding facilities (e.g., tanks or basins) associated with run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system. [30 TAC 335.173(i)]

12. Wind Dispersal [30 TAC 335.173(j)]

    If the landfill contains any particulate matter which may be subject to wind dispersal, the owner or operator must cover or otherwise manage the landfill to minimize wind dispersal. Based upon the characteristics of the material to be landfilled describe the likelihood of wind dispersal occurring. Describe in detail any method and/or control mechanism used to prevent wind dispersal.

13. Liquid Waste

    If liquid waste or waste containing free liquids is to be stabilized and then placed in the landfill, the procedures used to stabilize the waste must be described in the engineering report. The waste must be treated prior to landfilling using a treatment technology that does not solely involve the use of a material that functions primarily as a sorbent. Provide supporting documentation to verify that an appropriate stabilization procedure is used to comply with 30 TAC 335.175.

14. The Commission may approve an alternate design or operating practice for a landfill if the owner or operator demonstrates that such design or operating practices, together with location characteristics [40 CFR 264.301(d)]:

    a. Will prevent the migration of hazardous constituents into the groundwater or surface water at least as effectively as the liners and leachate collection and removal system; and

    b. Will allow detection leaks of hazardous constituents through the top liner at

least as effectively.

15. Exemption from Double-Liner Requirements for Monofills [264.301(e)]

Owners or operators of hazardous waste monofills will be exempted from the double-liner requirements if the Commission finds, based on a demonstration by the owner or operator, that alternative design and operating practices, together with location characteristics are at least as effective as a double liner in preventing migration of hazardous constituents to the groundwater or surface water. If an exemption is sought, submit detailed plans and engineering and hydrogeologic reports, as appropriate, describing alternate design and operating practices that will, in conjunction with location aspects, prevent the migration of any hazardous constituents into the groundwater or surface water at any future time.

16. Above-grade Benefits

The engineering report must evaluate the benefits, if any, associated with the construction of the landfill above existing grade at the proposed site, the costs associated with the above-grade construction, and the potential adverse effects, if any, which would be associated with the above-grade construction. [TX. Health and Safety Code 361.108]

17. Feasibility Study - Applicable to New Hazardous Waste Landfills or Areal Expansions of Existing Hazardous Waste Landfill

In accordance with the Health and Safety Code Section 361.106 and 30 TAC Section 335.205(a)(2), provide a feasibility study demonstrating that there is no practical, economic, and feasible alternative that is reasonably available to manage the types and classes of hazardous wastes to be disposed of at a proposed new hazardous waste landfill or the areal expansion of an existing hazardous waste landfill.

H. Incinerators

Engineering Report for Combustion Units

For hazardous waste combustion unit which are subject to regulation by 40 CFR Part 63, Subpart EEE, the requirements 30 TAC Chapter 305 and Subchapters I and Q do not apply when the unit becomes subject to Resource Conservation and Recovery Act (RCRA) permit requirements after October 12, 2005 (i.e., new unit), or no longer apply when an owner or operator of an existing hazardous waste management unit demonstrates compliance with the air emission standards and limitations in 40 Code of Federal Regulations (CFR) Part 63, Subpart EEE, except for the following:

1. Those provisions the Executive Director determines are necessary to comply with 40 CFR §264.345(a) and 40 CFR §264.345(c) for Phase I sources or 40 CFR §266.102(e)(1) and (2)(iii) for Phase II sources if the permittee or applicant elects to comply with any of the options listed in 40 CFR §270.235(a) to minimize emissions of toxic compounds from startup, shutdown, and malfunction events;

2. Those standards and associated requirements for particulate matter, hydrogen chloride and chlorine gas, and non-mercury metals that a Phase II area source elects to comply with in 40 CFR §§266.105, 266.106, and 266.107;

3. Those standards for particulate matter in 40 CFR 264.343(c) remain in effect for a Phase I source incinerator that elects to comply with the alternative to the

particulate matter standard under 40 CFR 63.1206(b)(14) and 63.1219(e); and

4. Those provisions that the Executive Director may apply in 30 TAC Chapter 305, Subchapters I and Q, on a case-by-case basis. The Executive Director may require a permittee or an applicant to submit information in order to establish permit conditions under §305.50(a)(15) or (16) and §305.127(1)(B)(iii) or (4)(A) (i.e., risk-based permit conditions).

For hazardous waste combustion units subject to regulation by 40 CFR Part 63, Subpart EEE, some of the information requested in Sections V.H and V.I. will not be applicable for new units or existing units which have submitted a Notification of Compliance in accordance with 40 CFR 63.1207(j) and 63.1210(d), received a Finding of Compliance pursuant to 40 CFR 63.1206(b)(3), and have the associated RCRA permit conditions removed from the permit. Information which is not applicable or no longer applicable should not be included in the Part B application. *[Please note that the TCEQ will require a Finding of Compliance be made prior to modifying the permit by deleting redundant operating parameter limits and standards for the combustion units. Until such time as the permit is modified to delete the redundant RCRA-based operating parameter limits and standards in the permit or the permit is terminated or revoked, the permittee must comply with the RCRA-based conditions specified in the permit. More stringent risk-based permit conditions will remain in the RCRA permit.]*

For the exceptions listed in Items 1.-4., the owner and operator must provide the applicable information requested in the Part B permit application and any additional information required by the Executive Director to establish permit conditions.

As applicable, provide an engineering report which includes all of the information specified in 30 TAC 305.171-305.176, 40 CFR 264.340, 264.342-264.346, 264.347(a), and 270.19. In addition, the Executive Director may require additional information to address the requirements in 30 TAC 305.50(a)(15).

Note: Please review the information provided in the section above entitled "Engineering Report for Combustion Units" and 40 CFR 270.19(e) to determine applicability of standards and associated requirements in 40 CFR Part 264, Subpart O. If the permit contains risk-based permit conditions, please ensure that all applicable supporting information is included in the engineering report.

1. Complete Table V.H.1 - Incinerators and list the incinerators covered by this application and list the waste managed in each unit.

2. Complete Table V.H.2 - Incinerator Permit Conditions, Monitoring, and Automatic Waste Feed Cutoff Systems for each Incinerator.

3. Complete Table V.H.3 - Maximum Constituents Feed Rate for each Incinerator.

4. Complete Table V.H.4 - Maximum Allowable Emission Rates for each Incinerator.

5. For use during the shakedown period, the trial burn period and the period after completion of the initial trial burn, complete Table V.H.5 - Incinerator Permit Conditions, Monitoring, and Automatic Waste Feed Cutoff-Short-Term Operation for each new or modified Incinerator.

6. If an incinerator will manage reactive or incompatible waste, as indicated on Table V.H.1, describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.17.

7. If an incinerator will manage F020, F021, F022, F023, F026, and F027 waste, as

indicated on Table V.H.1, the DRE requirement is 99.9999%.

8. If a trial burn for a modified unit and Comprehensive Performance Test under 40 CFR Part 63, Subpart EEE (HWC MACT) (for all new and modified units) will be performed, designate one or more of the 40 CFR 261 Appendix VIII organic compounds present in the wastes to be incinerated as Principal Organic Hazardous Constituents (POHCs). Selection will be based upon the degree of difficulty of incineration of these compounds and upon their concentration or mass in the waste feed. These POHCs will be used to determine the destruction and removal efficiency (DRE) specified in the performance standards of 40 CFR 264.343 and HWC MACT. In addition, complete Table V.H.8 - Principal Organic Hazardous Constituents.

9. Submit a Quality Control/Quality Assurance Plan for all sampling, analysis, and monitoring activities which will occur in conjunction with the trial burn.

10. As applicable, facilities with existing permits may request that the Executive Director to address permit conditions that minimize emissions from startup, shutdown, and malfunction events in accordance with the options under 40 CFR 270.235 when requesting the removal of permit conditions that are no longer applicable according to 30 TAC 305.175. Please provide the relevant information needed to process the requested option to minimize emissions identified in 40 CFR 270.235(1)(a)(i)-(iii). (30 TAC 305.176)

I. Boilers and Industrial Furnaces

Engineering Report for Combustion Units

For hazardous waste combustion unit which are subject to regulation by 40 CFR Part 63, Subpart EEE, the requirements 30 TAC Chapter 305 and Subchapters I and Q do not apply when the unit becomes subject to Resource Conservation and Recovery Act (RCRA) permit requirements after October 12, 2005 (i.e., new unit), or no longer apply when an owner or operator of an existing hazardous waste management unit demonstrates compliance with the air emission standards and limitations in 40 Code of Federal Regulations (CFR) Part 63, Subpart EEE, except for the following:

1. Those provisions the Executive Director determines are necessary to comply with 40 CFR §264.345(a) and 40 CFR §264.345(c) for Phase I sources or 40 CFR §266.102(e)(1) and (2)(iii) for Phase II sources if the permittee or applicant elects to comply with any of the options listed in 40 CFR §270.235(a) to minimize emissions of toxic compounds from startup, shutdown, and malfunction events;

2. Those standards and associated requirements for particulate matter, hydrogen chloride and chlorine gas, and non-mercury metals that a Phase II area source elects to comply with in 40 CFR §§266.105, 266.106, and 266.107;

3. Those standards for particulate matter in 40 CFR 264.343(c) remain in effect for a Phase I source incinerator that elects to comply with the alternative to the particulate matter standard under 40 CFR 63.1206(b)(14) and 63.1219(e); and

4. Those provisions that the Executive Director may apply in 30 TAC Chapter 305, Subchapters I and Q, on a case-by-case basis. The Executive Director may require a permittee or an applicant to submit information in order to establish permit conditions under §305.50(a)(15) or (16) and §305.127(1)(B)(iii) or (4)(A) (i.e., risk-based permit conditions).

For hazardous waste combustion units subject to regulation by 40 CFR Part 63, Subpart EEE, some of the information requested in Sections V.H and V.I. will not be applicable for new units or existing units which have submitted a Notification of Compliance in accordance with 40 CFR 63.1207(j) and 63.1210(d), received a Finding of Compliance pursuant to 40 CFR 63.1206(b)(3), and have the associated RCRA permit conditions removed from the permit. Information which is not applicable or no longer applicable should not be included in the Part B application. *[Please note that the TCEQ will require a Finding of Compliance be made prior to modifying the permit by deleting redundant operating parameter limits and standards for the combustion units. Until such time as the permit is modified to delete the redundant RCRA-based operating parameter limits and standards in the permit or the permit is terminated or revoked, the permittee must comply with the RCRA-based conditions specified in the permit. More stringent risk-based permit conditions will remain in the RCRA permit.]*

For the exceptions listed in Items 1.-4., the owner and operator must provide the applicable information requested in the Part B permit application and any additional information required by the Executive Director to establish permit conditions.

As applicable, provide an engineering report which includes all of the information specified in 30 TAC 305.50(a)(13), 305.571-573, 40 CFR 266.100 and 266.102 (as incorporated by reference in 30 TAC 335.221 through 335.225), 266.104-266.112, and 270.22. In addition, the Executive Director may require additional information to address the requirements in 30 TAC 305.50(a)(15).

Note: Please review the information provided in the section above entitled "Engineering Report for Combustion Units" and 40 CFR 270.22 to determine applicability of standards and associated requirements in 40 CFR Part 266, Subpart H. Area sources that elect to comply with the standards and associated requirements of 40 CFR 266.105, 266.106, and 266.107 should address those elected standards and requirements in the engineering report. If the permit contains risk-based permit conditions, please ensure that all applicable supporting information is included in the engineering report.

1. Complete Table V.I.1 - Boilers and Industrial Furnaces and list the boilers and/or industrial furnaces covered by this application to be permitted and list the waste managed in each unit.
2. Complete Table V.I.2 - Boiler and Industrial Furnace Permit Conditions, Monitoring, and Automatic Waste Feed Cutoff Systems for each unit.
3. Complete Table V.I.3 - Maximum Constituent Feed Rate for each unit.
4. Complete Table V.I.4 - Maximum Allowable Emission Rates for each unit.
5. For use during the shakedown period, trial burn period and the period after completion of the initial trial burn, complete Table V.I.5 - Boiler and Industrial Furnace Permit Conditions, Monitoring, and Automatic Waste Feed Cutoff Systems-Short-Term Operation for each new or modified unit.
6. If a boiler or industrial furnace will manage reactive or incompatible waste, as indicated on Table V.I.1, describe in the engineering report the procedures used to ensure compliance with 40 CFR 264.17.
7. If a boiler and industrial furnace will manage F020, F021, F022, F023, F026, and F027 waste, as indicated on Table V.I.1, the DRE requirement is 99.9999%.
8. If a trial burn for modified units and Comprehensive Performance Test under 40 CFR Part 63, Subpart EEE (HWC MACT) (for all new and modified units) will be performed, designate one or more of the 40 CFR 261 Appendix VIII organic compounds present in the wastes to be incinerated as Principal Organic Hazardous Constituents (POHCs). Selection will be based upon the degree of difficulty of incineration of these compounds and upon their concentration or mass in the waste feed. These POHCs will be used to determine the destruction and removal efficiency (DRE) specified in the performance standards of 40 CFR 266.104 and HWC MACT. In addition, complete Table V.I.8 - Principal Organic Hazardous Constituents.
9. Submit a Quality Control/Quality Assurance Plan for all sampling, analysis, and monitoring activities.
10. As applicable, facilities with existing permits may request that the Executive Director to address permit conditions that minimize emissions from startup, shutdown, and malfunction events in accordance with the options under 40 CFR 270.235 when requesting the removal of permit conditions that are no longer applicable according to 30 TAC 305.571(b). Please provide the relevant information needed to process the requested option to minimize emissions identified in 40 CFR 270.235(1)(a)(i)-(iii). [30 TAC 305.572(a)(6)]

J. Drip Pads

Provide an engineering report which includes all of the information specified in 40 CFR 264.570-573 and 270.26

1. Complete Table V.J.1. - Drip Pads and list the drip pads, covered by this application, to be permitted. List the N.O.R. unit number, the waste managed in each unit, the rated capacity of each unit, and the overall dimensions of the unit (including perimeter curb or berm height) that will be in contact with the waste.

2. For either new drip pads or existing drip pads for which the owner/operator elects to comply with the synthetic liner requirement of 40 CFR 264.573(b), please complete Table V.J.2. - Drip Pad Synthetic Liner System.

3. In the engineering report, describe the design, installation, construction, and operation of the liner and leakage collection system. The description must demonstrate that the liner system will prevent discharge to the land, groundwater, and surface water. The following analyses should be included as attachments to the engineering report (A QAPP should be included in the report to ensure that each analysis is performed appropriately):

For artificial liners:

a. Seaming method
b. Surface preparation method
c. Tensile Strength
d. Impact Resistance
e. Compatibility Demonstration
f. Foundation Design (including Settlement Potential, Bearing Capacity and Stability, and Potential for Bottom Heave Blow-out)

For Leakage Collection System

g. Capacity of the system:
    (1) rate of leachate removal
    (2) capacity of sumps
    (3) thickness of mounding and maximum hydraulic head
h. Pipe Material and Strength
i. Pipe Network Spacing and Grading
j. Collection Sump(s) Material and Strength
k. Drainage Media Specifications and Performance
l. Analyses showing that pipe and pipe perforation size will prevent clogging and allow free liquid access to the pipe.
m. Compatibility Demonstration

K. Miscellaneous Units

A miscellaneous unit is a unit other than a container, tank, incinerator, boiler, industrial furnace, landfill, surface impoundment, waste pile, underground injection well, land treatment area, drip pad, or unit eligible for an R, D & D permit that is used to process, store, or dispose of hazardous waste.

For each miscellaneous unit for which an operating permit is sought, provide an engineering report which includes all of the information specified in 40 CFR 264.600-264.602, and 270.23.

1. Complete Table V.K - Miscellaneous Units and list the miscellaneous units covered by this application. List the waste managed in each unit and the rated capacity or size of the unit. If the information requested is not applicable, an explanation must be submitted.

2. Provide any other information which is descriptive of the relationship between the miscellaneous unit and the environment. Application information may include design requirements of 30 TAC 305 and 335, 40 CFR Part 264 Subparts I through O, and Part 270 that are appropriate for the miscellaneous unit or portions of the unit being permitted.

3. For a unit which involves combustion, please provide emissions data or a trial burn plan. Tables V.H.1-5 for incinerators or Tables V.I.1-5 for boilers and industrial furnaces may be adapted as appropriate to provide operation, monitoring, and emission information for a miscellaneous combustion unit.

L. Containment Buildings

Complete Table V.L. - Containment Buildings and list the containment buildings covered by this application to be permitted. List the N.O.R. unit number, whether the unit is for storage and/or processing, the waste or debris managed in each unit, the rated capacity of each unit, and the overall dimensions of the unit (including containment wall height) that will be in contact with the waste or debris.

GSI Job No. 10426

Hazardous Waste Permit Renewal Application

BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section V: Appendix V.A – General Engineering Report

GSI Job No. 10426

GSI ENVIRONMENTAL

PART B APPLICATION
APPENDIX V.A - GENERAL ENGINEERING REPORT

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

I, James M. McDade, a registered professional engineer in the State of Texas, certify that the Engineering Report in the Hazardous Waste Permit Renewal Application, dated 14 March 2025 and submitted on 14 April 2025 for the following waste management units at the BASF Beaumont Agro Plant located in Beaumont, Texas, has been prepared in accordance with good engineering practices, requirements of 30 TAC 305.45(a)(8)(A), and the TCEQ RCRA Permit Application (TCEQ-00376, Revised 1 March 2023):

- Tanks F-414A, F-414B, and F-414C (Permit Unit Nos. 07, 09, and 10);
- Tank WB-1767 (Permit Unit No. 08); and
- Tanks WB-502A, WB-502B, and WB-1765 (Permit Unit Nos. 12, 13, and 14).

4 September 2025

James M. McDade, P.E.
State of Texas Registration No. 115868
GSI Environmental Inc.
Texas Registration No. F-1198

INTRODUCTION

This section summarizes the current waste management units at the BASF Beaumont Agro Plant (BASF) facility in Beaumont, Texas, which is an active hazardous waste facility (Hazardous Waste Permit No. 50219). Note that the permitted units (i.e., tanks listed below) only manage non-hazardous wastes, and therefore, are not required to meet the standards of 40 CFR 264 and 40 CFR 270; however, these requirements have been used as a general guide for good engineering practices. The topics listed below are in order of the Part B permit application for the General Engineering Report.

1. General Information

As provided on Table V.A and shown on Figure V.A.6, the facility currently has three tank systems (total of 7 tanks) that store non-hazardous wastewater as part of the pre-injection unit associated with the facility's Class I UIC-permitted injection wells. The active tanks listed in Table V.A are permitted because the facility receives non-hazardous waste from an off-Site tolling facility that manufactures chemicals for BASF and ships the wastewater from the manufacturing process to the BASF Beaumont facility for storage, processing, and disposal. Note that Table V.A also lists those permitted units that were closed previously in 2003.

Individual engineering reports in Section V of this application have been provided for active permitted waste management units (note that while these units are permitted, they do not handle hazardous waste) at the facility, as shown below:

Permit Unit Nos.	Description	Engineering Report Section or Attachment
Section V.C: Tanks or Tank Systems		
7, 9, and 10	**Waste Water Tanks F-414A, F-414B, and F-414C**	**Appendix V.C.1**
8	**Injection Well Head Tank WB-1767**	**Appendix V.C.2**
12, 13, and 14	**Waste Water Tanks WB-502A, WB-502B, and WB-1765**	**Appendix V.C.3**

Safe handling and containment procedures are implemented at the facility in accordance with 40 CFR 270.14(b)(8) and 270.14(b)(10) as described below:

Prevention of Hazards in Unloading Operations [40 CFR 270.14(b)(8)(i)]

For all wastewater tanks (Permit Unit Nos. 7, 9, 10, and 12 through 14) and pre-injection tanks (Permit Unit No. 8), non-hazardous wastes are directly piped to the tanks; therefore, no unloading operations are conducted, thereby effectively preventing contact between personnel and wastes at the tanks.

For offsite wastewater, the wastes are transported via tank trucks to the BASF Beaumont facility's Waste Organic Destruction (WOD) unit and then transferred from the tank trucks into B-548 sump, B-514 sump or S-440 sump in the Sand Filter area. Initial hazard control is exercised at the unloading area where the truck is inspected for damage or leaks. This procedure protects unloading personnel from unanticipated contact with waste materials during the unloading process. In order to ensure that personnel are equipped to handle the wastes during unloading, only previously approved wastes are accepted by the facility.

Prevention of Runoff from Waste Handling Areas [40 CFR 270.14(b)(8)(ii)]

For all tanks (Permit Unit Nos. 7, 8, 9, 10, and 12 through 14), non-hazardous wastes are contained within hard piping, which is located within a secondary containment dike; therefore, any releases from pipes would be contained within the secondary containment dike.

Prevention of Contamination of Water Supplies [40 CFR 270.14(b)(8)(iii)]

All tanks (Permit Unit Nos. 7, 8, 9, 10, and 12 through 14) are enclosed in concrete secondary containment, which will prevent contamination of water supplies.

Mitigation of Equipment Failure and Power Outages [40 CFR 270.14(b)(8)(iv)]

Secondary containment areas for the tanks enclose each storage unit to prevent the release of waste (non-hazardous) due to a power outage or equipment failure.

Prevention of Undue Exposure to Personnel of Hazardous Waste [40 CFR 270.14(b)(8)(v)]

In order to prevent exposure of personnel to hazardous waste, general personnel protection precautions practiced by unloading personnel include: i) wearing protective clothing, ii) eye and/or face protection, iii) hard hats, and iv) respiratory protection (as appropriate). Fire extinguishers are maintained at the unloading areas. Eye wash and safety shower units are also located throughout the site.

Prevention of Releases to Atmosphere [40 CFR 270.14(b)(8)(vi)]

All tanks are handled or operated to prevent releases to the atmosphere by remaining closed except when adding or removing wastes.

Traffic Patterns, Estimated Volumes, and Descriptions of Access Roads [40 CFR 270.14(b)(10)]

Off-site wastes received from BASF Hannibal Missouri Site and JayHawk Fine Chemicals Corporation are transported using tank trucks. Approximately 3.87 million pounds of wastes per year are transported to the site. The roads within the loading/unloading area are paved. All other wastes are transported to the tanks via pipeline.

Facility Maps Required by 40 CFR 270.14

For Figures required to meet the requirements of 40 CFR 270.14(b)(19), 270.14(c)(3), and 270,14(d)(1(i), the following table provides the regulatory citation, a summary of the requirement, and the figure provided in this application which satisfies that requirement.

Regulatory Citation (40 CFR Pt 270)	Requirement	Figure(s)
14(b)(19)	**Topographic map showing a distance of 1,000 feet around the facility.**	**Figure V.A.1**
14(b)(19)(i)	**Map scale and date.**	**All Figures**
14(b)(19)(ii)	**100-year floodplain area.**	**Figure V.A.2**
14(b)(19)(iii)	**Surface waters and intermittent streams.**	**Figure V.A.1**

Regulatory Citation (40 CFR Pt 270)	Requirement	Figure(s)
14(b)(19)(iv)	Surrounding land uses (residential, commercial, agricultural, recreational).	Figure V.A.3
14(b)(19)(v)	A wind rose (i.e., prevailing windspeed and direction).	Figure V.A.4
14(b)(19)(vi)	Orientation of the map (north arrow).	All Figures
14(b)(19)(vii)	Legal boundaries of the HWM facility site.	Figure V.A.5
14(b)(19)(viii)	Access control (fences, gates).	Figures V.A.6 through V.A.8
14(b)(19)(ix)	Injection and withdrawal wells both on-site and off-site.	Figure V.A.8
14(b)(19)(x)	Buildings; treatment, storage, or disposal operations; other structures (runoff control systems, access and internal roads, storm, sanitary, and process sewerage systems, loading and unloading areas, fire control facilities).	Figures V.A.6 thorugh V.A.8
14(b)(19)(xi)	Barriers for drainage or flood control.	Figure V.A.7
14(b)(19)(xii)	Location of operational units where hazardous waste is (or will be) treated, stored, or disposed.	Figure V.A.6
14(c)(3)	Topographic map with showing the waste management area, property boundary, proposed ‘‘point of compliance,’’ proposed location of groundwater monitoring wells, and info required in 40 CFR 270.14(c)(2), including identification of uppermost aquifer and aquifers hydraulically interconnected beneath the facility property, including groundwater flow direction and rate.	Figures V.A.1, V.A.5, and V.A.8 through V.A.14
14(c)(2)	Identification of uppermost aquifer and aquifers hydraulically interconnected beneath the facility property, including groundwater flow direction and rate.	Figures V.A.10 through V.A.14
14(d)(1)(i)	Location of solid waste management units.	Figure V.A.6
176	Location of container holding ignitable or reactive waste at least 50 ft from facility property line. Reactive waste treated in a tank of 2,500-gal capacity located at least 15 ft from the public ways, streets, alleys, or an adjoining property line.	Figure V.A.6

2. Features to Mitigate Unsuitable Site Characteristics

As discussed in the Site Selection Report (Part B, Section II of this renewal application), the property meets the requirements of 30 TAC 335, Subchapter G (Location Standards for Hazardous Waste Storage, Processing, or Disposal) and is suitable for hazardous waste

permitting. No additional engineering design, construction, or operational requirements are needed for the current units to meet the location standards of 30 TAC 335 Subchapter G.

3. Construction Schedules

BASF does not currently anticipate constructing new waste management units. However, TCEQ will be notified of any schedule changes via written correspondence.

4. Detailed Plans and Specifications

Plans and specifications for all current and proposed permitted units, including dimensions and materials of construction, are provided in each unit Appendix. All plans and specifications were prepared and sealed by licensed professional engineers registered in the State of Texas.

GSI Job No. 10426

PART B APPLICATION
APPENDIX V.A - GENERAL ENGINEERING REPORT

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plan, Beaumont, Texas

TABLES

Table V.A	Facility Waste Management Handling Units
Table V.C	Tanks and Tank System

Table V.A. - Facility Waste Management Handling Units

TCEQ Permit Unit No. [1]	Unit Name	NOR No.[1]	Unit Description[3]	Capacity	Unit Status[2]
01	Tank J-516	032	Storage Tank	20,000 gal	Closed
02	Tank J-519	033	Storage Tank	6,000 gal	Closed
03	Tank B-521	034	Storage Tank	2,000 gal	Closed
04	Tank B-503	035	Storage Tank	1,000 gal	Closed
06	Thermal Process Unit H-507	036	Halogen Acid Furnace	15 MM BTU/hr	Closed
07	Tank F-414A	042	Storage and Processing Tank	196,202 gal	Active
08	Tank WB-1767	061	Storage and Processing Tank	150,000 gal	Active
09	Tank F-414B	042	Storage and Processing Tank	197,000 gal	Active
10	Tank F-414C	069	Storage and Processing Tank	197,000 gal	Active
12	Tank WB-502A	073	Storage and Processing Tank	1,000,000 gal	Active
13	Tank WB-502B	074	Storage and Processing Tank	1,000,000 gal	Active
14	Tank WB-1765	071	Storage and Processing Tank	1,000,000 gal	Active

1. Permitted Unit No. and NOR No. cannot be reassigned to new units or used more than once and all units that were in the Attachment D of a previously issued permit must be listed.

2. Unit Status options: Active, Closed, Inactive (built but not managing waste), Proposed (not yet built), Never Built, Transferred, Post-Closure.

3. If a unit has been transferred, the applicant should indicate which facility/permit it has been transferred to in the Unit Description column of Table V.A.

Table V.C. - Tanks and Tank Systems

Permit Unit No.	Tank	N.O.R. No.	Storage and/or Processing	Waste Nos.[1]	Rated Capacity	Dimensions	Containment Volume (including rainfall for unenclosed areas)	Unit will manage Ignitable, Reactive, or Incompatible waste (state all that apply)	Unit Status
07	F-414A	042	Storage and processing	1,2	196,202 gal	46' dia x 16'	262,199 gal	No	Active
08	WB-1767	061	Storage and processing	1,2	150,000 gal	30' dia x 29'	226,327 gal	No	Active
09	F-414B	042	Storage and processing	1,2	197,000 gal	46' dia x 16'	262,199 gal	No	Active
10	F-414C	069	Storage and processing	1,2	197,000 gal	46' dia x 16'	262,199 gal	No	Active
12	WB-502A	073	Storage and processing	1,2	1,000,000 gal	69'9'' dia x 35'9''	1,333,335 gal	No	Active
13	WB-502B	074	Storage and processing	1,2	1,000,000 gal	69'9'' dia x 35'9''	1,333,335 gal	No	Active
14	WB-1765	071	Storage and processing	1,2	1,000,000 gal	69'9'' dia x 35'9''	1,333,335 gal	No	Active

1. from Table IV.B, first column

GSI Job No. 10426

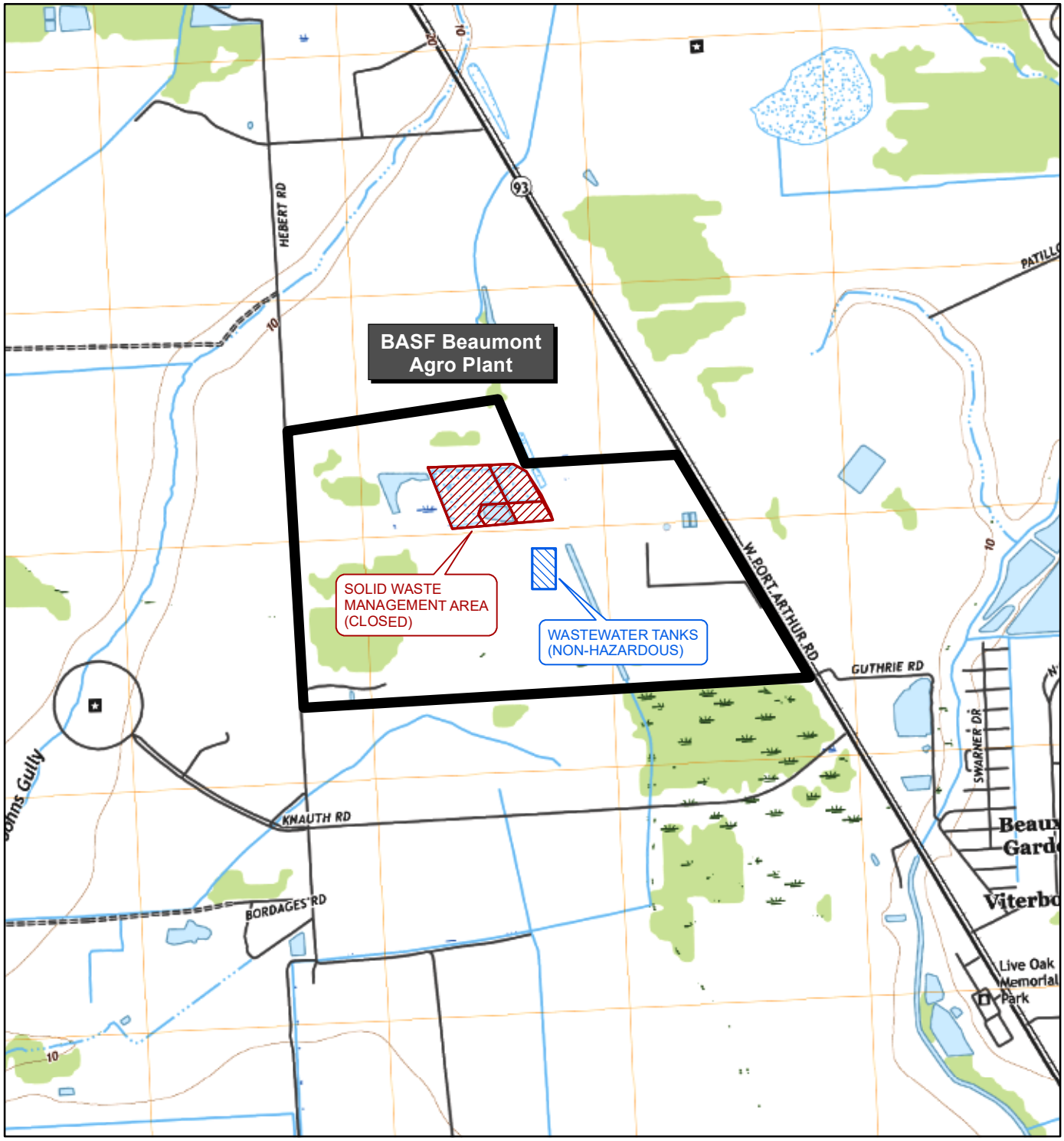
PART B APPLICATION
APPENDIX V.A - GENERAL ENGINEERING REPORT

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

FIGURES

Figure V.A.1	Site Location Topographic Map
Figure V.A.2	Location of 100-Year Floodplain
Figure V.A.3	Land Use in Vicinity of BASF Beaumont Agro Plan
Figure V.A.4	Wind Rose Map
Figure V.A.5	Site Legal Boundaries Map
Figure V.A.6	Location of Waste Management Units
Figure V.A.7	Plant Drainage and Control Structure Map
Figure V.A.8	Location of Monitoring and Injection Wells
Figure V.A.9	Location of Water Wells within One-Mile Radius of Facility
Figure V.A.10	Potentiometric Surface of the Upper Chicot Aquifer
Figure V.A.11	Potentiometric Surface of the Lower Chicot Aquifer
Figure V.A.12	Structure Map, Base of the Chicot Aquifer
Figure V.A.13	Structure Map, Base of the Evangeline Aquifer
Figure V.A.14	Potentiometric Surface Map: 11 July 2024



U.S. Geological Survey Map
Port Acres Quadrangle - 2022
Texas - Jefferson County
7.5 - Minute Series (1:24,000)

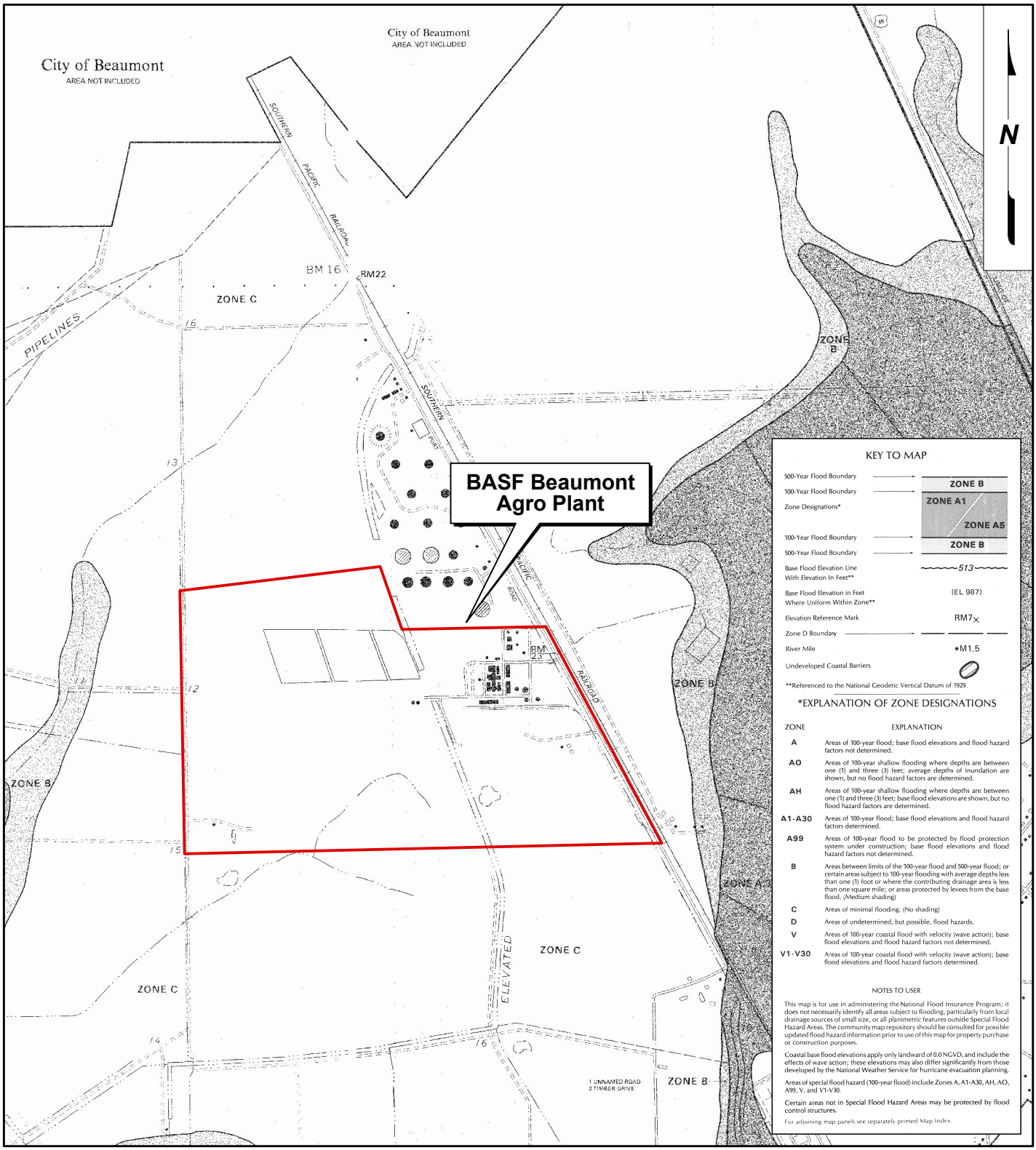
SCALE (ft)
0 1000 2000

GSI ENVIRONMENTAL
Texas Registration Number: F-1198

GSI Job No.	10426	Drawn by:	CDM
Map ID:	005_01	Chk'd by:	MW
Issued:	14-Apr-2025	Aprv'd by:	JMM
Scale:	As Shown	**FIGURE V.A.1**	

REGIONAL SITE TOPOGRAPHIC MAP

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas



Notes:

1. Floodplain map from Federal Emergency Management Agency FIRM Community Panels 480385 0285C and 480385 0280C, Revised November 20,1991.
2. Zone A3 = Area of 100-year flood; base flood elevations and flood hazard factors determined.
3. Zone B = Area between the limits of the 100-year flood and 500-year flood. Moderate flood hazard.
4. Zone C = Areas of minimal flooding; minimal flood hazard.
5. Map Reference: FEMA, Flood Insurance Rate Map, Jefferson County, Texas, and Incorporated Areas, Panel 280 of 600, Map Number 4803850280C, and Panel 285 of 600, Map Number 4803850285C, Federal Emergency Management Agency, 20 November 1991.

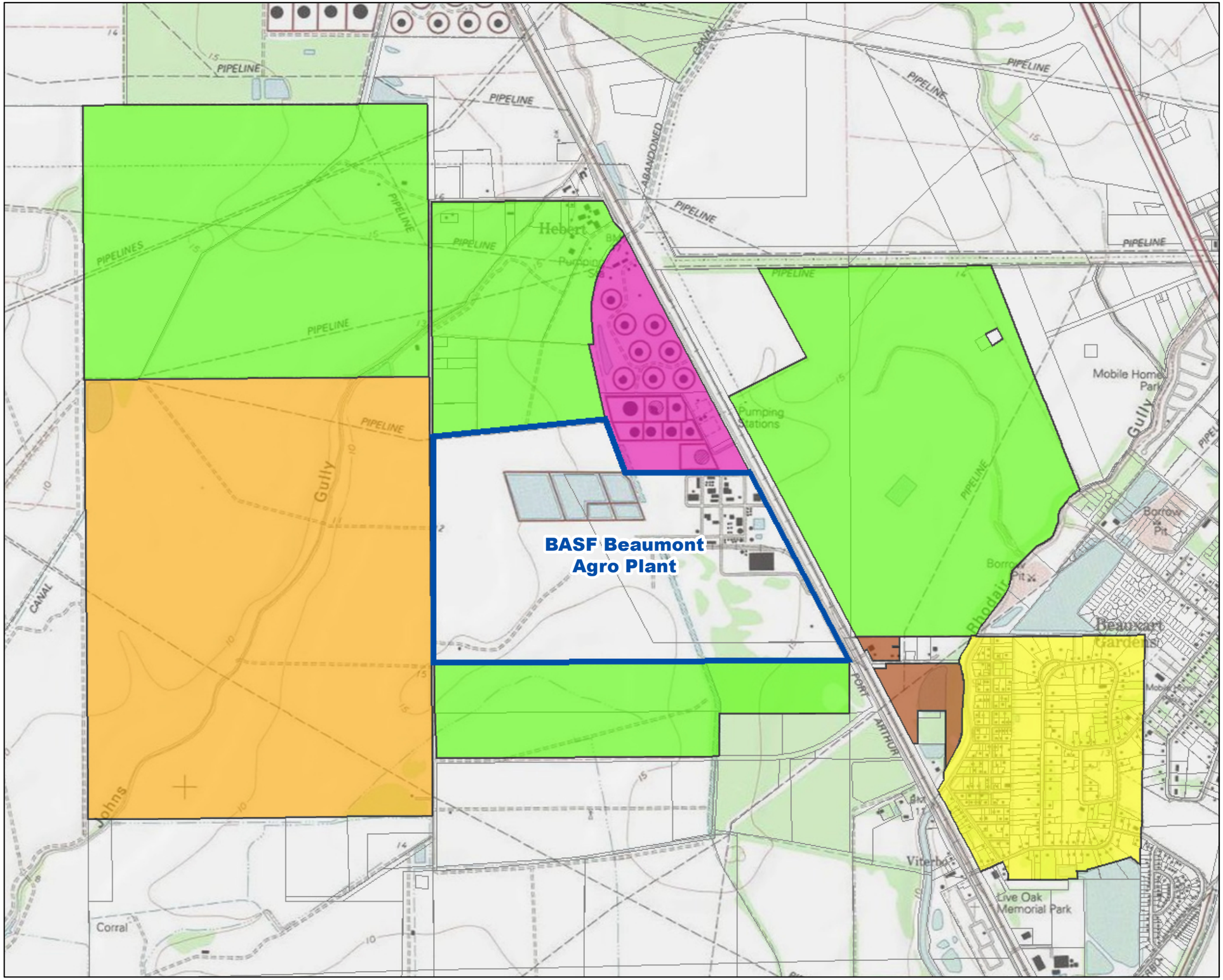
SCALE (ft.)
0 1000 2000

GSI ENVIRONMENTAL
Texas Registration Number: F-1198

LOCATION OF 100-YEAR FLOODPLAIN

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No:	10426	Drawn By:	CDM
Map ID:	005_02	Chk'd By:	WMC
Issued	14-Apr-2025	Appv'd By:	JMM
Scale:	As Shown	**Figure V.A.2**	



N

LEGEND

- Department of Justice Land
- Agriculture Land Use
- Residential Land Use
- Industrial Land Use
- Commercial Land Use
- BASF Beaumont Agro Plant Property Boundary

Notes

1. Parcel information was obtained from Jefferson County Appraisal District on 2/11/2025.
2. Background imagery provided by ESRI Online: USGS Topo Maps (Map Service - FDEPOpen Data Portal, 11/28/2018).

Feet
0 800 1,600

Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N (meters)

GSI ENVIRONMENTAL
Texas Registration Number: F-1198

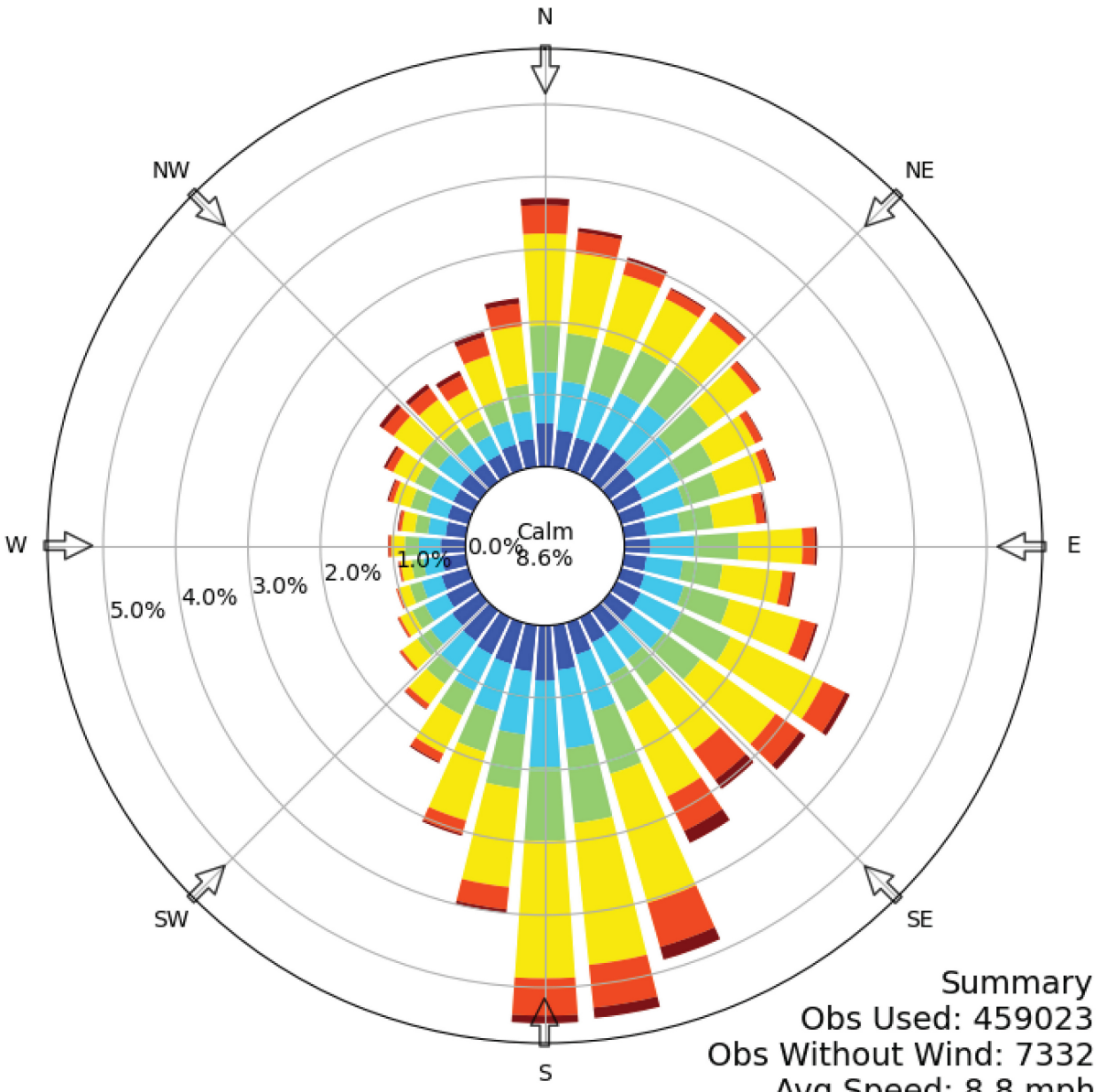
LAND USE IN VICINITY OF BASF BEAUMONT AGRO PLANT

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No.	10426	Drawn By:	CDM
Issued:	14-Apr-2025	Chk'd By:	MW
Map ID:	**005_03**	Appv'd By:	JMM

FIGURE V.A.3

Windrose Plot for [BPT] Beaumont - Port Arthur
Obs Between: 01 Jan 1970 03:00 AM - 21 Oct 2024 01:53 AM America/Chicago



Summary
Obs Used: 459023
Obs Without Wind: 7332
Avg Speed: 8.8 mph

Calm values are < 2.0 mph
Bar Convention: Meteorology
Flow arrows relative to plot center.
Generated: 21 Oct 2024

Wind Speed [mph]

2 - 4.9 | 5 - 6.9 | 7 - 9.9 | 10 - 14.9 | 15 - 19.9 | 20+

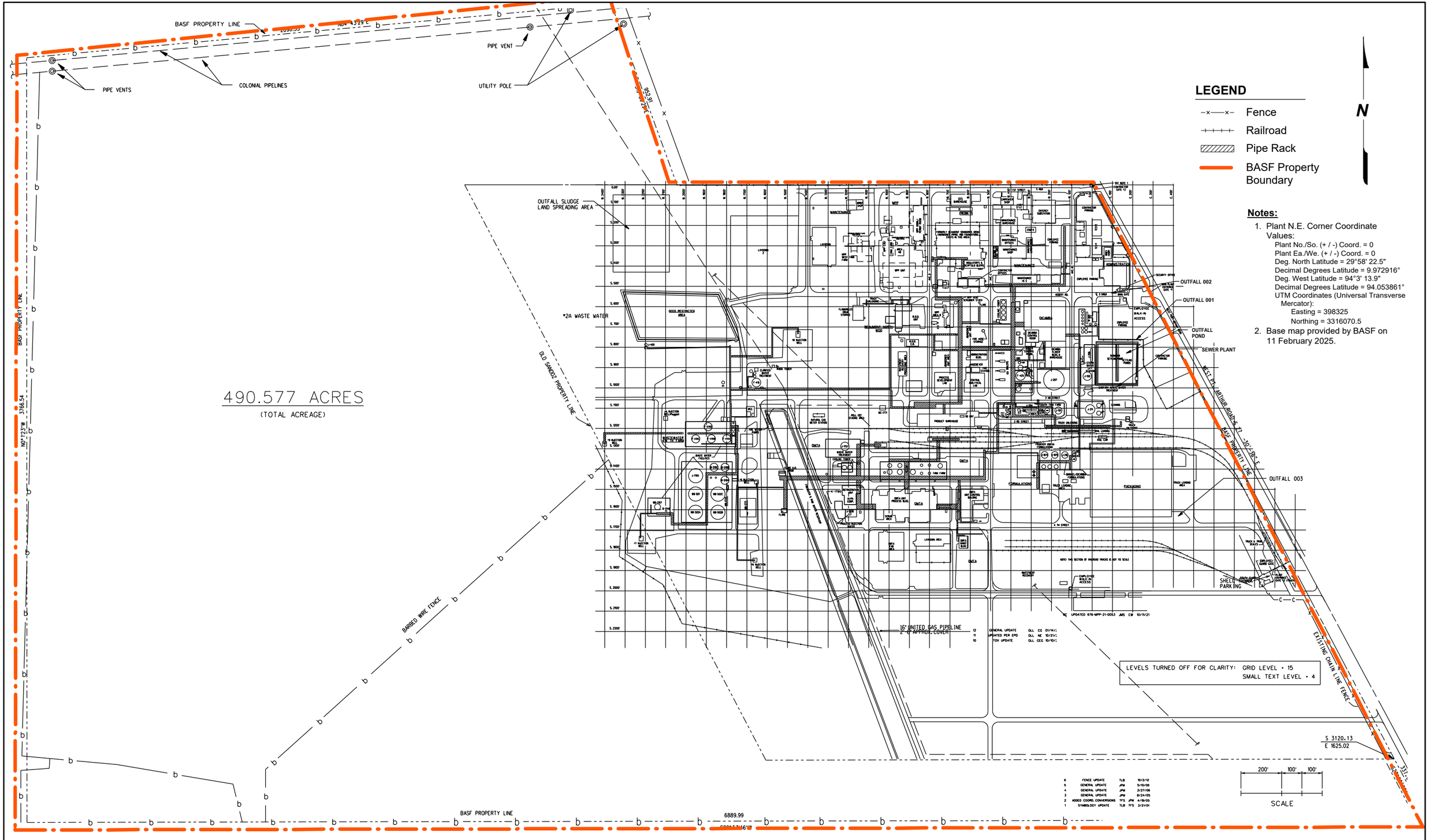
Note:
The wind rose map was obtained from the Iowa State University Environmental Mesonet website. The wind measurements were obtained from 1970 to 2024 at Beaumont - Port Arthur station, located approximately 10 miles south of the BASF Beaumont Agro Plant facility.

GSI ENVIRONMENTAL
Texas Registration Number: F-1198

WIND ROSE MAP

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Argo Plant, Beaumont, Texas

GSI Job No:	10426	Drawn By:	CDM
Issued:	005_04	Chk'd By:	MW
Revised:	14-Apr-2025	Appv'd By:	JMM
Scale:	As Shown	**Figure V.A.4**	



Notes:

1. Plant N.E. Corner Coordinate Values:
   - Plant No./So. (+ / -) Coord. = 0
   - Plant Ea./We. (+ / -) Coord. = 0
   - Deg. North Latitude = 29°58' 22.5"
   - Decimal Degrees Latitude = 9.972916°
   - Deg. West Latitude = 94°3' 13.9"
   - Decimal Degrees Latitude = 94.053861°
   - UTM Coordinates (Universal Transverse Mercator):
     - Easting = 398325
     - Northing = 3316070.5
2. Base map provided by BASF on 11 February 2025.

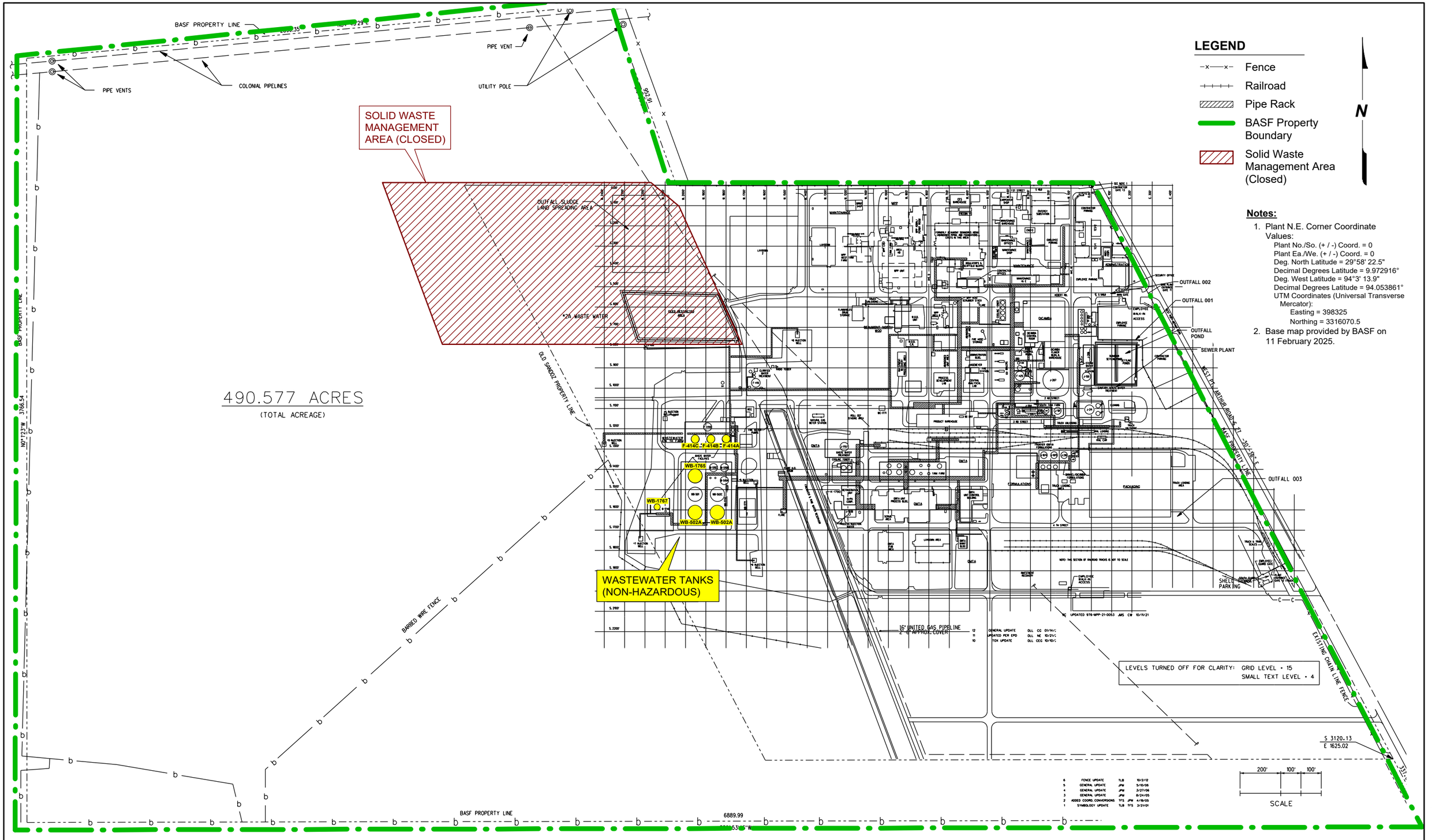
GSI ENVIRONMENTAL

Texas Registration Number: F-1198

GSI Job No.	10426	Drawn By:	CDM
Map ID:	005_05	Chk'd By:	MW
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	As Shown	**FIGURE V.A.5**	

SITE LEGAL BOUNDARIES MAP

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas



Notes:

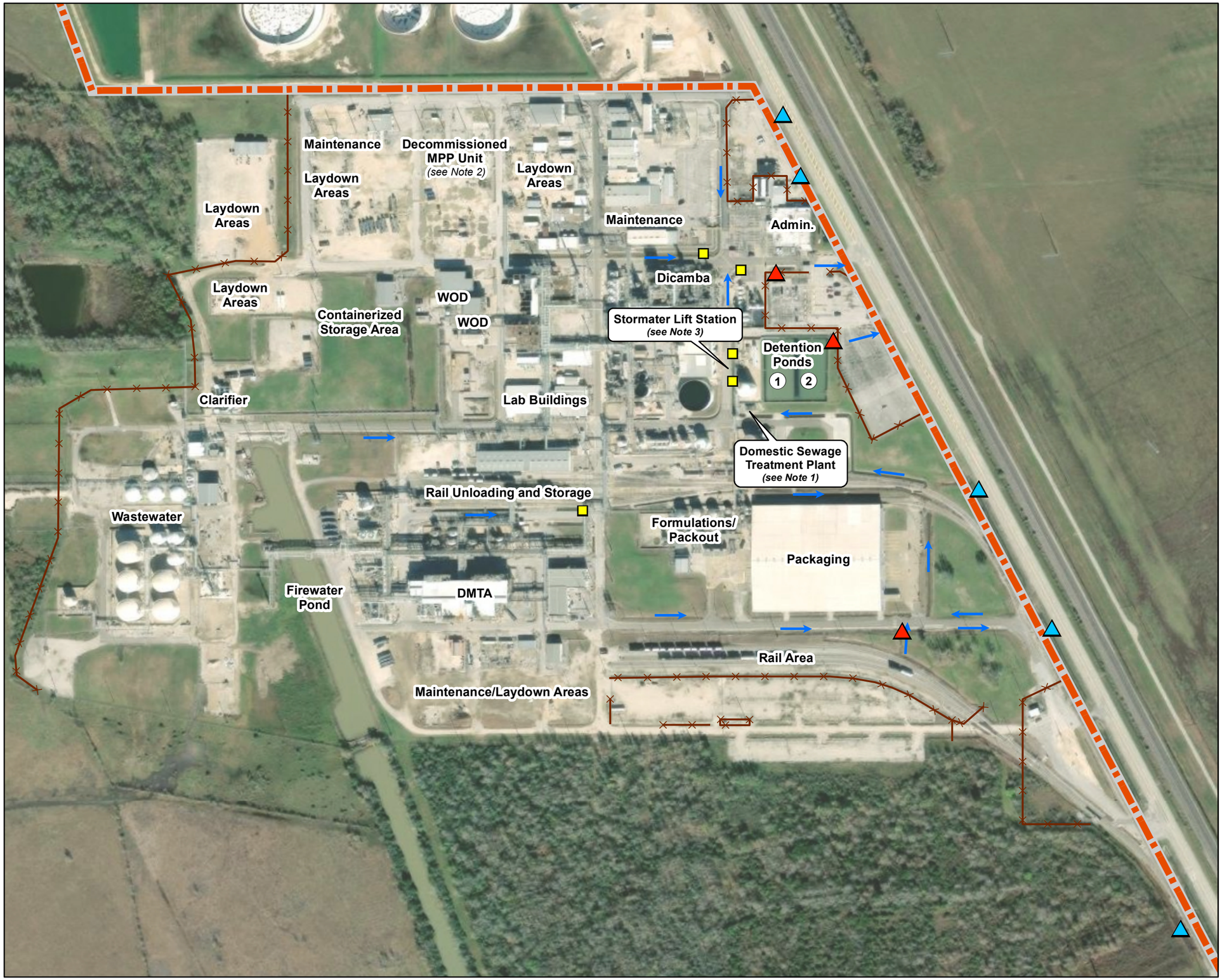
1. Plant N.E. Corner Coordinate Values:
   Plant No./So. (+ / -) Coord. = 0
   Plant Ea./We. (+ / -) Coord. = 0
   Deg. North Latitude = 29°58' 22.5"
   Decimal Degrees Latitude = 9.972916°
   Deg. West Latitude = 94°3' 13.9"
   Decimal Degrees Latitude = 94.053861°
   UTM Coordinates (Universal Transverse Mercator):
   Easting = 398325
   Northing = 3316070.5
2. Base map provided by BASF on 11 February 2025.

GSI ENVIRONMENTAL
Texas Registration Number: F-1198

GSI Job No.	10426	Drawn By:	CDM
Map ID:	005_06	Chk'd By:	MW
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	As Shown	**FIGURE V.A.6**	

LOCATION OF WASTE MANAGEMENT UNITS

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas



N

LEGEND

- Wastewater Outfalls
- Stormwater MSGP Outfalls
- Stormwater Gate
- Flow direction within the Stormwater Drainage Ditches
- BASF Property Boundary
- Fence

Notes

1. Domestic sewage treatment plant effluent discharges to site deep well injection system.
2. MPP is a non-process area. The unit was shut down, cleaned, and decommissioned in 2016.
3. The Stormwater Lift Station has the optional capability to pump stormwater to the deep well injection system.
4. Background Imagery: ESRI World Imagery - 1m Color InfraRed NAIP imagery last modified 8/16/2023. Source: Esri, DigitalGlobe, USGS, and the GIS User Community, et al.

Feet
0 150 300

Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N (meters)

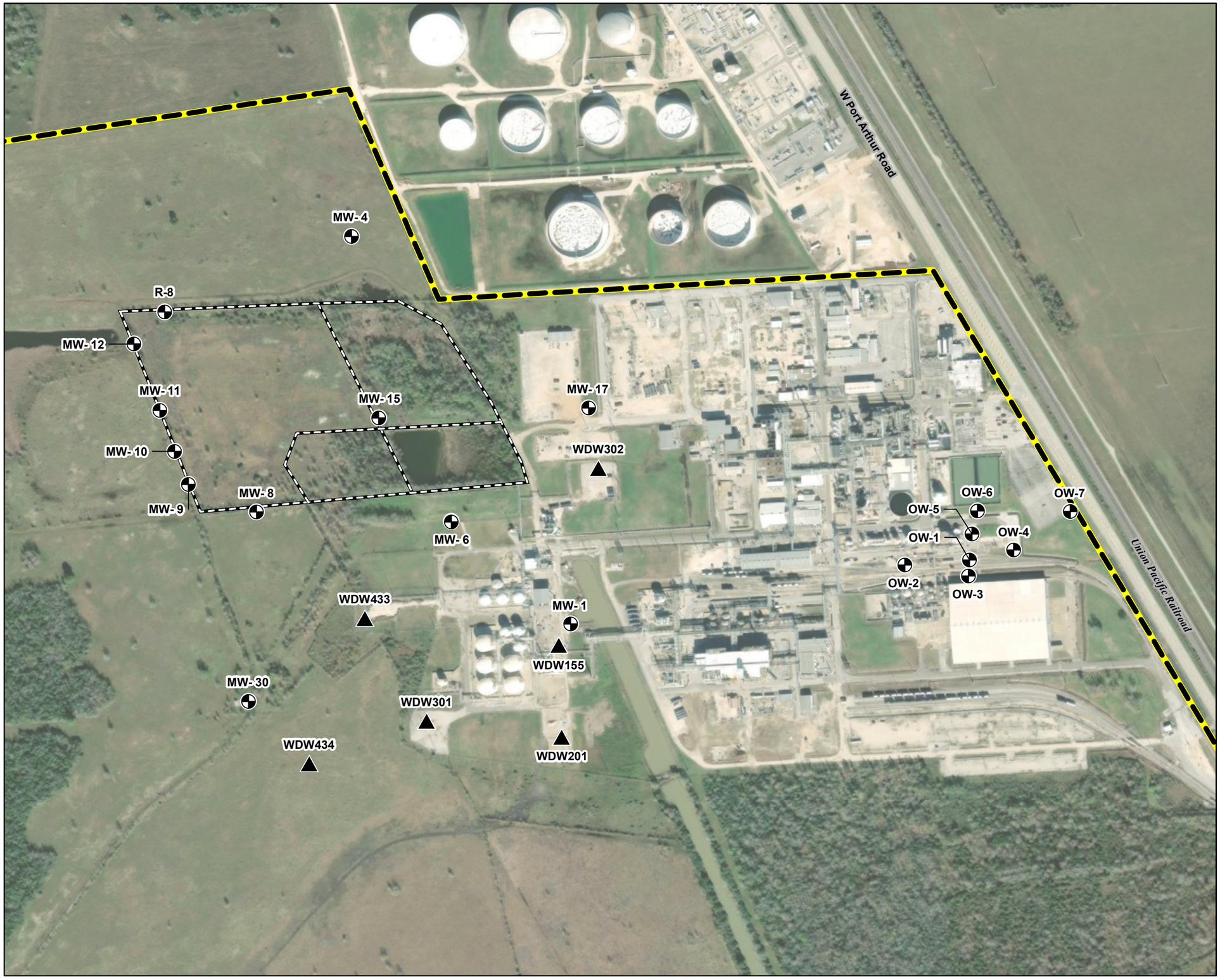
GSI ENVIRONMENTAL
Texas Registration Number: F-1198

PLANT DRAINAGE AND CONTROL STRUCTURE MAP

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No.	10426	Drawn By:	CDM
Issued:	14-Apr-2025	Chk'd By:	MW
Map ID:	**005_07**	Appv'd By:	JMM

FIGURE V.A.7



LEGEND

- Shallow Monitoring Well
- UIC Class I Non-Hazardous Injection Well
- BASF Corporation Property Boundary
- Former Pond Boundary

Notes

1. The monitoring wells associated with the former Solid Waste Management Area will be plugged and abandoned in 2025.
2. Background Imagery: ESRI World Imagery - 1m Color InfraRed NAIP imagery last modified 8/16/2023. Source: Esri, DigitalGlobe, USGS, and the GIS User Community, et al.

Feet
0 200 400

Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N (meters)

GSI ENVIRONMENTAL
Texas Registration Number: F-1198

LOCATION OF MONITORING AND INJECTION WELLS

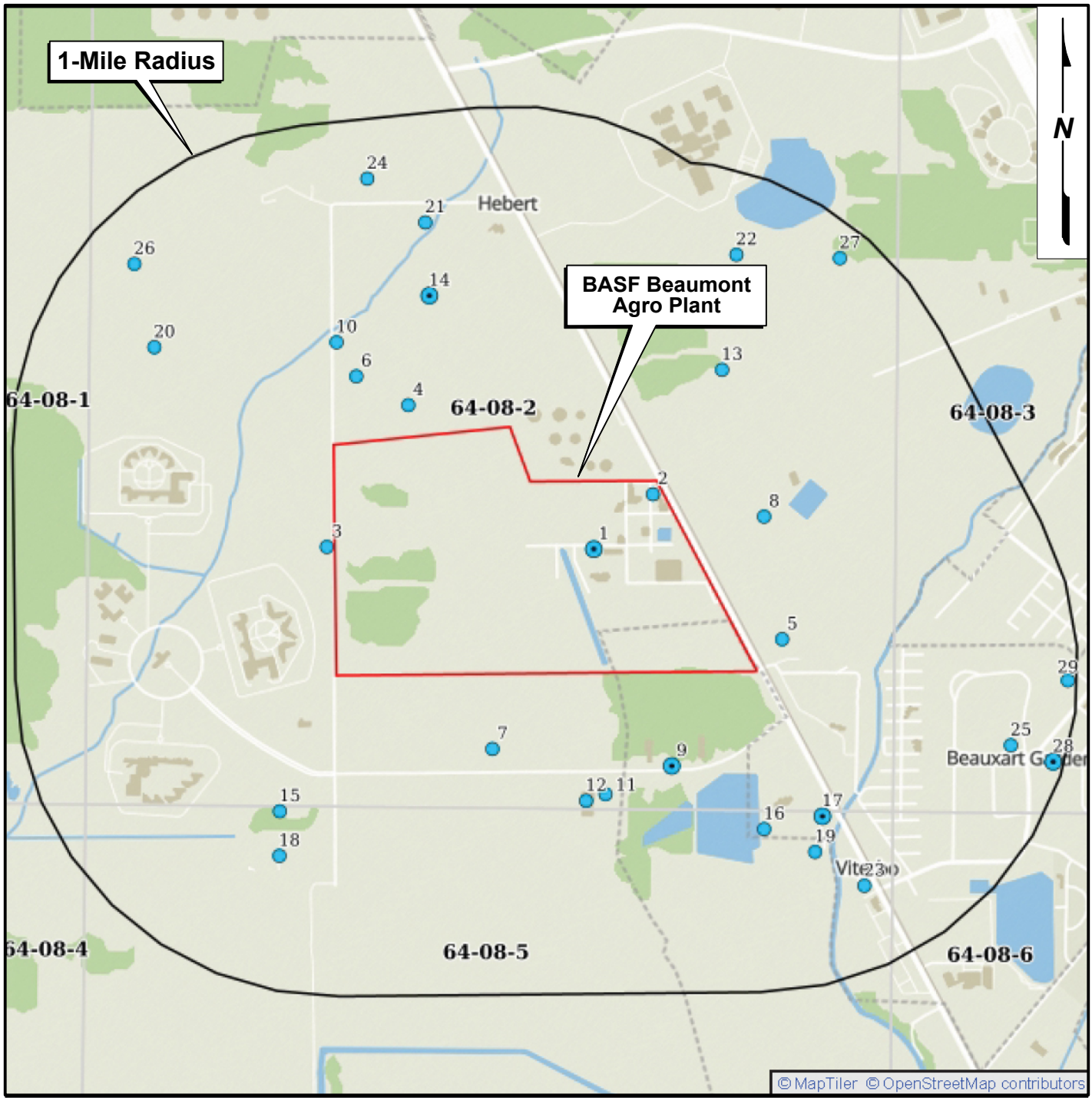
Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No.	10426	Drawn By:	CDM
Issued:	14-Apr-2025	Chk'd By:	MW
Map ID:	**005_08**	Appv'd By:	JMM

FIGURE V.A.8

Summary Map - 1.0 Mile Radius

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP



BASF Corporation - Beaumont, TX

0' 1583' 3167'

Single Water Well | Water Well Cluster

US WW,TX GWS,TX HIST,TX PWS
TX SDR

Subject Site
Search Buffer
Texas Quad Index

NAD83 / UTM Zone 15N
North American Datum 1983
Western Meridian: 96 0' 00" West
Eastern Meridian: 90 0' 00" West
Latitude of Origin: 0 0' 00" North

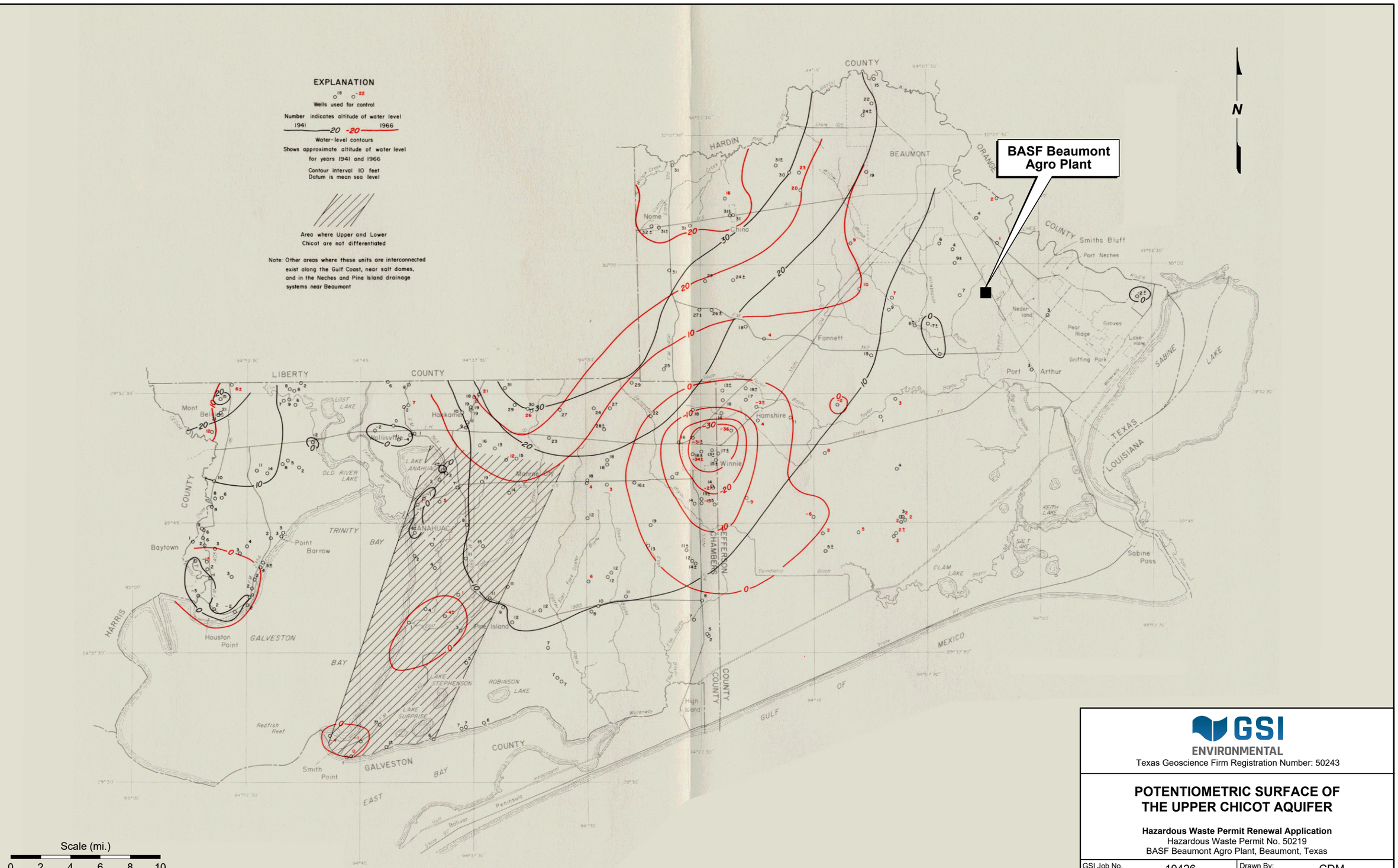
1:28500
1 in = 2375 ft
1 in = 0.450 mi
1 cm = 285 m
1 cm = 0.285 km

GSI ENVIRONMENTAL
Texas Registration Number: F-1198

GSI Job No.	10426	Drawn By:	CDM
Map ID:	005_09	Chk'd By:	WMC
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	As Shown	**FIGURE V.A.9**	

LOCATION OF WATER WELLS WITHIN ONE-MILE RADIUS OF FACILITY

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas



(modified from Aronow, 1971)

GSI ENVIRONMENTAL
Texas Geoscience Firm Registration Number: 50243

POTENTIOMETRIC SURFACE OF THE UPPER CHICOT AQUIFER

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No.	10426	Drawn By:	CDM
Map ID:	005_10	Chk'd By:	WMC
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	As Shown	**FIGURE V.A.10**	

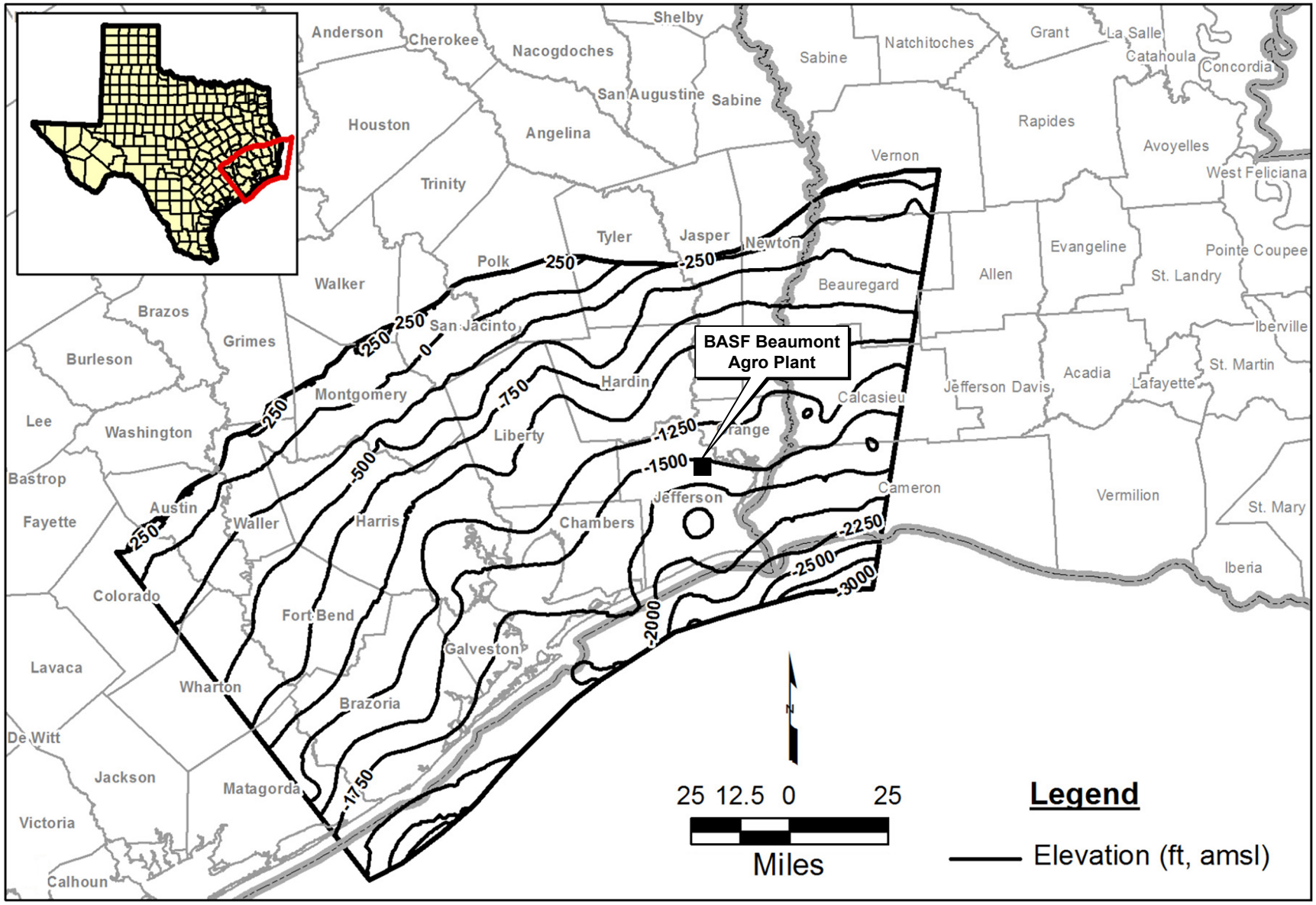
(modified from Aronow, 1971)

GSI ENVIRONMENTAL
Texas Geoscience Firm Registration Number: 50243

POTENTIOMETRIC SURFACE OF THE LOWER CHICOT AQUIFER

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No.	10426	Drawn By:	CDM
Map ID:	005_11	Chk'd By:	WMC
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	As Shown	**FIGURE V.A.11**	



(modified from Young et al., 2012

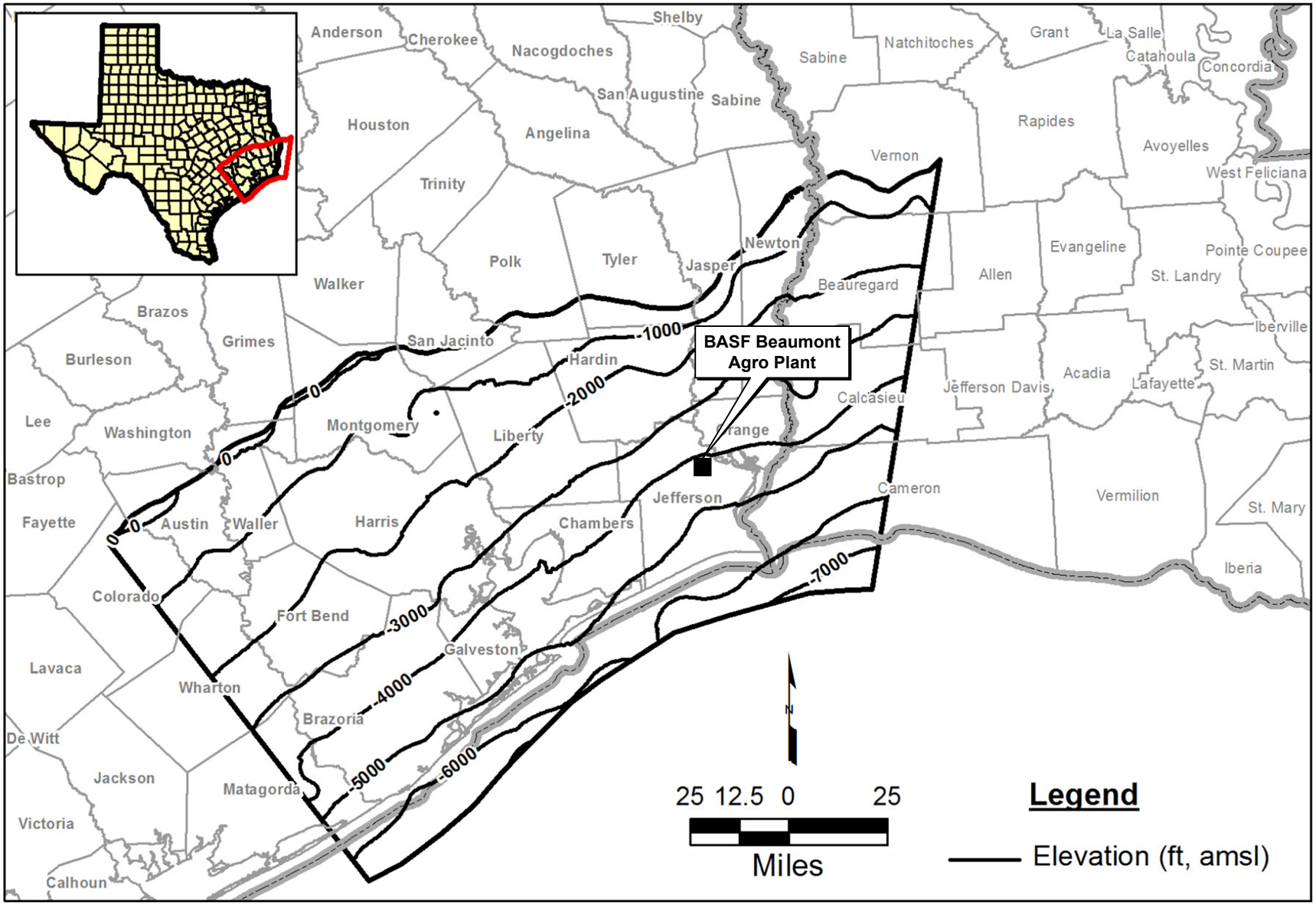
GSI ENVIRONMENTAL

Texas Geoscience Firm Registration Number: 50243

GSI Job No.	10426	Drawn By:	CDM
Map ID:	005_12	Chk'd By:	WMC
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	As Shown	**Figure V.A.12**	

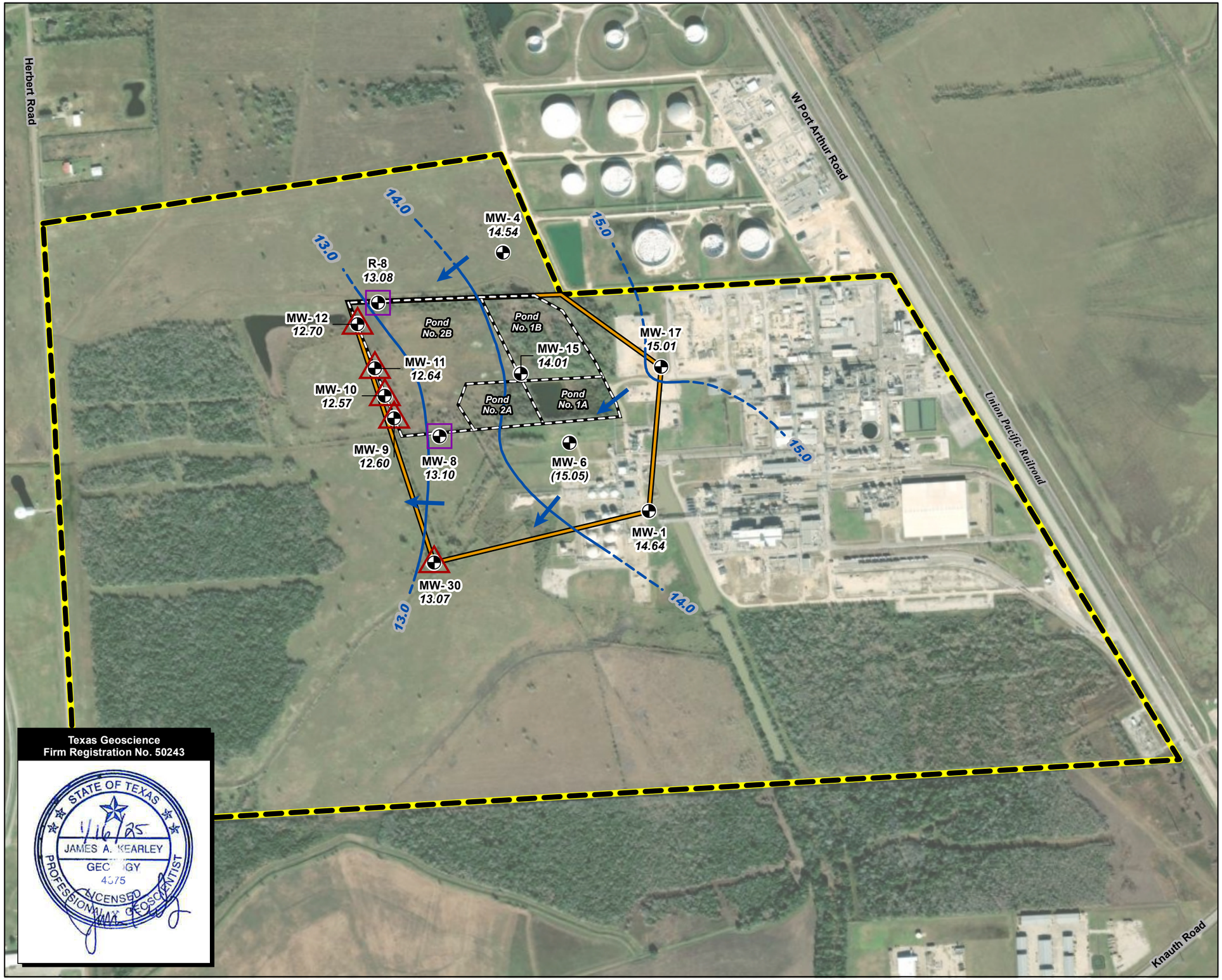
STRUCTURE MAP, BASE OF THE CHICOT AQUIFER

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas



(modified from Young et al., 2012

GSI ENVIRONMENTAL Texas Geoscience Firm Registration Number: 50243	GSI Job No. 10426	Drawn By: CDM	**STRUCTURE MAP, BASE OF THE EVANGELINE AQUIFER**
	Map ID: 005_13	Chk'd By: WMC	**Hazardous Waste Permit Renewal Application** Hazardous Waste Permit No. 50219 BASF Beaumont Agro Plant, Beaumont, Texas
	Issued: 14-Apr-2025	Aprv'd By: JMM	
	Scale: As Shown	**Figure V.A.13**	



Texas Geoscience
Firm Registration No. 50243

STATE OF TEXAS
1/16/25
JAMES A. KEARLEY
GEOLOGY
4575
LICENSED
PROFESSIONAL GEOSCIENTIST

LEGEND

- Supplemental Monitoring Well
- Alternate Monitoring Point Monitoring Well
- Point of Exposure Monitoring Well
- BASF Corporation Property Boundary
- Solid Waste Management Area PMZ
- Former Pond Boundary
- *15.01* — Water elevation used for contouring (ft,MSL)
- *(15.05)* — Water elevation not used for contouring (ft, MSL)
- *15.0* — Potentiometric surface contour (ft,MSL)
- Inferred groundwater flow direction

Notes

1. MSL= Mean Sea Level.
2. Water elevation at MW-6 is not used for contouring due to well damage.
3. Background Imagery: ESRI World Imagery - 1m Color InfraRed NAIP imagery Last modified: 3/12/2024: Source: Esri, DigitalGlobe, etal., and the GIS User Community.

Feet
0 300 600

Projected Coordinate System
Datum: NAD 1983
STP: Texas South Central
FIPS 4204 (ft)

GSI ENVIRONMENTAL

POTENTIOMETRIC SURFACE MAP: 11 JULY 2024

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No.	10426	Drawn By:	CDM
Issued:	14-Apr-2025	Chk'd By:	WMC
Map ID:	**005_14**	Appv'd By:	JAK

FIGURE V.A.14

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section V: Appendix V.C.1 – Engineering Report for Tanks F-414A, F-414B, and F-414C

Note: This engineering report was originally prepared by RPS Group in September 2018 and June 2020 and has subsequently been reformatted and additional information provided to meet submittal requirements for Hazardous Waste Permit Renewal Applications.

GSI Job No. 10426

APPENDIX V.C.1
ENGINEERING REPORT FOR
TANKS F-414A, F-414B, AND F-414C (PERMIT UNIT NOS. 7, 9, AND 10)

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

This engineering report was originally prepared by RPS Group in September 2018 and June 2020 and has subsequently been reformatted and additional information provided to meet submittal requirements for Hazardous Waste Permit Renewal Applications.

GSI Job No. 10426

APPENDIX V.C.1
ENGINEERING REPORT FOR
TANKS F-414A, F-414B, AND F-414C (PERMIT UNIT NOS 7, 9, AND 10)

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

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GSI Job No. 10426

CERTIFICATION OF
ENGINEERING REPORT FOR
TANKS F-414A, F-414B, AND F-414C (PERMIT UNIT NOS 7, 9, AND 10)

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

I, James M. McDade, a registered professional engineer in the State of Texas, certify that the Engineering Report in the Hazardous Waste Permit Renewal Application issued 14 April 2025 for Tanks F-414A, F-414B, and F-414C (Permit Unit Nos. 7, 9, and 10) on the BASF Beaumont Agro Plant (BASF) facility in Beaumont, Texas, has been prepared and developed in accordance with good engineering practices and requirements of 30 TAC 305.45(a)(8)(A). Tanks F-414A, F-414B, and F-414C only manage non-hazardous wastes, and therefore, are not required to meet the standards of 40 CFR 264, Subpart J; however, the requirements in 40 CFR 264, Subpart J have been used as a general guide for good engineering practices.

4/14/25

James M. McDade, P.E.
State of Texas Registration No. 115868
GSI Environmental Inc.
Texas Registration No. F-1198

1.0 DESCRIPTION OF TANKS F-414A, F-414B, AND F-414C

1.1 Basis for the Engineering Report

Tanks F-414A, F-414B, and F-414C (Permit Unit Nos. 7, 9, and 10) are located in the southwestern portion of the BASF Beaumont Agro Plant (BASF) facility in Beaumont, Texas (see Figure V.A.6 in this Part B application). This engineering report has been prepared to certify that the tanks have been designed in accordance with good engineering practices and 30 TAC 305.45(a)(8)(A). Furthermore, this report includes independent verification and certification by a licensed Professional Engineer in the State of Texas, confirming that Tanks F-414A, F-414B, and F-414C have been properly constructed and inspected, and are suitable for their intended service.

1.2 Wastes Managed in Tanks F-414A, F-414B, and F-414C

Tanks F-414B and F-414C serve primarily as the first stage storage of the Dicamba wastewater. The wastewater stored in F-414B and F-414C is sourced mainly from the Dicamba process unit, FFP loading rack, formulations, the Waste Organic Destruction (WOD) processing area (which also received off-site wastewater), and the containment sumps at the F-414 Tank Farm. Water from tanks F-414B and F-414C is pumped through the WC-505 filters and to tank F-414A for storage before disposal via the Class I Underground Injection Control (UIC)-permitted injection wells. Additionally, the F-414 tanks are configured such that wastewater can be recirculated between the tanks.

Tank F-414A serves as the final wastewater storage tank prior to injection in UIC-permitted waste disposal wells WDW-155, WDW-201, and WDW-433 (also known as Injection Wells 5, 6, and 9, respectively). F-414A can also receive wastewater from Dicamba's main neutralization sump, B-248 if bypassing F-414B and C is needed.

2.0 DESIGN AND INSTALLATION OF TANKS F-414A, F-414B, AND F-414C

2.1 Design of Tanks F-414A, F-414B, and F-414C

Tanks F-414A, F-414B, and F-414C share a rectangular shaped secondary containment system with four other tanks (F-414D, B-432A, B-432B, and B-309; see Figure V.C.1.4). These three tanks are located above grade on reinforced concrete associated with the flooring of the secondary containment, and each tank sits on elevated reinforced concrete pedestals. Based on design criteria and performance to date, the foundation is adequate to handle the loads that are imposed on it.

2.2 Installation of Tanks F-414A, F-414B, and F-414C

Based on tank integrity assessments conducted by RPS Group (RPS) in 2018 and 2020, Tanks F-414A, F-414B, and F-414C and associated ancillary equipment were installed in accordance with standard engineering practices for quality control and testing. The tanks and ancillary piping are fabricated from carbon steel, featuring welded and flanged connections and tie-downs engineered to manage potential thermal expansion and contraction.

3.0 CONTAINMENT AREA

Potential releases to the environment are prevented by locating Tanks F-414A, F-414B, F-414C and ancillary equipment associated with the tank system (i.e., piping, pumps, valves, etc.) within a sealed concrete secondary containment area. These tanks are located within F-414 Tank Farm, which has a containment volume of 262,199 gallons. This volume accounts for displacement of equipment, including tanks F-414A, F-414B, F-414C, F-414D, B-309, and an assumed additional 10% of the containment volume for other ancillary equipment (piping, footers, pump bases, etc.). The containment volume is sufficient to contain 110% of the volume of the largest tank in the secondary containment area. Note that these tanks do not store or manage hazardous wastes; therefore, the secondary containment requirements in 40 CFR 264.193(e)(1)(i) and 264.193(e)(1)(ii) are not applicable.

The base of the secondary containment is sloped so that fluid flows to sumps located along the southern secondary containment walls of F-414 Tank Farm. Precipitation, wash water, and/or potential leaks from the tanks are removed by means of a sump from the secondary containment area within 24 hours.

4.0 OPERATION OF TANKS F-414A, F-414B, AND F-414C

4.1 General Operating Requirements

Tanks F-414A, F-414B, and F-414C are operated to: i) manage neutralized wastewater, compatible with the carbon steel tanks and concrete secondary containment; ii) ensure all tanks and equipment are within a reinforced concrete secondary containment vault, elevated on concrete pedestals to prevent soil or water contact, eliminating the need for specific corrosion protection; and iii) maintain stress levels within acceptable limits for current use.

4.2 Inspections

Each of the tanks has one level meter to measure the liquid level in the tank and one independent high level alarm. If the tank reaches 90% capacity, an alarm will sound, and readings from these instruments are continuously monitored in the Control Room. Tanks F-414A, F-414B, and F-414C are monitored routinely by operators in accordance with the inspection schedule provided in Table III.D.

4.3 Spill Response

Response activities will be conducted in the event of a release from Tanks F-414A, F-414B, and F-414C. In the event of a release from the tank, BASF will implement the following applicable procedures:

- *Flow Cessation*: Upon notification of a release, BASF will immediately discontinue the flow of waste into the secondary containment area.

- *Waste Removal*: Within 24 hours of release, BASF will remove spilled waste from the secondary containment system to be either disposed of on-site or stored in another permitted tank. If removal of waste cannot be completed in 24 hours (i.e., because of force majeure), BASF will complete waste removal at the earliest possible time to prevent harm to human health or the environment.

- *Notifications*: All notifications regarding a release to the environment will be completed in accordance with specifications in 40 CFR 264.196(d).

- *Return to Service*: If the integrity of the tank was not damaged, the tank will be returned to service upon completion of necessary repairs, removal of waste, and adherence to applicable provisions of 40 CFR 264.196(e) and 40 CFR 264.196(f). If the integrity of the tank was damaged, the tank will be repaired accordingly, and re-certified by a registered professional engineer in the State of Texas prior to returning to service in accordance with 40 CFR 264.196(f).

5.0 SPECIAL REQUIREMENTS FOR WASTES MANAGED IN TANKS F-414A, F-414B, AND F-414C

5.1 Ignitable and/or Reactive Wastes

Tanks F-414A, F-414B, and F-414C manage non-hazardous wastewater mainly from the Dicamba process that is not ignitable or reactive; therefore, the tanks are not subject to 40 CFR 264.198(a)(2).

5.2 Incompatible Wastes

Tanks F-414A, F-414B, and F-414C manage non-hazardous wastewater mainly from the Dicamba process. The waste streams going to the tanks are consistent and compatible; therefore, the tanks are not subject to 40 CFR 264.17(b) or 40 CFR 264.199.

6.0 AIR EMISSIONS FROM TANKS F-414A, F-414B, AND F-414C

Tanks F-414A, F-414B, and F-414C manage non-hazardous wastewater mainly from the Dicamba process, and therefore provisions of 40 CFR 264, Subparts AA, BB, and CC are not applicable. However, BASF will manage all air emissions using emission control media in accordance with the facility's air permits.

GSI Job No. 10426

APPENDIX V.C.1
ENGINEERING REPORT FOR
TANKS F-414A, F-414B, AND F-414C (PERMIT UNIT NOS 7, 9, AND 10)

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

FIGURES

Figure V.C.1.1 Waste Water Tank F-414A
Figure V.C.1.2 Waste Water Tank F-414B
Figure V.C.1.3 Waste Water Tank F-414C
Figure V.C.1.4 Waste Water Tank Farm (F-414A, F-414B, and F-414C)

V.C.1.1 Waste Water Tank F-414A

Permitting purposes only
March 5, 2025
State of Texas Registration No.
118504

STATE OF TEXAS
NAPOLI R. VAZQUEZ
118504
LICENSED
PROFESSIONAL ENGINEER

Napoli R. Vazquez
03/05/2025

F-414A (R)
WASTE WATER TANK
SIZE: 46' DIA. x 16'
WORKING CAPACITY: 197,000 GAL.
DESIGN PRESSURE: 6 IN. WC/-1" W.C. @ 150° F
MATERIAL: CARBON STEEL, LINED

WASTE WATER
F-414A(R)
46' DIA.x16'
(STEEL TANK LINED)

NOTES:

1. FOR GENERAL NOTES & LEGEND DESCRIPTION REFER TO DWG. WWF-FE-1000
2. DCS CONTROL OF VFD SPEED, INCLUDE RATE OF CHANGE LIMITS ON SPEED ADJUSTMENT IN VFD AND DCS.
3. PRIMARY VARIABLE DENSITY, HART INPUT VARIABLES FOR TEMPERATURE AND FLOW RATE.
4. RECIRCULATION FLOW CONTROL TO INSURE TOTAL FLOW OF EACH PUMP TO THE RIGHT OF PEAK IN THE CURVE.
5. SHUTDOWN G-465A/B/C ON LOW SUCTION PRESSURE 15 MINUTE DELAY, (AND/OR TURN ON 2ND BOOSTER PUMP). SHUTDOWN G-465A/B/C ON HIGH PRESSURE AT WELL HEAD PER TCEQ LIMITS PC5A, PC6A, PC9A WITH 15 MIN. DELAY.
6. LIMIT G465C VFD SPEED AT VFD AND DCS CLAMP TO 4380 RPM AT PUMP (3072 MOTOR RPM) TO PREVENT OVER PRESSURE THE PIPE.
7. ORIFICE PLATE MATERIAL IS ALLOY C-276.
8. BLIND TO ALLOW PSE-G465C DISCHARGE TO FLOW TO F-414A WHILE G-465C IS PUMPING FROM F-414A. FLIP WHEN G-465C IS PUMPING FROM F-414B.
9. AVOID LINING UP PRESSURIZED FILTER DISCHARGE LINE TO A-4141A PUMPS. POTENTIAL OVERPRESSURE OF G27 PIPE SPEC.

VISABLE FROM ROTOJET PUMPS

A-414AA	WASTE WELL BOOSTER PUMP 750 GPM @ 75' TDH 20 HP 1750 RPM CB-6x4x10H-TBM INNOMAG
A-414AB	WASTE WELL BOOSTER PUMP 750 GPM @ 75' TDH 20 HP 1750 RPM CB-6x4x10H-TBM INNOMAG
G-465A	WASTE WELL *6 INJECTION PUMP 225 GMP @ 1837' TDH 200 HP 3560 RPM W/VFD ROTOJET 2X3-18
G-465B	WASTE WELL *5 INJECTION PUMP 225 GMP @ 1837' TDH 200 HP 3560 RPM W/VFD ROTOJET 2X3-18
G-465C	WASTE WELL *9 INJECTION PUMP 345 GPM @ 2045' TDH 400 HP 3560 RPM W/VFD ROTOJET 2X3-18 GEAR BOX FIXED

REV.	DESCRIPTION	BY	ENG.	DATE
10	HOSE AND EXPANSION JOINT UPDATE	DLL	WC	03/01/25
9A	AS BUILT	SMH	WD	09/02/21
9	2020 PHA UPDATE	SMH	NJH	01/21/21
8	ASBUILT UPDATE	JMS	TLB	05/27/20
7E	INCORP. PROJECT 2015-008	SMH	TLB	10/29/19
7D	ASBUILT WALK DOWN BGS	JMS	AB	07/12/16
7C	INCORP. 2012-069	JMS	RI	11/15/15
7B	UPDATED LINE NUMBERS	TLB	RI	12/1/14
7A	2012 UPDATE	TLB	JL	12/31/12

PROJECTS IN PROGRESS

PROJECT	DATE	REV	ISSUED-TO
2018-006	10/29/19	7E	D. STELLY

ORIGINAL FILE: WWF-FE-2

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BASF
We Create Chemistry

BEAUMONT, TEXAS
WASTE WATER FACILITIES
WASTE WATER TANK F-414A
PIPING & INSTRUMENT DIAGRAM

DRAWN RFL | DATE 6-16-88 | SCALE NTS
PROJ. | DRAWING NO. WWF-FE-1002 | REV. 10

D-SIZE BORDER - SCALE FOR 24"x36" PLOT ONLY

UNCONTROLLED IF PRINTED 24HRS AFTER 2/24/2025

34x22 (in.)

V.C.1.2 Waste Water Tank F-414B

F-414B(R)

WASTE WATER TANK
SIZE: 46' DIA. x 16'
WORKING CAPACITY: 197,000 GAL.
DESIGN PRESS: 6" IN. W.C./-1" W.C. @ 150° F
MATERIAL: CARBON STEEL, LINED

WWF FE-1002B — VENT FROM F-414C — 4"-G27-WC501-1 — (VENT HEADER) (DO NOT POCKET) — (VENT HEADER) (DO NOT POCKET) — 4"-G27-WC501-1 — WWF FE-1002 — VENT TO WC-501B/C

WWF FE-1002 — FROM F414A — 2"-WW-B23-G465C-65

WWF FE-1006B — FROM WA-510A & 510B PUMP DISCHARGE — 4"-G17-WA502A-1 — 4"-G27-WA502A-1 — WWF FE-1002B — TO WASTE WATER F-414C (WEST)

SEE TYP. DWG. WWF-FU-1003 — IAS — HZ F414B A-A — HZ F414B A-B — FVX F414B A — 4" — 1" — HS-F414B — WWF-FE-1014

RECIRCULATION LINE

WWF FE-1002 — FROM F414A — 4"-WW-G27-G465C-61

WWF FE-1002 — FROM WC-505R/B — 4"-G27-WC505-3

FVX B414 B — HZ B414 B B-B — HZ B414 B B-A — IAS — 4" F/L

4"-G27-B414B-1 — 4"-G27-WC501B-2 — NOTE 2 — ILK-F414B-1 — A06 B23

@ GRADE — LI F414B — LI F414B — LT F414B — PSV F414B — SET @ 5.5" W.C. PRESSURE 0.86" W.C. VAC. — RADAR — 4" LO-600-76 — 6"x4" — 6"x2" — G27 — A05

10" — 24" M.W. — 3" N10 — 6" N11 — 6" N6 — 4" N9 — 6" N5 — 10" N13 — 1½" — O.E. 10°

F414BR_EXJT2 — 12" N19 12" — 12"-G27-F414C-1 — WWF FE-1002B — TO/FROM WASTE WATER F-414C

WWF FE-1005 — FROM A-501AR — 6"x4" — 4" — 6" — 6"-N15

LG F414B — RO F414B — 6" N2 — 6"x4" — 3" N8 — 2" — 3" — 3" N7 — 36" N16 M.W. — 1½"

WASTE WATER F-414B(R) (MIDDLE) 46' DIA.x16' (STEEL TANK LINED)

F414BR_EXJT1 — 6" — 6"-G27-F414B-1 — N1 6" — 6" 6"x4" — N12 6" — 6" 8"X6" — N2 6" NC — N17 24" M.W.

4"-G27-F414B-1 — 4" — 6"

WWF FE-1002B — FROM WASTE WATER F-414C — 6"-G27-F414C-2

ILK-F414A-1 — HS F414A — FX F414A — TO LI-F414A — WWF-FE-1002

LOCATE AT GRADE — WWF FE-1002 — TO/FROM F-414A TO A-414AA/AB & G465A/B/C

8"-WW-G27-F414B-10

B-1 — 4" FO — 8"X4" — 8" — 8"-WW-G27-A464A-20 — WWF FE-1003 — TO FILTERS WC-505(R) & WC-505B

A464AR1EXJT1 — A464AR1EXJT2 — A-464A(R1) — 6"-WW-G27-A464A-11

A464BR1EXJT1 — A464BR1EXJT2 — A-464B(R1) — 6"-WW-G27-A464B-12

A464CR1EXJT1 — A464CR1EXJT2 — A-464C(R1) — 6"-WW-G27-A464C-13

PI A464A — PI A464B — PI A464C — PSH — HS/EL A464A — HS/EL A464B — HS/EL A464C — S/S — G27 — A11 — O.E. — ½"PIPE/4"SST — A09 B

A-464A/B/C(R1)

INNOMAG MODEL TB
3X1-8.25
440GPM @ 230 TDH
40HP 3600 RPM
ETFE LINED/C.S.

NOTES:

1. FOR GENERAL NOTES & LEGEND DESCRIPTION REFER TO DWG. WWF-FE-1000.
2. FLIP BLIND ONLY WHEN G-465C IS PUMPING FROM F-414B.

Permitting purposes only
March 5, 2025
State of Texas Registration No. 118504

STATE OF TEXAS — NAPOLI R. VAZQUEZ — 118504 — LICENSED PROFESSIONAL ENGINEER

Napoli R. Vazquez
03/5/2025

REV.	DESCRIPTION	BY	ENG.	DATE
11	HOSE AND EXPANSION JOINT UPDATE	DLL	WC	03/01/25
10	LC/LO UPDATE	DLV	LD	3/7/23
9	2020 PHA UPDATE	SMH	NJH	01/21/21

REV.	DESCRIPTION	BY	ENG.	DATE
8	AS BUILT REVISION	JMS	TLB	05/27/20
7G	INCORP. PROJECT 2015-008	SMH	TLB	10/29/19
7F	AS BUILT UPDATE	SMH	RI	04/11/18
7E	ASBUILT WALK DOWN BGS.	JMS	AB	7/11/16
7D	INCORP. 2012-069 PROJECT	JMS	RI	11/15/15
7C	UPDATED LINE NUMBERS	TLB	RI	12/1/14

ORIGINAL FILE: WWF-FE-2

PROJECTS IN PROGRESS

PROJECT	DATE	REV	ISSUED-TO
2018-006	10/29/19	7G	D. STELLY
2023-099	02/27/24	10	L. MacCORMACK

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BEAUMONT, TEXAS
WASTE WATER FACILITIES
WASTE WATER TANK (F-414B)
PIPING & INSTRUMENT DIAGRAM

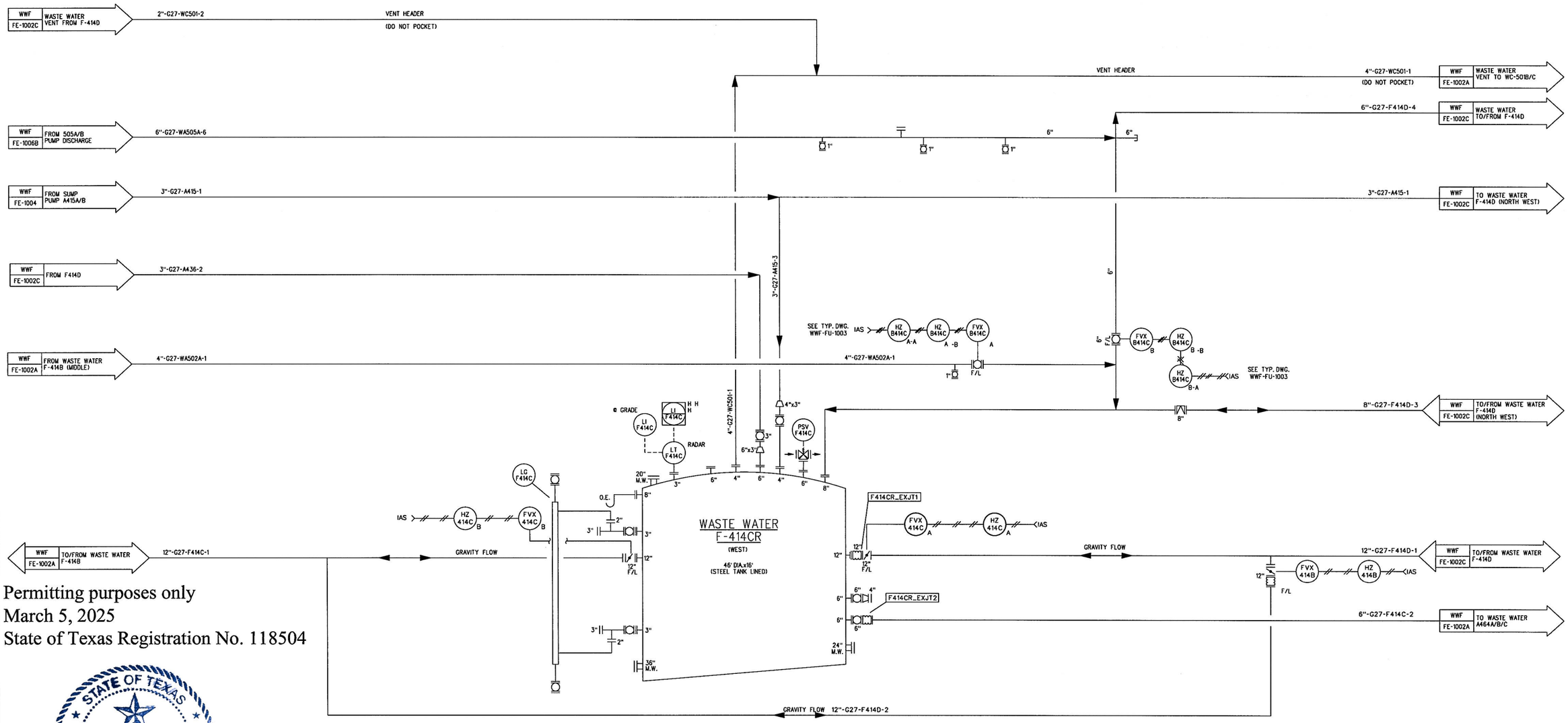
DRAWN: RFL — DATE: 6-16-88 — SCALE: NTS — PROJ. — DRAWING NO.: WWF-FE-1002A — REV.: 11

34x22 (in.)
2/24/2025
UNCONTROLLED IF PRINTED 24HRS AFTER
D-SIZE BORDER - SCALE FOR 24"x36" PLOT ONLY

V.C.1.3 Waste Water Tank F-414C

F-414CR

WASTE WATER TANK
SIZE: 45'DIA. x 16'
WORKING CAPACITY: 197,000 GAL.
DESIGN PRESS: 6 IN WC/1 IN WC @150°F-1" WC
MATERIAL: CARBON STEEL, LINED



Permitting purposes only
March 5, 2025
State of Texas Registration No. 118504

STATE OF TEXAS
NAPOLI R. VAZQUEZ
118504
LICENSED PROFESSIONAL ENGINEER

Napoli R. Vazquez
03/05/2025

NOTES:

1. FOR GENERAL NOTES & LEGEND DESCRIPTION REFER TO DWG. WWF-FE-1000.

REV.	DESCRIPTION	BY	ENG.	DATE
10	HOSE AND EXPANSION JOINT UPDATE	DLL	WC	03/01/25
9	2020 PHA UPDATE	SMH	NJH	01/21/21
8	AS BUILT UPDATE	JMS	TLB	05/27/20
7B	UPDATED LINE NUMBERS	TLB	RI	12/1/14
7B	UPDATED LINE NUMBERS	TLB	RI	12/1/14
7A	2012 UPDATE	TLB	JL	12/31/12
6A	2011 UPDATE	TLB	JL	12/12/11

PROJECTS IN PROGRESS

PROJECT	DATE	REV	ISSUED-TO

CHECKED DATE
ORIGINAL FILE: WWF-FE-2

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BEAUMONT, TEXAS
WASTE WATER FACILITIES
WASTE WATER TANK (F-414C)
PIPING & INSTRUMENT DIAGRAM

DRAWN RFL | DATE 6-16-88 | SCALE NTS
PROJ. | DRAWING NO. WWF-FE-1002B | REV. 10

34x22 (in.)
2/24/2025
UNCONTROLLED IF PRINTED 24HRS AFTER
D-SIZE BORDER - SCALE FOR 24"x36" PLOT ONLY

V.C.1.4 Waste Water Tank Farm (Tank F-414A, F-414B, and F-414C)

Permitting purposes only
March 5, 2025
State of Texas Registration No. 118504

STATE OF TEXAS
NAPOLI R. VAZQUEZ
118504
LICENSED
PROFESSIONAL ENGINEER

Napoli R. Vazquez
03/5/2025

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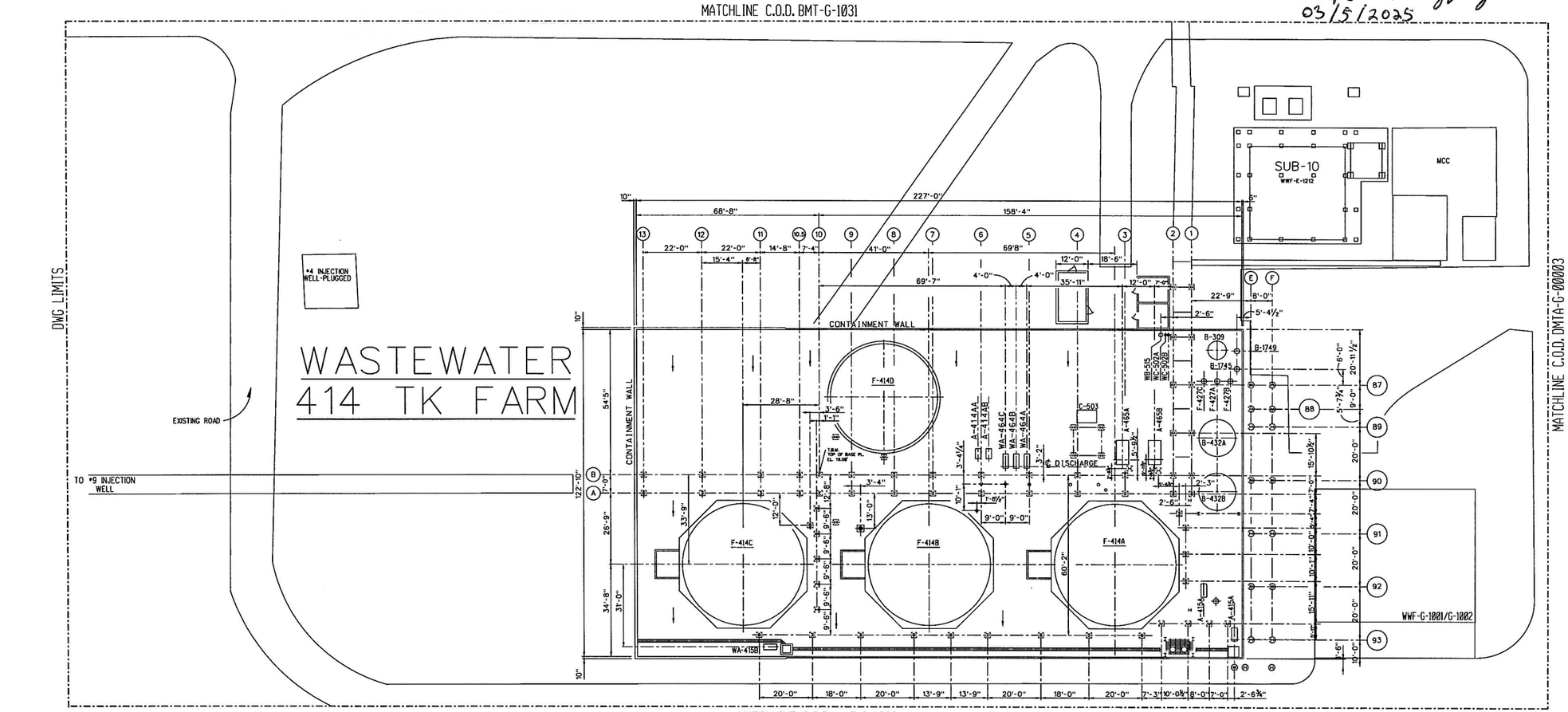

REFERENCE DRAWINGS

BMT-G-1033 - MASTER PLANT MAP BEAUMONT SITE LOCATION KEY PLAN
BMT-G-1031
DMTA-G-00003
WWF-G-1008 WASTE WATER TANK FARM AREA "A"
WWF-G-1001 SOLIDS WASTE HANDLING FACILITIES
WWF-G-1002 SOLIDS WASTE HANDLING FACILITIES

REV.	DESCRIPTION	BY	ENG.	DATE
2	AS BUILT UPDATE	DLL	NR	3/5/25
1	AS BUILT UPDATE	TLB	-	3/4/24
0	INITIAL ISSUE	EMW	-	08-22-16

PROJECTS IN PROGRESS

PROJECT	DATE	ISSUED TO

CHECKED | DATE
ORIGINAL FILE:

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BASF
The Chemical Company

BEAUMONT, TEXAS
WASTE WATER TANK FARM
AREA "B"
EQUIPMENT LOCATION PLAN

DRAWN	DATE	SCALE
EMW	08-22-16	1"=20'

PROJ.
DRAWING NO. WWF-G-1009
REV. 2

D-SIZE BORDER - SCALE FOR 24"x36" PLOT ONLY

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section V: Appendix V.C.2 – Engineering Report for Tank WB-1767

Note: This engineering report was originally prepared by RPS Group in September 2018 and has subsequently been reformatted and additional information provided to meet submittal requirements for Hazardous Waste Permit Renewal Applications.

GSI Job No. 10426

APPENDIX V.C.2
ENGINEERING REPORT FOR
TANK WB-1767 (PERMIT UNIT NO. 8)

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

This engineering report was originally prepared by RPS Group in September 2018 and has subsequently been reformatted and additional information provided to meet submittal requirements for Hazardous Waste Permit Renewal Applications.

GSI Job No. 10426

APPENDIX V.C.2
ENGINEERING REPORT FOR
TANK WB-1767 (PERMIT UNIT NO. 8)

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

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2.2	Installation of Tank WB-1767	1
3.0	**Containment Area**	**1**
4.0	**Operation of Tank WB-1767**	**2**
4.1	General Operating Requirements	2
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4.3	Spill Response	2
5.0	**Special Requirements for Wastes Managed in TANK WB-1767**	**3**
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Figure V.C.2.1 Injection Well Head Tank WB-1767
Figure V.C.2.2 Tank Farm (WB-1767)

GSI Job No. 10426

APPENDIX V.C.2
ENGINEERING REPORT FOR
TANK WB-1767 (PERMIT UNIT NO. 8)

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

I, James M. McDade, a registered professional engineer in the State of Texas, certify that the Engineering Report in the Hazardous Waste Permit Renewal Application issued 14 April 2025 for Tank WB-1767 (Permit Unit No. 8) on the BASF Beaumont Agro Plant (BASF) facility in Beaumont, Texas, has been prepared and developed in accordance with good engineering practices and requirements of 30 TAC 305.45(a)(8)(A). Tank WB-1767 only manages non-hazardous wastes, and therefore, is not required to meet the standards of 40 CFR 264, Subpart J; however, the requirements in 40 CFR 264, Subpart J have been used as a general guide for good engineering practices.

4/14/25

James M. McDade, P.E.
State of Texas Registration No. 115868
GSI Environmental Inc.
Texas Registration No. F-1198

1.0 DESCRIPTION OF TANK WB-1767

1.1 Basis for the Engineering Report

Tank WB-1767 (Permit Unit No. 8) is located in the southwestern portion of the BASF Beaumont Agro Plant (BASF) facility in Beaumont, Texas (see Figure V.A.6 in this Part B application). This engineering report has been prepared to certify that the tank has been designed in accordance with good engineering practices and 30 TAC 305.45(a)(8)(A). Furthermore, this report includes independent verification and certification by a licensed Professional Engineer in the State of Texas, confirming that WB-1767 has been properly constructed and inspected, and is suitable for its intended service.

1.2 Wastes Managed in Tank WB-1767

WB-1767 serves as the final DMTA wastewater storage tank and includes ancillary injection pumps A-1767A and A-1767B that feed Underground Injection Control (UIC) permitted injection wells WDW-301 and WDW-302, which are also known as Injection Wells 7 and 8. The wastewater is produced mainly from the DMTA process and containment sumps at the Million Gallon Tank Area.

DMTA wastewater is pumped from the unit to WB-501. Overview from WB-501 is pumped to WB-502A through WC-501 filters, then to WB-1765, and finally pumped to WB-1767.

2.0 DESIGN AND INSTALLATION OF TANK WB-1767

2.1 Design of Tank WB-1767

Tank WB-1767 has its own rectangular shaped secondary containment system (see Figure V.C.2.2. Tank WB-1767 is located above grade on reinforced concrete associated with the flooring of the secondary containment, and the tank sits on elevated reinforced concrete pedestals. Based on design criteria and performance to date, the foundation is adequate to handle the loads that are imposed on it.

2.2 Installation of Tank WB-1767

Based on tank integrity assessments conducted by RPS Group (RPS) in 2018, WB-1767 and associated ancillary equipment were installed in accordance with standard engineering practices for quality control and testing. The tank and ancillary piping are fabricated from carbon steel, featuring welded and flanged connections and tie-downs engineered to manage potential thermal expansion and contraction.

3.0 CONTAINMENT AREA

Potential releases to the environment are prevented by locating tank WB-1767 and ancillary equipment associated with the tank system (i.e., piping, pumps, valves, etc.) within a sealed concrete secondary containment area. Tank WB-1767 has a

containment volume of 226,327 gallons. This volume accounts for displacement of equipment, including the tank itself and an assumed additional 10% of the containment volume for other ancillary equipment (piping, footers, pump bases, etc.). The containment volume is sufficient to contain 110% of the volume of the largest tank in the secondary containment area. Note that WB-1767 does not store or manage hazardous wastes; therefore, the secondary containment requirements in 40 CFR 264.193(e)(1)(i) and 264.193(e)(1)(ii) are not applicable.

The base of the secondary containment is sloped so that fluid flows to sumps located along the northern secondary containment walls of the tank area. Precipitation, wash water, and/or potential leaks from the tank are removed by means of a sump from the secondary containment area within 24 hours.

4.0 OPERATION OF TANK WB-1767

4.1 General Operating Requirements

Tank WB-1767 is operated to: i) manage neutralized wastewater, compatible with the carbon steel tank and concrete secondary containment; ii) ensure the tank and its equipment are within a reinforced concrete secondary containment vault, elevated on concrete pedestals to prevent soil or water contact, eliminating the need for specific corrosion protection; and iii) maintain stress levels within acceptable limits for current use.

4.2 Inspections

Tank WB-1767 has one level meter to measure the liquid level in the tank and one independent high level alarm. If the tank reaches 90% capacity, an alarm will sound, and readings from these instruments are continuously monitored in the Control Room. Tank WB-1767 is monitored routinely by operators in accordance with the inspection schedule provided in Table III.D.

4.3 Spill Response

Response activities will be conducted in the event of a release from Tank WB-1767. In the event of a release from the tank, BASF will implement the following applicable procedures:

- *Flow Cessation*: Upon notification of a release, BASF will immediately discontinue the flow of waste into the secondary containment area.

- *Waste Removal*: Within 24 hours of release, BASF will remove spilled waste from the secondary containment system to be either disposed of on-site or stored in another permitted tank. If removal of waste cannot be completed in 24 hours (i.e., because of force majeure), BASF will complete waste removal at the earliest possible time to prevent harm to human health or the environment.

- *Notifications*: All notifications regarding a release to the environment will be completed in accordance with specifications in 40 CFR 264.196(d).

- *Return to Service*: If the integrity of the tank was not damaged, the tank will be returned to service upon completion of necessary repairs, removal of waste, and adherence to applicable provisions of 40 CFR 264.196(e) and 40 CFR 264.196(f). If the integrity of the tank was damaged, the tank will be repaired accordingly, and re-certified by a registered professional engineer in the State of Texas prior to returning to service in accordance with 40 CFR 264.196(f).

5.0 SPECIAL REQUIREMENTS FOR WASTES MANAGED IN TANK WB-1767

5.1 Ignitable and/or Reactive Wastes

Tank WB-1767 manages non-hazardous wastewater mainly from the DMTA process that is not ignitable or reactive; therefore, the tank is not subject to 40 CFR 264.198(a)(2).

5.2 Incompatible Wastes

Tank WB-1767 manages non-hazardous wastewater mainly from the DMTA process. The waste streams going to Tank WB-1767 are consistent and compatible; therefore, the tank is not subject to 40 CFR 264.17(b) or 40 CFR 264.199.

6.0 AIR EMISSIONS FROM TANK WB-1767

Tank WB-1767 manages non-hazardous wastewater mainly from the DMTA process, and therefore provisions of 40 CFR 264, Subparts AA, BB, and CC are not applicable. However, BASF will manage all air emissions using emission control media in accordance with the facility's air permits.

GSI Job No. 10426

APPENDIX V.C.2
ENGINEERING REPORT FOR
TANK WB-1767 (PERMIT UNIT NO 8)

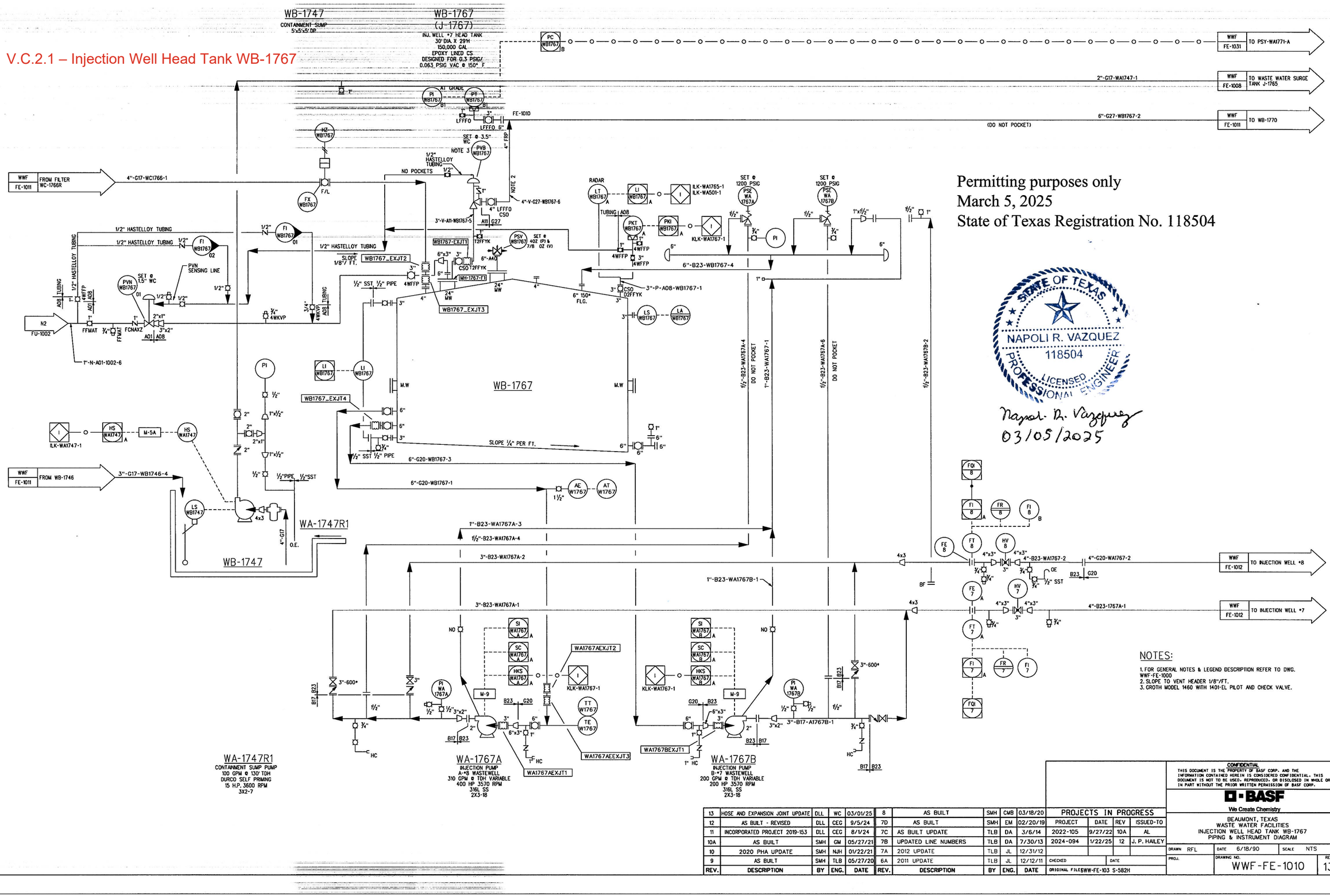
Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

FIGURES

Figure V.C.2.1 Injection Well Head Tank WB-1767
Figure V.C.2.2 Tank Farm (WB-1767)

V.C.2.1 – Injection Well Head Tank WB-1767



NOTES:

1. FOR GENERAL NOTES & LEGEND DESCRIPTION REFER TO DWG. WWF-FE-1000
2. SLOPE TO VENT HEADER 1/8"/FT.
3. GROTH MODEL 1460 WITH 1401-EL PILOT AND CHECK VALVE.

Permitting purposes only
March 5, 2025
State of Texas Registration No. 118504

Napoli R. Vazquez
03/05/2025

REV.	DESCRIPTION	BY	ENG.	DATE	REV.	DESCRIPTION	BY	ENG.	DATE
13	HOSE AND EXPANSION JOINT UPDATE	DLL	WC	03/01/25	8	AS BUILT	SMH	CMB	03/18/20
12	AS BUILT - REVISED	DLL	CEG	9/5/24	7D	AS BUILT	SMH	EM	02/20/19
11	INCORPORATED PROJECT 2019-153	DLL	CEG	8/1/24	7C	AS BUILT UPDATE	TLB	DA	3/6/14
10A	AS BUILT	SMH	GM	05/27/21	7B	UPDATED LINE NUMBERS	TLB	DA	7/30/13
10	2020 PHA UPDATE	SMH	NJH	01/22/21	7A	2012 UPDATE	TLB	JL	12/31/12
9	AS BUILT	SMH	TLB	05/27/20	6A	2011 UPDATE	TLB	JL	12/12/11

PROJECTS IN PROGRESS

PROJECT	DATE	REV	ISSUED-TO
2022-105	9/27/22	10A	AL
2024-094	1/22/25	12	J. P. HAILEY

ORIGINAL FILE:WW-FE-103 S-582H

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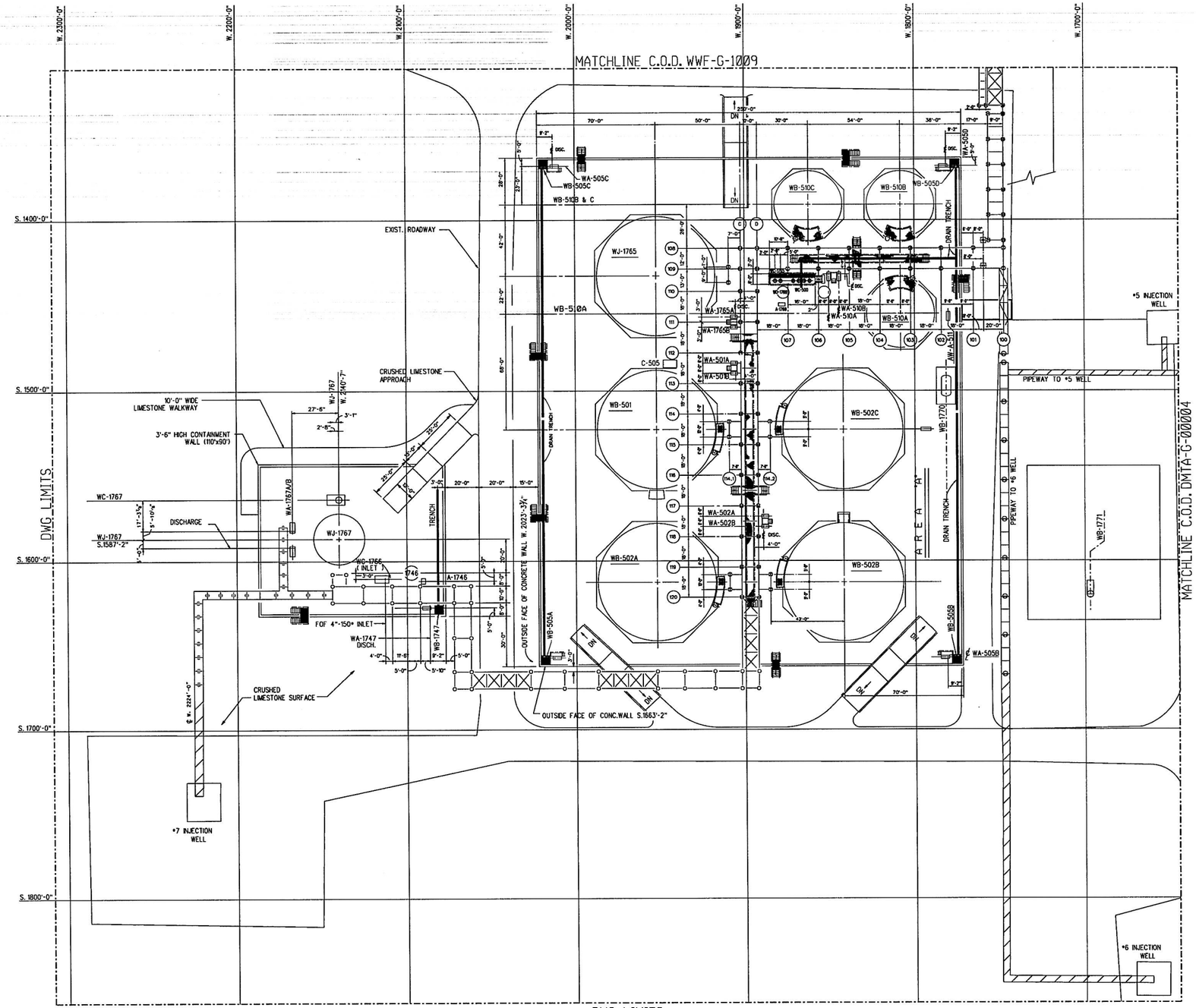
BEAUMONT, TEXAS
WASTE WATER FACILITIES
INJECTION WELL HEAD TANK WB-1767
PIPING & INSTRUMENT DIAGRAM

DRAWN RFL | DATE 6/18/90 | SCALE NTS
PROJ. | DRAWING NO. WWF-FE-1010 | REV. 13

34x22 (in.)
2/26/2025
UNCONTROLLED IF PRINTED 24HRS AFTER
D-SIZE BORDER - SCALE FOR 24"x36" PLOT ONLY



REFERENCE DRAWINGS

BMT-G-1033	MASTER PLANT MAP BEAUMONT SITE LOCATION KEY PLAN
DMTA-G-00004	
WWF-G-1009	WASTE WATER TANK FARM AREA "B"

Permitting purposes only
March 5, 2025
State of Texas Registration No. 118504

STATE OF TEXAS
NAPOLI R. VAZQUEZ
118504
LICENSED
PROFESSIONAL ENGINEER

Napoli R. Vazquez
03/05/2025

V.C.2.2 Tank Farm (WB-1767)

REV.	DESCRIPTION	BY	ENG.	DATE
2	AS BUILT	DLL	NR	3-5-25
1	ADDED MATCHLINES	EMW	-	08-22-16
0	ISSUED TO MASTERS	EMW	-	05-09-16

PROJECTS IN PROGRESS

PROJECT	DATE	ISSUED TO

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BEAUMONT, TEXAS
WASTE WATER TANK FARM
PLOT PLAN
EQUIPMENT LOCATION PLAN

DRAWN E. WILSON	DATE 05/09/16	SCALE 1"=30'-0"
PROJ.	DRAWING NO. WWF-G-1008	REV. 2

CHECKED | DATE
ORIGINAL FILE:

D-SIZE BORDER - SCALE FOR 24"x36" PLOT ONLY UNCONTROLLED IF PRINTED AFTER $$date$$plotted$$$$USERNAME$$$$skskdirfilename$

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section V: Appendix V.C.3 – Engineering Report for Tanks WB-502A, WB-502B, and WB-1765

Note: This engineering report was originally prepared by RPS Group in June 2020 and has subsequently been reformatted and additional information provided to meet submittal requirements for Hazardous Waste Permit Renewal Applications.

GSI Job No. 10426

APPENDIX V.C.3
ENGINEERING REPORT FOR
TANKS WB-502A, WB-502B, AND WB-1765 (PERMIT UNIT NOS. 12, 13, AND 14)

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

This engineering report was originally prepared by RPS Group in June 2020 and has subsequently been reformatted and additional information provided to meet submittal requirements for Hazardous Waste Permit Renewal Applications.

GSI Job No. 10426

APPENDIX V.C.3
ENGINEERING REPORT FOR
TANKS WB-502A, WB-502B, AND WB-1765 (PERMIT UNIT NOS. 12, 13, AND 14)

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

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3.0 Containment Area 2

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4.2 Inspections 2
4.3 Spill Response 3

5.0 Special Requirements for Wastes Managed in TANKS WB-502A, WB-502B, and WB-1765 3
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GSI Job No. 10426

APPENDIX V.C.3
ENGINEERING REPORT FOR
TANKS WB-502A, WB-502B, AND WB-1765 (PERMIT UNIT NOS. 12, 13, AND 14)

Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

I, James M. McDade, a registered professional engineer in the State of Texas, certify that the Engineering Report in the Hazardous Waste Permit Renewal Application issued 14 April 2025 for Tanks WB-502A, WB-502B, and WB-1765 (Permit Unit Nos. 12, 13, and 14) on the BASF Beaumont Agro Plant (BASF) facility in Beaumont, Texas, has been prepared and developed in accordance with good engineering practices and requirements of 30 TAC 305.45(a)(8)(A). Tanks WB-502A, WB-502B, and WB-1765 only manage non-hazardous wastes, and therefore, are not required to meet the standards of 40 CFR 264, Subpart J; however, the requirements in 40 CFR 264, Subpart J have been used as a general guide for good engineering practices.

4/14/25

James M. McDade, P.E.
State of Texas Registration No. 115868
GSI Environmental Inc.
Texas Registration No. F-1198

1.0 DESCRIPTION OF TANKS WB-502A, WB-502B, AND WB-1765

1.1 Basis for the Engineering Report

Tanks WB-502A, WB-502B, and WB-1765 (Permit Unit Nos. 12, 13, and 14) are located in the southwestern portion of the BASF Beaumont Agro Plant (BASF) facility in Beaumont, Texas (see Figure V.A.6 in this Part B application). This engineering report has been prepared to certify that the tanks have been designed in accordance with good engineering practices and 30 TAC 305.45(a)(8)(A). Furthermore, this report includes independent verification and certification by a licensed Professional Engineer in the State of Texas, confirming that Tanks WB-502A, WB-502B, and WB-1765 have been properly constructed and inspected, and are suitable for their intended service.

1.2 Wastes Managed in Tanks WB-502A, WB-502B, and WB-1765

Tank WB-501 serves primarily as the first stage of storage for DMTA Unit wastewater generated in tank B-1757 and containment sumps at the Million Gallon Tank Area. Wastewater overflow from WB-501 is pumped to tank WB-502A or/and WB-502B (via overflow from WB-502A) for additional storage before disposal.

Tanks WB-1765, WB-501, WB-502A, and WB-502B are registered on the facility's Notice of Registration (NOR) as elementary neutralization units.

Tanks WB-502A and WB-502B receive DMTA wastewater from tank WB-501. Tanks WB-502A and WB-502B are interconnected, allowing the co-mingling of wastewater between the two tanks. In the event that additional storage space is necessary due to an upset at the facility, liquids are transferred to WB-502B. The wastewater from WB-502A and WB-502B is pumped to the tank WB-1765 outlet, and then to tank WB-1767 for final storage before disposal via injection wells.

Tank WB-1765 is used to collect wastewater before it is filtered and pumped to tank WB-1767, which serves as the final wastewater storage tank. Tank WB-1765 is fed primarily from tank WB-501; however, WB-1765 can also receive aqueous waste from DMTA tank WB-1757. The tank also receives wastewater from containment sump WB-1747, as well as filter backwash stored in B-1746 via pump WA-1746.

2.0 DESIGN AND INSTALLATION OF TANKS WB-502A, WB-502B, AND WB-1765

2.1 Design of Tanks WB-502A, WB-502B, and WB-1765

Tanks WB-502A, WB-502B, and WB-1765 share a rectangular shaped secondary containment system with five other tanks (WB-501, WB-502C, WB-510A, WB-510B, and WB-510C; see Figure V.C.3.4). These three tanks are located above grade on reinforced concrete associated with the flooring of the secondary containment, and each tank sits on elevated reinforced concrete pedestals. Based on design criteria and performance to date, the foundation is adequate to handle the loads that are imposed on it.

2.2 Installation of Tanks WB-502A, WB-502B, and WB-1765

Based on tank integrity assessments conducted by RPS Group (RPS) in 2020, tanks WB-502A, WB-502B, WB-1765 and associated ancillary equipment were installed in accordance with standard engineering practices for quality control and testing. The tanks and ancillary piping are fabricated from carbon steel, featuring welded and flanged connections and tie-downs engineered to manage potential thermal expansion and contraction.

3.0 CONTAINMENT AREA

Potential releases to the environment are prevented by locating Tanks WB-502A, WB-502B, WB-1765, and ancillary equipment associated with the tank system (i.e., piping, pumps, valves, etc.) within a sealed concrete secondary containment area. These tanks are located within the Million Gallon Tank Farm, which has a containment volume of 1,333,335 gallons. This volume accounts for displacement of equipment, including tanks WB-502A, WB-502B, WB-1765, WB-501, WB-502C, WB-510A, WB-501B, WB-510C, and an assumed additional 10% of the containment volume for other ancillary equipment (piping, footers, pump bases, etc.). The containment volume is sufficient to contain 110% of the volume of the largest tank in the secondary containment area. Note that these tanks do not store or manage hazardous wastes; therefore, the secondary containment requirements in 40 CFR 264.193(e)(i) and 264.193(e)(ii) are not applicable.

The base of the secondary containment is sloped so that fluid flows to sumps located along the western and eastern secondary containment walls of the Million Gallon Tank Farm. Precipitation, wash water, and/or potential leaks from the tanks are removed by means of a sump from the secondary containment area within 24 hours.

4.0 OPERATION OF TANKS WB-502A, WB-502B, AND WB-1765

4.1 General Operating Requirements

Tanks WB-502A, WB-502B, and WB-1765 are operated to: i) manage neutralized wastewater, compatible with the carbon steel tanks and concrete secondary containment; ii) ensure all tanks and equipment are within a reinforced concrete secondary containment vault, elevated on concrete pedestals to prevent soil or water contact, eliminating the need for specific corrosion protection; and iii) maintain stress levels within acceptable limits for current use.

4.2 Inspections

Each of the tanks has one level meter to measure the liquid level in the tank and one independent high level alarm. If the tank reaches 95% capacity, an alarm will sound, and readings from these instruments are continuously monitored in the Control Room. Tanks WB-502A, WB-502B, and WB-1765 are monitored routinely by operators and the inspection schedule provided in Table III.D.

4.3 Spill Response

Response activities will be conducted in the event of a release from Tanks WB-502A, WB-502B, and WB-1765. In the event of a release from the tank, BASF will implement the following applicable procedures:

- *Flow Cessation*: Upon notification of a release, BASF will immediately discontinue the flow of waste into the secondary containment area.

- *Waste Removal*: Within 24 hours of release, BASF will remove spilled waste from the secondary containment system to be either disposed of on-site or stored in another permitted tank. If removal of waste cannot be completed in 24 hours (i.e., because of force majeure), BASF will complete waste removal at the earliest possible time to prevent harm to human health or the environment.

- *Notifications*: All notifications regarding a release to the environment will be completed in accordance with specifications in 40 CFR 264.196(d).

- *Return to Service*: If the integrity of the tank was not damaged, the tank will be returned to service upon completion of necessary repairs, removal of waste, and adherence to applicable provisions of 40 CFR 264.196(e) and 40 CFR 264.196(f). If the integrity of the tank was damaged, the tank will be repaired accordingly, and re-certified by a registered professional engineer in the State of Texas prior to returning to service in accordance with 40 CFR 264.196(f).

5.0 SPECIAL REQUIREMENTS FOR WASTES MANAGED IN TANKS WB-502A, WB-502B, AND WB-1765

5.1 Ignitable and/or Reactive Wastes

Tanks WB-502A, WB-502B, and WB-1765 manage non-hazardous wastewater mainly from the DMTA process that is not ignitable or reactive; therefore, the tanks are not subject to 40 CFR 264.198(a)(2).

5.2 Incompatible Wastes

Tanks WB-502A, WB-502B, and WB-1765 manage non-hazardous wastewater mainly from the DMTA process. The waste streams going to the tanks are consistent and compatible; therefore, the tanks are not subject to 40 CFR 264.17(b) or 40 CFR 264.199.

6.0 AIR EMISSIONS FROM TANKS WB-502A, WB-502B, AND WB-1765

Tanks WB-502A, WB-502B, and WB-1765 manage non-hazardous wastewater mainly from the DMTA process, and therefore provisions of 40 CFR 264, Subparts AA, BB, and CC are not applicable. However, BASF will manage all air emissions using emission control media in accordance with the facility's air permits.

GSI Job No. 10426

APPENDIX V.C.3
ENGINEERING REPORT FOR
TANKS WB-502A, WB-502B, AND WB-1765 (PERMIT UNIT NOS 12, 13, AND 14)

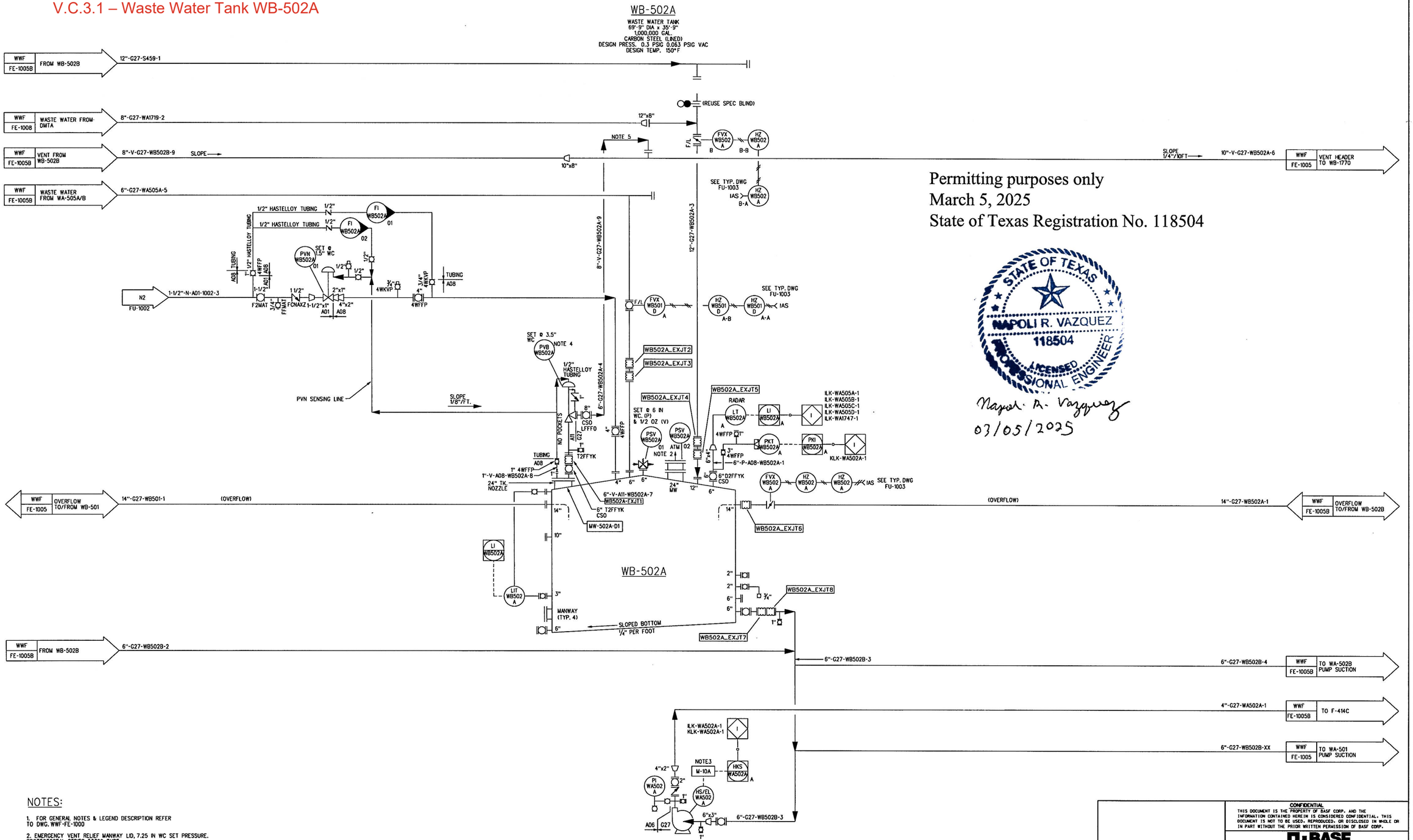
Hazardous Waste Permit Renewal Application

Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

FIGURES

Figure V.C.3.1 Waste Water Tank WB-502A
Figure V.C.3.2 Waste Water Tank WB-502B
Figure V.C.3.3 Waste Water Tank WB-1765
Figure V.C.3.4 Million Gallon Tank Farm (Tanks WB-502A, WB-502B, and WB-1765)

V.C.3.1 – Waste Water Tank WB-502A



Permitting purposes only
March 5, 2025
State of Texas Registration No. 118504

Napoli R. Vazquez
03/05/2025

NOTES:

1. FOR GENERAL NOTES & LEGEND DESCRIPTION REFER TO DWG. WWF-FE-1000
2. EMERGENCY VENT RELIEF MANWAY LID, 7.25 IN WC SET PRESSURE. PROTECTOSEAL SERIES 53300 TYPE.
3. THIS MOTOR IS SIMILAR TO TYPICAL M-10A WITH THE EXCEPTION OF AN ADDITIONAL HARDWIRED START.
4. GROTH MODEL 1460 WITH 1401-EL PILOT AND CHECK VALVE.
5. SLOPE TO VENT 1/8 "-1'-0".

WA-502A
WASTE WATER TRANSFER
150 GPM @ 100' TDH
DURCO 3x2 L - 10
10 HP, 1750 RPM

REV.	DESCRIPTION	BY	ENG.	DATE
12	HOSE AND EXPANSION JOINT UPDATE	DLL	WC	03/01/25
11	INCORPORATED PROJECT 2019-153	DLL	CEG	8/6/24
10	MOC 0976-DMTA-24-0029	DLL	WH	7/17/24
9B	AS BUILT	JMS	WD	07/27/22
9A	AS BUILT	SMH	GM	05/27/21
9	2020 PHA UPDATE	SMH	NJH	01/22/21
8	AS BUILT	SMH	TLB	05/27/20
7D	AS BUILT UPDATE	SMH	RI	04/11/18
7C	INCORPORATED INTO MASTERS	ELW	RI	03/13/18
7B	UPDATED LINE NUMBERS	TLB	DA	7/30/13
7A	2012 UPDATE	TLB	JL	12/31/12
6A	2011 UPDATE	TLB	JL	12/12/11

PROJECTS IN PROGRESS

PROJECT	DATE	REV	ISSUED-TO

ORIGINAL FILE: WWF-FE-5

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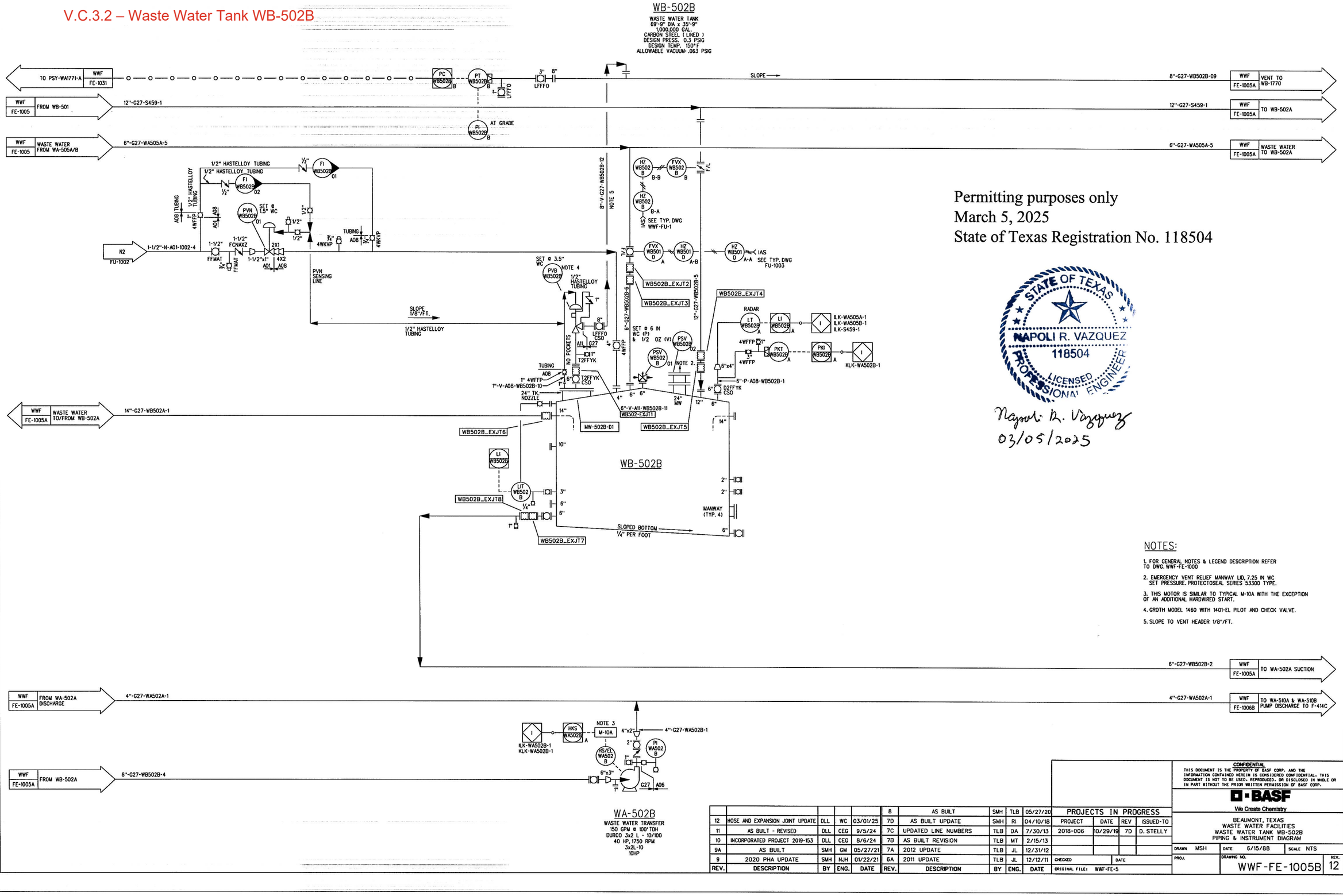
BEAUMONT, TEXAS
WASTE WATER FACILITIES
WASTE WATER TANK WB-502A,
PIPING & INSTRUMENT DIAGRAM

DRAWN MSH | DATE 6/15/88 | SCALE NTS
PROJ. | CHECKED | DATE
DRAWING NO. WWF-FE-1005A | REV. 12

34x22 (in.)
2/24/2025
UNCONTROLLED IF PRINTED 24HRS AFTER
D-SIZE BORDER - SCALE FOR 24"x36" PLOT ONLY

V.C.3.2 – Waste Water Tank WB-502B



Permitting purposes only
March 5, 2025
State of Texas Registration No. 118504

STATE OF TEXAS
NAPOLI R. VAZQUEZ
118504
LICENSED PROFESSIONAL ENGINEER

Napoli R. Vazquez
03/05/2025

NOTES:

1. FOR GENERAL NOTES & LEGEND DESCRIPTION REFER TO DWG. WWF-FE-1000
2. EMERGENCY VENT RELIEF MANWAY LID, 7.25 IN WC SET PRESSURE. PROTECTOSEAL SERIES 53300 TYPE.
3. THIS MOTOR IS SIMILAR TO TYPICAL M-10A WITH THE EXCEPTION OF AN ADDITIONAL HARDWIRED START.
4. GROTH MODEL 1460 WITH 1401-EL PILOT AND CHECK VALVE.
5. SLOPE TO VENT HEADER 1/8"/FT.

REV.	DESCRIPTION	BY	ENG.	DATE
12	HOSE AND EXPANSION JOINT UPDATE	DLL	WC	03/01/25
11	AS BUILT - REVISED	DLL	CEG	9/5/24
10	INCORPORATED PROJECT 2019-153	DLL	CEG	8/6/24
9A	AS BUILT	SMH	GM	05/27/21
9	2020 PHA UPDATE	SMH	NJH	01/22/21

REV.	DESCRIPTION	BY	ENG.	DATE
8	AS BUILT	SMH	TLB	05/27/20
7D	AS BUILT UPDATE	SMH	RI	04/10/18
7C	UPDATED LINE NUMBERS	TLB	DA	7/30/13
7B	AS BUILT REVISION	TLB	MT	2/15/13
7A	2012 UPDATE	TLB	JL	12/31/12
6A	2011 UPDATE	TLB	JL	12/12/11

PROJECTS IN PROGRESS

PROJECT	DATE	REV	ISSUED-TO
2018-006	10/29/19	7D	D. STELLY

CHECKED DATE
ORIGINAL FILE: WWF-FE-5

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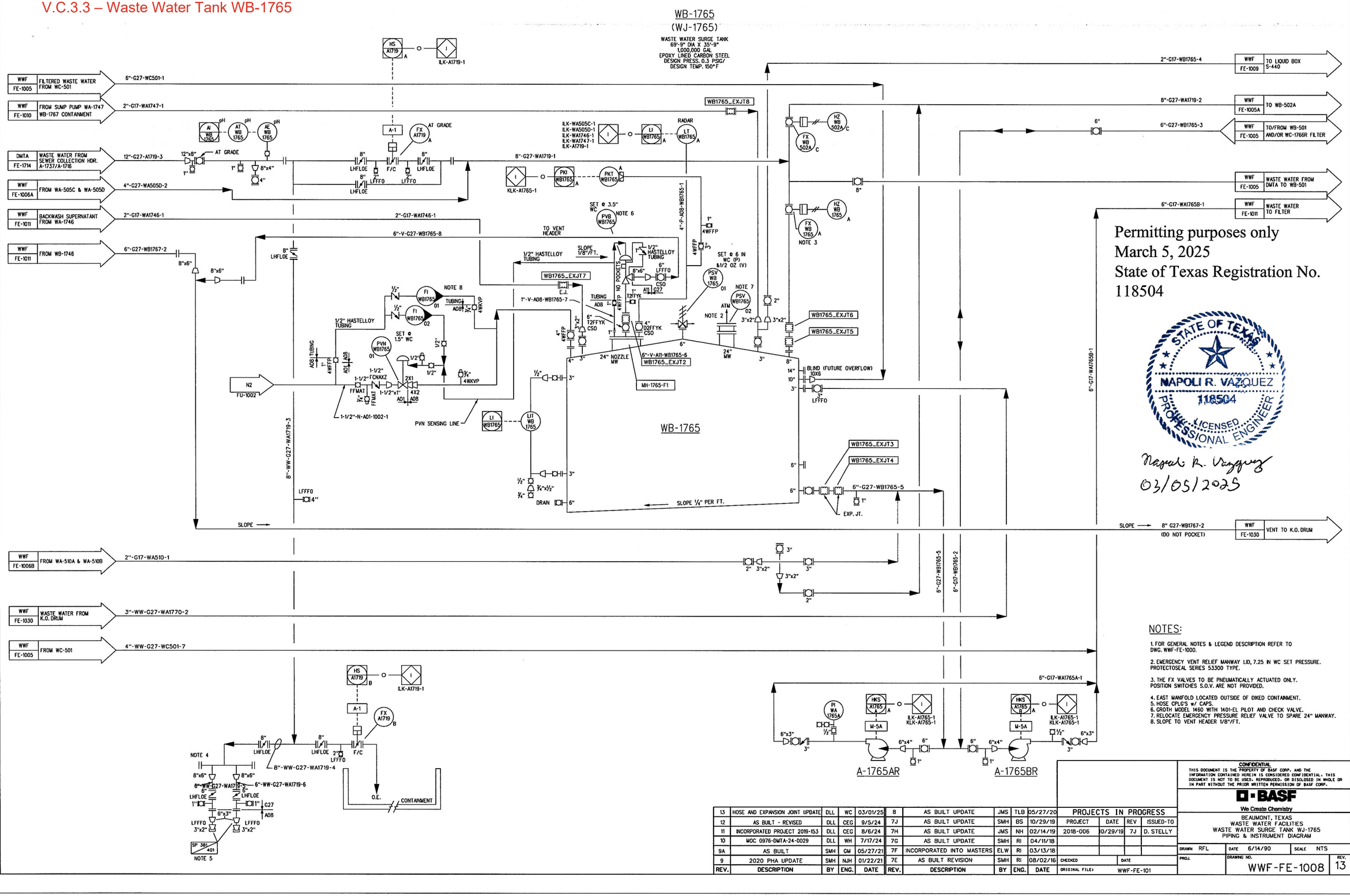
BEAUMONT, TEXAS
WASTE WATER FACILITIES
WASTE WATER TANK WB-502B
PIPING & INSTRUMENT DIAGRAM

DRAWN MSH | DATE 6/15/88 | SCALE NTS
PROJ. | DRAWING NO. WWF-FE-1005B | REV. 12

34x22 (in.)
2/24/2025
UNCONTROLLED IF PRINTED 24HRS AFTER
D-SIZE BORDER - SCALE FOR 24"x36" PLOT ONLY

V.C.3.3 – Waste Water Tank WB-1765



NOTES:

1. FOR GENERAL NOTES & LEGEND DESCRIPTION REFER TO DWG. WWF-FE-1000.
2. EMERGENCY VENT RELIEF MANWAY LID, 7.25 IN WC SET PRESSURE. PROTECTOSEAL SERIES 53300 TYPE.
3. THE FX VALVES TO BE PNEUMATICALLY ACTUATED ONLY. POSITION SWITCHES S.O.V. ARE NOT PROVIDED.
4. EAST MANIFOLD LOCATED OUTSIDE OF DIKED CONTAINMENT.
5. HOSE CPLG'S w/ CAPS.
6. GROTH MODEL 1460 WITH 1401-EL PILOT AND CHECK VALVE.
7. RELOCATE EMERGENCY PRESSURE RELIEF VALVE TO SPARE 24" MANWAY.
8. SLOPE TO VENT HEADER 1/8"/FT.

REV.	DESCRIPTION	BY	ENG.	DATE
13	HOSE AND EXPANSION JOINT UPDATE	DLL	WC	03/01/25
12	AS BUILT - REVISED	DLL	CEG	9/5/24
11	INCORPORATED PROJECT 2019-153	DLL	CEG	8/6/24
10	MOC 0976-DMTA-24-0029	DLL	WH	7/17/24
9A	AS BUILT	SMH	GM	05/27/21
9	2020 PHA UPDATE	SMH	NJH	01/22/21
8	AS BUILT UPDATE	JMS	TLB	05/27/20
7J	AS BUILT UPDATE	SMH	BS	10/29/19
7H	AS BUILT UPDATE	JMS	NH	02/14/19
7G	AS BUILT UPDATE	SMH	RI	04/11/18
7F	INCORPORATED INTO MASTERS	ELW	RI	03/13/18
7E	AS BUILT REVISION	SMH	RI	08/02/16

PROJECTS IN PROGRESS

PROJECT	DATE	REV	ISSUED-TO
2018-006	10/29/19	7J	D. STELLY

CHECKED | DATE
ORIGINAL FILE: WWF-FE-101

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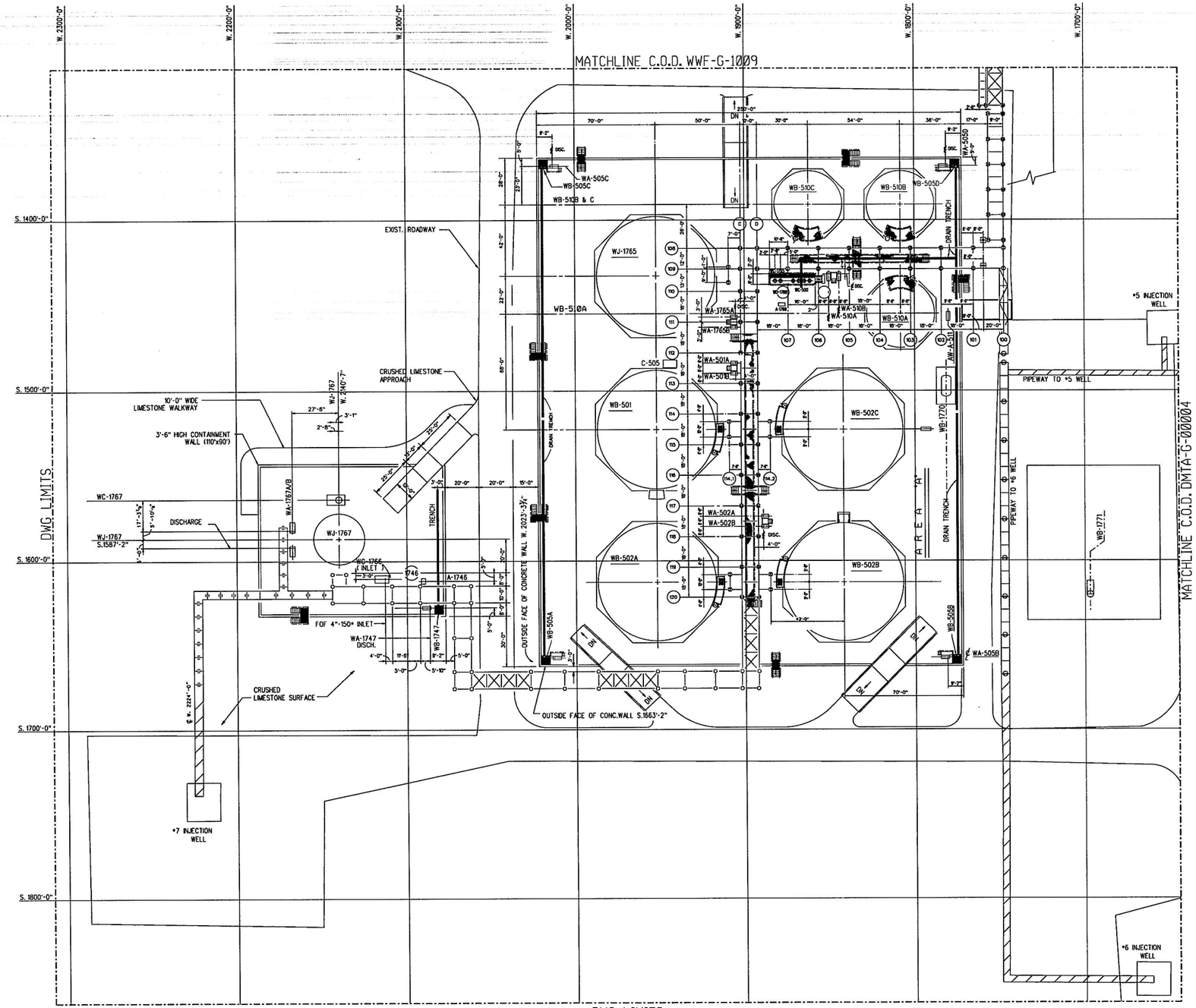
BEAUMONT, TEXAS
WASTE WATER FACILITIES
WASTE WATER SURGE TANK WJ-1765
PIPING & INSTRUMENT DIAGRAM

DRAWN RFL | DATE 6/14/90 | SCALE NTS
PROJ. | DRAWING NO. WWF-FE-1008 | REV. 13

34x22 (in.)
2/26/2025
UNCONTROLLED IF PRINTED 24HRS AFTER
D-SIZE BORDER - SCALE FOR 24"x36" PLOT ONLY



REFERENCE DRAWINGS

BMT-G-1033 · MASTER PLANT MAP BEAUMONT SITE LOCATION KEY PLAN

DMTA-G-00004

WWF-G-1009 WASTE WATER TANK FARM AREA "B"

Permitting purposes only
March 5, 2025
State of Texas Registration No. 118504

STATE OF TEXAS
NAPOLI R. VAZQUEZ
118504
LICENSED
PROFESSIONAL ENGINEER

Napoli R. Vazquez
03/05/2025

V.C.3.4 - Million Gallon Tank Farm (Tank WB-502A, WB-502B, and WB-1765)

REV.	DESCRIPTION	BY	ENG.	DATE
2	AS BUILT	DLL	NR	3-5-25
1	ADDED MATCHLINES	EMW	-	08-22-16
0	ISSUED TO MASTERS	EMW	-	05-09-16

PROJECTS IN PROGRESS

PROJECT	DATE	ISSUED TO

CHECKED DATE

ORIGINAL FILE:

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The Chemical Company

BEAUMONT, TEXAS
WASTE WATER TANK FARM
PLOT PLAN
EQUIPMENT LOCATION PLAN

DRAWN E. WILSON | DATE 05/09/16 | SCALE 1"=30'-0"

PROJ.

DRAWING NO. WWF-G-1008 | REV. 2

D-SIZE BORDER - SCALE FOR 24"x36" PLOT ONLY UNCONTROLLED IF PRINTED AFTER $$date$$plotted$$$$USERNAME$$$$$$sk$dir$$filename$$

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section V: Appendix V.C.4 – Secondary Containment Calculation for Permitted Tanks

GSI Job No. 10426
Prepared By: MW Date: 21 February 2025
Checked By: JMM Date: 3 March 2025
Issued On: 14 April 2025

GSI ENVIRONMENTAL

TABLE V.C.4.1
CALCULATION OF SECONDARY CONTAINMENT VOLUME: F-414 TANK FARM
BASF Beaumont Agro Plant, Beaumont, Texas
Hazardous Waste Permit 50219

Item	Length (ft)	Width or Diameter (ft)	Area (sq ft)	Average Height (ft)	Volume (cu ft)	Conversion from cu ft to Gallons	Volume (gallons)	Notes
Area and Volume within Dike Walls								
Containment Area	228.00	122.00	27,816	2.00	55,632	7.48	416,127	The volume for the secondary containment area was calculated based on dimensions measured during a site visit conducted on 2/13/2025.
						Volume within Dike Walls	***416,127***	
Volume Displaced by Tanks and Equipment								
Tanks								
F-414A	--	46	1,662	0.71	1,177	7.48	8,805	Each tank is placed atop of 15.5" (assumed average) thick concrete pad or base.
F-414B	--	46	1,662	0.63	1,039	7.48	7,769	Each tank is placed atop of 16.5" (assumed average) thick concrete pad or base.
F-414C	--	46	1,662	0.63	1,039	7.48	7,769	Each tank is placed atop of 16.5" (assumed average) thick concrete pad or base.
F-414D	--	42	1,385	0.50	693	7.48	5,182	Each tank is placed atop of 18" (assumed average) thick concrete pad or base.
B-309	--	8.0	50	1.3	63	7.48	470	Each tank is placed atop of 9" (assumed average) thick concrete pad or base.
Pads and Curbing								
F-414A Pad	--	20	1,931	1.3	2495	7.48	18,660	Octagon pad with an average height of 15.5".
F-414B Pad	--	20	1,931	1.4	2656	7.48	19,864	Octagon pad with an average height of 16.5".
F-414C Pad	--	20	1,931	1.4	2656	7.48	19,864	Octagon pad with an average height of 16.5".
F-414D Pad	--	42	1,385	1.5	2078	7.48	15,545	Circular pad with an average height of 18".
B-309 Pad	22	19	418	0.75	314	7.48	2,345	Rectangular pad with 9" height.
B-432A and B-432B Pad	35.5	16	568	1.0	592	7.48	4,426	Rectangular pad with 12.5" height. These two tanks are constructed with skirts elevating their bottoms above the containment berm. Therefore, no tank replacement volume calculation is necessary for these tanks.
Access Ramp	18	12	18	2.0	216	7.48	1,616	Assumes right triangular ramp with 2-ft height.
Other Ancillary Equipment (estimated)								
Other ancillary equipment (piping, footers, pump bases)	--	--	--	--	--	--	41,613	Conservatively assumes 10% of the volume within the dike wall.
						Volume Displaced by Tanks and Equipment	***153,928***	
Volume Available for Containment								
Volume within Dike Walls							416,127	Equal to volume within dike walls.
Less Displacement Volume							153,928	Equal to volume displaced by tanks and equipment.
						Volume Available for Containment	***262,199***	Volume within dike walls minus volume displaced by tanks and equipment.
Volume to be Contained								
110% of Largest Tank Volume							216,700	The largest tank in the secondary containment area will have a full volume of 197,000 gallons.
						Volume to be Contained	***216,700***	
Net Volume Over/(Under)								
Volume Available for Containment							262,199	Equal to available volume for containment.
Volume to be Contained							216,700	Equal to volume to be contained.
						Net Volume Over/(Under)	***45,499***	Conclusion: Sufficient containment volume available.

Notes:

1. Numerical rounding accounts for small differences in certain totals.
2. Note that these tanks only manage non-hazardous wastes (i.e., wastewater) in a pre-injection unit for the facility's UIC permitted Class I injection wells. Therefore, the secondary containment requirements in 40 CFR 264.193(e)(1)(i) and 264.193(e)(1)(ii), which include accounting for the rainfall from a 24-hour, 25-year storm, are not applicable.

STATE OF TEXAS
JAMES M. McDADE
115868
LICENSED
PROFESSIONAL ENGINEER

4/14/25

GSI Job No. 10426
Prepared By: MW Date: 21 February 2025
Checked By: JMM Date: 3 March 2025
Issued On: 14 April 2025

GSI ENVIRONMENTAL

TABLE V.C.4.2
CALCULATION OF SECONDARY CONTAINMENT VOLUME: TANK WB-1767
BASF Beaumont Agro Plant, Beaumont, Texas
Hazardous Waste Permit 50219

Item	Length (ft)	Width or Diameter (ft)	Area (sq ft)	Average Height (ft)	Volume (cu ft)	Conversion from cu ft to Gallons	Volume (gallons)	Notes
Area and Volume within Dike Walls								
Containment Area	108	88	9,504	4.0	38,016	7.48	284,360	The volume for the secondary containment area was calculated based on dimensions measured during a site visit on 2/13/2025.
						Volume within Dike Walls	***284,360***	
Volume Displaced by Tanks and Equipment								
Tanks								
WB-1767	--	30	707	2.8	1,973	7.48	14,760	Tank is placed atop of 14.5" (assumed average) thick concrete pad or base.
Pads and Curbing								
WB-1767 Pad	--	14	946	1.2	1,144	7.48	8,554	Octagon pad with an average height of 14.5".
Access Ramp	35	12	70	4.0	840	7.48	6,283	Assumes right triangular ramp with 4-ft height.
Other Ancillary Equipment (estimated)								
Other ancillary equipment (piping, footers, pump bases)	--	--	--	--	--	--	28,436	Conservatively assumes 10% of the volume within the dike wall.
						Volume Displaced by Tanks and Equipment	***58,033***	
Volume Available for Containment								
Volume within Dike Walls							284,360	Equal to volume within dike walls.
Less Displacement Volume							58,033	Equal to volume displaced by tanks and equipment.
						Volume Available for Containment	***226,327***	Volume within dike walls minus volume displaced by tanks and equipment.
Volume to be Contained								
110% of Largest Tank Volume							165,000	The largest tank in the secondary containment area will have a full volume of 150,000 gallons.
						Volume to be Contained	***165,000***	
Net Volume Over/(Under)								
Volume Available for Containment							226,327	Equal to available volume for containment.
Volume to be Contained							165,000	Equal to volume to be contained.
						Net Volume Over/(Under)	***61,327***	Conclusion: Sufficient containment volume available.

Notes:

1. Numerical rounding accounts for small differences in certain totals.
2. Note that these tanks only manage non-hazardous wastes (i.e., wastewater) in a pre-injection unit for the facility's UIC permitted Class I injection wells. Therefore, the secondary containment requirements in 40 CFR 264.193(e)(1)(i) and 264.193(e)(1)(ii), which include accounting for the rainfall from a 24-hour, 25-year storm, are not applicable.

STATE OF TEXAS
JAMES M. McDADE
115868
LICENSED
PROFESSIONAL ENGINEER

4/14/25

GSI ENVIRONMENTAL

TABLE V.C.4.3
CALCULATION OF SECONDARY CONTAINMENT VOLUME: MILLION GALLON TANK FARM
BASF Beaumont Agro Plant, Beaumont, Texas
Hazardous Waste Permit 50219

Item	Length (ft)	Width or Diameter (ft)	Area (sq ft)	Average Height (ft)	Volume (cu ft)	Conversion from cu ft to Gallons	Volume (gallons)	Notes
Area and Volume within Dike Walls								
Containment Area	274	253	69,322	4.6	317,726	7.48	2,376,589	The volume for the secondary containment area was calculated based on dimensions measured during a site visit on 2/13/2025.
						Volume within Dike Walls	***2,376,589***	
Volume Displaced by Tanks and Equipment								
Tanks								
WB-1765	--	70	3,821	3.0	11,622	7.48	86,934	Each tank is placed atop of 18.5" (assumed average) thick concrete pad or base.
WB-501	--	70	3,821	3.5	13,214	7.48	98,843	Each tank is placed atop of 13.5" (assumed average) thick concrete pad or base.
WB-502A	--	70	3,821	3.6	13,851	7.48	103,607	Each tank is placed atop of 11.5" (assumed average) thick concrete pad or base.
WB-502B	--	70	3,821	3.5	13,374	7.48	100,034	Each tank is placed atop of 13" (assumed average) thick concrete pad or base.
WB-502C	--	70	3,821	3.4	12,896	7.48	96,461	Each tank is placed atop of 14.5" (assumed average) thick concrete pad or base.
WB-510A	--	36	1,018	2.2	2,205	7.48	16,496	Each tank is placed atop of 29" (assumed average) thick concrete pad or base.
WB-510B	--	36	1,018	2.4	2,460	8.48	20,860	Each tank is placed atop of 26" (assumed average) thick concrete pad or base.
WB-510C	--	8.0	50	3.4	170	7.48	1,269	Each tank is placed atop of 20" (assumed average) thick concrete pad or base.
Pads and Curbing								
WB-1765 Pad	--	30	4,346	1.5	6,699	7.48	50,112	Octagon pad with an average height of 18.5".
WB-501 Pad	--	30	4,346	1.1	4,889	7.48	36,568	Octagon pad with an average height of 13.5".
WB-502A Pad	--	30	4,346	1.0	4,165	7.48	31,151	Octagon pad with an average height of 11.5".
WB-502B Pad	--	30	4,346	1.1	4,708	7.48	35,214	Octagon pad with an average height of 13".
WB-502C Pad	--	30	4,346	1.2	5,251	7.48	39,277	Octagon pad with an average height of 14.5".
WB-510A Pad	--	18	1,564	2.4	3,781	7.48	28,279	Octagon pad with an average height of 29".
WB-510B Pad	--	18	1,564	2.2	3,390	7.48	25,354	Octagon pad with an average height of 26".
WB-510C Pad	--	18	1,564	1.7	2,607	7.48	19,503	Octagon pad with an average height of 20".
Ramps	38	12	87	4.6	1,045	7.48	15,633	Assumes two right triangular ramps with 4.58-ft height.
Other Ancillary Equipment (estimated)								
Other ancillary equipment (piping, footers, pump bases)	--	--	--	--	--	--	237,659	Conservatively assumes 10% of the volume within the dike wall.
						Volume Displaced by Tanks and Equipment	***1,043,254***	
Volume Available for Containment								
Volume within Dike Walls							2,376,589	Equal to volume within dike walls.
Less Displacement Volume							1,043,254	Equal to volume displaced by tanks and equipment.
						Volume Available for Containment	***1,333,335***	Volume within dike walls minus volume displaced by tanks and equipment.
Volume to be Contained								
110% of Largest Tank Volume							1,100,000	The largest tank in the secondary containment area will have a full volume of 1,000,000 gallons.
						Volume to be Contained	***1,100,000***	
Net Volume Over/(Under)								
Volume Available for Containment							1,333,335	Equal to available volume for containment.
Volume to be Contained							1,100,000	Equal to volume to be contained.
						Net Volume Over/(Under)	***233,335***	Conclusion: Sufficient containment volume available.

Notes:

1. Numerical rounding accounts for small differences in certain totals.
2. Note that these tanks only manage non-hazardous wastes (i.e., wastewater) in a pre-injection unit for the facility's UIC permitted Class I injection wells. Therefore, the secondary containment requirements in 40 CFR 264.193(e)(1)(iii) and 264.193(e)(1)(ii), which include accounting for the rainfall from a 24-hour, 25-year storm, are not applicable.

STATE OF TEXAS
JAMES M. McDADE
115868
LICENSED
PROFESSIONAL ENGINEER

4/14/25

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B Section VI – Geology Report

Contents

- Part B Application Form, Section VI
- Part B, Section VI: Tables
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GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B Application Form, Section VI

VI. Geology Report

Provide all Part B responsive information in Appendix VI. When preparing the physical format organize your submittal using the Format of Hazardous Waste permit Application and Instructions.

This portion of the application applies to owners or operators of new hazardous waste management facilities; areal and/or capacity expansions of existing hazardous waste management facilities; and existing industrial solid waste facilities that store, process or dispose of hazardous waste in surface impoundments, landfills, land treatment units, waste piles (except those waste piles that meet the requirements of Section V.E.10.b. of this application), and tanks or drip pads which require a contingent post-closure plan.

For a new Compliance Plan or modification/amendment to an existing Compliance Plan of Section XI of this application, submit a Geology Report which contains updated site geologic information derived from on-going investigations since submittal of the last Permit modification/amendment application.

Submit a Geology Report which includes at a minimum the following information. This report and all specifications, details, calculations/estimates and each original sheet of plans, drawings, maps, cross-sections, other graphics, such as limits of contamination maps, etc. or any other geoscientific work must be signed and sealed by a Professional Geoscientist licensed in the State of Texas under the Professional Geoscientists Practice Act.

A. Geology and Topography

1. Active Geologic Processes

Provide a description and interpretation of the active geologic processes in the vicinity of the facility. This description should include:

a. An identification of any faults (active or otherwise) in the area of the facility. The preparer should determine which Holocene sediments or man-made structures have been displaced. The report should contain a description of the investigation techniques used to identify faults and should assess the degree, if any, to which a particular fault increases the long-term potential for waste migration. The clearance required from active faults to ensure that liner systems will not be disrupted will be based upon site specific factors such as the zone of significant surface deformation, uncertainty in locating the fault, activity of the fault, and a distance to provide a reasonable margin of safety. These issues should be addressed when discussing the offset of an industrial solid waste facility unit from an active fault.

To satisfy the requirements of 30 TAC 305.50(a)(4)(D) and 305.50(a)(10)(E), for a proposed hazardous waste management facility or a modification or amendment of a permit which includes a capacity expansion of an existing hazardous waste management facility, submit the following.

(1) A geologic literature review should be conducted, from which useful information on the possibility of faulting at a given site may be revealed. This includes, but is not limited to, maps of surface faults, subsurface structure, and field investigations by the author(s).

(2) Descriptions and maps of faulting, fracturing, and lineations in the area are necessary. An aerial photo with lineation interpretations is suggested.

(3) The maps and cross-sections are to be constructed using an amount of data necessary to adequately describe the geology of the area. Surface data, including data regarding known surface expressions, such as surface faults, gas seeps, lineations, etc., should be accounted for in the subsurface interpretations. A surface structure map should be prepared, incorporating all of the subsurface data as well as known surface features.

(4) A minimum of two structural cross-sections, utilizing available oil field and/or water well electric log data, shall be made perpendicular to each other, crossing at the proposed surface unit location. These cross-sections should define geologic units, indicating especially Holocene sediments and Underground Sources of Drinking Water (USDWs), as well as lithology. The cross-sections should be constructed from the surface, down through the shallowest major structure or the base of the Holocene, whichever is deeper. These cross-sections need to be on a scale necessary to depict the local geology (3000' radius from the site location minimum). If needed to adequately describe the local geology, then a larger radius or deeper area of review may be necessary.

(5) A minimum of two structural subsurface maps need to be prepared. One map should be made on the shallowest mappable subsurface marker, the other on a deeper horizon that shows the underlying major structure. Additional maps may be necessary.

(6) Field surveillance will be necessary to check the area of the facility for surface features, such as lineations, and to investigate potential surface faults as indicated by, but not limited to, aerial photos, topographic maps, and seismic and subsurface structural maps.

(7) The above requirements do not limit the use of any additional information, such as seismic data, isopach maps, or potentiometric maps, that may help in defining the geology of the area of review.

(8) If faulting exists within 3000 feet of the surface unit, it must be demonstrated that the fault has not had displacement within Holocene time. If such a fault does exist, it cannot pass within 200 feet of the surface unit.

(9) If a fault that has been active within the Holocene is located within 3000 feet of the surface unit, it must be demonstrated that, a.) the fault is not transmissive, i.e., it will not provide for groundwater movement that would result in endangerment to human health or the environment, and b.) there is no actual and/or potential problem of subsidence, which could endanger the stability of the surface unit.

b. A discussion of the extent of land surface subsidence in the vicinity of the facility including total recorded subsidence and past and projected rates of subsidence. For facilities located at low elevations along the coast which have experienced appreciable rates of subsidence, the potential for future submergence beneath Gulf water should be addressed.

c. A discussion of the degree to which the facility is subject to erosion. The potential for erosion due to surface water processes such as overland flow, channeling, gullying, and fluvial processes such as meandering streams and undercut banks should be evaluated. If the facility is located in a low-lying coastal area, historical rates of shoreline erosion should also be provided.

d. Complete Table VI.A.1. - Major Geologic Formations

2. **Applicable to Land Based Units Only.** Regional Physiography and Topography (applicable only to owners or operators of facilities that store, process, or dispose of hazardous waste in surface impoundments, landfills, land treatment units, waste piles, except waste piles exempt from groundwater monitoring requirements, and tanks which require a contingent post-closure plan)

    a. Distance and direction to nearest surface water body
    b. Slope of land surface
    c. Direction of slope
    d. Maximum elevation of facility
    e. Minimum elevation of facility

3. **Applicable to Land Based Units Only.** Regional Geology (applicable only to owners or operators of facilities that store, process, or dispose of hazardous waste in surface impoundments, landfills, land treatment units, waste piles, except waste piles exempt from groundwater monitoring requirements, and tanks which require a contingent post-closure plan)

    Provide a description of the regional geology of the area. This section should include:

    a. A geologic map of the region with text describing the stratigraphic and lithologic properties of the map units. An appropriate section of a published map series such as the Geologic Atlas of Texas prepared by the Bureau of Economic Geology is acceptable.

    b. A description of the generalized stratigraphic column in the facility area from the base of the lowermost aquifer capable of providing usable groundwater to the land surface. At least the uppermost 1,000 feet of section below the facility should be described. The geologic age, lithology, variation in lithology, thickness, depth, geometry, hydraulic conductivity, and depositional history of each geologic unit should be described based upon available geologic information. Regional stratigraphic cross sections should be provided, where available.

4. Subsurface Soils Investigation Report **(Applicable to land based units or units requiring contingent closure and post-closure).**

This section should contain the results of an investigation of subsurface conditions for each land based unit and/or unit which requires contingent closure and post-closure care. If several units are in close proximity, a single investigation for the area will suffice. This report should include:

a. The logs of borings performed at the waste management area. All borings must be conducted in accordance with established field exploration methods. Investigation procedures should be discussed in the report. A sufficient number of borings should be performed to establish subsurface stratigraphy and to identify and allow assessment of potential pathways for pollution migration. Borings must be sufficiently deep to allow identification of the uppermost aquifer and underlying hydraulically interconnected aquifers. Borings should penetrate through the uppermost aquifer and all deeper hydraulically interconnected aquifers, deep enough to identify the aquiclude at the lower boundary. Borings should be completed to a depth at least 30 feet below the deepest excavation planned at the waste management area.

b. A text which describes the investigator's interpretations of the subsurface stratigraphy based upon the field investigation. If appropriate, soils may be assigned to generalized strata to aid in the discussion.

c. A text which describes the investigator's interpretations of the subsurface stratigraphy based upon the field investigation. If appropriate, soils may be assigned to generalized strata to aid in the discussion.

d. Complete Table VI.A.4. - Waste Management Area Subsurface Conditions and provide in the report data which describes the geotechnical properties of the subsurface soil materials. All laboratory and field tests must be performed in accordance with recognized procedures. A brief discussion of test procedures should be included. All major strata encountered during the field investigation phase should be characterized with regard to: Unified Soil Classification, moisture content, percent less than number 200 sieve, Atterberg limits (liquid limit, plastic limit, and plasticity index), and coefficient of permeability. Field permeability tests should be used to determine the coefficient of permeability of sand or silt units and should also be used to supplement laboratory tests for more clay-rich soils. In addition, particle size distribution and relative density based upon penetration resistance should be determined for coarse-grained soils. For fine-grained soils the following parameters should also be determined: cohesive shear strength based upon either penetrometer or unconfined compression tests, dry unit weight, and degree of saturation(s). For the major soil strata encountered, the maximum, minimum, and average for each of these variables should be compiled.

e. For land treatment units, provide a description of the surficial soils at the site which includes:

(1) The name and description of the soil series at the site;
(2) Important physical properties of the series such as depth, permeability, available water capacity, soil pH, and erosion factors;
(3) Engineering properties and classifications such as USDA texture, Unified Soil Classification, size gradation, and Atterberg limits (liquid limit, plastic limit, and plasticity index); and
(4) The cation exchange capacity (CEC) of the soil(s) expressed in units of meq/100g.

Much of this information may be obtained by consulting the county soil survey published by the United States Department of Agriculture, Soil Conservation Service. If available, a copy of an aerial photograph showing soil series units on the land treatment area should be provided.

If an aerial photograph is not available, include a soil series map as an attachment to this subsurface soils investigation report.

B. Facility Groundwater

If past monitoring has shown the presence of hazardous constituents in the groundwater, the owner or operator must submit a Compliance Plan Application with this application. The Compliance Plan Application and instructions can be found in Section XI of this application form.

1. Regional Aquifers

Provide a description of the regional aquifers in the vicinity of the facility based upon available geologic references. The section should provide:

a. Aquifer names and their association with geologic units described in Section VI.A.3.b.;

b. A description of the constituent materials of the aquifer(s);

c. A description of the water-bearing and transmitting properties of the aquifer(s);

d. Whether the aquifers are under water table or artesian conditions;

e. Whether the aquifers are hydraulically connected;

f. A regional water table contour map or potentiometric surface map for each aquifer, if available, from published references;

g. An estimate of the rate of groundwater flow in units of ft/yr;

h. Values for total dissolved solids content of groundwater from the aquifers;

i. Identification of areas of recharge to the aquifers; and

Note: An application for a new hazardous waste surface impoundment, waste pile, land treatment unit, or landfill, which is to be located in the apparent recharge zone of a major or minor aquifer, as designated by the Texas Water Development Board, must include a hydrogeologic report documenting the potential effects, if any, on the regional aquifer in the event of a release from the waste containment system. See the publication entitled Water for Texas, Today and Tomorrow (1990) or subsequent revision (Available at http://www.twdb.texas.gov/waterplanning/swp/1990/index.asp) for more information [30 TAC 305.50(6)]

j. The present use of groundwater withdrawn from aquifers in the vicinity of the facility.

The preparer should update Section III.C.1.e. of the Part A permit application to ensure that all water wells within 1 mile of the property boundaries of the facility have been located. The aquifer(s) yielding water should be identified for each well.

2. Provide groundwater conditions for each land based unit or unit which requires post closure care which includes all the information specified in 30 TAC 335.156-335.167. This discussion should also include:

   a. Records of water level measurements in borings. The boring logs prepared in response to Section VI.A.4.a. should be annotated to note the level at which groundwater is first encountered and the level of groundwater after equilibration. Normally a 24-hour period is adequate for equilibration of groundwater but an extended period may be required for saturated clay deposits. This information should also be presented on the cross-sections required in Section VI.A.4.b. and recorded and retained in the facility groundwater monitoring record.

   b. Records of historical maximum and minimum static water level measurements in monitor wells. Historic water level measurements made during any previous groundwater monitoring should be presented in a table for each well.

   c. Upper and lower limits of the uppermost aquifer and deeper aquifers which are hydraulically interconnected to it beneath the facility boundary. In most cases this identification would include surface contour maps of the top and bottom surfaces. Indicate the typical depth at which groundwater is first encountered.

   d. A site specific water table contour map or potentiometric surface map for the uppermost aquifer, and the basis for such identification (the information obtained from hydrogeologic investigations of the facility area). The predicted groundwater flow direction and rate should be indicated.

   e. A discussion of the variation of hydraulic gradient across the site, including vertical gradient. Calculations for the maximum, minimum, and average groundwater flow velocities for each aquifer identified should also be provided, including pump test data where appropriate.

   f. An analysis of the most likely pathway(s) for pollutant migration in the event that the primary barrier liner system is penetrated.

3. Description of the Detection Monitoring Program

It is important to note that even if the proposed program may use the same well system as the present program, the sampling parameters may be different.

a. Include in the design report a description of the proposed detection monitoring program. This description should contain all requirements of 30 TAC 335.163-335.164.

b. Provide a justification for the selected suite of waste specific parameters specified in Table VI.B.3.c. - Groundwater Sample Analysis based on toxicity, mobility, persistence, and concentrations in light and dense non-aqueous phase components of the waste.

c. (Sampling and Analysis Plan) Describe the proposed sampling and analysis methods, as well as statistical comparison procedures to be utilized in evaluating groundwater monitoring data. Note: Methods listed for use in groundwater programs may provide flexibility allowing for updates of the base method. For methods other than the standard acceptable methods, applicant must provide a demonstration that the proposed methods are appropriate for groundwater analysis per 30 TAC 335.163(5).

d. Specify the statistical method and process for determining whether constituent concentrations in groundwater are above background, in accordance with 30 TAC 335.163. Refer to the EPA guidance document entitled Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities - Unified Guidance (March 2009) (document # EPA 530-F-09-020) for recommended methods.

   All data submitted to the TCEQ shall be in a manner consistent with the latest version of the "*Quality Assurance Project Plan for Environmental Monitoring and Measurement Activities Relating to the Resource Conservation Recovery Act and Underground Injection Control*" (TCEQ QAPP) which a can be found on the agency's website.

   Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity. The method used to obtain a representative sample of the material to be analyzed shall be the appropriate method from ***Ground Water, Volume II: Methodology***, (document # EPA/625/6-90/016b) or an equivalent method approved by the Executive Director of the TCEQ. Laboratory methods shall be those specified in ***Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846***, 1987, as revised; ***Standard Methods for the Examination of Water and Wastewater, Fifteenth Edition***, 1980, and 1981 supplement, or current adopted edition; ***RCRA Ground-Water Monitoring: Draft Technical Guidance***, 1992, ***OSWER Directive 9950.1***, or an equivalent method approved in writing prior to use by the Executive Director. [30 TAC Section 305.125(11)(A)]

e. For inclusion into a permit, complete Table VI.B.3.b. - Unit Groundwater Detection Monitoring System to specify the proposed well system for each unit or waste management area which requires groundwater monitoring.

f. For inclusion into a permit, complete Table VI.B.3.c to specify:

(1) the suite of waste specific parameters (indicator parameters, waste constituents, or reaction products) which will be analyzed at each sampling event for each well or group of wells. These parameters must provide a reliable indication of the presence of hazardous constituents in the groundwater;

(2) the sampling frequencies and calendar intervals (e.g., monthly; quarterly within the second 30 days of each quarter; semiannually within the first 30 days of the 2nd and 4th quarters, etc.);

(3) the analytical method and the laboratory predicted detection limit and predicted Practical Quantification Limit (PQL) of the sample preparation and analysis methods for the selected parameters. This detection limit will represent the capability of the sampling and analysis to reliably and accurately determine the presence of the selected parameters in the sample; and

(4) the concentration limit which will be the basis for determining whether a release has occurred from the waste management unit/ area. Concentration limits shall be based on background values for the waste management unit/area, or PQL values developed through laboratory data obtained using practices consistent with the latest version of the TCEQ QAPP. If background values are lower than PQLs, the applicant may choose respective PQLs as concentration limits for hazardous constituents.

g. Submit drawings depicting the monitoring well design, current and proposed.

h. Submit at least one map of the entire facility and additional maps or drawings if necessary on one or more 8.5" x 11" sheets of sufficient scale to show the following in adequate detail:
   (1) Monitoring well locations, current and proposed;
   (2) Soil-pore liquid and core sampling points, current and proposed;
   (3) Waste management unit(s)/area;
   (4) Property boundary;
   (5) Point of compliance;
   (6) Direction of groundwater flow; and
   (7) Extent of any known plume of contamination

i. For the description of site-specific groundwater for inclusion in permit summary documents, please complete the following:

Table VI.A.2. Description of Uppermost Aquifer

C. Exemption from Groundwater Monitoring for an Entire Facility

In accordance with 30 TAC 335.156(b)(4), a waste management facility may be exempt from groundwater monitoring if the owner or operator can demonstrate that there is no potential for migration of liquid from any regulated unit to the uppermost aquifer during the active life of the regulated unit (including the closure period) and post-closure care period. This demonstration must be submitted with the permit application, and must be certified by a qualified geologist or geotechnical engineer.

This exemption does not apply to Unsaturated Zone Monitoring. Owners and operators of Land Treatment Units must monitor the unsaturated zone under all circumstances.

The following areas should be addressed in the demonstration, and any predictions must be made on assumptions that maximize the rate of liquid migration:

1. Thickness of soil between the base of the unit and saturated zone;
2. Thickness of saturated zone;
3. Head pressure of the fluids;
4. Properties of the saturated and unsaturated zone (including permeability, effective porosity, and homogeneity), and
5. Total life of facility

The criteria used for the evaluation of this demonstration are more stringent than those used for evaluations of demonstrations submitted prior to permitting. Thus it is necessary for an owner or operator to submit another demonstration even if one was submitted and approved previously.

This type of exemption differs from the exemptions described in Sections V.D. (Surface Impoundments), V.E. (Waste Piles), and V.G. (Landfills). An owner or operator may pursue a facility-wide exemption as well as an exemption for a particular unit, if the owner or operator wishes.

D. Unsaturated Zone Monitoring

1. List all hazardous constituents that have been or will be monitored.
   a. Current parameters.
   b. Proposed parameters.
2. Number of soil-pore liquid sampling points.
   a. Depth of sampling points.
   b. Equipment used for soil pore liquid monitoring.
3. Number of soil core sampling points.
   a. Depth of soil core sampling points.
   b. Indicate on a facility map locations of all sampling points.

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section VI: Tables

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Table VI.A.1. - Major Geologic Formations

Names Of Major Geologic Formation(s) Beneath The Facility	Lithology Of The Major Geologic Formation	Formation Thickness (Feet)	Depth To Top Of Formation	
			Feet/MSL(1)	Feet/BGS(2)
Beaumont Formation	Clay-rich sediments with interbedded silt and sand intervals	315	~+15	0
Lissie Formation	Fine-grained sand and sandy clay	650	~-300	~-315
Willis Formation	Several upward-fining sequences of clay, silt, and sand	650	~-950	~-965
Goliad Formation	Sandstone with gravels, fine sand, silt, and clay	1800	~-1600	~-1615
Upper Lagarto Formation	Coastal plain fluvial/ coastal sand, silt, and clay	800	~-3400	~3415
Middle Lagarto Formation	Predominately fluvial deltaic clay and silt	900	~-4200	~-4215
Lower Lagarto Formation	Predominately sandstone with silt and clay	750	~-5100	~5115
Oakville Formation	Sandstone, some interbedded shale	1,450	~-5850	~5865

(1) MSL: Mean Sea Level

MLGL: Mean Low-tide Gulf Level

(2) BGS: Below Grade Surface

Table VI.A.4 - Waste Management Area Subsurface Conditions

Boring Number	Depth Below Grade	Stratum	USC Symbol	Liquid Limit*	Plasticity Index*	Percent Passing#200 Sieve	Permeability*	Percent Porosity*
Not Applicabl	Not Applicabl	Not Applicabl	Not Applicabl	Not Applicabl	Not Applicabl	Not Applicabl	Not Applicabl	Not Applicabl

Maximum depth: _____feet below grade

_____feet above MSL

*For the major soil strata encountered, record the minimum, maximum, and average values of these parameters as applicable.

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Hazardous Waste Permit Renewal Application

BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section VI: Appendix VI.1 - Geology Report

APPENDIX VI.1
GEOLOGY REPORT

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

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Hazardous Waste Permit Renewal Application
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BASF Beaumont Agro Plant, Beaumont, Texas

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CERTIFICATION OF GEOLOGY REPORT

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

I, Wynne Casteel, a professional geoscientist in the State of Texas, certify that the Geology Report in the Hazardous Waste Permit Renewal Application for the BASF Beaumont Agro Plant facility in Beaumont, Texas, has been prepared under my direction and supervision in accordance with generally accepted geoscience principles and practices. This report was prepared to address requirements of the TCEQ RCRA Permit Application (TCEQ-00376 Revised 1 March 2023).

14 April 2025

Wynne Casteel, P.G.
State of Texas Registration No. 15539
GSI Environmental Inc.
Registered Geoscience Firm No. 50243

APPENDIX VI.1
GEOLOGY REPORT

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

INTRODUCTION

This geology report has been prepared for the BASF Beaumont Agro Plant (BASF) hazardous waste permit renewal application. This report serves as a comprehensive review and update to the previous geology report for the BASF facility:

- RPS, 2014. "Industrial and Hazardous Waste Permit and Compliance Plan Renewal and Major Amendment Application," BASF Corporation, Beaumont, Texas, HW/CP-50219, SWR 30053. March 2014.

Findings presented below include results from an updated literature search and are consistent with those from the previous report which addressed a 2.5-mile study area surrounding the BASF facility (Study Area, see Figure VI.1.1).

To facilitate review, the section numbering and report content follow the order of the Texas Commission on Environmental Quality (TCEQ) Part B Application Form (TCEQ-00376 Rev. 03/01/2023). Major topics in this report include i) geology and topography and ii) groundwater beneath the facility. The BASF facility does not include any land-based units or units requiring contingent closure and post-closure care; therefore, the entire facility is exempt from groundwater monitoring and no groundwater detection monitoring is required per 30 Texas Administrative Code (TAC) 335.156(b)(4).

GEOLOGY REPORT

VI.A GEOLOGY AND TOPOGRAPHY

VI.A.1 Active Geologic Processes and Major Geologic Formations

The BASF Beaumont Agro Plant (formerly Sandoz Agro, Inc. and Sandoz Crop Protection Corp.) facility is located in eastern Jefferson County, Texas within the Texas Gulf Coast Plain, a gently sloping coastal plain that includes surface-water features such as incised drainage channels, streams, and associated tributaries (Ellis et al., 2023). The Texas Gulf Coast Plain is underlain by a thick wedge of terrigenous sediments deposited within the Gulf of Mexico basin (Kreitler, 1976). Sediments of the upper several thousand feet below ground surface (bgs) in the 2.5-mile radius Study Area were deposited in the Gulf of Mexico basin within fluvial-deltaic to shallow-marine environments during primarily the Miocene to Pleistocene Epochs (Mace et al., 2006). Cycles of sea-level changes and basin subsidence caused the episodic deposition of sequences of sand, silt, clay, and gravel sediments. The resulting often-heterogeneous assemblage of sediments dip and

thicken toward the Gulf of Mexico to the south. These sediments make up the present-day Gulf Coast Aquifer (Mace et al., 2006).

Surface faulting and land-subsidence, primarily due to sediment loading/gravity tectonics, salt domes/diapirs, and historical withdrawals of oil, gas, and/or groundwater, are the predominant geologic processes that have historically been active along the Texas Gulf Coast region, including in the vicinity of the BASF facility (Young et al., 2012; Ellis et al., 2023). These geologic processes, along with erosion, are described in further detail below. Major geologic formations found in the Study Area are also summarized.

VI.A.1.a Faulting

Types of Faulting

Faults in the Texas Gulf Coast region are products of either i) the upward movement of salt or shale diapirs (domes), or ii) growth faults associated with depositional loading of older, poorly consolidated strata and gulfward creep of the sediment mass. Many of the known active faults are also located in areas of heavy withdrawals of groundwater, oil, and gas (which are also areas of greatest surface subsidence; see Section VI.A.1.b). The two main types of faulting in the Texas Gulf Coast region are further described below.

- *Diapiric Faults*: Faulting associated with diapiric movement usually forms complex fault patterns which may show radial, peripheral, tangential or axial graben patterns. These faults are generally shorter and more localized than growth faults (Verbeek, 1979). One fault of this nature has been identified within the Study Area at a distance of approximately 2.5-miles of the BASF facility and is an extension of a fault associated with the Spindletop Salt Dome (Jeffrey, 1992). The BASF facility is located approximately 3 miles south of the Spindletop Salt Dome, 8 miles southwest of the Port Neches Salt Dome, and 13 miles northeast of the Fannett Dome (Seni et al., 1984; Fisher et al., 1973). No other salt domes or faulting associated with salt domes are known to be present near the BASF facility (see Figure VI.1.2).

- *Growth Faults*: Contemporaneous growth faults are gently sinuous, relatively long faults that occur in bands or zones paralleling the present coastline. Growth faults developed along the shelf margin where large quantities of fluvial sediments of a younger clastic wedge were rapidly deposited over prodelta and shelf muds of an older clastic wedge. The downthrown side of these growth faults is located on the coastward side of the fault plane. Hence, they are known as down-to-the-coast faults. Movement along these growth faults continued as sediments were deposited within the embayment causing the accumulation of thick sections of sands and muds on the downthrown side of these growth faults. Movement along growth faults occurs in the horizontal as well as the vertical direction. The horizontal component of movement may create enough stress on the downthrown block to develop an antithetic fault that will dip into the original growth fault, causing a graben structure. Growth faults may extend across Pleistocene strata and outcrop at the land surface forming topographic scarps in Holocene strata. Maximum displacement of growth faults in the Gulf Coast Aquifer are a few hundred feet and surface expressions of active growth faults are typically only

several feet (Verbeek, 1979). Multiple growth faults together commonly form zones of sediment deformation that can restrict the horizontal flow of groundwater and increase vertical flow of groundwater (Young et al., 2012).

Several studies including Kreitler (1978) and Verbeek and Clanton (1981) suggest that the extraction of fluids (e.g., water and oil) from sediments in the Gulf Coast basin could have accelerated or reinitiated fault movement along faults. However, Verbeek and Clanton (1981) note that the potential mechanism(s) causing this is/are not well understood.

The Texas coastal plain is classified as a Seismic Design Category A (i.e., lowest hazard) per the National Earthquake Hazards Reduction Program (NEHRP, 2023). Faults in the Texas coastal plain generally do not release measurable amounts of seismic energy due to the lack of stress build-up in the rocks on opposing sides of faults. Consequently, there is little potential energy to be released in an earthquake, and correspondingly low seismic hazard risk. A review of seismic activity from 1 January 1976 through 3 February 2025, confirmed that no earthquakes above magnitude 2.5 were detected in Jefferson County during this historical period (USGS, 2025). Although faults display low seismic risk, surface faults in the nearby Houston metropolitan region have been recorded to cause damage to roads, pipelines, wells, power lines, and buildings (Engelkemeir and Khan, 2008). However, this type of faulting appears to be more common in the Houston metropolitan region than in the Beaumont area where the BASF facility is located (Mace et al., 2006).

Faulting in the Vicinity of the BASF Facility

Active or potentially active faults within or near the BASF facility, based on lineament or grain displayed on available aerial photographs, are shown on Figure VI.1.1. As can be seen, some lineaments have been mapped crossing near the BASF facility (Fisher et al., 1973; Figure VI.1.1); however, none of these features have been documented as faults. As noted by Woodruff and Caran (1984), lineaments are “inherently ambiguous features”, and “the cause of many such features is unknown.” Hence, the presence of lineaments is not, in and of itself, indicative of surficial faulting.

An updated literature review was performed to identify faults in the vicinity of the facility. An extensive analysis of faulting was originally conducted during the facility evaluations completed during preparation of RCRA permit renewal applications by means of: i) literature reviews, ii) review of aerial photographs, and iii) surface investigations and reconnaissance and iv) review of available well logs (Jeffrey, 1994; RSP, 2014). These investigations concluded that there is no evidence of surface or near-surface faulting at the BASF facility (Jeffery, 1992; Jeffery, 1994; RSP, 2014). The closest fault found to the BASF is located approximately 2.5 miles from the facility and is an extension of a fault associated with the Spindletop Salt Dome (Jeffery, 1992). Evidence of displacement for this fault only exists in sediments of the Lower Miocene and older (approximately 5,000 feet bgs and deeper). Subsurface faults located in the top of the Frio Formation and base of the Miocene Formation were mapped in an addendum to the January 1992 Geology Report submitted as part of the 1998 permit application (Hill Country Environmental, 1998). No evidence of active faulting has been identified close enough to the BASF facility to adversely affect the waste management units.

VI.A.1.b Land Surface Subsidence

Land surface subsidence is not expected to threaten the stability of hazardous waste management units or operation of the BASF facility. Subsidence in the vicinity of the BASF facility has been attributed to withdrawals oil, gas, and associated groundwater as well as sulfur solution mining (Ratzlaff, 1980). Subsidence in the surrounding area is generally a localized phenomenon that occurs adjacent to salt domes and oil and gas fields (Ratzlaff, 1980). Historical and recent land surface subsidence in the vicinity of the BASF facility is discussed below.

The principal cause of historical land surface subsidence in the Gulf Coastal Plain is attributed to the large-scale withdrawal of groundwater from the Gulf Coast Aquifer that began in the early 1900s. These withdrawals caused depressurization and compaction of clay and silt layers interbedded in the aquifer sediments, which caused the overlying land surface to subside, especially in the Houston-Galveston region (Ellis, et al., 2023). In Jefferson County, localized subsidence has been known to be caused by historical withdrawals of oil, gas, and associated groundwater during oil and gas extraction. Sulfur solution mining has also contributed to subsidence (Ratzlaff, 1980).

The BASF facility is considered to be in an area of moderate to high risk of subsidence due to groundwater pumping according to the Texas Water Development Board (Furnans et al., 2017). Moreover, although Jefferson County is within Texas Groundwater Management Area 14 (GMA-14), the county does not have a groundwater conservation district to regulate ground water withdrawal.

Several areas in Jefferson County experienced large amounts of subsidence during the 1918-1977 period including the Spindletop Dome and the Port Acres areas which have subsided up to 15 feet and 3 feet, respectively over multi-decade periods (Ratzlaff, 1980). In contrast, less than 0.5 feet of cumulative subsidence has been observed in the area of the BASF facility during the 59-year period from 1918 to 1977 (Ratzlaff, 1980; see Figure VI.1.3). Due to the localized nature of subsidence in the vicinity of the BASF facility, subsidence is not likely to impact the waste management units at the BASF facility.

VI.A.1.c Potential for Erosion

There is limited potential for erosion of natural soils at the BASF facility. The majority of the developed area of the facility is covered by concrete or asphalt paved roads, concrete secondary containment, and/or foundations associated with the tank farm and process areas. Regular maintenance of concrete surfaces, roads, drainage ditches, and secondary containment areas ensures that erosion is negligible. Furthermore, no streams are located in the vicinity of the facility and the surface relief is nearly flat. The facility was not within the area inundated by the Hurricane Carla storm surge in 1961 (Fisher, 1973).

VI.A.1.d Major Geologic Formations

The major geologic formations, which make up the upper approximately 7,400 feet below the BASF facility, include the Beaumont, Lissie, Willis, Goliad, and the Lagarto and Oakville Formations of the Fleming Group. These units are underlain by the Catahoula Formation. The nomenclature of these stratigraphic units varies widely (Mace et al., 2006);

for the purposes of this report, naming conventions were adopted as used by Young et al. (2012). The dominant surficial geologic formation in Jefferson County is the Beaumont formation (see Figure VI.1.4). Note that the estimated depths to the top of each formation were updated using more up-to-date data from Young et al. (2012) (see Figure VI.1.5). Major geologic formations are summarized in Table VI.A.1 of this Part B application.

VI.A.2 Regional Physiography and Topography

None of the BASF waste management units are land-based units or units that require contingent closure and post-closure care. Consequently, this section is not applicable per TCEQ-00376, Section VI.A.2.

VI.A.3 Regional Geology

None of the BASF waste management units are land-based units or units that require contingent closure and post-closure care. Consequently, this section is not applicable per TCEQ-00376, Section VI.A.3.

VI.A.4 Subsurface Soils Investigation Report

None of the BASF waste management units are land-based units or units that require contingent closure and post-closure care. Consequently, this section is not applicable per TCEQ-00376, Section VI.A.4.

VI.B FACILITY GROUNDWATER

VI.B.1 Regional Aquifers

The only regional aquifer near the BASF facility is the Gulf Coast Aquifer. Hydrogeologic units and their associated geologic formations, characteristics, and hydraulic properties are described below.

VI.B.1.a Aquifer Names and Associated Geologic Formations (Stratigraphic Units)

The principal groundwater-bearing geologic units in Jefferson County are, from youngest (shallowest) to oldest (deepest), the Beaumont Formation, Lissie Formation, Willis Formation, Goliad Formation, Lagarto Formation (Upper, Middle, and Lower Fleming Group), Oakville Formation (Lower Fleming Group), and Catahoula Formation. These seven units, which range from Oligocene to Pleistocene age (Young et al., 2012), collectively form a thick sequence of interbedded sand, silt, and clay deposits and form leaky artesian aquifer system known as the Gulf Coast Aquifer. Up to five hydrogeologic units are generally recognized within this aquifer system (see Exhibit VI.B.1.a). In general, units of the Gulf Coast Aquifer dip and thicken toward the Gulf of Mexico (to the south). Although there is variability throughout the Gulf Coast Aquifer, the general hydrogeologic units and associated geologic formations are displayed in Exhibit VI.B.1.a.

Exhibit VI.B.1.a. Relationship between hydrogeologic and stratigraphic units in the Gulf Coast Aquifer (modified from Young et al., 2012).

Hydrogeologic Unit		Geologic Formation/ Stratigraphic Unit
Gulf Coast Aquifer System	Chicot Aquifer	Beaumont Formation
		Lissie Formation
		Willis Formation
	Evangeline Aquifer	Goliad Formation
		Lagarto Formation (Upper and Middle Fleming Group)
	Burkeville Confining System	
	Jasper Aquifer	
		Oakville Formation (Lower Fleming Group)
	Catahoula Confining System	Catahoula Group

Dip and strike cross-sections modified from Young et al. (2012) show the general sequence of the hydrogeologic units and geologic formations/ stratigraphic units within the region of the BASF facility. These are included as Figure VI.1.5 (dip) and Figure VI.1.6 (strike).

VI.B.1.b Aquifer Constituent Materials Description

Chicot Aquifer

The uppermost hydrogeologic unit of the Gulf Coast Aquifer is the Pleistocene-aged Chicot aquifer. The top of the Chicot aquifer beneath the BASF facility is composed of the interbedded clay, silt, and sand of the surficial Beaumont Formation. Underlying the Beaumont Formation are the predominantly sandy Lissie and Willis Formations with interbedded silts or clays. The Chicot Aquifer, which is the major aquifer in terms of water use in the vicinity of the BASF facility, is composed of two distinct water-producing units in the, the Upper Chicot (Beaumont Formation) and Lower Chicot (Lissie and Wilis Formations), which are generally separated by a clayey bed, though sometimes the two units are in direct hydraulic communication (Aronow, 1971).

As illustrated on Figure VI.1.5, the Chicot aquifer begins at the ground surface in the vicinity of the BASF facility and extends to a depth of approximately 1,600 feet bgs, where it transitions to the hydraulically connected Evangeline aquifer. A structural contour map of the base of the Chicot Aquifer is depicted on Figure VI.1.7 (Young et al., 2012).

Although lithologically similar and hydraulically connected, the Chicot aquifer and underlying Evangeline aquifer have been distinguished by differences in depositional period, hydraulic conductivity, sand content, or water level (Baker, 1979).

Evangeline Aquifer

The sandy Miocene to Pliocene-age Goliad Formation is located at the top of Evangeline Aquifer. Beneath the Goliad Formation are the interbedded sand and clay strata of the Miocene-age Lagarto Formation. The upper unit of the Lagarto Formation makes up the base of the Evangeline Aquifer (Young et al., 2012). Few water wells pump from the Evangeline Aquifer in Jefferson County presumably due to greater depth and/or higher salinity than the overlying Chicot. Between 80 to 100% of the water in the Evangeline Aquifer is estimated to be moderately saline (total dissolved solids, TDS, concentrations >3,000 ppm) (Young et al., 2012). As indicated in Figure VI.1.5, the Evangeline aquifer begins at around 1,600 feet bgs in the vicinity of the BASF facility and continues to a depth of approximately 4,200 feet bgs. A structural contour map of the base of the Evangeline Aquifer is depicted on Figure VI.1.8.

Burkeville Confining System

The base of the Evangeline aquifer is separated from the deeper Jasper aquifer by a leaky confining layer known as the Burkeville Confining System (Burkeville) which is composed of the middle unit of the Lagarto Formation.

The Burkeville consists predominately of clay, shale, and silt strata with interbedded sand lenses. The unit generally slows the interchange of water between the Evangeline and Jasper aquifer systems. Baker (1986) concluded that the Burkeville is an effective confining layer as demonstrated by distinct hydrostatic pressures in the Evangeline and Jasper aquifers, immediately above and below the Burkeville, respectively. The Burkeville is made up of Miocene-aged sediments and begins at around 4,200 feet bgs continuing to a depth of approximately 5,100 feet bgs in the vicinity of the BASF facility (see Figure VI.1.5).

Jasper Aquifer

The Jasper aquifer system includes the Lower Lagarto and Oakville Formations which are the lower unit of the Fleming Group. Upper Jasper sands in the Lower Lagarto are separated from the lower Jasper sands of the Oakville Formation by a sequence of clay and shale with interbedded sand beds. As shown in Figure VI.1.5, the Jasper aquifer extends from approximately 5,100 feet bgs to 7,400 feet bgs in the vicinity of the BASF facility. Groundwater in the Jasper aquifer is generally unused in Jefferson County due to its depth and high salinity. No Jasper aquifer wells were identified in Jefferson County in the Young et al. (2012) study. The Jasper aquifer is underlain by the Catahoula Confining System (of the lower Catahoula Formation) which impedes substantial exchange of water between the Jasper aquifer and underlying units (Kasmarek, 2013).

VI.B.1.c Water Bearing and Transmitting Properties

The transmissivity of the Chicot aquifer ranges from approximately 3,000 to 50,000 feet^2/day and storativity ranges from approximately 0.0004 to 0.1 (dimensionless)

(Kasmarek, 2013). Transmissivity of the Evangeline aquifer ranges from approximately 3,000 to 15,000 feet^2/day and storativity ranges from approximately 0.00005 to 0.1 (dimensionless) (Kasmarek, 2013).

VI.B.1.d Water Table/Artesian Conditions

Most of the ground water within the region, including beneath the BASF facility, exists under confined conditions beneath the interbedded clay and silt-rich group of sediments that correspond to the Beaumont Formation, which is in the upper part of the Chicot aquifer (Kasmarek, 2013). In localized areas the uppermost portion of the Chicot Aquifer can be unconfined (Ellis et al., 2023). Water levels in the upper Chicot and lower Chicot aquifers in the proximity of the BASF facility are approximately sea level and 10 feet below msl respectively (Aronow, 1971). Little groundwater recharge occurs in the vicinity of the BASF facility as the surficial geology of Jefferson County is dominated by the Beaumont Formation (see Figure VI.1.4), which generally impedes the downward movement of recharge due to low infiltration rates (Ellis et al., 2023). The majority of Chicot and Evangeline aquifer recharge occurs in the outcrop of Lissie, Willis, and Goliad formations which outcrop in counties north and west of Jefferson County.

VI.B.1.e Hydraulic Connections

The Evangeline and Chicot aquifer systems are known to be hydraulically connected, which allows for the flow of groundwater between the two systems. However, the hydraulic conductivity of the Chicot system is generally much higher than that of the Evangeline system (Kasmarek, 2013); this difference in hydraulic conductivity is the primary basis for separating the two aquifer systems into two distinct aquifers. The Burkeville Confining System restricts flow between the Evangeline and Jasper aquifers (Baker, 1986; Ellis, 2023).

VI.B.1.f Potentiometric Surface Contours

Potentiometric surface contour maps of the upper Chicot and lower Chicot units are depicted in Figures VI.1.9 and VI.1.10 respectively (Aronow, 1971). These figures indicate that groundwater in the two Chicot units historically flowed down-dip from northwest to southeast. However, groundwater flow directions have been affected by major areas of groundwater withdrawal (e.g., near Winnie, TX in the upper Chicot and in the Houston metro area in the lower Chicot).

VI.B.1.g Groundwater Flow Rate

Regional flow in the Gulf Coast Aquifer ranges from tens to hundreds of feet per year, depending upon the hydraulic gradient, permeability of the sediments, and temperature of the water (Shafer, 1968). Regional flow rates have been estimated using the following equation:

$$v = ki/n_e$$

where: k = hydraulic conductivity, feet/day
i = hydraulic gradient, feet/foot
n_e = effective porosity, dimensionless

Aquifer tests conducted in wells completed in the Chicot Aquifer in Chambers and Jefferson Counties measured coefficients of transmissivity of 10,800 to 29,800 gallons per day per foot (gpd/ft) in the upper Chicot and 5,200 to 401,000 gpd/ft in the lower Chicot (Aronow, 1971). Measured permeabilities ranged from 174 to 596 gallons per day per square foot (gpd/ft^2) in the upper Chicot and 108 to 1,670 gpd/ft^2 in the lower Chicot (Aronow, 1971).

Using the 95th percentile of hydraulic conductivities determined for the GULF model of 20.39 feet/day (Ellis et al., 2023), an estimated effective porosity of the aquifer of 0.30, and a hydraulic gradient of 0.000193 feet/foot estimated from Figure VI.1.10, the estimated regional horizontal velocity of sand beds in the lower Chicot aquifer in the vicinity of the BASF facility is 0.013 feet/day or 4.8 feet/year. As of 1966, the regional groundwater flow directions were generally to the southeast in the upper Chicot and to the east in the lower Chicot (Aronow, 1971; see Figures VI.1.9 and VI.1.10). Coefficients of storage in Jefferson and Chambers counties in the upper and lower Chicot range from 0.0002 to 0.0037 (Aronow, 1971).

The hydraulic properties of the Evangeline Aquifer are not widely known in Jefferson County, since few water wells pump from the aquifer in the county. However, two tests measured coefficients of transmissivity of 32,000 and 36,000 gpd/ft, and permeabilities of 244 and 327 gpd/ft^2 (Aronow, 1971). Groundwater flow direction presumably follows regional patterns (down dip to the south). The coefficient of storage for the Evangeline was found to be 0.00003 (Aronow, 1971).

VI.B.1.h Groundwater Quality

Groundwater having a TDS concentration of less than 3,000 milligrams per liter (mg/L) makes up approximately slightly less than half of water in the Chicot aquifer in the proximity of the BASF facility (Young et al., 2012). However, less than 20% of groundwater in the Evangeline aquifer has a TDS less than 3,000 mg/L in the proximity of the BASF facility (Young et al., 2012).

The Jasper Aquifer is not utilized as a source of water in Jefferson County due to its depth, poor water quality, and the availability of shallower, fresher groundwater in the Chicot and Evangeline aquifers (Baker, 1986). The down dip limit of groundwater with fresh to moderately saline water, defined as groundwater with a TDS concentration of less than 10,000 mg/L, occurs up-dip and approximately 30 miles north of the BASF facility (Kasmarek, 2013).

VI.B.1.i Groundwater Recharge

Precipitation falling on and infiltrating the exposed outcrops of the Gulf Coast Aquifer is the source of recharge for the aquifer. Little groundwater recharge occurs in the vicinity of the BASF facility as the surficial geology of Jefferson County is dominated by the Beaumont Formation (see Figure VI.1.4), which generally impedes the downward movement of recharge due to low infiltration rates (Ellis et al., 2023). The majority of Chicot and Evangeline aquifer recharge occurs farther up-dip in the outcrop of Lissie, Willis, and Goliad formations which outcrop in counties north and west of Jefferson County.

VI.B.1.j Groundwater Use

A database search identified a total of 29 water supply wells within a 1-mile radius of the BASF facility (the database search included U.S. Geological Survey (USGS), Texas Water Development Board (TWDB), and TCEQ databases). All wells with a 1-mile radius of the BASF facility appear to produce water from the Chicot aquifer from wells ranging from 18 feet to 615 feet deep. These water wells are primarily either domestic or industrial use wells. Several wells were also identified as being used for irrigation, rig supply, or public supply purposes. Water wells identified within the 1-mile radius are included on Table VI.A and are displayed in Figure VI.1.11.

VI.B.2 Groundwater Conditions

None of the existing waste management units are land-based units or units which require contingent closure and post-closure care. Consequently, this section is not applicable per TCEQ-00376, Section VI.B.2.

VI.B.3 Detection Monitoring Program

Groundwater monitoring standards apply to owners and operators of facilities that treat, store, or dispose of hazardous waste in surface impoundments, waste piles, land treatment units, landfills, or tanks without satisfactory secondary containment for which a post-closure care plan or permit is required. None of the existing waste management units at the BASF facility are land-based, and all tanks are contained within properly constructed secondary containment structures. Consequently, this section is not applicable per TCEQ-00376, Section VI.B.3

VI.C EXEMPTION FROM GROUNDWATER MONITORING FOR AN ENTIRE FACILITY

This section is not applicable to this application.

VI.D UNSATURATED ZONE MONITORING

This section is not applicable to this application.

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APPENDIX VI.A
GEOLOGY REPORT

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

TABLE

Table VI.A Summary of Water Well Information

GSI ENVIRONMENTAL

TABLE VI.A
SUMMARY OF WATER WELL INFORMATION

Hazardous Waste Permit Renewal Application

BASF Beaumont Agro Plant, Beaumont, Texas
Hazardous Waste Permit No. 50219

State ID	Owner of Well	Type of Well	Depth Drilled (ft bgs)	Completion Date	Latitude	Longitude	Map #
64-08-2D	Velsicol Chemical Co.	Industrial	35	3/8/1979	29.97000	-94.05724	1
64-08-2D	Velsicol Chem. Co.	Industrial	25	3/13/1979	29.97001	-94.05722	1
64-08-2D	Velsicol Chemical Co.	Industrial	30	3/9/1979	29.97002	-94.05724	1
6408201	BASF Corp Ag Products	Unused	580	11/13/1985	29.97250	-94.05420	2
G1230092A	FEDERAL CORRECTIONAL COMPLEX-BEAUMONT	Public Supply	NA	NA	29.97000	-94.07100	3
64-08-2A	Big 6 Drlg. Co.	Industrial	110	6/20/1973	29.97640	-94.06686	4
64-08-2	Noble Energy Inc.	Industrial	180	2/5/2003	29.96604	-94.04746	5
64-08-2F	Paul Choate	Domestic	60	9/15/1982	29.97768	-94.06956	6
64-08-2B	B. & W. Well Service	Industrial	110	9/15/1972	29.96099	-94.06236	7
64-08-2H	Mrs. Brewer	Domestic	90	10/23/1982	29.97154	-94.04845	8
G1230109A	DURCO PWS	Public Supply	100	8/4/2015	29.96030	-94.05310	9
401984	DURCO	Public Supply	100	8/4/2015	29.96030	-94.05310	9
6408202	James Sterling	Domestic	110	NA	29.97920	-94.07060	10
512074	Partners Industrial Coatings	Domestic	95	5/16/2019	29.95900	-94.05650	11
512075	Partners Industrial Coatings	Domestic	97	5/22/2019	29.95870	-94.05750	12
64-08-2	Marvin Decker	Domestic	35	7/27/1987	29.97812	-94.05069	13
64-08-2C	Gus McFaddin	Domestic	90	7/2/1977	29.98133	-94.06583	14
64-08-2C	Gus McFaddin	Domestic	90	7/1/1977	29.98130	-94.06583	14
64-08-2C	Gus McFaddin	Domestic	90	7/4/1977	29.98131	-94.06580	14
391889	DURCO	Irrigation	101	4/1/2015	29.95810	-94.07330	15
166792	Steve Pardue	Domestic	82	6/28/2005	29.95750	-94.04830	16
6408505	R. D. Humphries	Domestic	25	1/1/1955	29.95810	-94.04530	17
6408501	E. B. Hebert	Plugged or Destroy	18	1/1/1938	29.95810	-94.04530	17
285591	E & B Natural Resources	Rig Supply	125	12/22/2008	29.95610	-94.07330	18
64-08-5	David Scarborough	Domestic	20	3/6/1986	29.95650	-94.04566	19
609961	Ballard Exploration Company, Inc	Rig Supply	140	6/6/2022	29.97890	-94.08000	20

GSI ENVIRONMENTAL

TABLE VI.A
SUMMARY OF WATER WELL INFORMATION

Hazardous Waste Permit Renewal Application

BASF Beaumont Agro Plant, Beaumont, Texas
Hazardous Waste Permit No. 50219

State ID	Owner of Well	Type of Well	Depth Drilled (ft bgs)	Completion Date	Latitude	Longitude	Map #
64-08-2J	Martin Hebert	Domestic	90	9/29/1983	29.98462	-94.06608	21
160485	pedro esquivel	Domestic	615	10/15/2008	29.98330	-94.05000	22
504197	T.S Maintenace LLC	Domestic	110	1/24/2019	29.95500	-94.04310	23
64-08-2G	Glenn Kenny	Domestic	80	8/25/1982	29.98656	-94.06909	24
64-08-3	Irma Spence	Domestic	80	9/29/1988	29.96137	-94.03561	25
64-08-2E	Ogle Prod. Corp.	Industrial	140	7/20/1981	29.98263	-94.08107	26
64-08-2	Bayne Peyton	Domestic	100	10/9/1984	29.98318	-94.04466	27
64-08-3B	Emma Virgilio	Irrigation	28	6/12/1969	29.96065	-94.03342	28
64-08-3B	Houston Oil & Minerals	Oilfield/Rig Supply	90	3/29/1975	29.96067	-94.03342	28
623622	Christopher Metregeon	Domestic	35	8/18/2022	29.96430	-94.03270	29

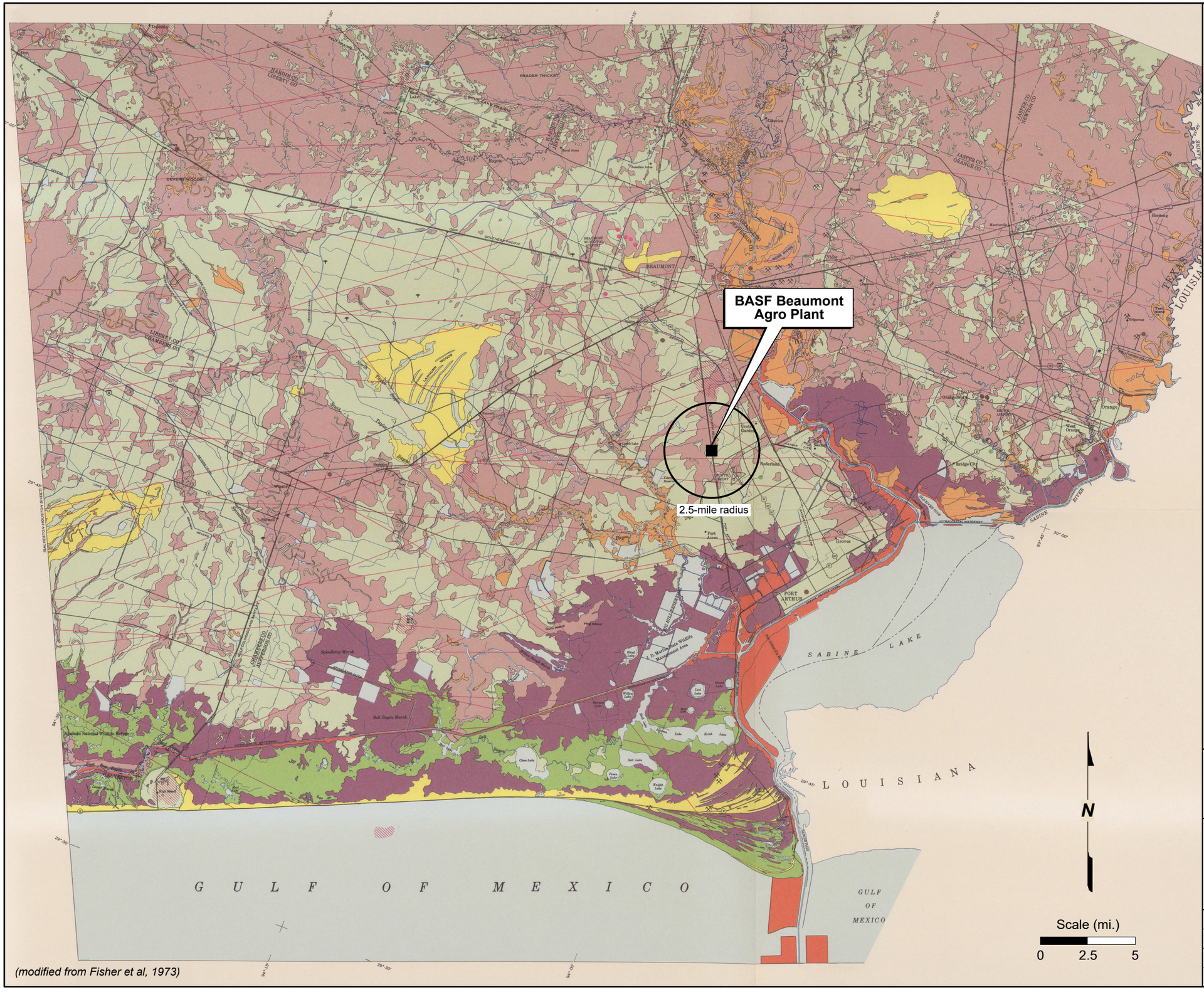
Notes:
1. Wells listed above represent registered water supply wells within a 1-mile distance from the BASF Beaumont Agro Plant facility in Beaumont, Texas.
2. Water well locations are plotted on Figure VI.1.11
3. bgs = Below ground surface. NA = Data not available.

APPENDIX VI.A
GEOLOGY REPORT

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

FIGURES

Figure VI.1.1	Regional Sediment Characteristics and Fault Map
Figure VI.1.2	Salt Dome Map for the Beaumont-Port Arthur Area
Figure VI.1.3	Land Surface Subsidence, 1918-1973 and 1953-1977
Figure VI.1.4	Geologic Map of Chambers and Jefferson Counties
Figure VI.1.5	Hydrogeologic Dip Cross-Section
Figure VI.1.6	Hydrogeologic Strike Cross-Section
Figure VI.1.7	Structure Map, Base of the Chicot Aquifer
Figure VI.1.8	Structure Map, Base of the Evangeline Aquifer
Figure VI.1.9	Potentiometric Surface of the Upper Chicot Aquifer
Figure VI.1.10	Potentiometric Surface of the Lower Chicot Aquifer
Figure VI.1.11	Location of Water Wells



(modified from Fisher et al, 1973)

EXPLANATION

CATEGORIES

GROUP I.

Dominantly clay and mud, low permeability, high water-holding capacity, high compressibility, high to very high shrink-swell potential, poor drainage, level to depressed relief, low shear strength, high plasticity
Geologic units include interdistributary muds, barrier-strandplain-chenier swales, channel-fill muds, overbank fluvial muds, mud-filled coastal lakes

GROUP II.

Dominantly sand, high to very high permeability, low water-holding capacity, low compressibility, low shrink-swell potential, good drainage, low ridge and depressed relief, high shear strength, low plasticity
Geologic units include beach, foredunes, barrier-strandplain-chenier vegetated flats, Pleistocene barrier and strandplain sands

GROUP III.

Dominantly clayey sand and silt, moderate permeability and water-holding capacity, low to moderate compressibility and shrink-swell potential, moderate drainage, level relief with local mounds and ridges, high shear strength
Geologic units include meanderbelt sands, alluvium, levee, crevasse splay, distributary sands, bay-margin sand and mud, Pleistocene fluvial and distributary sands

GROUP IV.

Coastal and estuarine marshes, very low permeability, high water-holding capacity, very poor drainage, depressed relief, low shear strength, high plasticity, high organic content, subject to salt-water flooding
Geologic units include coastal and estuarine marshes, fresh to brackish

GROUP V.

Inland swamp and marsh, permanently high water table, very low permeability, high water-holding capacity, very poor drainage, very poor load-bearing strength, high organic content, subject to frequent flooding
Geologic units include swamp, inland marsh, marsh-filled barrier-strandplain-chenier swales and abandoned channel and course.

GROUP VI.

Tidal flat and salt marsh, subject to frequent tidal inundation, properties similar to Group V
Geologic units include tidal flat, salt marsh

GROUP VII.

Made land and spoil, properties highly variable, mixed mud, silt, sand, reworked spoil commonly sandy and moderately sorted with properties similar to Group III
Geologic units include subaerial spoil heaps or mounds, subaerial reworked spoil, subaqueous spoil, made land

Refer to tables in text for land-use evaluation such as engineering, solid-waste disposal, and other functional categories based on physical properties and other parameters

- Pit or quarry, commonly in fluvial deposits
- Sludge pit or miscellaneous waste disposal site, may be abandoned
- Sewage disposal site, liquid effluent, normally treated
- Solid-waste disposal site, sanitary land fills, and open dumps
- Salt dome, shallow piercement, projected outline (approximate) of dome, normally surface expression
- Active or potentially active fault, based on lineament or grain displayed on aerial photographs

Sources of data given in text

GSI ENVIRONMENTAL
Texas Geoscience Firm Registration Number: 50243

REGIONAL SEDIMENT CHARACTERISTICS AND FAULT MAP

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No.	10426	Drawn By:	CDM
Map ID:	006_01	Chk'd By:	WMC
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	As Shown	**FIGURE VI.1.1**	

(modified from Fisher et al, 1973)

EXPLANATION

- Sand, includes all subaerial sandy deposits, fluvial sand, distributary sand and silt with local mud, strandplain-chenier sand, and subaqueous-sub-aerial spoil; *see* Physical Properties Map for specific description
- Mud, includes all subaerial muddy deposits, floodbasin mud, interdistributary mud, marsh and swamp facies, mud-filled strandplain-chenier swales, mudflats; *see* Physical Properties Map for specific description
- Pit or quarry, commonly in fluvial deposits, mainly sand and gravel
- Oil or gas field
- Salt dome, shallow piercement, projected outline (approximate) of dome, some surface expression
- **S-AS** Sulfur production site from salt dome cap rock, active *S*, inactive *AS*
- **LPG** Liquid petroleum gas storage site, solution cavities within salt dome
- **B** Brine production site, related to salt dome solution
- Salt dome oil field, moderate to deep-seated piercement, no surface expression
- **C** Cement plant
- Power generation plant
- Utility line or cable, major power transmission line, incomplete
- Pipeline, major lines only, incomplete
- Offshore petroleum production platform, bay or Gulf

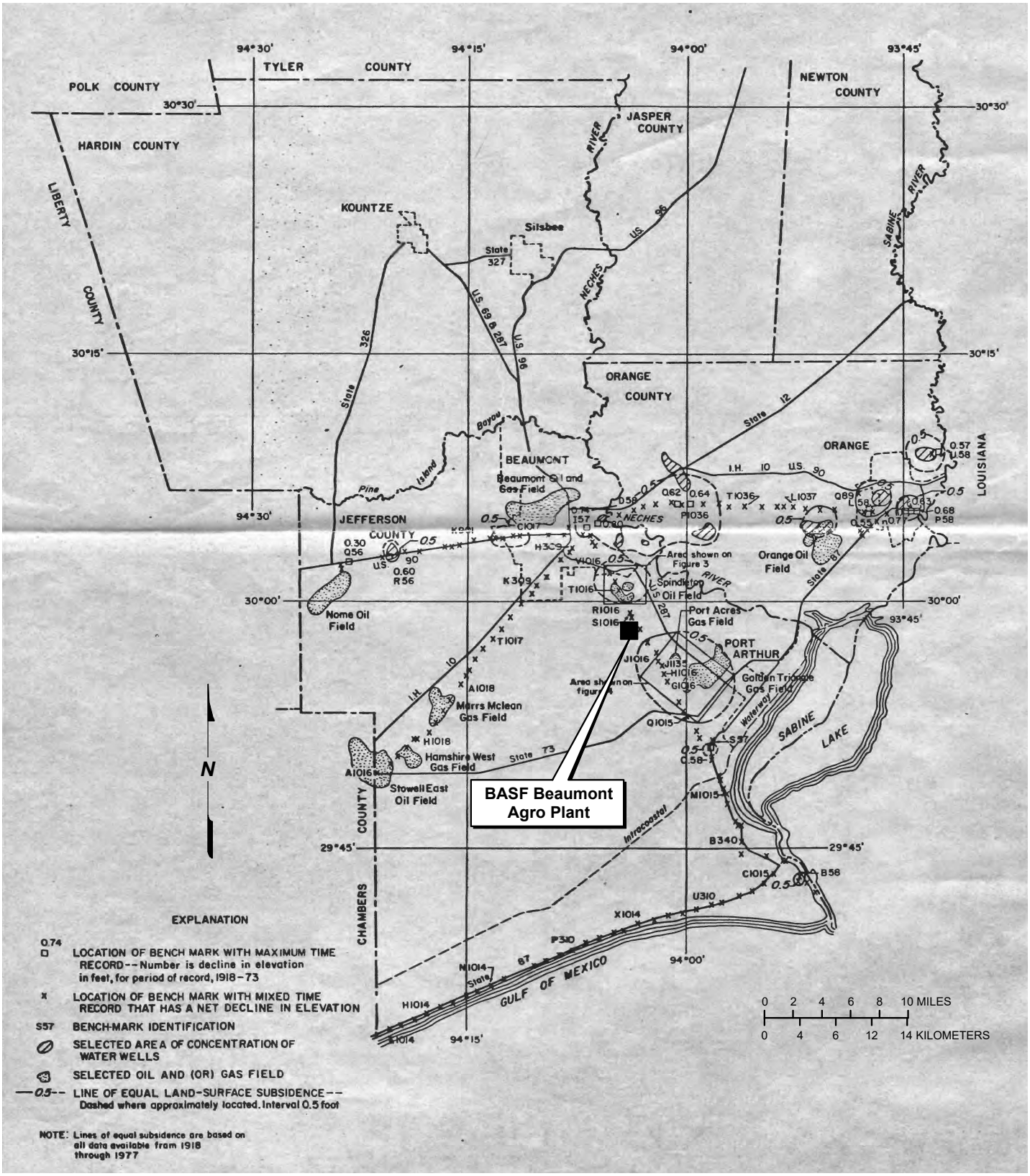
Sources of data given in text

GSI ENVIRONMENTAL
Texas Geoscience Firm Registration Number: 50243

SALT DOME MAP FOR THE BEAUMONT - PORT ARTHUR AREA

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No.	10426	Drawn By:	CDM
Map ID:	006_02	Chk'd By:	WMC
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	As Shown	**FIGURE VI.1.2**	



(modified from Ratzlaff, 1980)

GSI ENVIRONMENTAL Texas Geoscience Firm Registration Number: 50243	GSI Job No. 10426	Drawn By: CDM	**LAND SURFACE SUBSIDENCE, 1918-1973 AND 1953-1977** **Hazardous Waste Permit Renewal Application** Hazardous Waste Permit No. 50219 BASF Beaumont Agro Plant, Beaumont, Texas
	Map ID: 006_03	Chk'd By: WMC	
	Issued: 14-Apr-2025	Aprv'd By: JMM	
	Scale: As Shown	**Figure VI.1.3**	

EXPLANATION

Holocene

Qal — Alluvium
Clay, silt, and sand, organic matter abundant locally; includes flood plain, deltaic, coastal marsh, mud flat, and beach (chenier) deposits

Late(?) Pleistocene

Qd / Qd? — Deweyville deposits of Bernard (1950)
Sand, silt, and clay, some gravel. Alluvial terrace deposits along the Neches and Trinity Rivers

Qb / Qbb — Beaumont Clay
Beaumont Clay, Qb, with barrier island and beach deposits, Qbb, mapped separately. Beaumont Clay, Qb, mostly clay, silt, and sand; includes alluvial, deltaic, coastal marsh, and lagoonal deposits. Barrier island and beach deposits, Qbb, mostly very fine to fine sand, surface slightly higher than that of surrounding deposits, characterized by numerous small mounds and rounded depressions

QUATERNARY

Deltic border of the Beaumont Clay

Abandoned stream channels on the Beaumont Clay

Abandoned beach ridges (cheniers) on the Holocene deposits

Contact

Salt dome

BASF Beaumont Agro Plant

N

Scale (mi.)
0 2 4 6 8 10

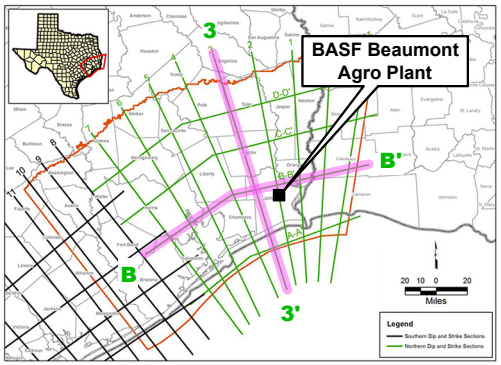
(modified from Aronow, 1971)

GSI ENVIRONMENTAL
Texas Geoscience Firm Registration Number: 50243

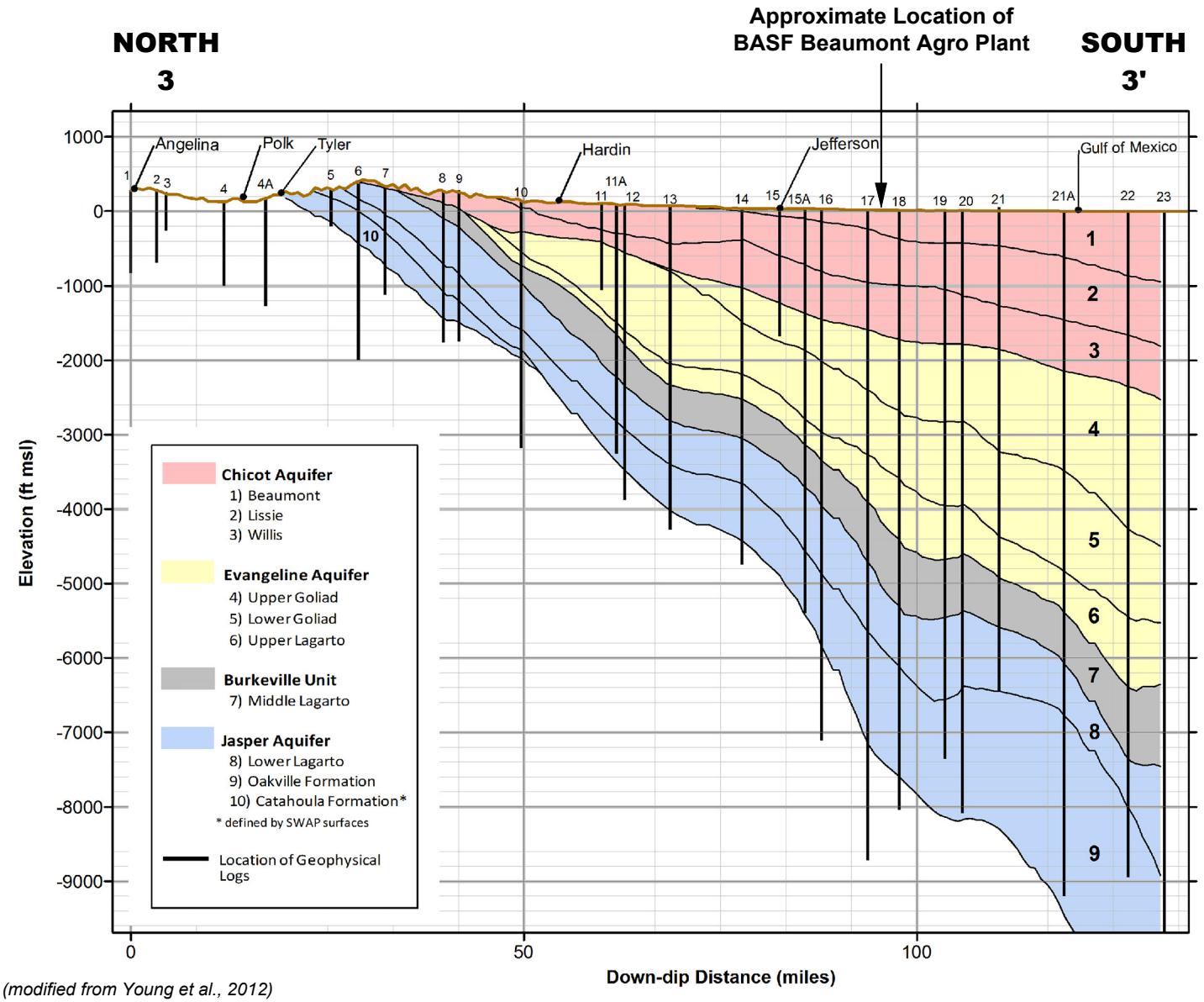
GEOLOGIC MAP OF CHAMBERS AND JEFFERSON COUNTIES

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No.	10426	Drawn By:	CDM
Map ID:	006_04	Chk'd By:	WMC
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	As Shown	**FIGURE VI.1.4**	



(modified from Young et al., 2012, Figure 1-1)



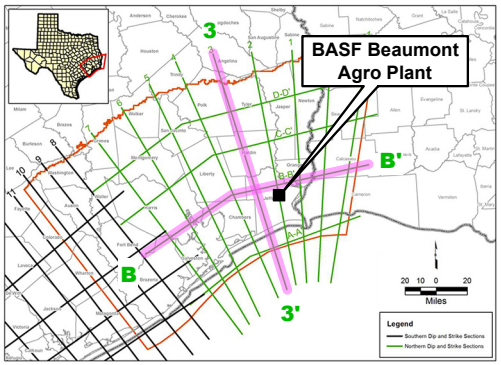
(modified from Young et al., 2012)

GSI ENVIRONMENTAL
Texas Geoscience Firm Registration Number: 50243

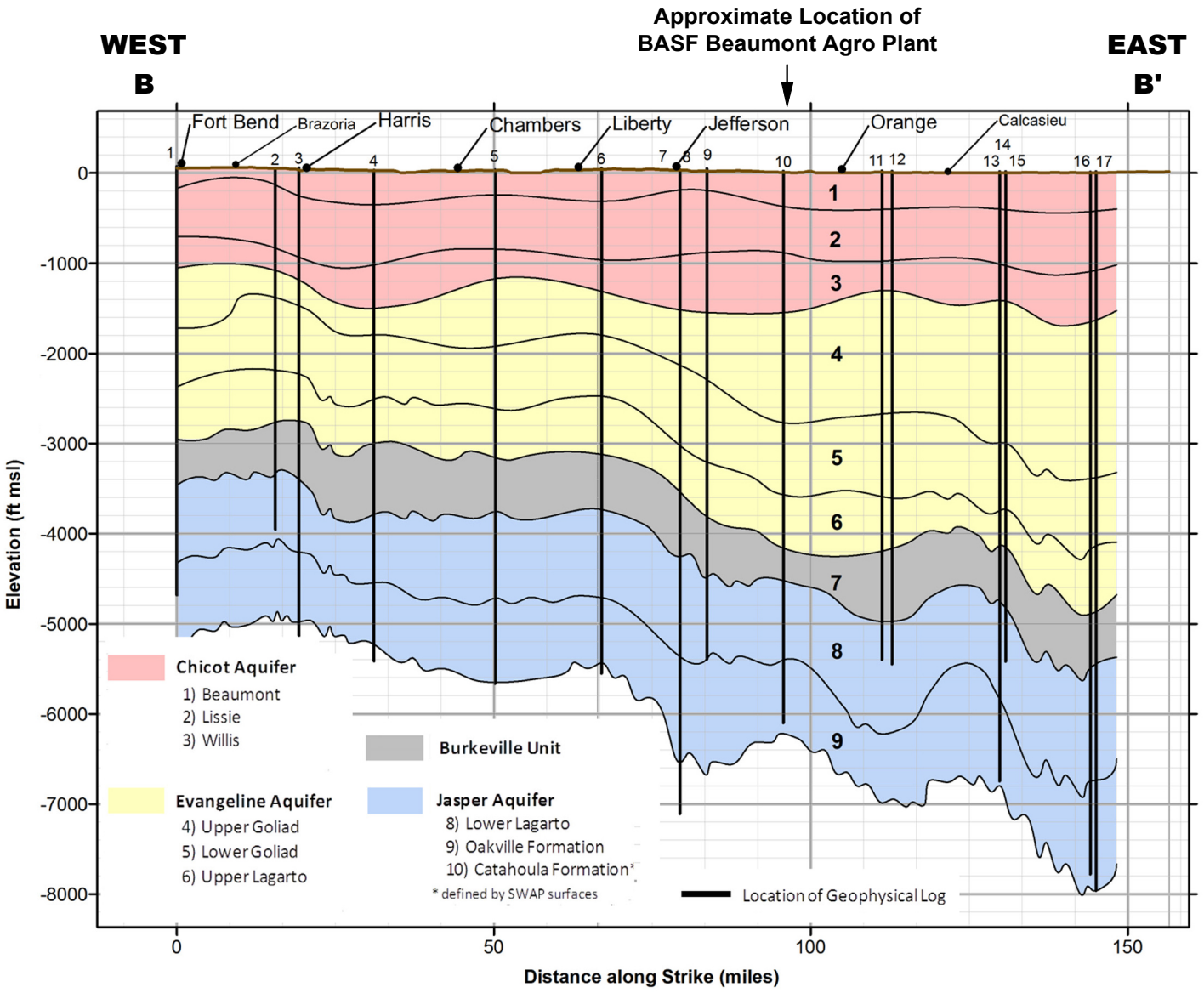
GSI Job No.	10426	Drawn By:	CDM
Map ID:	006_05	Chk'd By:	WMC
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	As Shown	**FIGURE VI.1.5**	

HYDROGEOLOGIC DIP CROSS-SECTION 3-3'

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas



(modified from Young et al., 2012, Figure 1-1)



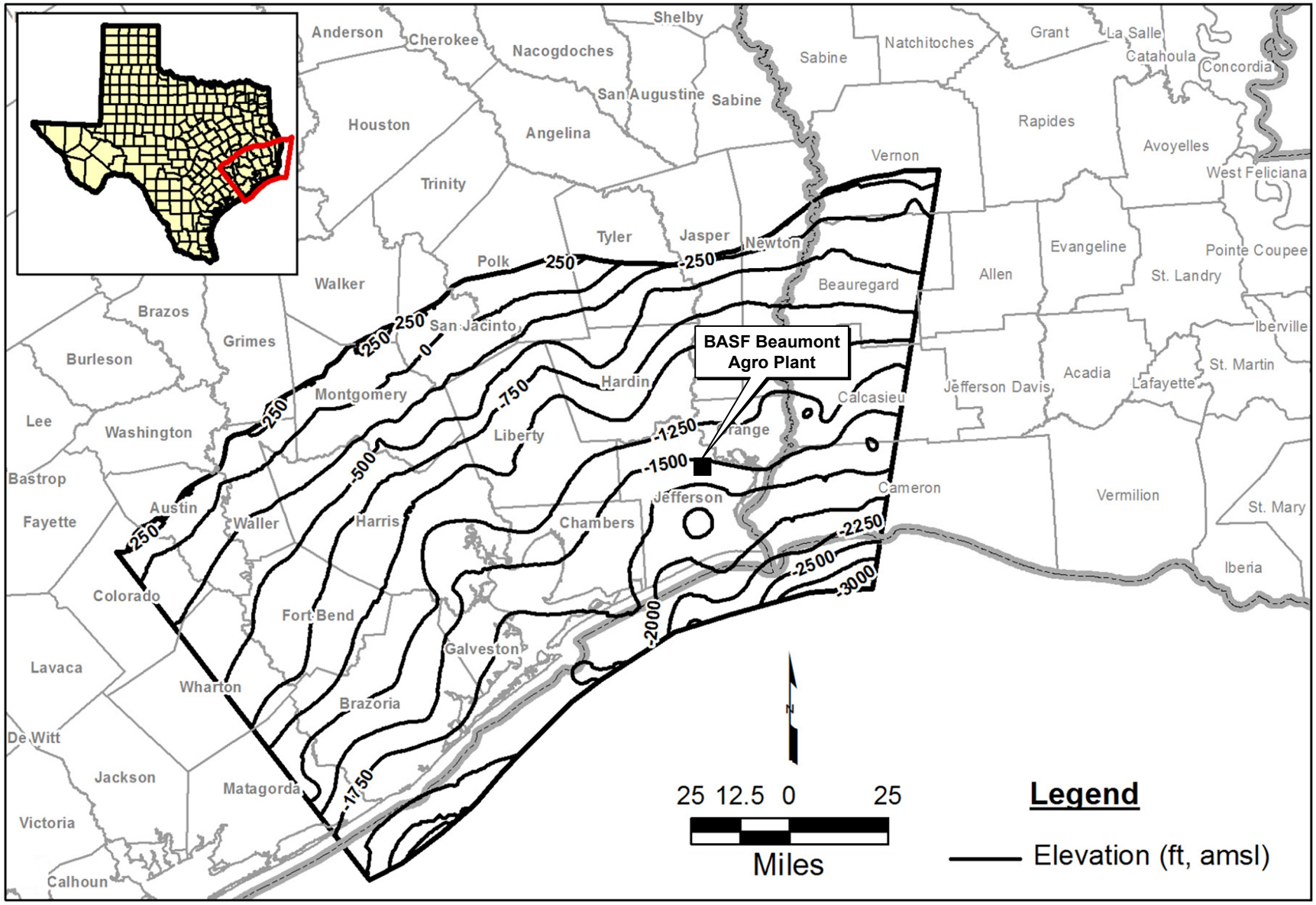
(modified from Young et al., 2012)

GSI ENVIRONMENTAL
Texas Geoscience Firm Registration Number: 50243

GSI Job No.	10426	Drawn By:	CDM
Map ID:	006_06	Chk'd By:	WMC
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	As Shown	**FIGURE VI.1.6**	

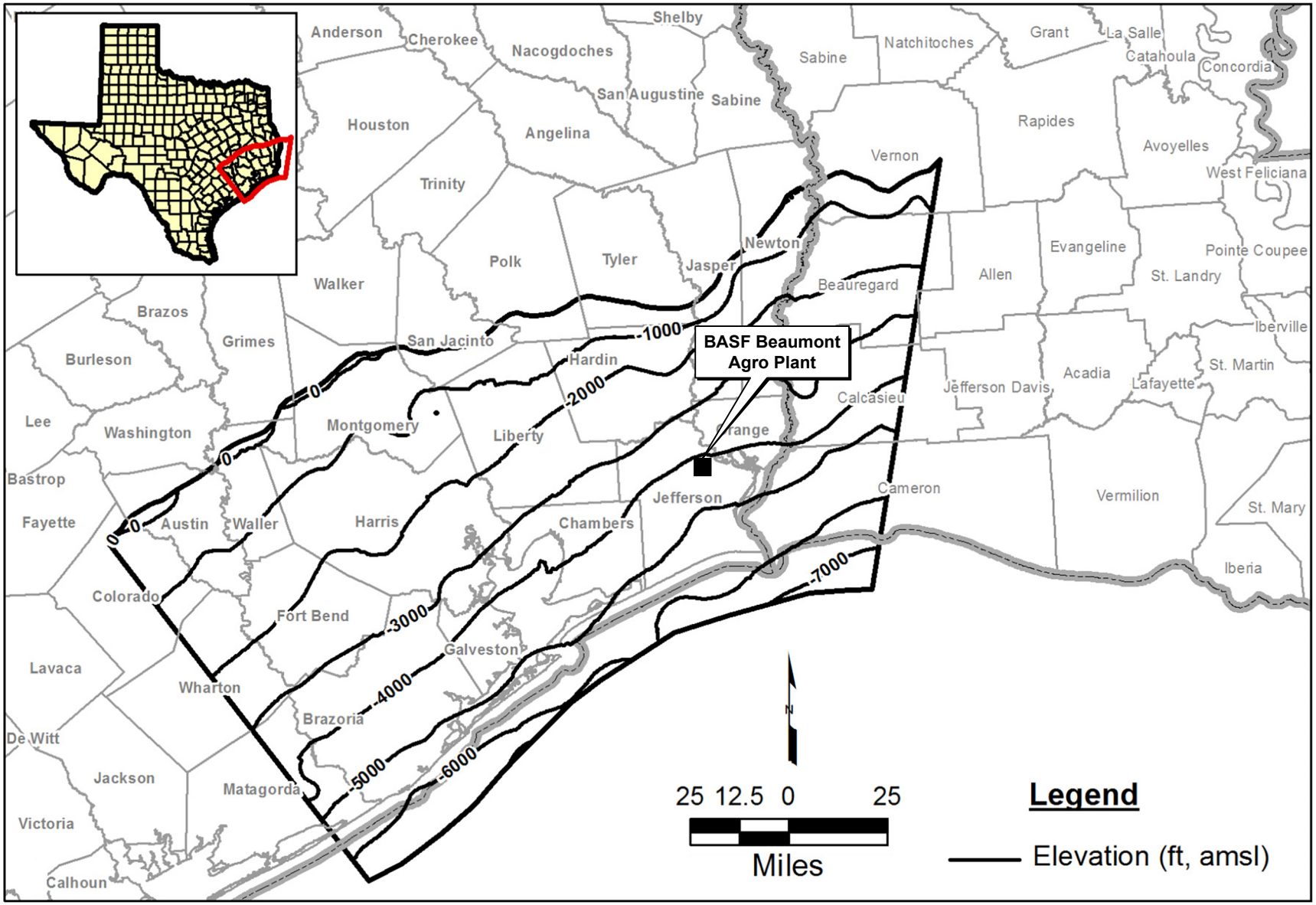
HYDROGEOLOGIC STRIKE CROSS-SECTION B-B'

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas



(modified from Young et al., 2012

GSI ENVIRONMENTAL Texas Geoscience Firm Registration Number: 50243	GSI Job No. 10426	Drawn By: CDM	**STRUCTURE MAP, BASE OF THE CHICOT AQUIFER**
	Map ID: 006_07	Chk'd By: WMC	**Hazardous Waste Permit Renewal Application** Hazardous Waste Permit No. 50219 BASF Beaumont Agro Plant, Beaumont, Texas
	Issued: 14-Apr-2025	Aprv'd By: JMM	
	Scale: As Shown	**Figure VI.1.7**	



(modified from Young et al., 2012

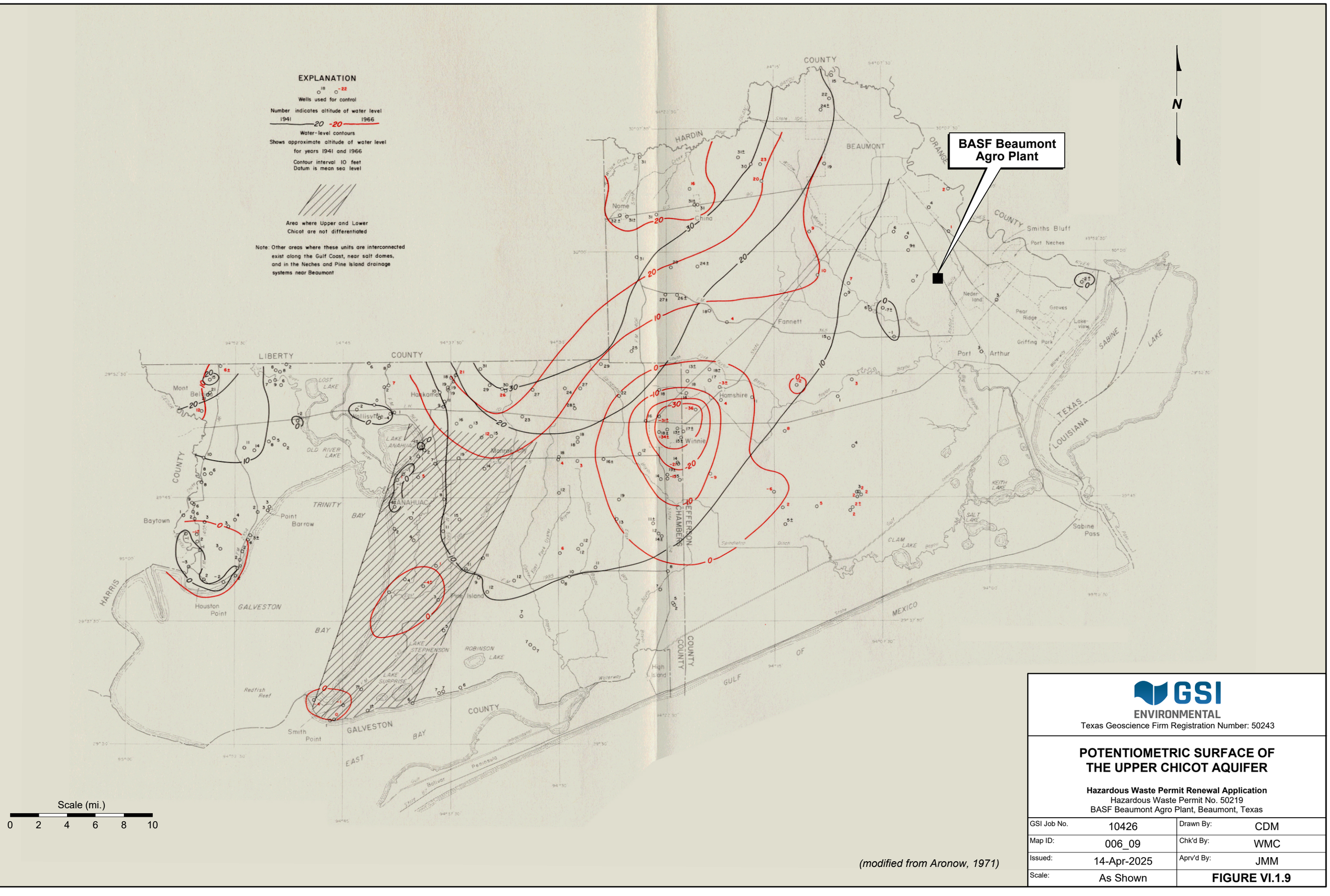
GSI ENVIRONMENTAL

Texas Geoscience Firm Registration Number: 50243

GSI Job No.	10426	Drawn By:	CDM
Map ID:	006_08	Chk'd By:	WMC
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	As Shown	**Figure VI.1.8**	

STRUCTURE MAP, BASE OF THE EVANGELINE AQUIFER

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas



(modified from Aronow, 1971)

GSI ENVIRONMENTAL
Texas Geoscience Firm Registration Number: 50243

POTENTIOMETRIC SURFACE OF THE UPPER CHICOT AQUIFER

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No.	10426	Drawn By:	CDM
Map ID:	006_09	Chk'd By:	WMC
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	As Shown	**FIGURE VI.1.9**	

EXPLANATION

Wells used for control

Number indicates altitude of water level

1941 —— 10 -10 —— 1966

Water-level contours

Shows approximate altitude of water level for years 1941 and 1966

Contour interval 10 feet
Datum is mean sea level

Area where Upper and Lower Chicot are not differentiated

Note: Other areas where these units are interconnected exist along the Gulf Coast, near salt domes, and in the Neches and Pine Island drainage systems near Beaumont

BASF Beaumont Agro Plant

N

Scale (mi.)
0 2 4 6 8 10

(modified from Aronow, 1971)

GSI ENVIRONMENTAL
Texas Geoscience Firm Registration Number: 50243

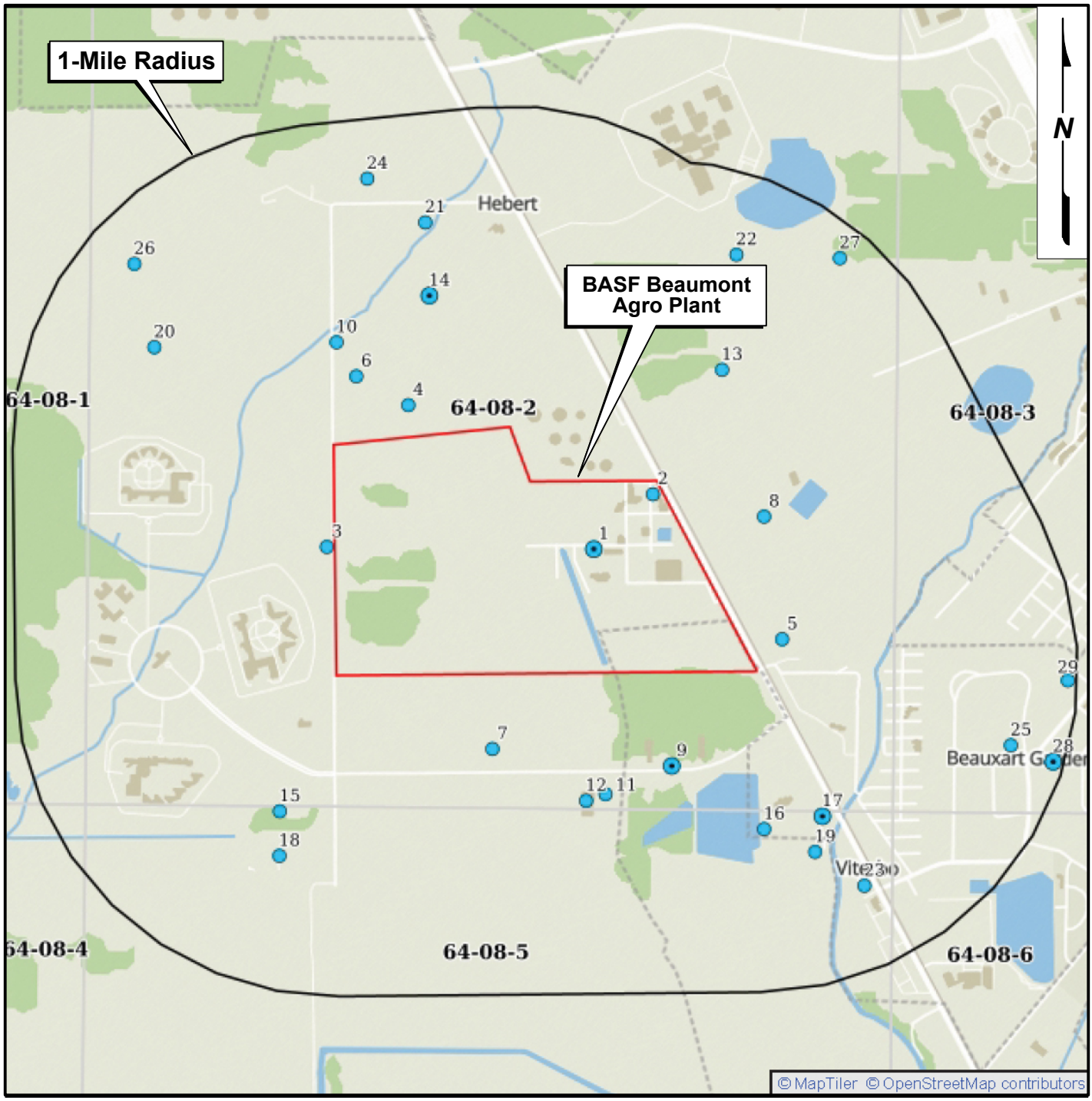
POTENTIOMETRIC SURFACE OF THE LOWER CHICOT AQUIFER

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No.	10426	Drawn By:	CDM
Map ID:	006_10	Chk'd By:	WMC
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	As Shown	**FIGURE VI.1.10**	

Summary Map - 1.0 Mile Radius

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP



BASF Corporation - Beaumont, TX

0' 1583' 3167'

Single Water Well
Water Well Cluster
US WW,TX GWS,TX HIST,TX PWS
TX SDR

Subject Site
Search Buffer
Texas Quad Index

NAD83 / UTM Zone 15N
North American Datum 1983
Western Meridian: 96 0' 00" West
Eastern Meridian: 90 0' 00" West
Latitude of Origin: 0 0' 00" North

1:28500
1 in = 2375 ft
1 in = 0.450 mi
1 cm = 285 m
1 cm = 0.285 km

GSI ENVIRONMENTAL
Texas Geoscience Firm
Registration Number: 50243

GSI Job No.	10426	Drawn By:	CDM
Map ID:	006_11	Chk'd By:	WMC
Issued:	14-Apr-2025	Aprv'd By:	JMM
Scale:	As Shown	**FIGURE VI.1.11**	

LOCATION OF WATER WELLS IN ONE-MILE RADIUS

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B Section VII – Closure and Post-Closure Plan

Contents

- Part B Application Form, Section VII
- Part B, Section VII: Appendix VII.A – Closure Plan
- Part B, Section VII: Appendix VII.B – Closure Cost Estimate
- Part B, Section VII: Appendix VII.E – Closure and Post-Closure Summary Tables

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B Application Form, Section VII

VII. Closure and Post-Closure Plans

Provide all Part B responsive information in Appendix VII. When preparing the physical format organize your submittal using the Format of Hazardous Waste permit Application and Instructions.

For multiple units provide an include all Part B responsive information in a separate Appendix for each unit.

Submit a full closure plan and post-closure plan, if applicable, which contains all the information required by 30 TAC 335.8, 335.169, 335.172, 335.174, 335.177, 335.178, 335.551-335.569, 30 TAC Chapter 350, 40 CFR 264.112, 264.118, 264.178, 264.197, 264.228, 264.258, 264.280, 264.310, 264.351, 264.575, 264.601, 264.603, 264.1102, 270.14(b)(13), 270.17(f), 270.18(h), 270.20(f), 270.21(e), 270.23(a)(2) & (3), and 270.26(c)(16) where applicable. The owner of property on which an existing disposal facility is located must also submit documentation that a notation has been placed in the deed to the facility that will in perpetuity notify any potential purchasers of the property that the land has been used to manage hazardous wastes and its use is restricted (see 30 TAC 335.5). For hazardous waste disposal units that were closed before submission of the application, the applicant should submit documentation to show that plats and notices required under 40 CFR 264.116 and 264.119 have been filed.

A. Closure

This section applies to the owners and operators of all hazardous waste management facilities to be permitted. The applicant must close the facility in a manner that minimizes need for further maintenance and controls, or eliminates, to the extent necessary to protect human health and the environment, the post-closure release of hazardous waste, hazardous constituents, leachate, contaminated rainfall, or waste decomposition products to the groundwater, surface waters, or to the atmosphere.

The facility type and type of unit to be closed can determine the level of detail sufficient for a closure plan.

For each unit to be permitted, complete Table VII.A. - Unit Closure and list the facility components to be decontaminated, possible methods of decontamination, and possible methods of disposal of wastes and waste residues generated during unit closure. All ancillary components must be included in calculating closure cost estimates.

Additionally, if the applicant plans to close a surface impoundment in accordance with 30 TAC 335.169(a)(1) and the impoundment does not comply with the liner requirements of 30 TAC Section 335.168(a) then the closure plan for the impoundment must include both a plan for complying with 30 TAC 335.169(a)(1) and a contingent plan for complying with 30 TAC 335.169(a)(2).

Guidance on design of a closure cap and final cover for landfills is given in TCEQ Technical Guideline No. 3, and EPA publication 530-SW-85-014 presents guidance on construction quality assurance of liner construction.

If a waste pile does not comply with the liner requirements of 30 TAC Section 335.170(a)(1) then the closure plan for the waste pile must include both a plan for complying with 40 CFR 264.258(a) and a contingent plan for complying with 40 CFR 264.258(b).

The final certification of closure of a land treatment unit may be prepared by an independent licensed Professional Geoscientist in lieu of an independent licensed Professional Engineer. [30 TAC 335.172(b)]

B. Closure Cost Estimate (including contingent closure) [30 TAC 335.178, 40 CFR 264.142]

This section applies to owners or operators of all hazardous waste facilities, except state and federal agencies. A detailed estimate, in current dollars, of the cost of closing the facility should be included in the report. The cost estimate must include the cost of closure at the point in the facilities operating life when the extent and manner of its operation would make closure the most expensive. The TCEQ has published Technical Guideline No. 10, Closure and Post-Closure Cost Estimates, for calculating closure costs which should be consulted. Closure costs should be developed on the basis of abandonment of the site at full capacity and closure activities to be conducted by a third party with no operable on-site equipment. The costs for closing each unit must be detailed.

1. If closure costs are based on contractor bids, the applicant should submit a copy of the bid specification and each contractor's response.

2. If closure costs are based on a detailed analysis, the applicant should submit details of item costs and number of each item, and details of costs for equipment rental, third party labor and supervision, transportation, analytical costs, etc. Provide an itemized cost on Table VII.B. - Unit Closure Cost Estimate for a complete, third party permitted facility closure.
As units are added or deleted from these tables through future permit amendments or modifications, the remaining itemized unit costs should be updated for inflation when re-calculating the revised total cost in current dollars.

3. The closure plan may propose on-site disposal of wastes, residues, etc. during closure of a unit, and this may be executed if on-site capacity exists in other units during closure of a unit. However, the cost estimate for closure must be based on off-site shipment and disposal during closure of all wastes, waste residues, wastes generated by decontamination, contaminated stormwater, and leachate.

4. For each surface impoundment, waste pile, or tank system required to have a contingent closure plan, the cost for closure under the contingent closure plan should be detailed, as well as the cost of proposed closure. The more expensive of the cost of the proposed closure of a unit versus the cost of the contingent closure of the unit should be used in the total facility closure cost estimate.

C. Post-closure

This section applies to owners or operators of all hazardous waste disposal facilities. This section also applies to certain waste piles, tanks and surface impoundments from which the owner or operator intends to remove wastes at closure but which are required to have contingent post-closure plans.

For Landfills, and Waste Piles, Surface Impoundments, and Tanks Closed as a Landfill

1. Provide as-built plans and specifications for the final cover system, individually for each unit that is sealed, signed and dated by a licensed professional engineer with current Texas registration along with the Registered Engineering Firm's name and

Registration Number would satisfy this requirement; Other as-built plans and specifications for the unit may be submitted upon request.

2. Complete the following tables, as applicable:

a. Complete Table VII.G - Post Closure Period.

b. Complete Table V.G.1 - Landfills and list the landfills (and number of cells, if applicable) covered by this application. List the waste(s) managed in each unit and the rated capacity or size of the unit. If wastes are segregated in some manner, list the cell number in which wastes are placed next to each waste type.

c. Table V.G.3. - Landfill Liner System and specify the type of liner used for the landfill.

d. Table V.G.4. - Landfill Leachate Collection System used for the landfill.

e. Table V.E.1 - Waste Piles and list the waste piles covered by this application. List the waste managed in each unit and the rated capacity or size of the unit.

f. Table V.E. 3 - Waste Pile Liner System and specify the type of containment/liner system.

g. Table V.D.1 - Surface Impoundments and list the surface impoundments, covered by this application, to be permitted. List the waste(s) managed in each unit and the rated capacity or size of each unit.

h. Table V.D. 6. - Surface Impoundment Liner System for each surface impoundment to be permitted.

i. Table V.C. Tanks and Tank Systems.

Post-closure care of each hazardous waste management unit must continue for 30 years after the date of completing closure of the unit and must consist of monitoring and reporting of the groundwater monitoring systems in addition to the maintenance and monitoring of waste containment systems. Continuation of certain security requirements may be necessary after the date of closure. Post-closure use of property on or in which hazardous waste remains after closure must never be allowed to disrupt the integrity of the containment system. In addition, submit the following information.

1. The post-closure care plan for a landfill or of a surface impoundment, waste pile, miscellaneous unit, or tank system closed with wastes or waste constituents left in place, or closed under a contingent closure plan, must demonstrate compliance with 30 TAC 335.174(b).
2. The name, address, and phone number of the person or office to contact about the disposal facility during the post-closure period; and
3. A discussion of the future use of the land associated with each unit.
4. For landfills, surface impoundments, waste piles, and land treatment areas closed under interim status, submit the required documentation of 40 CFR 270.14(b)(14).
5. Landfills, surface impoundments, waste piles and land treatment areas that received hazardous wastes after July 26, 1982 or for which closure was certified after January 26, 1983 must be included in post-closure care plans unless they have been determined to have closed by removal equivalent to the closure standards in 40 CFR 264 Subpart G. If such a demonstration has been made pursuant to 40 CFR 270.1(c)(5), but an equivalency determination has not been

made, please submit a copy of the demonstration documentation. If an equivalency determination has been made pursuant to 40 CFR 270.1(c)(6), applicant should submit a copy of the determination. Complete Table VII.C.5. - Land-Based Units Closed Under Interim Status for all land based units closed under interim status.

D. Post-closure Cost Estimate [40 CFR 264.144]

This section regarding post-closure cost estimate applies to owners or operators of all hazardous waste disposal facilities, except state and federal agencies, and certain waste piles, tank systems, and surface impoundments from which the owner or operator intends to remove wastes at closure, but which are required to have contingent closure and post-closure plans. A detailed estimate, in current dollars, of the annual cost of monitoring and maintenance of the facility in accordance with the applicable post-closure regulations must be included in the report. The TCEQ has published Technical Guideline No. 10 for calculating post-closure costs, which should be consulted. Costs should be developed in detail for 30 years of post-closure care activities to be conducted by a third party, for each applicable unit.

1. The applicant should submit details of item costs and number of each item for off-site disposal of leachate and bailed monitor well water, labor and supervision, monitor well sampling and analyses, inspection and repair of the cap(s), mowing and re-seeding of the vegetative cover, maintaining site security, etc. Provide an itemized cost estimate on Table VII.D. - Unit Post-Closure Cost Estimate for complete, third party permitted facility post-closure care.

2. As units are added or deleted from these tables through future permit amendments or modifications, the remaining itemized unit costs should be updated for inflation when re-calculating the revised total cost in current dollars.

3. Total annual cost of post-closure care for the facility including costs of contingent post-closure care should be multiplied by 30 years.

E. Closure and Post-Closure Cost Summary

Please Complete Table VII.E.1. - Permitted Unit Closure Cost Summary

Please Complete Table VII.E.2. - Permitted Unit Post-Closure Cost Summary

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Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section VII: Appendix VII.A - Closure Plan

APPENDIX VII.A
CLOSURE PLAN

Hazardous Waste Permit Renewal Application

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APPENDIX VII.A
CLOSURE PLAN

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APPENDIX VII.A
CLOSURE PLAN

Hazardous Waste Permit Renewal Application
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1.0 SCOPE AND OBJECTIVES

This section of the application outlines the method of closure care procedures to be implemented for permitted waste management units operated by BASF Corporation (BASF) at the BASF Beaumont Agro Plant in Beaumont, Texas. The plan is written in accordance with applicable requirements of 40 CFR Part 264 Subpart G; 30 TAC 335.8 and Subchapters F and S; and applicable technical guidance.

1.1 Basis for Closure Plans

Per the requirements of 40 CFR 264.110-264.116, a closure plan has been developed for each of the active, inactive, and proposed waste management units at the BASF Beaumont Agro Plant. In order to protect human health and the environment, closure plans have been developed that i) minimize or eliminate the need for further maintenance; ii) control, minimize, or eliminate the post-closure release of waste constituents to soil and groundwater; and iii) comply with applicable requirements for the closure of each type of waste management unit. For each unit, these plans specify the following closure-related information: estimated closure date, the sequence and scheduling of steps to completely close the unit, the maximum waste material inventory, and decontamination procedures. In addition, each closure plan includes a preliminary schedule for closure; notification, reporting, and certification requirements; and recordkeeping procedures.

1.2 Sample Analysis and Decontamination

For the closure plan outlined below, samples specified to be collected for verification of unit or equipment decontamination or for investigation of impacts resulting from the potential release of wastes or waste constituents (e.g., soil, rinsate) will be collected and analyzed in accordance with "Test Methods for the Evaluation of Solid Waste," SW-846, or other methods published by the USEPA and analyzed by laboratories accredited under the National Environmental Laboratory Accreditation Program (NELAP) or another laboratory approved by TCEQ. Decontamination will be considered complete when no visible evidence of contamination can be observed and when the results from verification sampling and analysis indicate that concentrations of applicable chemicals of concern (COCs) are less than Protective Concentration Levels (PCLs) as specified in the Texas Risk Reduction Program (TRRP) under 30 TAC 350. If the method quantitation limit (MQL) of the standard available analytical method having the lowest MQL is greater than the PCL, then the MQL becomes the assessment level. Background may also be considered, consistent with the TRRP rule. Institutional controls will be implemented, as required under TRRP, in the event that concentrations of COCs are evaluated with respect to commercial/industrial PCLs, rather than residential PCLs.

2.0 CLOSURE PLAN FOR PRE-INJECTION UNIT STORAGE TANKS

This closure plan covers procedures for closing Underground Injection Control (UIC) pre-injection unit (PIU) storage tanks F-414A, WB-1767, F-414B, F-414C, WB-502A, WB-502B, and WB-1765 (Permit Unit Nos. 07-10 and 12-14, respectively). This plan has been developed in accordance with the applicable requirements of 40 CFR 264 Subparts G and J, which address closure standards for permitted hazardous waste storage and processing tanks. However, this closure plan is considered to be conservative since the PIU storage tanks only manage non-hazardous wastewater.

2.1 Description of PIU Tanks

The PIU storage tanks (WB-1765, WB-501, WB-502A, WB-502B, F-414A, F-414B, F-414C, and WB-1767), made of carbon steel materials, and ancillary equipment were designed for collection and pretreatment of process wastewater and storm water prior to disposal in the on-site permitted injection well system. The tanks dimensions are summarized below:

- F-414A through F-414C: 46-ft diameter x 16-ft height (all located within F-414 Tank Farm single concrete wall secondary containment, approximately 2-ft height)
- WB-502A, WB-502B, and WB-1765: 69.75-ft diameter x 35.75-ft height (all located within Million Gallon Tank Farm single concrete wall secondary containment, approximately 4.6-ft height)
- WB-1767: 30-ft diameter x 16-ft height (located within WB-1767 Tank Farm single concrete wall secondary containment, approximately 4-ft height)

Each tank is located within secondary containment areas made of reinforced concrete, with a height between approximately 2-ft and 4.6-ft.

2.2 Closure Procedures

2.2.1 Basis for Closure Plan

In accordance with requirements of 40 CFR 264.114, all wastes and waste residues will be removed during closure of the PIU storage tanks. The closure procedures outlined below describe the sequence of events for closing all the PIU storage tanks at the same time. However, should BASF so desire, either one of the tanks may be closed and the others retained in service. In that case, similar methods will be employed for closure of each tank. If the PIU storage tanks are closed at different times, the secondary containment areas and all or a portion of the ancillary equipment will be retained in service until all permitted storage tanks are closed. If necessary, investigation of underlying soils will be implemented during closure of the last tank.

2.2.2 Waste Removal

At the time of closure, receipt of nonhazardous wastewater will be discontinued. The contents of the PIU storage tanks and associated piping will be removed completely and the system flushed of remaining waste materials. Waste fluids remaining in the tanks and

ancillary equipment will be removed for disposal either by i) pumping to one of the permitted on-site waste disposal wells or ii) by transporting to a permitted off-site disposal facility. Any waste solids collected in the PIU storage tanks will be removed and treated as necessary to meet applicable requirements of 40 CFR Part 268 prior to disposal at a permitted on-site or off-site hazardous waste disposal facility.

2.2.3 Decontamination of Tank System and Closure Equipment

On the basis of operating plans at the time of closure, equipment associated with the PIU storage tanks will be managed in one of the following ways: i) decontamination and retention in service; ii) decontamination, demolition, and salvage; or iii) demolition and disposal. Various components of the tank system may be managed in different ways (e.g., some items may be salvaged and others disposed). The PIU storage tanks and piping will be decontaminated by steam cleaning, pressure washing, or other appropriate methods. Clean water will be used to flush pumps, piping, and other mechanical equipment to be salvaged or left in place. Equipment used during closure operations will be decontaminated by pressure washing, steam cleaning, or other appropriate methods.

Decontamination of tanks and equipment will be considered complete when rinsate samples meet criteria described in Section 1.2. Rinsate samples will be collected as grab sample(s). The analyses will include:

- pH by ASTM Method 9040, 9041 or 9045,
- Volatile organic compounds (VOCs) by USEPA Method 8260C,
- Semivolatile organic compounds (SVOCs) by USEPA Method 8270E,
- Total petroleum hydrocarbons (TPH) by TCEQ TX 1005, and
- Metals (including Mercury) by USEPA Method 6010D and 7470A.

Additional COCs may be added for analysis in accordance with applicable USEPA Methods or equivalent, as necessary.

Decontamination rinsate will be routed to a permitted on-site or off-site disposal facility. Any items to be land disposed will be treated as necessary to meet applicable Land Disposal Restrictions per 40 CFR Part 268.

2.2.4 Decontamination of Secondary Containment

Closure of the secondary containment structure will be undertaken after all PIU storage tanks which share containment volumes are closed. The concrete walls and floor of the containment structure will be visually inspected to identify cracks or gaps in the coating material (if existing) that could provide pathways for release of nonhazardous wastes or constituents to the environment. If no potential pathways are found, the concrete base will be decontaminated by steam cleaning, pressure washing, or other appropriate methods. Rinsate will be collected in the sump within the secondary containment area

and conveyed by vacuum truck or other appropriate means to an on-site or off-site waste disposal facility.

Decontamination rinsate samples will be collected as grab sample(s) and analyzed for constituents expected to be present on the basis of wastes managed in the unit. The analyses will include:

- pH by ASTM Method 9040, 9041 or 9045,
- VOCs by USEPA Method 8260C,
- SVOCs by USEPA Method 8270E,
- TPH by TCEQ TX 1005, and
- Metals (including Mercury) by USEPA Method 6010D and 7470A.

Additional COCs may be added for analysis in accordance with applicable USEPA Methods or equivalent, as necessary. If laboratory results indicate that significant levels of wastes and waste residue remain (i.e., concentration greater than levels described in Section 1.2), the cleaning process will be repeated and additional samples collected and analyzed. If removal of all wastes and waste residues from the containment structure proves impracticable, the concrete will be managed as hazardous debris in accordance with the requirements of 40 CFR 268.45 or other applicable requirements.

2.2.5 Evaluation of Underlying Soils

To effectively prevent any contact of wastes or waste residue with soils underlying the Tank Farm areas, the PIU storage tanks are constructed within a secondary containment structures made of reinforced concrete. The PIU storage tanks are elevated on concrete pedestals above the floor of the secondary containments. In addition, standard operating procedures for the PIU storage tanks specify immediate removal of any spills or releases to the secondary containment areas. Therefore, if the PIU storage tanks operating records indicate that no leaks have been recorded during their active lives, then no additional decontamination procedures will be undertaken.

In the event that both i) significant cracks or gaps are found in the concrete floors and ii) the records for the PIU storage tanks indicate that releases of waste fluids have occurred and not been immediately cleaned up during their active lives, the decontamination of the secondary containment structures will not be completed, to prevent exacerbating any potential impacts. Rather, an investigation will be conducted to determine the magnitude and extent of the potentially impacted environmental media, and results of the study will be evaluated to determine appropriate remedial measures. Samples will be collected and analyzed in accordance with TCEQ guidelines and USEPA, ASTM or Standard methods. If necessary, BASF will request additional time for completion of closure activities in accordance with the requirements of 40 CFR 264.113(b).

The tank system will be closed and post-closure care will be conducted in accordance with the closure and post-closure care requirements that apply to landfills (40 CFR 264.310) if contaminated soils cannot be practicably removed or decontaminated as required in 40 CFR 264.197(a).

2.3 Closure Certification

To ensure that closure of each of the PIU storage tanks is performed in accordance with the approved closure plan, closure activities will be supervised by BASF and reviewed by an independent professional engineer registered in Texas. Per requirements of 40 CFR 264.115, closure certification will be submitted to the TCEQ within 60 days of completing closure activities.

2.4 Closure Schedule

Operation of the PIU storage tanks is dependent upon actual waste management requirements. Therefore, no date has been set for their closures. An estimated schedule prepared in accordance with the time limits specified in 40 CFR 264.113 is provided below for each PIU storage tank.

Time from Final Waste Receipt	Closure Task Description
45 days prior to final waste receipt	Provide a written notice to TCEQ of intent to close the unit.
0	Discontinue receipt of nonhazardous wastewater and commence closure.
90 days	Dispose fluid contents of PIU storage tank in permitted on-site injection well(s) or other off-site facility. Dispose of solids remaining in the tanks in a permitted on-site or off-site hazardous waste landfill (if applicable).
120 days	Decontaminate PIU storage tank, ancillary equipment, and closure equipment prior to re-use and/or disposal.
180 days	If spill occurred during operating life of unit, investigate to determine extent of affected media. If necessary, conduct remedial action.
240 days	Submit closure certification to the TCEQ.

3.0 BASIS FOR CLOSURE COST ESTIMATES

In accordance with TCEQ technical guidelines (TCEQ, 2017), conservative assumptions were employed to determine estimated third-party closure costs. Unit rates and estimated completion times for principal closure work items have been based on published values or typical local contractor rates. Closure activities will include oversight, supervision, reporting, and certification, as needed, for each unit. Conservative assumptions used for preparing the closure cost estimates are as follows:

- For costing purposes, at the time of unit closure, stormwater within the secondary containment areas has been assumed to accumulate to a depth of 2-inches.
- At the time of closure, all motorized equipment (e.g., pumps) is assumed to be inoperable and has no salvage value after decommissioning.

4.0 REFERENCES

TCEQ, 2017, "Draft Technical Guideline No. 10: Closure and Post-Closure Cost Estimates," Texas Natural Resource Conservation Commission, last revised 12/7/2017.

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Part B, Section VII: Appendix VII.B – Closure Cost Estimate

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- Table VII.A – Unit Closure
- Table VII.B – Unit Closure Cost Estimates

TABLE VII.A. – UNIT CLOSURE

For each unit to be permitted, list the facility components to be decontaminated, the possible methods of decontamination, and the possible methods of disposal of wastes and waste residues generated during unit closure:

Equipment of HWM Unit	*Possible Methods of Decontamination* [1]	*Possible Methods of Disposal* [1]
Pre-Injection Unit Storage Tanks (Permit Unit Nos. 07-10 and 12-14)		
Tanks and Ancillary Equipment	Empty tanks of contents and steam clean, pressure wash, or use other appropriate method.	· Waste liquids and decontamination rinsate to permitted on-site injection wells or off-site disposal facility. · Tanks and ancillary equipment to be left in place for possible re-use or dismantled and sent to reclamation facility, or disposed in off-site landfill.
Secondary Containments	Steam clean, pressure wash, or use other appropriate method.	Decontamination rinsate to permitted on-site injection wells or off-site disposal facility.

[1]Applicants may list more than one appropriate method.

Table VII.B - Unit Closure Cost Estimate

Task	Cost
Tank F-414A (Permit Unit 07)	
Mobilization (lump sum cost per event)	$2,600
Site setup (supervisory personnel for 3 weeks with the unit cost of $2,600/week)	$7,800
Disposal of stormwater (assume 8,167 gallons with the unit cost of $0.40/gal)	$3,267
Disposal of wastewater (assume 196,202 gallons with the unit cost of $0.40/gal)	$78,481
Decontamination of tanks, piping, and secondary containment, including sample collection	$13,400
Analysis of secondary containment decontamination rinsate samples for pH, VOCs, SVOCs, TPH and Metals (estimate 2 samples with the unit cost of $422/sample)	$844
Analysis of equipment decontamination rinsate samples at end of work program for pH, VOCs, SVOCs, TPH and Metals (estimate 5 samples with the unit cost of $422/sample)	$2,110
Closure certification	$3,500
Subtotal	$112,002
Contingency (10% minimum)	$11,200
Total Closure Cost Year 2024	$123,200

Table VII.B - Unit Closure Cost Estimate

Task	Cost
Tank WB-1767 (Permit Unit 08)	
Mobilization (lump sum cost per event)	$2,600
Site setup (supervisory personnel for 3 weeks with the unit cost of $2,600/week)	$7,800
Disposal of stormwater (assume 10,600 gallons with the unit cost of $0.40/gal)	$4,240
Disposal of wastewater (assume 150,000 gallons with the unit cost of $0.40/gal)	$60,000
Decontamination of tanks, piping, and secondary containment, including sample collection	$10,300
Analysis of secondary containment decontamination rinsate samples for pH, VOCs, SVOCs, TPH and Metals (estimate 2 samples with the unit cost of $422/sample)	$844
Analysis of equipment decontamination rinsate samples at end of work program for pH, VOCs, SVOCs, TPH and Metals (estimate 5 samples with the unit cost of $422/sample)	$2,110
Closure certification	$3,500
Subtotal	$91,394
Contingency (10% minimum)	$9,139
Total Closure Cost Year 2024	$100,500

Table VII.B - Unit Closure Cost Estimate

Task	Cost
Tank F-414B (Permit Unit 09)	
Mobilization (lump sum cost per event)	$2,600
Site setup (supervisory personnel for 3 weeks with the unit cost of $2,600/week)	$7,800
Disposal of stormwater (assume 8,167 gallons with the unit cost of $0.40/gal)	$3,267
Disposal of wastewater (assume 197,000 gallons with the unit cost of $0.40/gal)	$78,800
Decontamination of tanks, piping, and secondary containment, including sample collection	$13,400
Analysis of secondary containment decontamination rinsate samples for pH, VOCs, SVOCs, TPH and Metals (estimate 2 samples with the unit cost of $422/sample)	$844
Analysis of equipment decontamination rinsate samples at end of work program for pH, VOCs, SVOCs, TPH and Metals (estimate 5 samples with the unit cost of $422/sample)	$2,110
Closure certification	$3,500
Subtotal	$112,321
Contingency (10% minimum)	$11,232
Total Closure Cost Year 2024	$123,600

Table VII.B - Unit Closure Cost Estimate

Task	Cost
Tank F-414C (Permit Unit 10)	
Mobilization (lump sum cost per event)	$2,600
Site setup (supervisory personnel for 3 weeks with the unit cost of $2,600/week)	$7,800
Disposal of stormwater (assume 8,167 gallons with the unit cost of $0.40/gal)	$3,267
Disposal of wastewater (assume 197,000 gallons with the unit cost of $0.40/gal)	$78,800
Decontamination of tanks, piping, and secondary containment, including sample collection	$13,400
Analysis of secondary containment decontamination rinsate samples for pH, VOCs, SVOCs, TPH and Metals (estimate 2 samples with the unit cost of $422/sample)	$844
Analysis of equipment decontamination rinsate samples at end of work program for pH, VOCs, SVOCs, TPH and Metals (estimate 5 samples with the unit cost of $422/sample)	$2,110
Closure certification	$3,500
Subtotal	$112,321
Contingency (10% minimum)	$11,232
Total Closure Cost Year 2024	$123,600

Table VII.B - Unit Closure Cost Estimate

Task	Cost
Tank WB-502A (Permit Unit 12)	
Mobilization (lump sum cost per event)	$2,600
Site setup (supervisory personnel for 5 weeks with the unit cost of $2,600/week)	$13,000
Disposal of stormwater (assume 17,800 gallons with the unit cost of $0.40/gal)	$7,120
Disposal of wastewater (assume 1,000,000 gallons with the unit cost of $0.40/gal)	$400,000
Decontamination of tanks, piping, and secondary containment, including sample collection	$66,600
Analysis of secondary containment decontamination rinsate samples for pH, VOCs, SVOCs, TPH and Metals (estimate 2 samples with the unit cost of $422/sample)	$844
Analysis of equipment decontamination rinsate samples at end of work program for pH, VOCs, SVOCs, TPH and Metals (estimate 5 samples with the unit cost of $422/sample)	$2,110
Closure certification	$3,500
Subtotal	$495,774
Contingency (10% minimum)	$49,577
Total Closure Cost Year 2024	$545,400

Table VII.B - Unit Closure Cost Estimate

Task	Cost
Tank WB-502B (Permit Unit 13)	
Mobilization (lump sum cost per event)	$2,600
Site setup (supervisory personnel for 5 weeks with the unit cost of $2,600/week)	$13,000
Disposal of stormwater (assume 17,800 gallons with the unit cost of $0.40/gal)	$7,120
Disposal of wastewater (assume 1,000,000 gallons with the unit cost of $0.40/gal)	$400,000
Decontamination of tanks, piping, and secondary containment, including sample collection	$66,600
Analysis of secondary containment decontamination rinsate samples for pH, VOCs, SVOCs, TPH and Metals (estimate 2 samples with the unit cost of $422/sample)	$844
Analysis of equipment decontamination rinsate samples at end of work program for pH, VOCs, SVOCs, TPH and Metals (estimate 5 samples with the unit cost of $422/sample)	$2,110
Closure certification	$3,500
Subtotal	$495,774
Contingency (10% minimum)	$49,577
Total Closure Cost Year 2024	$545,400

Table VII.B - Unit Closure Cost Estimate

Task	Cost
Tank WB-1765 (Permit Unit 14)	
Mobilization (lump sum cost per event)	$2,600
Site setup (supervisory personnel for 5 weeks with the unit cost of $2,600/week)	$13,000
Disposal of stormwater (assume 17,800 gallons with the unit cost of $0.40/gal)	$7,120
Disposal of wastewater (assume 1,000,000 gallons with the unit cost of $0.40/gal)	$400,000
Decontamination of tanks, piping, and secondary containment, including sample collection	$66,600
Analysis of secondary containment decontamination rinsate samples for pH, VOCs, SVOCs, TPH and Metals (estimate 2 samples with the unit cost of $422/sample)	$844
Analysis of equipment decontamination rinsate samples at end of work program for pH, VOCs, SVOCs, TPH and Metals (estimate 5 samples with the unit cost of $422/sample)	$2,110
Closure certification	$3,500
Subtotal	$495,774
Contingency (10% minimum)	$49,577
Total Closure Cost Year 2024	$545,400

Table VII.B.1 Closure Cost Estimate: Unit Rates

	Cost for Closure Estimate		Quote from Vendor		
	Unit Cost[1]	Unit	Unit Cost	Unit	Quote Source
CLOSURE COST					
1. Tanks					
Site Preparation					
Mobilization	$ 2,600	total	$ 2,500	total	CIMA 2024
Site Setup	$ 2,600	week	$ 2,500	week	CIMA 2024
Disposal of Stormwater	$ 0.40	gal	$ 0.39	gal	Texas Molecular 2024
Waste Removal					
Disposal of Wastewater	$ 0.40	gal	$ 0.39	gal	Texas Molecular 2024
Decontamination of Tanks, Piping, and Secondary Containment, Including Sample Collection (Tanks WB-1765, WB-502A and WB-502B)	$ 66,600	each	$ 65,000	each	CIMA 2024
Decontamination of Tanks, Piping, and Secondary Containment, Including Sample Collection (Tanks F-414A, F-414B and F-414C)	$ 13,400	each	$ 13,000	each	CIMA 2024
Decontamination of Tanks, Piping, and Secondary Containment, Including Sample Collection (Tank WB-1767)	$ 10,300	each	$ 10,000	each	CIMA 2024
Analysis of Equipment Decontamination Rinsate Samples for pH, VOCs, SVOCs, TPH and Metals	$ 422	sample	$ 413	sample	Eurofins Quote 2024
Analysis of Secondary Containment Decontamination Rinsate Samples for pH, VOCs, SVOCs, TPH and Metals	$ 422	sample	$ 413	sample	Eurofins Quote 2024
Documentation					
Closure Certification	$ 3,500	total	$ 3,500	total	GSI Cost 2025

Notes:
1. The costs listed in this table are based on 2024 dollar values or updated for inflation where necessary.

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Part B, Section VII: Appendix VII.E – Closure and Post-Closure Summary Tables

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- Table VII.E.1 – Permitted Unit Closure Cost Summary
- Table VII.E.2 – Permitted Unit Post-Closure Cost Summary

Table VII.E.1 - Permitted Unit Closure Cost Summary

Existing Unit Closure Cost Estimate			
Unit		**Cost**	
Tank F-414A (Permit Unit 07)		$	123,200
Tank WB-1767 (Permit Unit 08)		$	100,500
Tank F-414B (Permit Unit 09)		$	123,600
Tank F-414C (Permit Unit 10)		$	123,600
Tank WB-502A (Permit Unit 12)		$	545,400
Tank WB-502B (Permit Unit 13)		$	545,400
Tank WB-1765 (Permit Unit 14)		$	545,400
Total Existing Unit Closure Cost Estimate[1]	Year 2024	$	2,107,100

Proposed Unit Closure Cost Estimate		
Unit		**Cost**
Not Applicable		
Total Proposed Unit Closure Cost Estimate[1]	Year 2024	-

1. As units are added or deleted from these tables through future permit amendments or modifications, the remaining itemized unit costs should be updated for inflation when re-calculating the revised total cost in current dollars.

Table VII.E.2 - Permitted Unit Post-Closure Cost Summary

Existing Unit Post-Closure Cost Estimate		
Unit		**Cost**
Not Applicable		
Total Existing Unit Post-Closure Cost Estimate[1]	Year 2024	-

Proposed Unit Post-Closure Cost Estimate		
Unit		**Cost**
Not Applicable		
Total Proposed Unit Post-Closure Cost Estimate[1]	Year 2024	-

1. As units are added or deleted from these tables through future permit amendments or modificiations, the remaining itemized unit costs should be updated for inflation when re-calculating the revised total cost in current dollars.

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Part B Section VIII – Financial Assurance

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Part B Application Form, Section VIII

VIII. Financial Assurance

Provide all Part B responsive information in Appendix VI. When preparing the physical format organize your submittal using the Format of Hazardous Waste permit Application and Instructions.

A. Financial Assurance Information Requirements for all Applicants (30 TAC Chapter 37, Subchapter P, 305.50(a)(4)(A-E), 335.152(a)(6) and 335.179)

1. Financial Assurance for Closure

   An owner or operator must establish financial assurance for the closure of the facility no later than 60 days prior to the first receipt of waste [30 TAC Section 37.31(a)]. Please refer to 30 TAC Chapter 37, Subchapter P, for the financial assurance requirements for closure and provide a signed statement from an authorized signatory per 30 TAC 305.44 regarding how the owner or operator will comply with this provision.

   If a financial mechanism has been obtained, provide a copy of the mechanism.

   For applications involving a permit transfer, the new owner or operator must provide a financial assurance mechanism (in original form) satisfactory to the TCEQ executive director. Prior to the executive director issuing the permit modification transferring the permit, the new owner or operator must provide proof of financial assurance in compliance with 30 TAC Section 305.64 (g) and Chapter 37, Subchapter P.

2. Financial Assurance for Post-Closure Care (applicable to disposal facilities and contingent post-closure care facilities only)

   An owner or operator subject to post-closure monitoring or maintenance requirements must establish financial assurance for the post-closure care of the facility no later than 60 days prior to the first receipt of waste [30 TAC Section 37.31(a)]. Please refer to 30 TAC Chapter 37, Subchapter P for the financial assurance requirements for post-closure and provide a signed statement from an authorized signatory per 30 TAC 305.44 regarding how the owner or operator will comply with this provision.

   If a financial mechanism has been obtained, provide a copy of the mechanism.

   For applications involving a permit transfer, the new owner or operator must provide a financial assurance mechanism (in original form) satisfactory to the TCEQ executive director. Prior to the executive director issuing the permit modification transferring the permit, the new owner or operator must provide proof of financial assurance in compliance with 30 TAC Section 305.64 (g) and Chapter 37, Subchapter P.

3. Financial Assurance for Corrective Action

   An owner or operator must establish financial assurance for corrective action of the facility no later than 60 days after the permit or order requiring the corrective action financial assurance is signed by the executive director or commission [30 TAC Section 37.31(b)]. Please refer to 30 TAC Chapter 37, Subchapter P, for the financial assurance requirements for closure and provide a signed statement from an authorized signatory per 30 TAC 305.44 regarding how the owner or operator will comply with this provision and indicate below the type of financial assurance mechanism to cover corrective action for the

facility.

If a financial mechanism has been obtained, provide a copy of the mechanism.

For applications involving permit transfers, the new owner or operator must provide a financial assurance mechanism (in original form) satisfactory to the TCEQ executive director. Prior to the executive director issuing the permit modification transferring the permit, the new owner or operator must provide proof of financial assurance in compliance with 30 TAC Section 305.64 (g) and Chapter 37, Subchapter P.

4. Liability Requirements (not required for post-closure care)

All owners or operators must establish financial assurance for third party sudden liability coverage of the facility no later than 60 days prior to the first receipt of waste [30 TAC Section 37.31(a)]. Owners or operators of disposal facilities must establish financial assurance for third party sudden and nonsudden liability coverage of the facility no later than 60 days prior to the first receipt of hazardous waste. Please refer to 30 TAC Chapter 37, Subchapter P, for the financial assurance requirements for liability coverage, and provide a signed statement from an authorized signatory per 30 TAC 305.44 regarding how the owner or operator will comply with this provision.

If a financial mechanism has been obtained, provide a copy of the mechanism.

For applications involving a permit transfer, the new owner or operator must provide a financial assurance mechanism (in original form) satisfactory to the TCEQ executive director. Prior to the executive director issuing the permit modification transferring the permit, the new owner or operator must provide proof of financial assurance in compliance with 30 TAC Section 305.64 (g) and Chapter 37, Subchapter P.

B. Applicant Financial Disclosure Statements for a new permit, permit amendment, or permit modification, or permit renewal (30 TAC 305.50(a)(4))

Refer to the Supplemental Technical Information Guidance for Applicants Subject to Financial Capability Requirements, included in Section VIII.B., and the requirements listed below as you complete this section.

1. Provide information required in 30 TAC 305.50(a)(4), as applicable to the application request.

2. Complete Table VIII.B. if requesting capacity expansion or new construction.

3. For new commercial hazardous waste management facility applications, a written statement signed by an authorized signatory per 30 TAC 305.44 explaining how the applicant intends to provide emergency response financial assurance per 30 TAC 305.50(a)(12)(C) or (D).

4. For renewal applications with no capacity expansion, please complete and submit the attached Financial Disclosure Letter.

Information for Applicants Subject to Financial Capability Requirements

Certain applications involving Hazardous Waste facilities are subject to review of the applicant's financial ability to construct, operate, and/or close the facility, perform post-closure care and corrective action at the facility in accordance with State law as specified in

Section 361.085 of the Texas Health and Safety Code. TCEQ refers to these reviews as financial capability reviews. This document summarizes and clarifies the information required in an application to meet the TCEQ requirements of 30 Texas Administrative Code (TAC) 305.50.

Information requirements vary depending on the type of financial information available to applicants, primarily whether audited financial statements are available as well as the type of application submitted. For each scenario described below, financial information must be provided for the specific applicant.

I. New Facilities, Facility Expansions and Permit Transfers

A. Publicly traded Entities

1. Securities and Exchange Commission (SEC) Form 10-Ks

   This portion of the requirement calls for the two most recent 10-K reports filed.

2. SEC Form 10-Q

   This portion of the requirement calls for a copy of the most recent quarterly report.

3. Explanation statement

   This portion of the requirement calls for a statement signed by an authorized signatory [as described in 30 TAC 305.44(a)] explaining in detail how the applicant demonstrates sufficient financial resources to construct, safely operate, properly close, perform post-closure care, perform corrective action and provide adequate liability coverage for the facility. This statement must also address how the closure, post-closure, corrective action, and liability coverage financial assurance requirements of Chapter 37, Subchapter P will be met. (ie. which financial assurance mechanism is or will be used).

4. Construction capital cost estimates

   This portion of the requirement calls for estimates of capital costs for expansion and/or initial construction if the application encompasses facility expansion, capacity expansion, or new construction.

B. Privately held entities with audited financial statements

1. Audited financial statements

   This portion of the requirement calls for complete copies of the audited financial statements for each of the most recent two fiscal years. If an audit has not been completed for one of the previous two years, a complete copy of the fiscal year end financial statement and federal tax return may be substituted in lieu of the audit not performed. The tax return must be certified by original signature of an authorized signatory as being a "true and correct copy of the return filed with the Internal Revenue Service." Financial statements must be prepared consistent with generally accepted accounting principles and include a balance sheet, income statement, cash flow statement, notes to the financial statement, and an accountant's opinion letter.

2. Quarterly financial statement

   This portion of the requirement calls for a complete copy of the most current quarterly financial statement prepared consistent with generally accepted accounting principles. Internally prepared statements are satisfactory.

3. Supplementary information statement

   This portion of the requirement calls for a written statement detailing the information that would normally be found in SEC's Form 10-K including descriptions of the business and its operations; identification of any affiliated relationships; credit agreements and terms; any legal proceedings involving the applicant; contingent liabilities; and significant accounting policies.

4. Construction capital cost estimates

   This portion of the requirement calls for estimates of capital costs for expansion and/or initial construction if the application encompasses facility expansion, capacity expansion, or new construction.

5. Explanation statement

   This portion of the requirement calls for a statement signed by an authorized signatory [as described in 30 TAC 305.44(a)] explaining in detail how the applicant demonstrates sufficient financial resources to construct, safely operate, properly close, perform post-closure care, perform corrective action and provide adequate liability coverage for the facility. This statement must also address how the closure, post-closure, corrective action, and liability coverage financial assurance requirements of Chapter 37, Subchapter P will be met (ie. which financial assurance mechanism is or will be used).

C. Entities without audited financial statements or entities choosing not to provide the information listed above

1. Financial Plan

   This portion of the requirement calls for a financial plan (including balance sheets listing assets, liabilities and capital accounts) sufficiently detailed to clearly demonstrate that the applicant will be in a position to readily secure financing for construction, operation, and closure, post-closure, and corrective action if the permit is issued. At least 3 balance sheets should be included as of: a) approximately the date of the permit application, b) 12 months after any construction is completed (or assumption of operational control for a permit transfer), and c) 24 months after any construction is completed (or assumption of operational control for a permit transfer).

2. Letters of opinion

   The submitted financial plan must be accompanied by original letters of opinion from two financial experts, not otherwise employed by the applicant, who have the demonstrated ability to either finance the facility or place the required financing. If the permit action sought involves construction of a new facility or expansion of an existing facility, the opinion letters must certify that financing is obtainable within 180 days of permit approval and include the time schedule contingent upon permit finality for securing the financing as well as certify the financial plan is reasonable. Even if the application does not involve a facility or capacity expansion, the opinion letters must certify that the financial plan is reasonable. Only one opinion letter from a financial expert, not otherwise employed by the applicant, is required if the letter renders a firm commitment to provide all the necessary financing.

   Letters of opinion are usually issued by investment or commercial bankers but there could be additional sources. Applicants are encouraged to verify the adequacy of the credentials of their chosen financial expert with TCEQ's financial assurance unit prior to a formal engagement. Financial experts should describe their qualifications and disclose their independence from the applicant and/or any entity or person affiliated with the applicant.

3. Operating and cash flow statement

   This portion of the requirement calls for a written detail of the annual operating costs of the facility and a projected cash flow statement including the period of construction and first two years of operation. The cash flow statement must demonstrate the financial resources to meet operating costs, debt service, and provide financial assurance for closure, post-closure care, and liability coverage requirements. A list of the assumptions made to forecast cash flow must also be provided.

4. Explanation statement

   This portion of the requirement calls for a statement addressing how the closure, post-closure, corrective action, and liability coverage financial assurance requirements of Chapter 37, Subchapter P will be met (ie. which financial assurance mechanism is or will be used).

5. Construction capital cost estimates

   This portion of the requirement calls for estimates of capital costs for expansion and/or initial construction if the application encompasses facility expansion, capacity expansion, or new construction.

D. Entities with a resolution from a governing body approving or agreeing to approve the issuance of bonds to satisfy financial assurance requirements (e.g. a city or county)

1. Explanation statement

   This portion of the requirement calls for a statement signed by an authorized signatory [as described in 30 TAC30 305.44(a)] explaining in detail how the applicant demonstrates sufficient financial resources to construct, safely operate, properly close, perform post-closure, perform corrective action and provide adequate liability coverage for the facility. This statement must also address how the closure, post-closure, corrective action, and liability coverage

financial assurance requirements of Chapter 37, Subchapter P will be met (ie. which financial assurance mechanism is or will be used).

2. Certified copy of the resolution from the governing body.

3. Certification by the governing body of passage of the resolution.

II. Permit Renewals

Complete the **Financial Disclosure Letter** letter with applicable information inserted into the parentheses. *Note that additional information must be provided if requested by TCEQ.*

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section VIII: Appendix VIII.A – Financial Assurance Information

Contents

- BASF Financial Assurance Update and Financial Assurance Mechanism – Surety Bond No. 6213032955
- Irrevocable Standby Letter of Credit No. 35674 for Third Party Liability Insurance

BASF
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April 3, 2025

Texas Commission on Environmental Quality (TCEQ)
Financial Assurance Unit (MC-184)
ATTN: Mark Stoebner
P.O. Box 13087
Austin, TX 78711-3087

Re: BASF Financial Assurance Updates

Dear Mr. Stoebner:

The following are amendments to Standby Letters of Credit (LC) from Intesa Sanpaolo to cover BASF Corporation Financial Assurance obligations in Texas:

LC #31261:

- Freeport facility – 602 Copper Road, Freeport, Texas 77541(EPA ID No. TXD008081697)
  - Closure/post-closure estimate for hazardous waste units increased by 1.024 inflation factor (no other changes) from $2,206,991 to $2,259,959.

- Pasadena facility – 4403 LaPorte Hwy 225, Pasadena, Texas 77501 (EPA ID No. TXD980808778)
  - Closure/post-closure estimate for hazardous waste units increased by 1.024 inflation factor (no other changes) from $518,194 to $530,630.

- Beaumont facility – 14385 West Port Arthur Road, Beaumont, Texas 77705 (EPA ID No. TXD067261412)
  - Closure/post-closure estimate for hazardous waste units increased by 1.024 inflation factor (no other changes) from $1,177,857 to $1,206,126.
  - Financial assurance amount of $263,922.04 for "corrective action" is no longer required since project completed and a "No Further Action" letter received from TCEQ.

- Combined LC therefore decreases from $4,146,167 to $3,996,715.
  - TCEQ should have received revised LC directly from Intesa Sanpaolo.
  - NOTE: Because of a decrease, TCEQ needs to provide a signature to the revised LC and send directly back to the bank.

LC #31263:

- Freeport Facility – 602 Copper Road, Freeport, Texas 77541(EPA ID No. TXD008081697)
  - Closure/post-closure estimate for UICs increased by 1.024 inflation factor (no other changes) from $818,474 to $838,118.

- Beaumont facility – 14385 West Port Arthur Road, Beaumont, Texas 77705 (EPA ID No. TXD067261412)
  - Closure/post-closure estimate for UICs increased by 1.024 inflation factor (no other changes) from $1,641,909 to $1,681,315.

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- Combined LC therefore increases from $2,460,383 to $2,519,432.
    - TCEQ should have received revised LC directly from Intesa Sanpaolo.

LC #35674:

- LC in the amount of $8,000,000 from Intesa Sanpaolo for 3rd party liability coverage for BASF's Freeport, Beaumont and Pasadena facilities remains in effect with no changes.
- Includes:
    - $1M/occurrence and $2M annual aggregate for sudden accidental occurrences.
    - $3M/occurrence and $6M annual aggregate for non-sudden accidental occurrences.

LC #35675:

- LC in the amount of $1,000,000 from Intesa Sanpaolo for 3rd party liability coverage for one (1) UST (ID #0071538) remains in effect with no changes.
    - Terminal location: FM 1495, Freeport, Texas 77541
    - Mailing address: BASF Corporation, 602 Copper Road, Freeport, Texas 77541 (EPA ID No TXD008081697).
    - Covers 3rd party liability for bodily injury and property damage caused by accidental releases in the amount of $500k/per occurrence and $1M annual aggregate.

Should you have any questions or require additional information, please contact me at (973-652-3430) or by email at [redacted]

Sincerely,

Tony Germinario

Tony Germinario
BASF Corporation – Manager Environmental Expert Services

INTESA SANPAOLO

AMENDMENT TO STANDBY LETTER OF CREDIT NO. 31261

March 28, 2025

BENEFICIARY:
Texas Commission on Environmental Quality (TCEQ)
Financial Assurance Section (MC-184)
P.O. Box 13087
Austin, Texas 78711-3087
Attention: Executive Director

APPLICANT:
BASF Corporation
100 Park Avenue
Florham Park, NJ 07932

Amendment No. 39

The above mentioned Letter of Credit has been amended as follows:

- **Effective immediately, the Letter of Credit amount is Decreased by US$ 149,452.00 to a new balance of US$ 3,996,715.00 (Three Million Nine Hundred Ninety Six Thousand Seven Hundred Fifteen and 00/100 U.S. Dollars).**
- All other terms and conditions remain the same.
- This amendment is to be considered an integral part of the above-mentioned Letter of Credit and must be attached thereto.
- This amendment is subject to Beneficiary's approval, please confirm your agreement to this amendment by returning duly signed the attached copy.

Intesa Sanpaolo SPA, New York

Louis NG
V.P., Head of Commercial Department

Charles S. Sweeney
Head of Treasury Settlement, Americas

Accepted by:

_____
Texas Commission on Environmental Quality (TCEQ)

IMI | CORPORATE & INVESTMENT BANKING

Banca Intesa

ORIGINAL

New York Branch

IRREVOCABLE STANDBY LETTER OF CREDIT NO. 35674

March 23, 2005

BENEFICIARY:
Executive Director
Texas Commission on Environmental Quality
Financial Assurance Section (MC-84)
P.O. Box 13087
Austin, Texas 78711-3087

APPLICANT:
BASF Corporation
100 Campus Drive
Florham Park, New Jersey 07932

Dear Sir or Madam,

We hereby establish our Irrevocable Standby Letter of Credit No. 35674 in the favor of any and all third-party liability claimants, at the request and for the account of BASF Corporation, 100 Campus Drive, Florham Park, New Jersey 07932 for third-party liability awards or settlements up to One Million U.S. dollars ($1,000,000) per occurrence and the annual aggregate amount of Two Million U.S. dollars $2,000,000, for sudden accidental occurrences and/or for third-party liability awards or settlements up to the amount of Three Million U.S. dollars $3,000,000 per occurrence, and the annual aggregate amount of Six Million U.S. dollars $6,000,000, for nonsudden accidental occurrences available upon presentation of a sight draft bearing reference to this Letter of Credit No. 35674, and

(1) A signed certificate reading as follows:

CERTIFICATE OF VALID CLAIM

The undersigned, as parties, the Principal (BASF Corporation) and (name and address of third party claimant(s)), hereby certify that the claim of bodily injury and/or property damage caused by a sudden and/or nonsudden accidental occurrence arising from operations of the Principal's facility(ies) should be paid in the amount of $_____.

We hereby certify that the claim does not apply to any of the following:

(a) Bodily injury or property damage for which the Principal is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that the Principal would be obligated to pay in the absence of the contract or agreement.
(b) Any obligation of the Principal under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.
(c) Bodily injury to:
(i) An employee of the Principal arising from, and in the course of, employment by the Principal; or

(ii) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by the Principal.

This exclusion applies:

(A) Whether the Principal may be liable as an employer or in any other capacity; and
(B) To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (i) and (ii).
(C) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle or watercraft.
(D) Property damage to:
(Da) Any property owned, rented, or occupied by the Principal;
(Db) Premises that are sold, given away or abandoned by the Principal if the property damage arises out of any part of those premises;
(Dc) Property loaned to the Principal;
(De) Personal property in the care, custody or control of the Principal;
(Df) That particular part of real property on which the Principal or any contractors or subcontractors working directly or indirectly on behalf of the Principal are performing operations, if the property damage arises out of these operations.

(Signatures) _____

Principal _____

(Signatures) _____

Claimant(s) _____

OR

(2) A valid final court order establishing a judgment against the Principal for bodily injury or property damage caused by a sudden and/or nonsudden accidental occurrence arising from operation of the Principal's facility or group of facilities.

This Letter of Credit is effective as of April 1, 2005 and shall expire on March 31, 2006, but such expiration date shall be automatically extended for a period of one year on March 31, 2006 and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify you, the TCEQ executive director, and BASF Corporation by certified mail that we have decided not to extend this Letter of Credit beyond the current expiration date.

Whenever this Letter of Credit is drawn on under and in compliance with the terms of this Credit, we shall duly honor such draft upon presentation to us.

In the event that this Letter of Credit is used in combination with another mechanism for liability coverage, this Letter of Credit shall be considered primary coverage.

We certify that the wording of this Letter of Credit is identical to the wording specified in 30 Texas Administrative Code §37.621 as such regulations were constituted on the date shown immediately below.

This Standby Letter of Credit is subject to the Uniform Customs and Practice for Documentary Credits (1993 Revision), International Chamber of Commerce Publication No. 500.

(Signature(s) and title(s) of official(s) of issuing institution

A. Perrino N. Migliano

(Date) 3/23/05

A. Perrino, VP N. Migliano, AVP

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section VIII: Appendix VIII.B – Financial Disclosure Statement and Information

Contents

- Financial Disclosure Letter for Permit Renewal

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April 10, 2025

Mr. Martin Torres
Manager, Industrial and Hazardous Waste Permits Section
Texas Commission on Environmental Quality
Building F, MC 130
12100 Park 35 Circle
Austin, Texas 78753

Re: Financial Disclosure Letter for BASF Corporation Permit Renewal
Hazardous Waste Permit No. 50219
Industrial Solid Waste Registration No. 30053
EPA ID No. TXD067261412
RN100634922; CN600124895

Dear Mr. Torres:

This letter is furnished to you in response to financial disclosure requirements as applicable under Texas Health and Safety Code Section 361.085 and Title 30, Texas Administrative Code (30 TAC), Section 305.50 to provide assurance that BASF Corporation (BASF) has sufficient financial resources.

In keeping with the above law and rule requirements, I hereby certify that BASF is adequately capitalized and has sufficient financial resources to operate, close, provide post-closure care for and perform corrective action for the above-referenced facility in a safe manner, and in compliance with the permit and all applicable rules.

BASF currently provides, as a financial assurance mechanism set out in 30 TAC, Chapter 37, Subchapter C to meet BASF's financial assurance obligations, the following:

- Letter of Credit 31261 issued by Intesa Sanpaolo Bank for closure / post-closure care for hazardous waste units
- Letter of Credit 31263 issued by Intesa Sanpaolo Bank for closure / post-closure care for UIC wells
- Letter of Credit 35674 issue by Intesa Sanpaolo Bank for 3rd party liability coverage for sudden & non-sudden accidental occurrences

I am authorized to make these statements on behalf of BASF. I understand that the TCEQ may request additional information as part of their review.

Sincerely,

Tony Germinario

Tony Germinario
Manager, Environmental Expert Services
973-652-3430
[redacted]

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B Section IX – Releases from Solid Waste Units and Corrective Action

Contents

- Part B Application Form, Section IX
- Part B, Section IX: Appendix IX.1 – Preliminary Review Facility Checklist
- Part B, Section IX: Appendix IX.2 – Preliminary Review Units Checklist
- Part B, Section IX: Appendix IX.3 – Solid Waste Management Area Closure
- Part B, Section IX: Appendix IX.4 – Solid Waste Management Area Plume Management Zone Deed Record

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B Application Form, Section IX

IX. Releases from Solid Waste Units and Corrective Action

Provide all Part B responsive information in Appendix IX. When preparing the physical format organize your submittal using the Format of Hazardous Waste permit Application and Instructions.

The Texas Solid Waste Disposal Act, 30 TAC 335.167, 40 CFR 270.14(d) and Section 3004(u) of the Hazardous and Solid Waste Amendments of 1984 (HSWA) *require that each hazardous waste management permit application review shall address corrective action for all releases of hazardous waste and hazardous constituents* listed in 40 CFR 261, Appendix VIII, 40 CFR Part 264, Appendix IX, and/or other constituents of concern from any solid waste management unit (SWMU) and/ or Areas of Concern (AOCs) at a facility, regardless of the time at which waste was placed in such unit[2]. For the purposes of HSWA Corrective Action, a SWMU may include, but is not limited to, any landfill, surface impoundment, land treatment unit, waste pile, underground injection well, incinerator, boiler, industrial furnace, tank, container storage area, drip pad, containment building, miscellaneous unit; any units exempt from hazardous waste permitting requirements, such as wastewater treatment units, elementary neutralization units, totally enclosed treatment units, waste recycle/reuse units, and 90-day accumulation time units; or process units or areas which may have routine and/or systematic releases to the environment (e.g., process drainage ditches or product storage tanks). Current EPA interpretation of this requirement has resulted in a Corrective Action process that begins with a RCRA Facility Assessment (RFA) to determine if corrective action is necessary.

[2]For the purposes of HSWA Corrective Action, a SWMU may include, but is not limited to, any landfill, surface impoundment, land treatment unit, waste pile, underground injection well, incinerator, boiler, industrial furnace, tank, container storage area, drip pad, containment building, miscellaneous unit; any units exempt from hazardous waste permitting requirements, such as wastewater treatment units, elementary neutralization units, totally enclosed treatment units, waste recycle/reuse units, and 90-day accumulation time units; or process units or areas which may have routine and/or systematic releases to the environment (e.g., process drainage ditches or product storage tanks).

The first step in the RFA is the development of a Preliminary Review (PR) from all available documentation for a facility (including but not limited to all facility documents, Part A, and Part B of the permit application, TCEQ correspondence files and inspection reports, etc.). The PR compiles available information on every SWMU and/or AOC that has ever existed at the facility. A unit checklist is completed for each SWMU and/ or AOC. On a unit-by-unit basis, the PR may recommend no further action for:

- well-designed and well-managed units
- units that have not managed hazardous wastes or wastes containing hazardous constituents;
- units already under corrective action by enforcement order; or
- units scheduled to be addressed in a compliance plan.

In addition, the unit checklists are summarized in a *Facility Checklist*. If there is a known release or potential for a release of hazardous waste or hazardous constituents from a unit/area, the PR may recommend a *RCRA Facility Investigation* (RFI), or an *Affected Property Assessment* (APA), if 30 TAC Chapter 350, Texas Risk Reduction Program (TRRP) applies, to determine the extent of the release for future corrective action, or stabilization as an appropriate and immediate corrective action.

The second step is a *Visual Site Inspection* (VSI) of the entire facility. The RFA is the combination of the PR and VSI documentation and any sample results. The RFA process should be scheduled so as to be completed during the latter stages of the Technical Review process or no later than one month in advance of the preparation of an initial draft permit for the facility. The RFA includes recommendations for whether further investigation or corrective action is warranted.

The requirements for an RFI or any other corrective action will be included in the permit, in the associated compliance plan which is mandatory for facilities with known groundwater contamination, or pursuant to 40 CFR 270.14(d)(3), the applicant may be required to start the RFI or other corrective action before the permit is issued. The RFI shall comply with all the applicable items contained in the U.S. EPA publication EPA/520-R-94-004, OSWER Directive 9902.3-2A, RCRA Corrective Action Plan (Final), May 1994, unless an alternate investigation approach is approved by the Executive Director. An RFI workplan may typically include a soil boring program, installation of monitoring wells, and sampling and analysis for 40 CFR 261 Appendix VIII and 40 CFR 264 Appendix IX hazardous constituents for surface soils, subsurface strata, surface water, groundwater, and/or air.

The permittee shall perform the RFI or APA and report the results. Corrective Action under 30 TAC Chapter 350 consists of an APA, determination of protective concentration levels, selection of a remedy standard (if necessary), development and implementation of a response action (if necessary), and submittal of required report according to 30 TAC Chapter 350.

If the RFI report indicates releases of hazardous waste or hazardous constituents for SWMUs and/or AOCs that have been grandfathered under 30 TAC Chapter 335 Subchapters A and S, Corrective Action shall consists of, if necessary, Interim Corrective Measures, *Baseline Risk Assessment* (BLRA)/*Corrective Measures Study* (CMS) Report, and *Corrective Measures Implementation* (CMI).

For grandfathered SWMUs and/or AOCs, the permittee may continue to complete the Corrective Action requirements under 30 TAC Chapter 335, Subchapter A and S, provided the permittee complies with the notification and schedule requirements pursuant to 30 TAC 335.8 and 350.(2)(m).

This report shall evaluate the risk, identify and evaluate corrective measure alternatives, and recommend appropriate corrective measure(s) to protect human health and the environment. The BLRA/CMS Report shall address all of the applicable items in 30 TAC 350, 30 TAC 335 Subchapter S, and the U.S. EPA publication EPA/520-R-94-004, OSWER Directive 9902.3-2A, RCRA Corrective Action Plan (Final), May 1994.

Upon approval of the BLRA/CMS Report by the TCEQ, the permittee shall submit a CMI Workplan to address all of the items for CMI Workplan contained in the U.S. EPA publication EPA/520-R-94-004, OSWER Directive 9902.3-2A, RCRA Corrective Action Plan (Final), May 1994. For projects conducted under TRRP, the risk assessment process shall be addressed in the *Affected Property Assessment Report* (APAR), and the evaluation of corrective measures shall be

conducted as part of the remedy standard selection process provided in the *Response Action Plan* (RAP). If the CMI or RAP does not propose a permanent remedy, then a CMI Workplan or RAP shall be submitted as part of a new compliance plan application or as a modification/ amendment application to an existing compliance plan. The workplan or RAP shall contain detailed final engineering design, monitoring plans, and schedules necessary to implement the selected remedy. Implementation of the corrective measures shall be addressed through a new and/or a modified/amended compliance plan. Upon installation of a corrective action system based upon the approved CMI Workplan or RAP, the permittee shall submit a CMI Report or RAP which includes as-built drawings of the corrective action system. To report the progress of the corrective measures, the permittee shall submit periodic CMI Progress Reports or Response Action Effectiveness Reports to the TCEQ in accordance with the schedule specified in the compliance plan. Upon completion of the corrective action requirements, the permittee shall submit CMI Report or Response Action Completion Reports for review and approval.

Please note that the applicant/permittee may perform voluntary corrective action, stabilization, or "interim measures" at any time prior to or during the RFA/RFI/CMS/CMI or the APAR/RAP process without prior TCEQ approval. The TCEQ strongly supports these actions when undertaken to mitigate releases or reduce or minimize exposure and releases to human health and the environment.

A. Preliminary Review Checklists

For Applications for a New Hazardous Waste Permit:

- For all facility Solid Waste Management Units (SWMUs) and/or Areas of Concern (AOCs), complete the accompanying forms entitled "Preliminary Review Facility Checklist" and "Preliminary Review Unit Checklist". Make additional copies as necessary.

For Applications for a Renewal/Amendment/Modification of an Existing Hazardous Waste Permit:

- Update the Preliminary Review Facility Checklist to include any newly identified SWMUs and/or AOCs that were not incorporated into the previous permit issuance (new, amendment, modification, or renewal), and to update the status of all previously identified SWMUs or AOCs which are incorporated into the existing permit under either Section IX - Corrective Action for Solid Waste Management Units, or Section XI - Compliance Plan. Status updates should include notes regarding whether the SWMU or AOC has been incorporated into a compliance plan, has received approval of no further action (NFA), has had changes in its corrective action status, or has had other determinations issued by the TCEQ. Include the date of the status change in the updated checklist;
- Complete the Preliminary Review Unit Checklists for any newly identified SWMUs or AOCs that were not incorporated into the previous permit issuance (new, amendment, modification, or renewal);
- Update the status on the Preliminary Review Unit Checklists for all previously identified SWMUs or AOCs that had not yet received TCEQ approval of NFA at the time of the previous permit issuance;
- Provide copies of the letters from the TCEQ approving NFA or other determinations that were issued since the previous permit issuance;
- For previously identified SWMUs and/or AOCs which are incorporated into the existing permit and are included in Section XI - Compliance Plan of this application, you may forego filling out the Preliminary Review Unit Checklists for these units. Briefly note on the Preliminary Review Facility Checklist that the SWMUs or AOCs are addressed in

Section XI. Provide the location where the SWMU's and addressed in Section XI. ; or

- If all previously identified SWMUs and/or AOCs reached NFA status at or before the last permit issuance you may forego filling out the Preliminary Review Unit Checklists, indicate Not Applicable, and provide a brief explanation of the facts.

Complete Preliminary Review Facility Checklist (located in attachments)

Instructions for Preliminary Review Unit Checklist

Preliminary Review Facility Checklist

Preliminary Review Unit Checklist

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section IX: Appendix IX.1 - Preliminary Review Facility Checklist

Preliminary Review Facility Checklist

Facility:	BASF Beaumont Agro Plant	City	Beaumont
ISW Reg. No:	30053	Date	Apr 14, 2025
Permit No.	50219	Reviewer:	BASF Corporation
EPA ID No.	TXD067261412		

A. Waste Management Units:

RCRA Regulated Units:

NOR. No.	Description	Status
032	Tank J-516	Closed
033	Tank J-519	Closed
034	Tank B-521	Closed
035	Tank B-503	Closed
036	Thermal Process Unit H-507	Closed
042	Tank F-414A	Active (only manages non-hazardous wastes, not subject to RCRA requirements)
061	Tank WB-1767	Active (only manages non-hazardous wastes, not subject to RCRA requirements)
042	Tank F-414B	Active (only manages non-hazardous wastes, not subject to RCRA requirements)
069	Tank F-414C	Active (only manages non-hazardous wastes, not subject to RCRA requirements)
073	Tank WB-502A	Active (only manages non-hazardous wastes, not subject to RCRA requirements)
074	Tank WB-502B	Active (only manages non-hazardous wastes, not subject to RCRA requirements)
071	Tank WB-1765	Active (only manages non-hazardous wastes, not subject to RCRA requirements)
	Remove Last Row	Add Row

Solid Waste Management Units:

NOR. No.	Description	Status
010	Non-hazardous Solid Waste Management Area (Ponds 1A, 1B, 2A, 2B)	Closed
	Remove Last Row	Add Row

B. Reviewed Documents

RCRA:

Part A ☒

Part B ☒

Permit ☒

CERCLA:

Inspection Reports:	Not applicable
Enforcement Actions	Not applicable
Exposure Infomation	None
Other Infomation:	TCEQ Notice of Registration, Aerial Photographs, BASF files and reports

C. Summary:

Wastewater treatment ponds 1A, 1B, 2A, and 2B received non-hazardous waste when in operation. The area near the former wastewater ponds was initially investigated in the mid-1980s and a groundwater compliance plan application was submitted on March 20, 1987. Recovery operations began in 1988 and ran more or less continuously for over 20 years. The area of the plume and the concentrations of COCs have been reduced and there has been no indication of plume expansion since 2006. The SWMA was in Corrective Action groundwater monitoring under the RCRA Permit Compliance Plan. A plume management zone (PMZ) was established, institutional controls (deed restriction) filed noting the area of the PMZ, and groundwater monitoring for natural attenuation has been conducted through July 2024. Note that the deed restriction for the SWMA is provided in Appendix IX.4. In April 2024, BASF submitted a Class 3 Permit Modification and a Response Action Completion Report demonstrating the following: i) the SWMA has been investigated, ii) remediation to prevent any future releases has been completed (achievement of the Groundwater Performance Standards), and iii) no further action is required. TCEQ concurred with BASF request in a letter dated January 15, 2025, approving the Class 3 Permit Modification.

D. Recommended Action::

None. No further action issued on January 15, 2025 and February 13, 2025 (see Appendix IX.3).

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section IX: Appendix IX.2 - Preliminary Review Units Checklist

Preliminary Review Unit Checklist

Facility:	BASF Beaumont Agro Plant	City	Beaumont
ISW Reg. No:	30053	Date	Apr 14, 2025
Permit No.	50219	Reviewer:	BASF Corporation
EPA ID No.	TXD067261412		

Waste Management Unit(s):

A. NOR No.:	010
B. Description:	Solid Waste Management Area (Ponds 1A, 1B, 2A, 2B); Surface Impoundment (Surge Pond associated with RCRA-exempt Wastewater Treatment Unit NOR Unit No. 06)
C. Dates of Operation:	Closed
Wastes Managed:	Wastewater associated with RCRA-exempt Wastewater Treatment Unit (NOR Unit No. 06)
Evidence of Release:	Shallow groundwater (i.e., the upper-most aquifer) was impacted by petroleum hydrocarbons and chlorinated phenols (i.e., constituents of concern; COCs) in the area of the former surface impoundments. The groundwater was impacted due to infiltration of water from one or more of the ponds, which were remediated to prevent any future releases. The impacted groundwater was limited to an on-site location within the chemical plant, and there are no affected or threatened receptors. The chlorinated compounds detected in groundwater above the Protective Concentration Levels (PCLs) are chlorobenzene, 1,4-Dichlorobenzene, 2,4-Dichlorophenol, and 2,6-Dichlorophenol.
Pollutant Dispersal Pathways:	The direction of groundwater flow does not present any particular issues (e.g., discharge of COCs to surface water will not occur). The contaminated groundwater does not discharge to the land surface and thus there is no complete exposure pathway to wildlife. There are no crops or physical structures located within the PMZ boundary and there is no indication that vegetation overlying the area is in any way stressed due to the presence of the COCs.
	The area near the former wastewater ponds was initially investigated in the mid-1980s and a groundwater compliance plan application was submitted on March 20, 1987. Groundwater recovery operations began in 1988 and operated for 20 years. As the area of the plume and the concentrations of COCs were reduced, the number of recovery and monitoring wells were reduced in 2006 and completely shut down

Summary:	in 2009. In 2004, analyses for additional constituents (beyond those required for compliance monitoring in the Compliance Plan) indicated there are only a limited number of COCs that have concentrations above the Texas Risk Reduction Program (TRRP) Tier 1 PCLs. Remedial actions for the SWMA were conducted under a Corrective Action Program in the Compliance Plan that incorporated a plume management zone (PMZ) and groundwater monitoring for natural attenuation. In April 2024, BASF submitted a Class 3 Permit Modification and a Response Action Completion Report demonstrating that the SWMA has been investigated, remediation to prevent any future releases has been completed (achievement of the Groundwater Performance Standards), and no further action is required. TCEQ concurred with BASF request in a letter dated January 15, 2025, approving the Class 3 Permit Modification (see Appendix IX.3).
Recommended Action:	None.
A. NOR No.:	TCB AOC (no NOR Unit number assigned)
B. Description:	FFP Loading/Unloading Area for BASF raw and finished products.
C. Dates of Operation:	Active Investigation (2021 to present)
Wastes Managed:	None.
Evidence of Release:	Soil and groundwater (i.e., the uppermost groundwater bearing unit) impacts were observed due to infiltration of 1,2,4-Trichlorobenzene (TCB) rail-car wash water and/or TCB releases in the vicinity of FFP rail car loading/unloading area. The impacted soils have been delineated laterally and vertically in accordance with 30 TAC 350 and are limited to an on-site location within the facility. The impacted groundwater is being investigated in accordance with 30 TAC 350. In addition to TCB, its degradation byproducts, 1,4-dichlorobenzene and 2,4-dichlorophenol, were also detected in soil and/or groundwater at concentrations above their Protective Concentration Levels (PCLs).
Pollutant Dispersal Pathways:	The direction of groundwater flow, which is generally towards the east, is not anticipated to present any particular issues (e.g., discharge of COCs to surface water or water supply wells screened within the uppermost groundwater bearing unit). However, the impacted groundwater is still being investigated to achieve delineation in accordance with 30 TAC 350.
	The soil and groundwater in the vicinity of the FFP

Summary:	Loading/Unloading area were initially investigated in the December 2021 and June 2022, respectively, after odors suspected to be TCB were observed during the remedial actions associated with the Dicamba AOC in November 2021. The June 2022 sampling efforts provided lateral and vertical delineation of the impacted soil, but also provided evidence of groundwater impacts. Several groundwater investigation efforts have been conducted since June 2022 to delineate the impacted groundwater. The groundwater investigation has included installation of temporary and permanent groundwater monitoring wells, slug testing, and groundwater sampling. The impacted groundwater is believed to be delineated to the west and south, but investigations are still ongoing to determine the northern and eastern boundaries in accordance with 30 TAC 350.
Recommended Action:	Continue the investigation in accordance with 30 TAC 350 and submit an Affected Property Assessment Report and Response Action Plans.

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section IX: Appendix IX.3 – Solid Waste Management Area Closure

Brooke Paup, *Chairwoman*
Bobby Janecka, *Commissioner*
Catarina R. Gonzales, *Commissioner*
Kelly Keel, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 15, 2025

Ms. Kendra Derrick
EHS Specialist
BASF Corporation
14385 West Port Arthur Road
Beaumont, Texas 77705

Re: Transmittal of Class 3 Permit Modification
BASF Corporation, Jefferson County
Hazardous Waste Permit No. 50219
Industrial Solid Waste Registration No. 30053
EPA Identification No. TXD067261412
Tracking No. 29714498; RN100634922/CN600124895

Dear Ms. Derrick:

Enclosed, please find a signed copy of the above-referenced Class 3 permit modification issued pursuant to the Texas Health and Safety Code, Chapter 361, in response to your application dated April 5, 2024.

This action is taken under authority delegated to the executive director of the Texas Commission on Environmental Quality.

Please direct questions regarding the Class 3 permit modification to Mr. Vahab Haghighatian, P.E., P.G. of the Industrial and Hazardous Waste Permits Section by email at Vahab.Haghighatian@tceq.texas.gov, by phone at (512) 239-6081, or at the letterhead address provided in the correspondence. If you respond in writing, please include mail code MC 130 in the mailing address.

Sincerely,

Charly Fritz, Deputy Director
Waste Permits Division

CF/VH/kjm

Enclosure

cc: Mr. Christ Niamike, P.E. - GSI Environmental Inc – Houston

Texas Commission on Environmental Quality

Class 3 Permit Modification

Permittee Name	BASF Corporation	**Hazardous Waste Permit No.**	50219
City	Beaumont	**County**	Jefferson
Customer No.	CN600124895	**Solid Waste Registration No.**	30053
Regulated Entity No.	RN100634922	**EPA Identification No.**	TXD067261412
Application Date	April 5, 2024	**Application Received Date**	April 10, 2024
Request	Class 3 Permit Modification	**Tracking No.**	29714498

The Texas Commission on Environmental Quality (TCEQ) reviewed the permit application for consistency with the goals and policies of the Texas Coastal Management Program (CMP) in accordance with the regulations of the Coastal Coordination Council and determined that the permit is consistent with the applicable CMP goals and policies. [30 TAC Section 281.43(a)(1)]

The above permit is modified as

follows: **Continuation Sheet 6 of 38**

Section I.B. Incorporated Application Materials

Incorporate the application dated above and its subsequent revisions, as included in the attached "Table of Permit Modifications and Amendments," into this permit.

Tables

Replace the following existing Compliance Plan (CP) tables with the attached revised tables:

- CP Table I: Waste Management Units and Areas Subject to Groundwater Corrective Action and Compliance Monitoring - Reserved
- CP Table II: Solid Waste Management Units and/or Areas of Concern Addressed in Permit Section XI.H. for which Corrective Action Applies Pursuant to 30 TAC Section 335.167
- CP Table III: Corrective Action Program Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard - Reserved

- CP Table IIIA: Corrective Action Program Table of Indicator Parameters and the Groundwater Protection Standard - Reserved
- CP Table V: Designation of Wells - Reserved
- CP Table VII: Reporting Requirements - Reserved
- CP Table VIII: Compliance Schedule - Reserved

This Class 3 Permit Modification is part of Permit No. 50219 and should be attached thereto.

Issued Date: January 9, 2025

K Keel

For the Commission

Brooke T. Paup, *Chairwoman*
Bobby Janecka, *Commissioner*
Catarina R. Gonzales, *Commissioner*
Kelly Keel, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 13, 2025

Ms. Kendra Derrick
EHS Specialist
BASF Corporation
14385 West Port Arthur Road
Beaumont, Texas 77705

Via Email

Re: Approval
January 2025 Semiannual Corrective Action Report, January 20, 2025
BASF Corporation Beaumont Plant
14385 West Port Arthur Road, Beaumont, Jefferson County
TCEQ Hazardous Waste Permit/Compliance Plan No. 50219
TCEQ SWR No. 30053; CN600124895; RN100634922; EPA ID No. TXD067261412

Dear Ms. Derrick:

The Texas Commission on Environmental Quality (TCEQ) has reviewed the above-referenced submittal for the Solid Waste Management Area (SWMA), which consists of four former surface impoundments that were clean-closed (i.e., Ponds 1A, 1B, 2A, and 2B). The SWMA is subject to the RCRA Corrective Action Program as outlined in the Compliance Plan (CP) of the site's hazardous waste permit. Response actions for impacted groundwater include a plume management zone (PMZ) with semi-annual groundwater sampling and reporting.

The above-referenced report provides the results of the July 2024 semi-annual sampling event. Barium was the only chemical of concern (COC) detected, but the concentrations were below the groundwater protection standard (GWPS). All other COCs listed on CP Table III were not detected in the seven monitoring wells sampled.

The TCEQ received a Class 3 permit modification application on April 9, 2024 to terminate the Corrective Action Program for the SWMA. At that time, groundwater monitoring results showed that the GWPS established for the COCs listed on CP Table III had not been exceeded for three consecutive years at the alternate points of exposure established for the SWMA's PMZ. This was detailed in the August 5, 2024 revised Response Action Completion Report (RACR) that was submitted with the Class 3 permit modification application. Based on the groundwater monitoring results presented in the RACR, the requirements of Permit Provision XI.D.6.e had been met such that the Corrective Action Program for the SWMA could be terminated.

The TCEQ approved the termination request and issued the Class 3 permit modification on January 9, 2025. ***Therefore, no further groundwater monitoring or reporting is required under the Compliance Plan for the SWMA***. Additionally, the TCEQ agrees that the groundwater monitoring results of the above-referenced report continue to support that the Corrective Action Program objectives have been met for the SWMA and no further action is required.

Please note that it is the continuing obligation of persons associated with a site to ensure that municipal hazardous waste and industrial solid waste are managed in a manner that does not cause the discharge or imminent threat of discharge of waste into or adjacent to waters in the state, a nuisance, or the endangerment of the public health and welfare as required by Title 30 Texas Administrative Code §335.4. Be advised that the burden remains upon the owner to take necessary and authorized action to correct such conditions whenever they exist.

Questions concerning this letter should be directed to me at [redacted] or at (512) 239-1488. When responding by mail, please submit one paper copy and one electronic copy (on USB or disc) of all correspondence and reports to the TCEQ Remediation Division at Mail Code MC-127. An additional copy should be submitted in electronic format to the local TCEQ Region Office. The information in the reference block should be included in all submittals. Note that the electronic and hard copies should be identical, complete copies. A Correspondence ID Form (TCEQ Form 20428) must accompany each document submitted to the Remediation Division and should be affixed to the front of your submittal. The Correspondence ID Form helps ensure that your documents are identified correctly and are routed to the applicable program for a timely response.

Sincerely,

Rachel Vander Nat

Rachel Vander Nat, Project Manager
VCP-CA Section
Remediation Division
Texas Commission on Environmental Quality

RVN/rvn

cc: Mr. James M. McDade, P.E., GSI Environmental, Inc., Vice President and Principal Engineer

Mr. Christ Niemke, P.E., GSI Environmental, Inc., Environmental Engineer

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section IX: Appendix IX.4 – Solid Waste Management Area Plume Management Zone Deed Record

Bryan W. Shaw, Ph.D., *Chairman*
Buddy Garcia, *Commissioner*
Carlos Rubinstein, *Commissioner*
Mark R. Vickery, P.G., *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 5, 2010

Mr. Howard Baker, Manager
Ecology, Safety, Health, Waste
BASF Corporation
14385 West Port Arthur Road
Beaumont, Texas 77705

Re: Approval of Filing of Institutional Controls
Transmittal of Recorded Deed Notice for Plume Management Zone, dated December 2, 2009
BASF Corporation - Ponds 1A, 1B, 2A, and 2B - Beaumont, Texas
TCEQ SWR No. 30053
TCEQ Hazardous Waste Compliance Plan No. CP -50219
EPA ID No. TXD067261412
CN No. 600124895 /RN No. 100634922

Dear Mr. Baker:

The Texas Commission on Environmental Quality (TCEQ) received your letter, dated December 2, 2009, submitted by BASF Corporation for the Beaumont facility containing proof of filing of institutional controls for the Plume Management Zone (PMZ). After reviewing the proof of filing of institutional controls the TCEQ concurs that the institutional control requirements of 30 Texas Administrative Code (TAC) §350.111 have been completed. The institutional controls were filed to inform others of ongoing long-term response actions. Please continue the response actions in accordance with the approved Response Action Plan (RAP) and submit Response Action Effectiveness Reports (RAERs) in accordance with the schedule proposed in the approved RAP.

Please be aware that it is the continuing obligation of persons associated with a site to ensure that municipal hazardous waste and industrial solid waste are managed in a manner which does not cause the discharge or imminent threat of discharge of waste into or adjacent to waters in the state, a nuisance, or the endangerment of the public health and welfare as required by 30 TAC §335.4. If the actual response action fails to comply with these requirements, please take any necessary and authorized action to correct such conditions.

Questions concerning this letter should be directed to me at (512) 239-3156. When responding by mail, please submit an original and one copy of all correspondence and reports to the TCEQ Remediation Division at Mail Code MC-127 with an additional copy submitted to the local TCEQ Region Office. The information in the reference block should be included in all submittals.

Sincerely,

Jim Formby, Project Manager
Corrective Action Team 2, VCP-CA Section
Remediation Division
Texas Commission on Environmental Quality

JF/jdm

cc: Mr. Derek Eades, Waste Program Manager, TCEQ Region 10 Office, Beaumont

BASF

The Chemical Company

December 2, 2009

Central Records, MC-199
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Re: Transmittal of Recorded Deed Notice for Plume Management Zone;
Texas Risk Reduction Program;
BASF Corporation – Beaumont, Texas; SWR No. 30053
CN 600124895, RN 100634922, Compliance Plan No. CP-50219

Dear Sir/Madame:

Pursuant to the TCEQ's Texas Risk Reduction Program (TRRP), the attached deed notice has been filed and recorded with the County Clerk of Jefferson County, Texas. The date of record is November 17, 2009. This record establishes a 54.57 acre plume management zone for the BASF facility. If you have any questions please do not hesitate to call me at 409-981-5033.

Sincerely,

Ryan Yoes
Environmental Specialist
BASF Corporation – Beaumont Facility

cc: Jim Formby, TCEQ Austin – MC-127
Chip Volz, RPS – Beaumont

BASF Corporation
14385 West Port Arthur Road
Beaumont, TX 77705
Tel: (409) 722-8061
www.basf.com/usa

Helping Make Products Better ®

NOT 2009043572
6 PGS

Texas Risk Reduction Program

Deed Notice

STATE OF TEXAS §
§
COUNTY OF JEFFERSON §

This Notice is filed to provide information concerning certain environmental conditions and/or use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described as follows:

> Tract 1 (200.00 acres) and Tract 2 (290.577 acres) as conveyed by deed dated December 24, 1996 from Sandoz Agro, Inc. to BASF Corporation, recorded in Clerk's File No. 96-9639343 of the Official Public Records of Real Property, County Clerk's Office, Jefferson County, Texas, as situated in and a part of the W.H. Sigler Survey, Abstract No. 48 of said County.

Portions of the groundwater of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP. The portion considered to be Affected Property is described as follows:

> Attached hereto and incorporated herein by reference is Exhibits A and B, which contains a metes and bounds description and survey, respectively, of the Affected Property.

This Notice is required for the following reasons:

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone. A plume management zone is defined as an area of groundwater containing concentrations of chemicals of concern (e.g., barium, benzene, chlorobenzene, ethylbenzene, 1,4-dichlorobenzene, and 2,6-dichlorophenol) exceeding the TCEQ-approved protective concentration levels for a site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). The undersigned has established a plume management zone at the Property so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The TCEQ-approved Response Action Plan, which is on-file at the TCEQ, provides the location and extent of the plume management zone and describes the maintenance and monitoring required. This maintenance and monitoring is required until TCEQ approves some modification of those requirements. Exposure to groundwater within the plume management zone for any purpose is not advised until such time when all chemicals of concern no longer exceed the respective protective concentration levels. This deed notice must not be removed or modified without prior approval from TCEQ.

As of the date of this Notice, the record owner of fee title to the Property is BASF Corporation with an address at 14385 West Port Arthur Road, Beaumont, Texas 77705.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle, Building E

Mail: TCEQ - MC 199
P O Box 13087
Austin, Texas 78711-3087

Austin, Texas 78753

TCEQ Program and Identifier: SWR No. 30053

This Notice may be rendered of no further force or effect only by a superseding deed notice executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Deed Notice is filed.

Executed this 12 day of November 2009.

BASF Corporation

By: John Smoter

Name: John Smoter

Title: Site Manager

STATE OF TEXAS
JEFFERSON COUNTY

BEFORE ME, on this the 12 day of November, 2009, personally appeared John Smoter, Site Manager, of BASF Corporation, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and in the capacity herein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 12 day of November, 2009.

MADONNA ANN JOHNSON
Notary Public, State of Texas
My Commission Expires
November 14, 2011

Madonna Ann Johnson
Notary Public in and for the State of Texas,
County of Jefferson

My Commission Expires:

After recording, return to:

BASF Corporation
Attention: Ryan Yoes
14385 West Port Arthur Road
Beaumont, Texas 77705

ARCENEAUX & GATES
Consulting Engineers, Inc.
Engineers • Surveyors • Planners

EXHIBIT "A"

METES AND BOUNDS DESCRIPTION OF 54.57 ACRES OF LAND SITUATED IN THE W.H. SIGLER SURVEY, ABSTRACT NO. 48, JERFFERSON COUNTY, TEXAS

SOLID WASTE MANAGEMENT AREA PLUME MANAGEMENT ZONE

Being a 54.57 acre tract or parcel of land, a portion of those certain two tracts of land (called Tract 1 – 200.00 acres, Tract 2 – 290.577 acres) as conveyed by deed dated December 24,1996 from Sandoz Agro, Inc. to BASF Corporation, recorded in Clerk's File No. 96-9639343 of the Official Public Records of Real Property, County Clerk's Office, Jefferson County, Texas, as situated in and a part of the W.H. Sigler Survey, Abstract No. 48 of said County and being more particularly described by metes and bounds as follows;

FOR LOCATIVE PURPOSES, commence at a copper rod found located on the Westerly Right of Way line of West Port Arthur Road (a.k.a. Spur 93) marking the Northeast corner of said Tract 1 and the Southeast corner of a called 210.6 acres now or formerly owned by Louis M. Hebert, recorded in Volume 142, Page 279 of the Deed Records of said County, said commencing point having a coordinate value of North 13,934,482.49 and East 3,534,019.28;

THENCE South 86 deg. 44 min. 55 sec. West (North 89 deg. 59 min. West deed) along the common line of said Hebert tract and Tract 1 a distance of 2061.51 feet to a fence post found marking the Northeast corner and **POINT OF BEGINNING** of the herein described tract of land, this point having a coordinate value of North 13,934,365.57 and East 3,531,961.08;

THENCE South 53 deg. 58 min. 31 sec. East a distance of 764.96 feet to a monitor well found (called MW17) marking an angle point for corner, this point having a coordinate value of North 13,933,915.67 and East 3,532,579.76;

THENCE South 04 deg. 45 min. 14 sec. West a distance of 904.22 feet to a monitor well found (called MW1) marking the Southeast corner of the herein described tract of land, this point having a coordinate value of North 13,933,014.56 and East 3,532,504.82;

THENCE South 76 deg. 30 min. 57 sec. West a distance of 1380.79 feet to a monitor well found (called MW30) marking the Southwest corner of the herein described tract of land, this point having a coordinate value of North 13,932,692.59 and East 3,531,162.09;

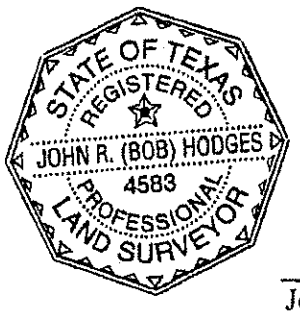
One Turtle Creek Square 3501 Turtle Creek Drive, Suite 102 Port Arthur, Texas 77642 (409) 724-7888 FAX (409) 724-1447

EXHIBIT "A"

THENCE North 17 deg. 49 min. 50 sec. West a distance of 1707.47 feet to a fence post found marking the Northwest corner of the herein described tract of land, this point having a coordinate value of North 13,934,318.04 and East 3,530,639.26;

THENCE North 87 deg. 56 min. 26 sec. East a distance of 1322.68 feet to the Northeast corner and **POINT OF BEGINNING** and containing in area 54.57 acres of land, more or less.

Surveyed: October, 2009



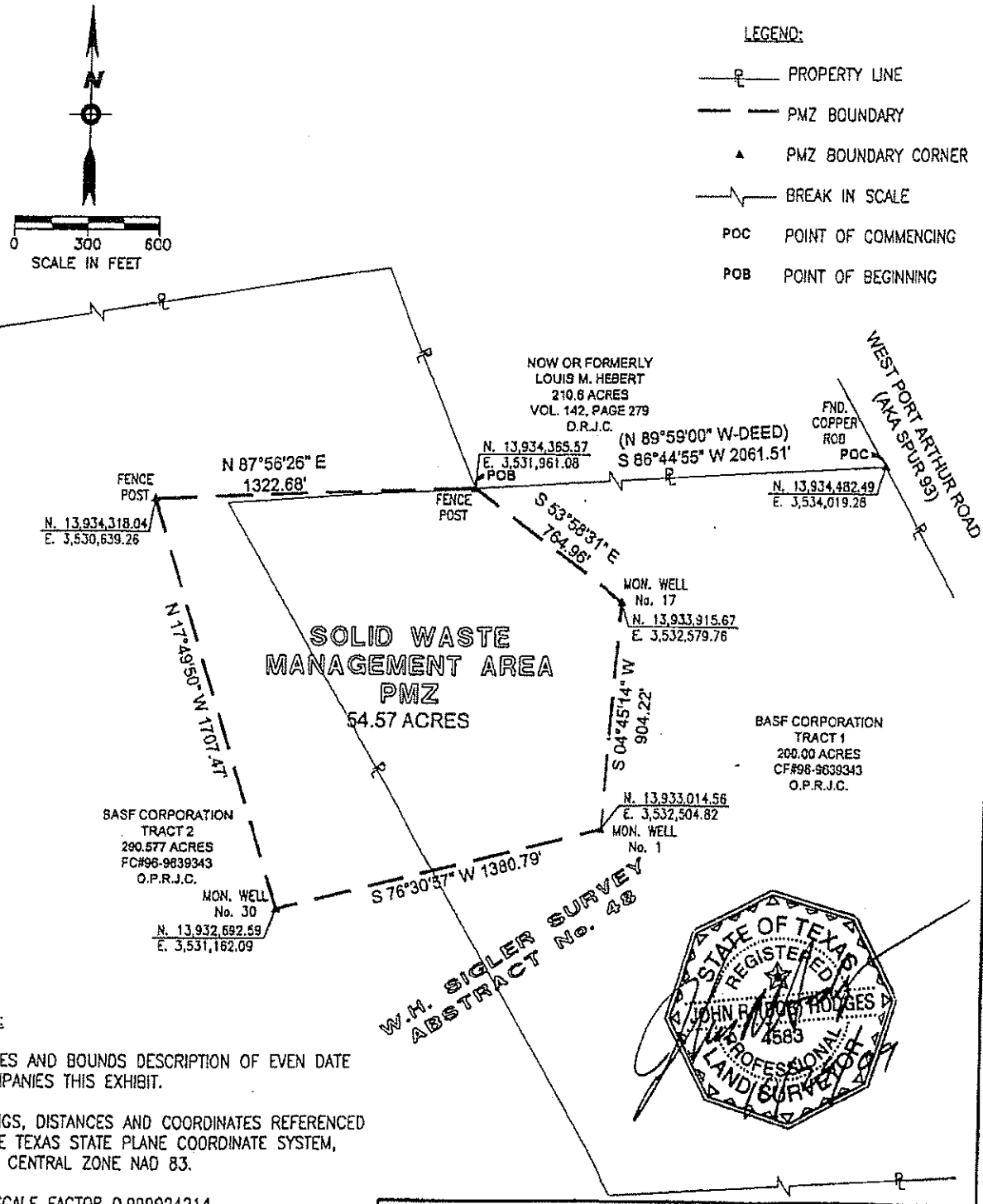
John R. (Bob) Hodges R.P.L.S. #4583

10/29/09

Notes:
Bearings, distances and coordinates, referenced to the Texas State Plane Coordinate System, South Central Zone, NAD 83. Grid Scale Factor = 0.999924214

An Exhibit of even date is being submitted with this metes and bounds description.
Acreage expressed in Surface Area.

EXHIBIT "B"



NOTES:

A METES AND BOUNDS DESCRIPTION OF EVEN DATE ACCOMPANIES THIS EXHIBIT.

BEARINGS, DISTANCES AND COORDINATES REFERENCED TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE NAD 83.

GRID SCALE FACTOR 0.999924214

ACREAGE EXPRESSED IN SURFACE AREA.

ARCENEAUX & GATES
CONSULTING ENGINEERS, INC.
PORT ARTHUR, TEXAS

ARCENEAUX & GATES
Consulting Engineers, Inc.
Engineers Surveyors Planners
3501 Turtle Creek Drive, Suite 102
Port Arthur, Texas 77642
(409) 724-7688

EXHIBIT SHOWING
SOLID WASTE MANAGEMENT AREA
PLUME MANAGEMENT ZONE
LOCATED AT THE
BASF CORP. FACILITY
WEST PORT ARTHUR ROAD
BEAUMONT, JEFFERSON COUNTY, TEXAS

PAGE 1 OF 1

DATE: OCTOBER, 2009	SCALE: 1"=600'	DRAWN: TMR
PROJ. No.: JDC-180	VER.: AutoCAD 2010	CHECKED: JRH

FILED AND RECORDED

OFFICIAL PUBLIC RECORDS

Carolyn L Guidry

2009 Nov 17, 09:36 AM 2009043572

WILLIAMSD: $32.00

CAROLYN L. GUIDRY, COUNTY CLERK

JEFFERSON COUNTY, TEXAS

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B Section X – Air Emission Standards

Contents

- Part B Application Form, Section X - Reserved

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B Application Form, Section X - Reserved

X. Air Emission Standards

Provide all Part B responsive information in Appendix X. When preparing the physical format organize your submittal using the Format of Hazardous Waste permit Application and Instructions.

Section X.D. applies to Permittees with "one- stop" permits applying for an amendment, modification, or renewal of the Air Permits Division portions of their combined "one-stop" permit.

A. Process Vents

Does the facility have process vents and equipment subject to the requirements of 40 CFR Part 264, Subpart AA?

If Yes: please provide a report that includes all of the information required by 40 CFR §270.24. Indicate on a facility plot plan the approximate location of process vents.

1. For incorporation into the permit, complete Table X.A - Process Vents for all vents on waste management units that manage hazardous waste with an annual average total organics concentration of 10 ppmw or greater ("process vents"). Specifically include:

   a. process vents on distillation, fractionation, thin-film evaporation, solvent extraction, air or steam stripping operations, and vents on condensers serving these operations; and

   b. process vents on tanks (e.g., distillate receivers, bottom receivers, surge control tanks, separator tanks, and hot wells) associated with distillation, fractionation, thin-film evaporation, solvent extraction, and air or steam stripping processes if emissions from these process operations are vented through the tanks.
   Emissions caused by natural means such as daily temperature changes or by tank loading and unloading are not subject to control.

2. For process vents, include the following certification as part of the air emissions report:

   I,_____*[owner or operator]*___, certify that the operating parameters used in the design analysis reasonably represent the conditions that exist when the hazardous waste management unit is or would be operating at the highest load or capacity level reasonably expected to occur.

   I further certify that the control device is designed to operate at an efficiency of 95 weight percent or greater.

   OR

   I further certify that the total organic emission limits of 40 CFR §264.1032(a) for affected process vents at the facility can be attained by a control device involving vapor recovery at an efficiency less than 95 weight percent.

   [Signature] _____ *[Date]* _____.

B. Equipment Leaks

Does the facility have equipment subject to the requirements of 40 CFR Part 264, Subpart BB?

If No: please provide the regulatory exclusion/exemption(s):

If Yes: please provide a report that includes all of the information required by 40 CFR §270.25.

1. For incorporation into the permit, complete Table X.B. - Equipment Leaks for all valves, pumps, compressors, pressure relief devices, sampling connection systems, and open-ended valves or lines that contain or contacts hazardous waste streams with organic concentrations of 10% by weight or greater. Equipment in vacuum service is not subject to control if identified in the facility operating record.

2. For equipment, include the following statement as part of the air emissions report:

   I, *[owner or operator]*, certify that the operating parameters used in the design analysis reasonably represent the conditions that exist when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur.

   I further certify that the control device is designed to operate at an efficiency of 95 weight percent or greater.

   [Signature] _____ *[Date]* _____.

C. Tanks, Surface Impoundments, and Containers

Does the facility have tanks subject to the requirements of 40 CFR Part 264, Subpart CC?

☐ Yes ☐ No ☐ Not Applicable (no permitted tanks)

If No: provide the regulatory exception/exemption(s) for each tank subject to regulation under 40 CFR Part 264, Subpart J:

Does the facility have surface impoundments subject to the requirements of 40 CFR Part 264, Subpart CC?

☐ Yes ☐ No ☐ Not Applicable (no permitted surface impoundments)

If No: provide the regulatory exception/exemption(s) for each permitted surface impoundment subject to regulation under 40 CFR Part 264, Subpart K:

Does the facility have containers subject to the requirements of 40 CFR Part 264, Subpart CC?

☐ Yes ☐ No ☐ Not Applicable (no permitted container storage areas)

If No: provide the regulatory exception/exemption(s) applicable to the authorized containers subject to regulation under 40 CFR Part 264, Subpart I:

If the facility contains tanks, surface impoundments, and containers subject to the requirements of 40 CFR Part 264 Subpart CC, please provide a report that includes all of the information required by 40 CFR §270.27.

1. For incorporation into the permit, complete Table X.C.

2. As applicable, include the following floating roof cover certification as part of the air emissions report for tanks:

   I, *[owner or operator]*, certify that the floating roof cover meets the applicable design specifications as listed in 40 CFR §264.1084(e)(1) or 40 CFR §264.1084(f)(1).

   [Signature] _____ *[Date]* _____.

3. As applicable, include the following floating membrane cover certification as part of the air emissions report for surface impoundments:

   I, *[owner or operator]*, certify that the floating membrane cover meets the applicable design specifications listed in 40 CFR §264.1085(c)(1).

   [Signature] _____ *[Date]* _____.

4. As applicable, include the following container certification as part of the air emissions report for containers:

   I, *[owner or operator]*, certify that the requirements of 40 CFR Part §264, Subpart CC, are met for all containers subject to control.

   [Signature] _____ *[Date]* _____.

5. As applicable, include the following control device certification as part of the air emissions report:

   I, *[owner or operator]*, certify that the control device is designed to operate at the performance level documented by a design analysis as specified in 40 CFR 264.1089 (e)(1)(ii) or by performance tests as specified in 40 CFR §264.1089(e)(1)(iii) when the tank, surface impoundment, or container is or would be operating at capacity or the highest level reasonably expected to occur.

   [Signature] _____ *[Date]* _____.

D. "One-Stop" Permits:

Does the facility have a "one-stop" permit?

☐ Yes ■ No

If yes: does this permit application propose to delete the "one-stop" portion of the permit?

☐ Yes ☐ No

Does the facility want the application processed in accordance with 30 TAC Chapter 33

- Consolidated Permit Applications?

☐ Yes ■ No

If yes: please provide a copy of the notification of intent required by 30 TAC 33.43.

Permittees having "one-stop" permits may elect to combine the air and waste management amendment, modification, or renewal of permitted waste management units. The combined amendment, modification, or renewal application will follow the application processing procedures for an industrial solid waste permit. "One-Stop" permit applications shall include the following air quality information, as applicable.

1. Area map (to scale) showing the location of the plant and land use in the vicinity of the facility including buildings, schools, residences, etc. within 3000 feet.
2. Plot plan (to scale) with latitude and longitude showing the plant layout, property boundary and location of all emission points of air contaminants. Emission points are to be numbered.
3. Specific chemical name of each air contaminant and emission rate in maximum pounds per hour, maximum tons per year and calculations used to determine emission rates. Fugitive emissions are to be included. Complete Table 1(a) entitled "Emission Sources."
4. Process description, operating schedule, and flow chart in sufficient detail that will explain the process and operation and a material balance for processes where applicable. The description should include a discussion of disposal methods for any generated residues and associated air emissions.
5. Design specifications about each emission control device using the appropriate OAQ table.
6. Volatile organic compound (VOC) concentrations in water or sludges or soil and volumes or weights of water, sludges or soils to be processed.
7. Exhaust stack or emission point parameters for each emission point including height, diameter, temperature, velocity and flow rate, except ground level fugitive emissions.
8. Best available control technology (BACT) documentation for all new and modified facilities.
9. Documentation of compliance with any applicable Federal New Source Performance Standard (NSPS) and Federal National Emission Standard for Hazardous Air Pollutants (NESHAPS).
10. Documentation as to whether a permit is required under new source review requirements of part C or D or Title I of the Federal Clean Air Act, 42 U.S.C. 7401 et seq., for a major source or major modification.
11. Information that demonstrates reliability of emission control systems including process instrumentation, equipment redundancy and operating procedures.
12. Results of atmospheric dispersion modeling certified to have been conducted in accordance with applicable TCEQ Office of Air Quality (OAQ) procedures. Model results must show maximum off-property 30-minute and annual ground level concentrations of each air contaminant. Dispersion modeling results must indicate compliance with all OAQ Rules and Regulations. Dimensions of buildings/structures that may influence dispersion modeling are to be

furnished. Please consult with OAQ before beginning any modeling study.

13. Storage tank data including capacity in gallons, diameter, height, paint color, composition, density, vapor pressure and molecular weight of liquid stored, maximum hourly and annual throughput and number of turnovers per year. Complete Table 7 entitled "Storage Tank Summary" for each tank.

14. A statement addressing the applicability of each OAQ regulation.

15. All methods of calculating emissions must be properly referenced with justification for selecting and assuming the values used in any equation.

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B Section XI – Compliance Plan

Contents

- Part B Application Form, Section XI
- Part B, Section XI: Appendix XI.1 – Compliance Plan

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B Application Form, Section XI

XI. Compliance Plan

Provide all Part B responsive information in Appendix XI. When preparing the physical format organize your submittal using the Format of Hazardous Waste permit Application and Instructions.

Groundwater Monitoring and Corrective Action Requirements for Regulated Units

Owners or operators of facilities that process, store, or dispose of hazardous waste may be required to establish groundwater monitoring and response programs in accordance with the provisions of 30 TAC 335.157. There are three types of groundwater monitoring programs which may be addressed in a Compliance Plan Application for Regulated Units: i) detection monitoring, ii) compliance monitoring, and iii) corrective action monitoring. The applicability of these various monitoring programs and the associated application requirements are illustrated in Figure 2 of the Compliance Plan Application instructions and further outlined below. A Compliance Plan Application will be required to be submitted when establishing a new compliance plan or incorporating changes in an existing compliance plan.

Detection Monitoring: An owner/operator required to conduct detection monitoring per the requirements of 30 TAC 335.164 must monitor for indicator parameters, such as specific conductance, total organic carbon, and total organic halogen, as well as chemical parameters and hazardous constituents specified in the facility permit. If a statistically significant increase in any parameter or hazardous constituent specified in the facility permit is detected in any monitoring well down gradient of the compliance point, the owner/operator must sample the groundwater in all monitoring wells and analyze the samples for the presence of 40 CFR Part 264 Appendix IX hazardous constituents. As shown in the accompanying Flow Diagram (see Figure 2), if the analytical results confirm the presence of Appendix IX constituents down gradient of the compliance point, the owner/operator must submit a Compliance Plan Application to establish a compliance monitoring program or corrective action program.

Compliance Monitoring: The requirements for compliance monitoring programs are detailed in 30 TAC 335.165. Owners/operators required to establish a compliance monitoring program must monitor the groundwater to determine whether Regulated Units are in compliance with the Groundwater Protection Standard (GWPS) specified in the compliance plan (see 30 TAC 335.158 .160). If a statistically significant increase above the GWPS in any chemical parameter or hazardous constituent specified in the compliance plan is confirmed, the owner/operator must submit a application to modify the compliance plan to establish a corrective action program in accordance with 30 TAC 335.166 (see Figure 2). If no such exceedance of the GWPS is detected for three consecutive years and the applicable compliance period has expired, the owner/operator must apply for modification of the compliance plan to re-establish a detection monitoring program for the unit. No further monitoring may be needed if the applicable post-closure care period for the unit is complete.

Regulated Unit Corrective Action Program: Owners/operators required to implement a corrective action program in accordance with the provisions of 30 TAC 335.166 must remove the hazardous waste constituents found in the groundwater or treat the groundwater in-place to levels equal to or less than the GWPS down gradient of the compliance point. The owner/ operator must also establish and implement a groundwater monitoring program to demonstrate the effectiveness of the corrective action program. Corrective action measures may be terminated once the concentrations of hazardous constituents are reduced to levels equal to or below their respective concentration limits. After termination of the corrective action measures, the owner/operator must submit an application for modification of the compliance plan to re-establish a compliance monitoring program for the duration of the

compliance period (see Figure 2).

Groundwater Corrective Action Requirements for Solid Waste Management Units (SWMUs)

HSWA Solid Waste Management Unit (SWMU) Corrective Action Program: An owner/operator of a Permitted facility or an applicant applying for a hazardous waste permit is required to submit a Compliance Plan Application if hazardous constituents have been released from a SWMU and/or Area of Concern (AOC) to the groundwater and exceeds background or Practical Quantitation Limit (PQL) values, if under Risk Reduction Rules 30 TAC 335 and/or appropriate Protective Concentration Limits (PCLs), if under Texas Risk Reduction Program Rules 30 TAC 350. The Permitted facility must implement a corrective action program for SWMUs and/or AOCs in accordance with provisions 30 TAC 335.167 (see Figure 3, page 122 of the instructions for example of process-alternate, but equivalent process may be authorized by the Executive Director).

Compliance Plan Application Form Structure:

The Compliance Plan Application consists of Sections XI.A. through E.

Application Information Form:

This section contains detailed information necessary for the application and regulatory requirements needed to put in the final compliance plan.

The application form contains the following subsections:

A. Site Specific Information

B. Groundwater Protection Standard (GWPS)

C. Compliance Monitoring Program

D. Corrective Action Program

E. Cost Estimates for Financial Assurance

1. Table XI.E.1 Corrective Action Program Cost Estimate
2. Table XI.E.2.e Groundwater Monitoring Cost Estimate
3. Table XI.E.3. Financial Assurance Summary

CP Attachments:

A. Maps

B. Well Design and Construction Specifications

C. Sampling and Analysis Plan

Compliance Plan Site Specific Tables:

This section includes the following tables which are to be completed by the applicant, as applicable, and shall be incorporated as part of the final draft Compliance Plan. [Note: include a CD disk or the USB with the application providing an electronic copy of the files supporting the compliance plan tables**. Tables should be converted to the PDF format when submitting the application**:

CP Table I - Waste Management Units and/or Areas Subject to Groundwater Corrective Action and Compliance Monitoring

CP Table II - Solid Waste Management Units and/or Areas of Concern for which Corrective Action applies pursuant to 30 TAC 335.167.

CP Table III - CORRECTIVE ACTION PROGRAM Table of Detected Hazardous and Solid

Waste Constituents and the Groundwater Protection Standard

CP Table IIIA - CORRECTIVE ACTION PROGRAM Table of Indicator Parameters and the Groundwater Protection Standard

CP Table IV - COMPLIANCE MONITORING PROGRAM Table of Hazardous and Solid Waste Constituents and Practical Quantitation Limits or Method Quantitation Limits for Compliance Monitoring

CP Table IVA - COMPLIANCE MONITORING PROGRAM Table of Detected Hazardous Constituents and the Groundwater Protection Standard for Compliance Monitoring

CP Table V - Designation of Wells by Function

CP Table VI - Compliance Period and Post Closure for RCRA-Regulated Units

CP Table VII - Reporting Requirements

CP Table VIII - Compliance Schedule

CP Table IX - Description of Uppermost Aquifer

Note to the Permittee: All responses to each item in Section XI of the application form should be submitted under Appendix XI- Compliance Plan. The applicant should use the MS Word formatted Tables provided in the Part B application to include site-specific information that will become part of the final draft permit. For consistency, the tables provided in the application are formatted to be accessible, and the agency will no longer accept site-specific tables created by the applicant. **Convert the tables to the PDF format when submitting the application.** Do not delete any areas of the application form that are not applicable, submit answers to these areas with a response of either 'Reserved' or 'Not Applicable' in the Appendix XI. In addition, if material supporting a response is located elsewhere in the application, the response should provide details as to the specific location within the referenced material.

One of the primary goals of the performance based Compliance Plan is the wells listed in, CP Table V - Designation of Wells by Function (to be included in the final Compliance Plan) are the wells in which the GWPS must be met to verify compliance with Compliance Monitoring program or corrective action objectives, and to change the table would require a modification. On the other hand, the following types of wells Corrective Action Observation Wells, Corrective Action System well, etc., that are included in "Attachment A" maps of the final draft Compliance Plan, should be flexible. The purpose is to provide the permittee with the authority to alter the groundwater monitoring system and Corrective Action System designs, as necessary, to proactively address changing environmental conditions without modifying or amending the Compliance Plan. An application to modify/amend the compliance plan is only required if wells listed in CP Table V are changed; consequently, Corrective Action Observation and Corrective Action System Wells are not listed in CP Table V of the compliance plan so they may be added or removed without modifying/amending the compliance plan. Notification of proposed changes to the groundwater monitoring system and Corrective Action System designs can be included in the semiannual or annual report required by CP Table VIII - Compliance Schedule (to be included in the final Compliance Plan).

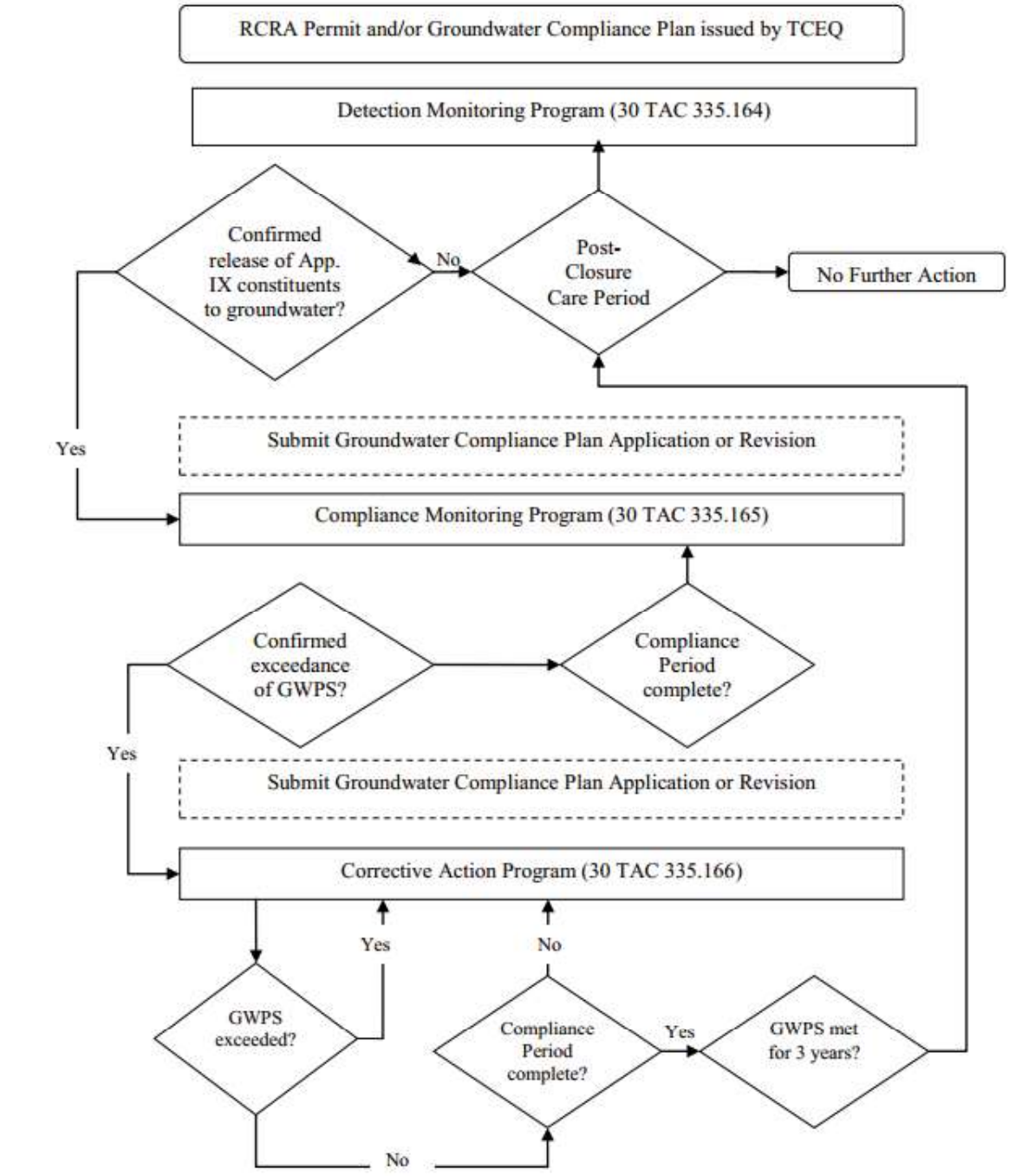
Figure 1 - Overview of Required Submittals And Revisions Associated with TCEQ Groundwater Compliance Plan Application

Type of Compliance Plan Application or Revision	Minimum Required Submittals				Additional Application Submittals Or Revisions					
	Description of Modification	Public Notification Evidence	Fee Payment Evidence	Part B, Section I General Information	Section XI. A. Site-Specific Information	Section XI.B Groundwater Protection Standard	Section XI.C Compliance Monitoring Program	Section XI.D Corrective Action Program	Section XI.E Financial Assurance Cost Estimates	Attachment A Alternate Concentration Limits
RCRA Permitted Units										
Compliance Monitoring Program, Commencement or modification per 30 TAC 335.165.	•	•	•	•	•	•	•	○	•	■
Corrective Action Program, commencement or modification per 30 TAC 335.166.	•	•	•	•	•	•	○	•	•	■
Compliance Period, termination or extension per 30 TAC 335.162.	•	•	•	•	■	○	•	○	■	○
Solid Waste Management Units										
Corrective Measure Implementation (CMI), per 30 TAC 335.167.	•	•	•	•	•	•	■	•	•	○
Corrective Action Program termination.	•	•	•	•	■	○	•	○	○	○

Note:

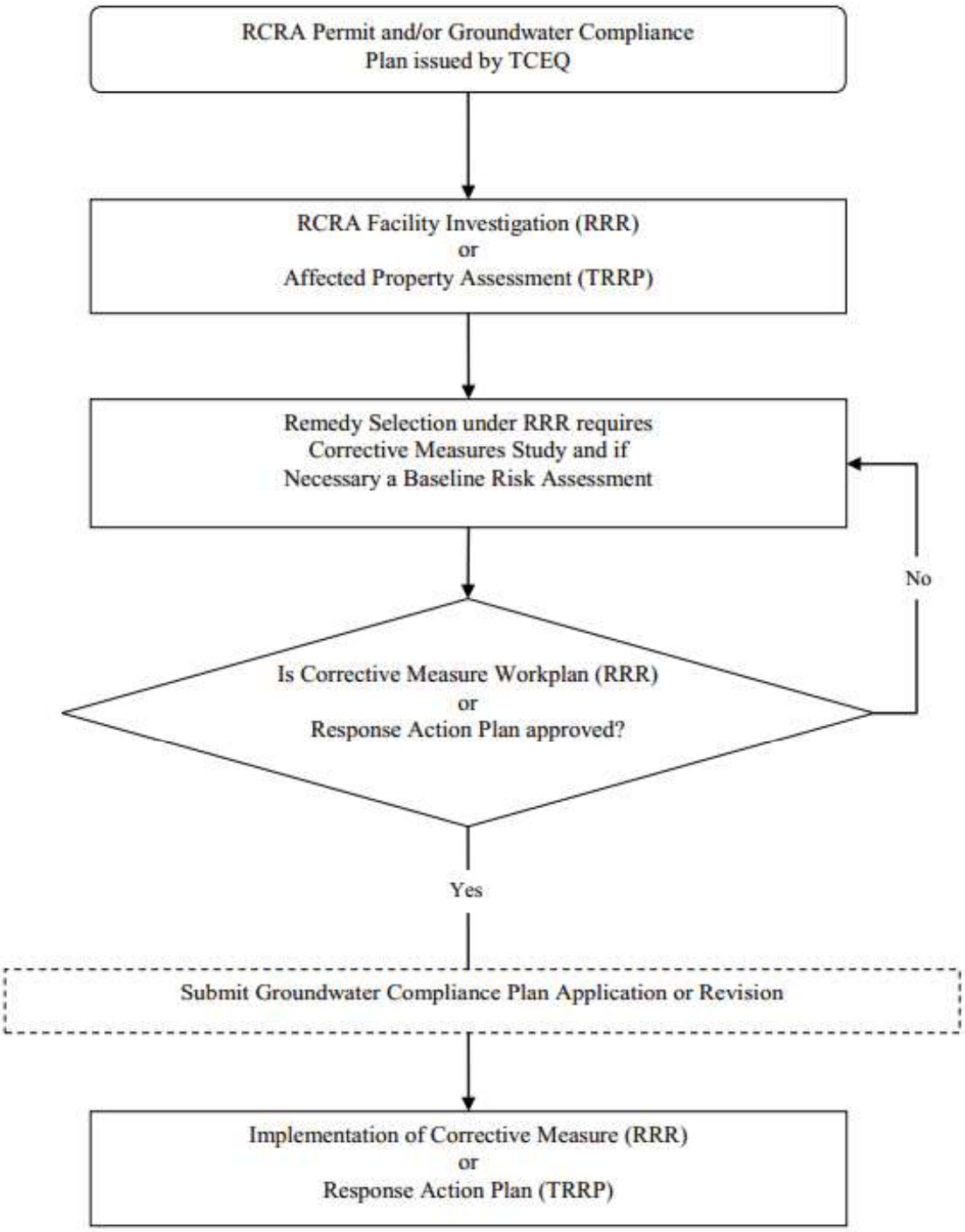
- • Submittal of additional or revised information required.
- ○ No submittal of additional or revised information required.
- ▪ Possible submittal of additional or revised information required

Figure 2 - Summary of Groundwater Monitoring and Compliance Plan Application Requirements for Regulated Waste Management Units (30 TAC 335 Subchapter F)



Note:
- GWPS = Groundwater Protection Standard (See Section XI.B. of this document, and 30 TAC 335.158 – 160)
- App. IX = Groundwater Monitoring List, 40 CFR 264 Appendix IX.
- Compliance Period = See Section XI.E. of this application, and 30 TAC 335.162.

Figure 3 - Summary of Compliance Plan Applications Requirements for Solid Waste Management Units (SMMUS) (30 TAC 335.167)



Note:
(RRR) – Risk Reduction Rules, 30 TAC 335
(TRRP) – Texas Risk Reduction Program, 30 TAC 350

A. Site Specific Information

1. General Site Information (provide the following information):

   a. An overall plan view map of the entire facility delineating the facility's property boundary, Facility Operations Area (FOA) boundaries, as applicable, and the plume management zone (PMZ) boundaries as applicable;

   All CP Attachment A Maps should be provided in Appendix XI of the application.

   b. A 7.5 minute U.S.G.S. quadrangle topographic map showing the entire facility;

      NOTE: This information is supplemental only and is not intended to be included as figures in the final draft permit.

   c. All oversized (larger than 8.5" by 11") drawings submitted in accordance with A, above, should be accompanied with legible photocopies of the reduced drawing on 8.5" by 11" sheet(s) of paper which shall be used as "CP Attachment A" maps in the final draft Permit/Compliance Plan. The applicant should title the map(s) accordingly as "CP Attachment A, Sheet 1 of xx - Facility Site Map"; "CP Attachment A, Sheet xx of xx, FOA Lateral Boundary Map"; "CP Attachment A, Sheet xx of xx, PMZ Boundary Location Map"; and

   d. Aerial photographs through time depicting changes in the land use, if available.

      NOTE: This information is supplemental only and is not intended to be included as figures in the final draft permit

2. Waste Management

   Provide a complete list and a plan view drawing(s) locating and identifying the following waste management units at the scale of 2.5 centimeters (1 inch) equal to not more than 61.0 meters (200 feet). All oversized (larger than 8.5" by 11") drawings should be accompanied with legible photocopies of the reduced drawing on 8.5" by 11" sheet(s) of paper. Please provide information for each waste management unit listed below on CP Table XI.A.1. - Facility History for Waste Management Units.

   All CP Attachment A Maps should be provided in Appendix XI of the application.

   a. All hazardous waste management units regulated under the Industrial Solid Waste and Municipal Hazardous Waste Rules (Chapter 335) required to be monitored in accordance with 30 TAC 335.164 (Detection Monitoring), 335.165 (Compliance Monitoring Program) and 335.166 (Corrective Action Program);
   b. All solid waste management units (SWMUs) and Areas of Concern (AOCs) regulated under 335.167 which are recommended for further investigation and/or corrective action in the RCRA Facility Assessment (RFA) shall include those identified in accordance with the permit requirements subsequent to the initial RFA.
   c. All on site wastewater treatment units.

3. Facility History

   Based on the information provided in CP Table XI.A.1., complete CP Table I - Waste Management Units and Areas Subject to Groundwater Corrective Action

and Compliance Monitoring accordingly in the format provided.

For the SWMUs or AOCs listed in CP Table XI.A.1. regulated under 30 TAC 335.167 which are recommended for further investigation and/or corrective action in the RCRA Facility Assessment (RFA), including those identified in accordance with permit requirements subsequent to the initial RFA, complete CP Table II - Solid Waste Management Units and Areas of Concern for which Corrective Action applies pursuant to 30 TAC 335.167. CP Table II will become part of the Compliance Plan.

4. Site Geology, Hydrogeologic Conditions, and Relationship to Surface Water

For New, modified/amended Compliance Plan, please provide a Geology Report as required by Section VI.B of this application containing updated site geologic information including the following descriptions, maps and tables with appropriate supporting documentation [All maps should be at the scale of 1 inch equal to not more than 200 feet and legible when reduced to 8.5" by 11" letter size paper]:

a. A description of the site geology for the facility. The geologic description should include a site geology map and sufficient cross sections (see Item h. below) to describe the uppermost aquifer and any confining stratigraphic unit(s) beneath the site.

b. A description of the site soils and subsurface lithologies using the Unified Soil Classification System. For those soil units which do not extend beneath the entire site area, the soil description should include a plan view map designating the soil's areal extent;

c. Where a soil remedy is required in a corrective action program of Section XI.D.1. of this application for a Regulated Unit, SWMU and/or AOC, the applicant shall submit a description of contamination in soils of the vadose zone (unsaturated zone above the uppermost aquifer). The soil description should include maps indicating lateral and vertical extent of contamination;

d. A description and designation of the uppermost saturated zone or uppermost aquifer including the name, the type of unit (e.g. perched, confined, etc.,), and groundwater characteristics (flow rates, directions, hydraulic conductivity, etc.). As defined in 40 CFR 260.10, an aquifer is a geologic formation, group of formation, or part of a formation, capable of yielding significant amount of groundwater to wells or springs. Persons using Texas Risk Reduction Program (TRRP) should also consider the definition of a groundwater bearing unit as a saturated geologic formation, group of formations, or part of a formation with a hydraulic conductivity of equal to or greater than 1 x 10 -5 centimeters/second (30 TAC 350.4(a)40).

   Based on the information contained in the Geology Report, complete CP Table IX-Description of Uppermost Aquifer. CP Table IX will be come part of the Compliance Plan.

e. Present the geologic, stratigraphic and hydrogeological information; and

f. Maps indicating the lateral and vertical extent of the contamination for each stratigraphic unit affected, with supporting documentation.

g. Current Contaminant Plume Map(s) Locating and identifying the extent of

contamination as determined from previous monitoring on a separate facility base map(s). Locate and identify all monitor wells and waste management units/areas.

h. Cross section Cross section transect lines should be indicated on the Contaminant Plume Map. The applicant, at a minimum, must submit two (2) stratigraphic cross sections for each waste management unit/area. One cross section should be drawn through all the point of compliance wells and the second cross section should be drawn along the direction of the movement of the contaminant plume released from the unit/area. Cross sections should follow the requirements outlined in the Geologic and Hydrogeologic Report of Parts IV and V of this application. At a minimum, the cross sections should include the following information:

1. the stratigraphic interpretation (e.g., surface grade, uppermost aquifer, aquiclude);
2. lithology/geologic description of the uppermost aquifer and aquiclude;
3. the potentiometric surface;
4. detected non-aqueous phase liquids (NAPLs) and hazardous constituents; and
5. screen length and screen depth for each well in the cross section.

i. Well Construction diagram The report should include a well construction diagram for all wells used in the cross section. The well construction diagram should include the information in "Attachment B" of this (Compliance Plan) application. The well construction diagram information may be included on the geologic cross-section(s).

j. Describe the potential for any surface water bodies to be hydraulically connected to groundwater containing hazardous constituents. Apply the guidance provided in Determining PCLs for Surface Water and Sediment, RG-366/TRRP-24 Revised, December 2002, in order to determine the water body type and applicable surface water criteria for human health, aquatic life and wildlife, as applicable.

B. Hazardous Constituents In Groundwater And Groundwater Protection Standards (GWPSs)

Hazardous Constituents in Groundwater

For each contaminated hydrogeologic unit beneath a waste management unit/area (40 CFR 264.95), provide a list of all 40 CFR Part 264 Appendix IX hazardous constituents that have been detected in groundwater samples above background values, Practical Quantitation Limits (PQLs), or Method Quantitation Limits (MQLs). Please submit for each unit/area the most recent Appendix IX laboratory analysis results showing the constituents, constituent concentrations, methods used for analysis and associated laboratory QA/QC.

The groundwater samples (collected for the purpose of determining whether constituents listed in Appendix IX are present) shall be from each waste management unit/area monitoring well system as required by 30 Texas Administrative Code (TAC) 335.164 (detection monitoring program).

If the waste management unit/area is subject to Corrective Action Program required by 30 TAC 335.166 or 335.167 and/or Compliance Monitoring required by 30 TAC 335.165, then list the unit/area and include the list of hazardous constituents and their principal degradation constituents in:

CP Table III - Corrective Action Program Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard; and

CP Table IV - Compliance Monitoring Program Table of Hazardous and Solid Waste Constituents and Practical Quantitation Limits or Method Quantitation Limits for Compliance Monitoring.

1. Groundwater Protection Standards (GWPSs)
   The GWPS (30 TAC 335.158) is designed to ensure that hazardous constituents (30 TAC 335.159) identified in groundwater and their principal degradational constituents do not exceed concentrations that pose a present or potential hazard to human health and the environment. Compliance monitoring and corrective action programs for a Regulated Unit (30 TAC 335.165 and 335.166) and a corrective action program for a solid waste management unit (SWMU) (30 TAC 335.167) require human health and the environment to be protected from all releases of hazardous wastes and constituents. These corrective action and monitoring programs are evaluated using the GWPS. The GWPS is based on the following criteria.
   a. Background Levels Background levels authorized under 30 TAC 335.160(a)(1) are defined as constituent concentration values that are naturally occurring or are not influenced by contamination coming from the waste management unit. These values are established by statistical analysis of upgradient well sampling data. Analytical results from a sufficient number of independent samples are required to be utilized with an approved and appropriate statistical method. For guidance on the statistical methods consult, Statistical Analysis of Groundwater Data at RCRA Facilities-Unified Guidance, U.S. EPA, March 2009, and any subsequent updates to this document.
      Practical Quantitation Limits (PQLs) or Method Quantitation Limits (MQLs) are utilized in lieu of background values unless a background demonstration establishes concentrations for naturally occurring constituents. The PQL or MQL is defined in the footnote of CP Tables III and IV.
   b. Primary and Secondary Maximum Contaminant Levels (MCLs) Maximum permissible level of a contaminant in water which is delivered to any user of a public water system (40 CFR Part 141 and 143, Federal Safe Drinking Water Act).
   c. Alternate Concentration Limits (ACLs) determined in accordance with 30 TAC 335.160(b) and are defined in footnote of CP Tables III and IV.

2. Establishing the Groundwater Protection Standard (GWPS)
   a. If background, PQL or MQLs are proposed for the GWPS, the applicant must list all constituents (i.e., detected and degradational constituents) for which a GWPS is being applied for and the appropriate concentration limits. This information shall be submitted in the format of CP Tables III, and IV.
   b. Alternate Concentration Limits (ACLs) ACLs are established at the point of compliance (POC) for a regulated or solid waste management unit (SWMU). All concentration values or limits listed in Section XI.B.1.c. are considered ACLs. ACLs are evaluated in accordance with the provisions of 30 TAC 335.160(b) and other regulations acceptable to the executive director. If an ACL is requested on the basis of Section XI.B.1.c. (MCLs), then no ACL

demonstration is necessary. The ACL demonstration must establish constituent concentrations in groundwater in accordance with regulations acceptable to the executive director. This information shall be submitted in the format of CP Tables III and IV. Note that depending upon the rule employed [i.e., 30 TAC 335 Subchapter S - Risk Reduction Rules (RRR) or 30 TAC 350 - Texas Risk Reduction Program (TRRP)], the applicant should determine the GWPS for the point of compliance and point of exposure, as applicable, in accordance with the remedy standard being utilized.

c. If the contaminant plume discharges or has a potential to discharge into surface water, then the facility must also comply with 30 TAC Chapter 307 (Texas Surface Water Quality Standards) unless other regulatory requirements acceptable to the executive director are requested.

C. Compliance Monitoring Program

As required by 30 TAC 335.165, an owner or operator must monitor the groundwater to determine whether Regulated Units are in compliance with the Groundwater Protection Standard (GWPS) under 30 TAC 335.158. The applicant must provide the following information when proposing a compliance monitoring program.

1. Groundwater Monitoring Program Description

a. Describe the proposed groundwater monitoring system to be used to monitor compliance with the GWPS which includes the following information.

(1) Changes, if applicable, from the current detection monitoring system or compliance monitoring system groundwater monitoring program at the waste management unit that will be required to comply with the compliance monitoring program described in 30 TAC 335.165. This description should address changes concerning:

(a) Geological and/or hydrogeological information differences since the submittal of the previous application [must submit an updated Geologic and Hydrogeologic Report required by Section XI.A.4];
(b) Waste management areas/units;
(c) Construction details for monitor wells to evaluate compliance with "Attachment B" well specification requirements;
(d) The number and locations of additional monitor wells [also see Section XI.C.1.b.(2)];
(e) Sample handling, chain of custody, and analytical procedures (also see "Attachment C");
(f) Frequency of monitoring;
(g) Monitoring parameters;
(h) Evaluation of compliance with GWPS (Statistical Methods);
(i) Other Sampling and Analysis Plan information to be compliant with "Attachment C";
(j) Compliance period as defined in Section XI.E.1.c. of the application;
(k) Financial assurance (see Section XI.E.); and
(l) An ACL variance under 30 TAC 335.160(b), if applicable.

(2) The number, depth and location of all monitor wells (Background Wells, Point of Compliance Wells, Observation Wells, Piezometers,

etc.). Complete CP Table V - Designation of Wells by Function and make changes as applicable to plans referenced in Section XI.C.1.b.

(3) The proposed hazardous constituent monitoring list which is based on constituents that were monitored during detection monitoring (if applicable), constituents detected in accordance with 30 TAC 335.164, and degradational constituents identified in Table CP IV accordingly to develop the constituent list for the Compliance Monitoring Program. Also, list the PQL, MQL, or background concentration for each constituent in CP Table IV. CP Table IV shall become part of the final Compliance Plan to be analyzed at least annually as required by 30 TAC 335.165(7).

(4) The proposed indicator parameter monitoring list. From the list of constituents and GWPS identified in CP Table IV., complete CP Table IVA - Compliance Monitoring Program, Table of Detected Hazardous Constituents and the Groundwater Protection Standard for Compliance Monitoring, accordingly. CP Table IVA shall become part of the final Compliance Plan to be analyzed at least semiannually as required by 30 TAC 335.165(6).

(5) Frequency of monitoring should be specified in CP Table VIII

(6) Provisions for reporting groundwater data at least on an annual basis should be specified in CP Table VII).

(7) Annual determination of contamination plume rate and direction of migration.

(8) Compliance period. Calculate the compliance period as required by 30 TAC 335.162 and 335.165(1)(d). Include calculations and complete CP Table VI - Compliance Period for RCRA-Regulated Units which shall become part of the final Compliance Plan.

b. Submit the following plans and reports.

(1) Current Sampling and Analysis Plan The Sampling and Analysis Plan must include information required by 30 TAC 335.163(4) and 335.163(5) and 40 CFR Subpart 270.30(j). For guidance, please see "Attachment C" to the application.

(2) Monitoring System Plan If the applicant is proposing a monitoring well or a monitoring system in the application, the applicable well installation specifications outlined in "Attachment B" of this application should be followed. All new monitoring wells must be installed in accordance with the specifications outlined in "Attachment B", unless an alternative design is approved by the agency prior to installation. If the applicant proposes as part of the monitoring system, any well (existing or proposed) that does not meet or exceed the requirements outlined in "Attachment B", then the proposed alternative design must be described in detail in the Monitoring System Plan and must be submitted with this application. The Monitoring System Plan must include:

(a) Monitoring System Design and Specifications Certified by a qualified engineer and/or geologist which provides detailed plans and specifications on the monitoring system design; and

(b) Well Drilling and Well Casing Specifications Certified by a qualified engineer and/or geologist which provides details on well casing specification, drilling logs and reports.

(3) Current Geologic and Hydrogeologic Report Provide a report per Section X.I.A.4 of this application discussing the geologic and hydrogeologic conditions of the facility and the specific area affected by the waste management areas. This report should include the most up-to-date information from which the design of the groundwater monitoring system was based.

2. Waste Management Units Monitored

a. Delineate and identify the following for each waste management unit in the proposed groundwater monitoring program.

(1) Boundary of the waste management unit and, if applicable, the proposed waste management area which includes more than one waste management unit (identify all waste management units which are included in the waste management area). These waste management units subject to compliance monitoring should be listed in CP Table I - Waste Management Units and Areas Subject to Groundwater Corrective Action and Compliance Monitoring which shall become part of the final Compliance Plan.

(2) The proposed point of compliance (30 TAC 335.161) and point of exposure wells.

(3) Any other proposed monitor wells such as supplemental wells, observation wells, background wells, etc. If appropriate the groundwater monitoring system should have a sufficient number of wells be designated to monitor the downgradient extent of the plume.

(4) Features which may serve as conduits for subsurface contamination.

b. For each waste management unit/area in the proposed groundwater monitoring system, submit the locations of individual waste management unit/area monitor wells (existing or proposed) and any soil borings (plugged and unplugged) specifically drilled for assessment of contamination. These individual monitor wells shall be identified by respective well number on a plan view drawing and only the background, point of compliance and/or point of exposure wells should be indicated in CP Table V - Designation of Wells by Function. The plan view map depicting the location of individual monitoring wells for compliance monitoring should be labeled as "CP Attachment A, sheet xx of xx" in the text box. The title box should also include reference to the facility name, Permit/Compliance Plan Number, Solid Waste Registration Number, Unit Description or name with Notice of Registration (NoR) Unit No. 0000. The "CP Attachment A" map(s) and CP Table V shall also become part of the final Compliance Plan.

3. Implementation Schedule

Itemize and discuss, in detail, the estimated time schedule necessary for any testing and assessments, system design, construction and installation, and final implementation of the groundwater monitoring program for each Regulated

Unit and solid waste management unit. If the schedule of implementation for items are not completed at the time of the application or are not completed at the time of issuance of the final draft Permit/Compliance Plan, then the items should be added to the CP Table VIII - Compliance Schedule of the application.

D. Corrective Action Program

As required by 30 TAC 335.166, the owner or operator must take corrective action to ensure that Regulated Units are in compliance with the Groundwater Protection Standards (GWPS) under 30 TAC 335.158. As required under 30 TAC 335.167, all releases of hazardous constituents from any solid waste management unit at the facility must also be addressed. For existing corrective action programs which have been approved by the TCEQ, the applicant shall provide a copy of the TCEQ corrective action system approval letter, design system specifications and any updates as requested in Section XI.D.3.a.(1) of this section. The applicant must provide the information requested below when proposing a corrective action program which has not been previously approved by the TCEQ including a detailed description of a corrective action or a combination of corrective actions that will remedy the groundwater contamination at the waste management unit and a proposed plan for a monitoring program that will demonstrate the effectiveness of the corrective action.

The owner or operator may also apply for a the Facility Operations Area (FOA) pursuant to the requirements of 30 TAC 350.131 - 350.135 of the Texas Risk Reduction Program (TRRP) rules, provided the applicant meets the FOA pre-approval process steps 1 through 3 approved by the Commission.

Also, the owner or operator may apply for alternative groundwater Corrective Action Program pursuant 30 TAC 335.151, 335.156 and 30 TAC 350, where there are commingled releases from RCRA-regulated unit from one or more SWMUs, PCO, and/or AOC.

1. Type of Corrective Action Proposed
From the list below, indicate the type of groundwater corrective action proposed for each hazardous waste unit/area. Discuss in detail if more than one corrective action is to be used in a waste management area. Submit the discussion and descriptions as an attachment to the application.
    a. Groundwater well recovery with surface treatment
    b. Groundwater well recovery/surface treatment/re injection
    c. Groundwater well recovery and disposal
    d. Vapor extraction system
    e. Interceptor trench recovery and disposal
    f. Interceptor trench recovery and surface treatment
    g. In-situ treatment - bioreclamation
    h. In-situ treatment - chemical reaction
    i. Barrier walls/encapsulation
    j. Permeable treatment beds
    k. Other, please describe

2. Program Description

Attach a technical report providing a detailed description of a complete corrective action system including above and below ground equipment/ facilities. Include discussions on the following concerns for each type of corrective action as applicable.

a. Recovery Wells

(1) Indicate on a plan view of the waste management area the anticipated location of Recovery Well(s) which would optimize the extraction of the groundwater contaminants.
(2) Indicate on a plan view the estimated radius of influence of each Recovery Well.
(3) Indicate the optimum pumping rate of each Recovery Well determined from the aquifer pump test.
(4) Describe the design of the Recovery Wells and pump system including diameter, construction material, gravel packing, screen slot sizes and patterns, type of pumps and maintenance requirements.
(5) Describe the collection and storage of the contaminated groundwater which is classified hazardous waste (on site storage of hazardous waste shall require compliance with the applicable regulations):
    (a) Less than 90-day tanks (see 40 CFR 262.34/40 CFR 265 Subpart J);
    (b) Permitted Tanks (see 40 CFR 264 Subpart J);
    (c) (Less than 90-day Container Storage Area (see 40 CFR 262.34/40 CFR 265 Subpart I);
    (d) Permitted Container Storage Area (see 40 CFR 264 Subpart I); and
    (e) Temporary Units (see CFR 264.553).
(6) Describe the treatment and/or final disposition of the hazardous and nonhazardous contaminated groundwater.

b. Vapor Extraction System
(1) Indicate on a plan view of the waste management area the anticipated location of the vapor extraction system which would optimize the extraction of hazardous constituents from the vadose zone.
(2) Describe the construction design of the vapor extraction system in detail, including all diagrams and drawings.
(3) Describe the emission control equipment used to comply with air quality regulations.
(4) Provide the anticipated volatile contaminants to be remediated along with information on the expected effectiveness of the vapor extraction system at the waste management unit.
(5) Provide established treatability data for the proposed design.
(6) Specify the hazardous constituents affected by this type of treatment.

c. Interceptor Trenches
(1) Indicate on a plan view of the waste management area the anticipated location of the interceptor trench.
(2) Provide the construction design.
(3) Describe the procedure for construction.
(4) Describe the liquid removal and collection system.
(5) Describe the surface storage and/or treatment of the contaminated groundwater.
(6) Describe the final disposition of the contaminated groundwater.

d. In-situ Treatment - Chemical Reaction
   (1) Characterize the chemical agents to treat the contaminated groundwater and/or soils in the vadose zone.
   (2) Provide laboratory treatability data.
   (3) Specify the hazardous constituents affected by this type of treatment.
   (4) Specify the reaction by products produced during the chemical reactions.
   (5) Indicate degradation time for each treated hazardous constituent and any resulting chemical reaction by products.
   (6) Describe the potential health risks caused by human exposure to the reaction by products.
   (7) Describe potential damage to wildlife, crops, vegetation and physical structures caused by exposure to reaction by products.
   (8) Describe the persistence and permanence of the potential effects of the reaction by products.
   (9) Describe the method of chemical reactant injection and other important aspects of the system design.

e. In-situ Treatment Bioreclamation
   (1) Describe the type of bacteria most appropriate for the degradation of the hazardous constituents present in the groundwater and/or soil in the vadose zone.
   (2) Describe the nutrients necessary and application frequency to encourage effective bioreclamation.
   (3) Provide laboratory data from treatability studies utilizing the contaminated groundwater and describe any potential hazardous by products.
   (4) Indicate the degradation time for each hazardous constituent affected by this treatment.
   (5) Describe the method of injecting the bacteria and nutrients and describe the delivery system design.

f. Barrier Walls
   (1) Provide laboratory permeability data using the actual contaminated groundwater.
   (2) Describe the barrier wall materials.
   (3) Summarize construction design and installation procedures.

g. Permeable Treatment Beds
   (1) Provide laboratory data of treatability simulations using actual contaminated groundwater in combination with the material proposed to be used in treatment beds.
   (2) Discuss the properties of the treatment material which would make it effective for use at this site.
   (3) Indicate which hazardous constituents will be affected by this treatment. Indicate the reactions which will take place and the resulting reactant by products. Discuss the anticipated lifetime of the permeable treatment beds.
   (4) Provide the construction design and installation procedures.

h. Other

Discuss in detail, any other corrective action (soils and groundwater) not

included above which is proposed for use at the affected waste management area(s).

3. Groundwater Monitoring and Corrective Action Program Description

   a. Describe the proposed groundwater monitoring system to be used to monitor corrective action and compliance with the GWPS which includes the following information.

      (1) Changes, if applicable, from the current groundwater monitoring program at the waste management unit that will be required to comply with the corrective action monitoring program described in 30 TAC 335.166. This description should address changes concerning:

         (a) Geological and/or hydrogeological information differences since the submittal of the previous application [must submit a Geologic and Hydrogeologic Report in accordance with Section XI.A.4;
         (b) Waste management areas/units;
         (c) Construction details for monitor wells to evaluate compliance with "Attachment B" well specification requirements;
         (d) The number and locations of additional monitor wells [must submit the Monitoring System Plan/Report required by Section XI.D.3.c.(2);
         (e) Sample handling, chain of custody, and analytical procedures (also see "Attachment C");
         (f) Frequency of monitoring;
         (g) Monitoring parameters;
         (h) Evaluation of compliance with GWPS (statistical methods);
         (i) Other Sampling and Analysis Plan information to be incompliant with "Attachment C";
         (j) Compliance period as defined in Section XI.E.1.c. of the application;
         (k) Financial assurance; and
         (l) An ACL variance under 30 TAC 335.160(b), if applicable.

      (2) The number, depth and location of all monitor wells (Background Wells, Point of Compliance Wells, Corrective Action Observation Wells, Supplemental Wells, piezometers, etc.) and all Recovery Wells and complete CP Table V - Designation of Wells by Function. Also, make revisions as applicable to plans referenced in Section XI.D.3.c.

      (3) The proposed hazardous constituent monitoring list which is based on constituents that were monitored during detection monitoring (if applicable), constituents detected in accordance with 30 TAC 335.164, and degradational constituents identified in CP Table III accordingly to develop the constituent list for the Corrective Action Monitoring Program. CP Table III shall become part of the final Compliance Plan.

      (4) The proposed indicator parameter monitoring list. From the list of constituents and GWPS identified in CP Table III complete CP Table IIIA - Corrective Action Program Table of Indicator Parameters and the Groundwater Protection Standard,

accordingly. CP Table IIIA shall become part of the Compliance Plan to be analyzed at least semiannually as required by 30 TAC 335.166(7).

(5) Frequency of monitoring should be specified in CP Table VIII

(6) Provisions for reporting groundwater data at least on an annual basis should be specified in CP Table VII)

(7) Annual determination of contamination plume rate and direction of migration.

(8) Compliance period. Calculate the compliance period as required by 30 TAC 335.162 and 335.165(1)(d). Include calculations and complete CP Table VI - Compliance Period for RCRA-Regulated Units which shall become part of the final Compliance Plan

b. Proposed methods of evaluating the effectiveness of the corrective action in the saturated and vadose zone.

c. Submit the following plans and reports.

(1) Current Sampling and Analysis Plan The Sampling and Analysis Plan must include information required by 30 TAC 335.163(4) and 335.163(5) and 40 CFR Subpart 270.30(j). For guidance, please see "Attachment C" to the application.

(2) Groundwater Recovery and Monitoring System Plan At a minimum, the plan must include:

(a) Recovery System Plan The applicant should propose a recovery system design that will achieve the performance requirement to protect human health and the environment. The plan should provide detailed plans, information and specifications on the recovery system's design and well installation specifications. All new recovery wells must be installed in accordance with applicable specifications outlined in "Attachment B", unless an alternative well design is approved by the agency prior to installation of the well. The Recovery System Plan must include Recovery System Design and Specifications Certified by a Texas Registered Professional Engineer. The certification must be sealed by a licensed Professional Engineer, with current license, along with the Registered Engineering Firm's name and Registration Number as required by the Texas Engineering Practice Act.;

(b) Monitoring System Plan If the applicant is proposing a monitoring well or a monitoring system in the application, the applicable well installation specifications outlined in "Attachment B" of this application should be followed. All new monitoring wells must be installed in accordance with the specifications outlined in "Attachment B", unless an alternative design is approved by the agency prior to installation. If the applicant proposes as part of the monitoring system, any well (existing or proposed) that does not meet or exceed the requirements outlined in "Attachment B", then the proposed alternative design must be described in detail in the Monitoring System Plan and must be submitted with this application. The

Monitoring System Plan must include:

(i.) Monitoring System Design and Specifications Certified by a qualified engineer and/or geologist which provides detailed plans and specifications on the monitoring system design; and

(ii.) Well Drilling and Well Casing Specifications Certified by a qualified engineer and/or geologist which provides details on well casing specification, drilling logs and reports.

(3) Current Geologic and Hydrogeologic Report - Provide a report per Section XI.A.4 of this application discussing the geologic and hydrogeologic conditions of the facility and the specific area affected by the waste management areas. This report should include the most up-to-date information from which the design of the groundwater monitoring system was based.

4. Waste Management Units/Areas Monitored Under Corrective Action Programs

a. Delineate and identify the following for each waste management unit/area in the proposed groundwater monitoring and corrective action programs.

(1) Boundary of the waste management unit and, if applicable, the proposed waste management area which includes more than one waste management unit (identify all waste management units which are included in the waste management area). These waste management units/areas subject to corrective action pursuant to 30 TAC 335.166 and 335.167 should be listed in CP Table I - Waste Management Units and Areas Subject to Groundwater Corrective Action and Compliance Monitoring. CP Table I shall become part of the final Compliance Plan.

(2) The proposed point of compliance (30 TAC 335.161), point of exposure wells, or alternate point of exposure wells.

(3) Any proposed monitor wells such as supplemental wells, observation wells, background wells, etc. If appropriate the groundwater monitoring system should have a sufficient number of wells to monitor the downgradient extent of the plume.

(4) Features which may serve as conduits for subsurface contamination.

(5) Corrective action system.

b. For each waste management unit/area in the proposed groundwater monitoring system, submit the locations of individual waste management unit/area monitor wells (existing or proposed) and any soil borings (plugged and unplugged) specifically drilled for assessment of contamination. These individual monitor wells shall be identified by respective well number on a plan view drawing and only the background, point of compliance, point of exposure wells and/or alternate point of exposure wells should be indicated in CP Table V - Designation of Wells by Function. The plan view map depicting the location of individual monitoring wells for corrective action monitoring should be labeled as "CP Attachment A, sheet xx of xx" in the text box. The title box should also include reference to the facility name, Permit/Compliance Plan Number, Solid Waste Registration Number, Unit

Description or name with Notice of Registration (NoR) Unit No. 0000. The "CP Attachment A" map(s) and CP Table V shall also become part of the final Permit/Compliance Plan.

5. Waste Management Units/Areas Addressed Under Other Corrective Action Programs -Facility Operations Area (FOA), specific to the requirements of 30 TAC 350.131 - 350.135. The Permittee should also complete Sections XI.D.4. for other units not addressed by the FOA that may require corrective action outside the FOA boundary. For other units not addressed by the FOA, either within the FOA or outside the FOA which may require compliance monitoring, the Permittee should complete Section XI.C. of this application accordingly.

   a. Provide an approved version of the FOA Qualifying Criteria Checklist and evidence that Steps 1 through 3 of the FOA pre-approval process has been approved by the Commission.

   b. Provide a discussion on exceptions to the TRRP rule requested.

   c. Provide a summary of the SWMUs/AOCs that will be addressed within the FOA boundary and a discussion of the multiple sources of COCs present and how FOA will better address these sources.

   d. Provide maps of appropriate scale depicting the following (maps may be combined where appropriate):

      (1) The number, location and type of monitoring points in each stratigraphic unit to be monitored individual monitoring wells should be identified by respective well number on a plan view drawing, to include the background, Point of Compliance (POC), Point of Exposure (POE), FOA Boundary of Compliance wells, FOA piezometers or supplemental wells, Corrective Action Observation ((CAO), Corrective Action System (CAS) wells that are applicable for FOA monitoring program should be labeled as "CP Attachment A, sheet no xx of xx" in the title box. The title box should also include reference to the facility name, Permit/ Compliance Plan Number (00000), TCEQ Solid Waste Registration Number and Unit Description or Name. The "CP Attachment A" map(s) shall become part of the final Permit/Compliance Plan.
      (2) HWMUs/SWMUs/AOCs addressed
      (3) Surrounding land use
      (4) FOA lateral boundaries
      (5) Potential source areas
      (6) Potentiometric surface of all relevant transmissive units
      (7) Surrounding water wells
      (8) Extent of known contamination in each transmissive unit
      (9) Areas of potential ecological impact
      (10) Known occurrences of NAPL or DNAPL in each transmissive units
      (11) FOA access control components

   e. Provide cross-sections in accordance with Section XI.A.4. depicting the following (maps may be combined where appropriate);

      (1) The vertical boundaries of the FOA;
      (2) The vertical extent of contamination;
      (3) Groundwater level elevations for each transmissive unit.

f. Provide tabulated information for;
   (1) Results of Appendix IX GW sampling.
   (2) Proposed PCLs for each hazardous constituent and principal degradational constituent for each monitoring point with supporting documentation (including a discussion of exposure pathways) should be listed in CP Table III - CORRECTIVE ACTION PROGRAM Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard. CP Table III shall become part of the final Compliance Plan.
   (3) The proposed indicator parameter monitoring list. From the list of constituents and GWPS identified in CP Table IIIA. CP Table IIIA shall become part of the Compliance Plan to be analyzed at least semiannually as required by 30 TAC 335.166(7).
   (4) Only the background, POC, POE, FOA Boundary of Compliance wells should be listed in CP Table V which shall become part of the final Permit/Compliance Plan.

g. Provide a discussion of the types of corrective action that will be employed to address contaminated media.
h. Provide detailed descriptions of GW recovery and other remedial technologies such as vapor extraction, interceptor trenches, hydraulic containment, barrier walls, etc., including radius of influence, estimated optimum recovery rates, location of collection, storage or disposal facilities.
i. Provide a detailed description of the ground water monitoring system including placement of monitoring wells, hydrogeologic characteristics of monitored units and well completion details.
j. Provide a Sampling and Analysis plan for the proposed FOA that includes development of COCs to be monitored, sampling methodology, sample handling procedures, sampling frequency and statistical procedures for evaluating analytical results (Appendix C).
k. Propose a methodology for evaluating the effectiveness of remedial measures and potential remedial system enhancements.
l. Propose a reporting schedule to provide updated information on the installation and operation of remedial and monitoring systems.
m. Provide Financial Assurance in accordance with Section XI.E.
n. Provide draft language intended to comply with the deed notification requirements of 30 TAC 350.111 and 350.135(a)(11).
o. Provide a summary of the approved workers protection plan.
p. Provide a discussion of areas of ecological impact, if any, and development of associated Protective Concentration Limits (PCLs).
q. Provide a discussion of how NAPL occurrences, if any, will be addressed inside and outside the FOA.
r. Provide a schedule of implementation for items not completed at the time of application See also Section XI.D.8.

6. Waste Management Units/Areas Monitored Under Corrective Action Programs - Plume Management Zone (PMZ)
   a. Please provide a summary of the HWMUs and SWMUs/AOCs that will be addressed within the PMZ boundary.
   b. Please provide a discussion of the multiple sources of COCs present and how PMZ will better address these sources.
   c. Please provide maps of appropriate scale depicting the following (maps may be combined where appropriate);
      (1) HWMUs/SWMUs/AOCs addressed

(2) surrounding land use
(3) PMZ lateral boundaries
(4) potential source areas
(5) Potentiometric surface of all relevant transmissive units
(6) Surrounding water wells
(7) extent of known contamination in each transmissive unit
(8) number, location and type of monitoring points in each stratigraphic unit to be monitored
(9) Areas of potential ecological impact
(10) known occurrences of LNAPL or DNAPL in each transmissive unit

d. Please provide sufficient cross-sections depicting the following (maps may be combined where appropriate);
   (1) The vertical boundaries of the PMZ;
   (2) The vertical extent of contamination;
   (3) potentiometric surfaces for each transmissive unit.

e. Please provide tabulated information for;
   (1) history of all relevant units or AOCs;
   (2) summary of hydrogeologic data for each affected transmissive unit;
   (3) results of Appendix IX GW sampling;
   (4) proposed PCLs for each constituent for each monitoring point (Point of Exposure wells, alternate point of exposure wells, etc.) with supporting documentation (including a discussion of exposure pathways). This should also include the designation/ establishment of sufficient number of Attenuation Monitoring Points (AMPs) beginning at an appropriate hydraulically upgradient location within the groundwater protective concentration level exceedance (PLCE) zone and continuing down the approximate central flow path of the constituent of concern (COC) in the downgradient extent of the Plume Management Zone(s) in accordance with 30 TAC 350.33(f)(4)(D).
   (5) Establish/Calculate Attenuation Action Levels (AALs) (critical PCLs) for each attenuation monitoring point in accordance with 30 TAC 350.33(f)(4)(D)(ii). The established AALs (critical PCLs) for each AMP well should be graphically presented in table format on the plan view map depicting the location of individual monitoring wells (including AMP wells) for corrective action monitoring labeled "CP Attachment A, Sheet xx of xx", referenced in XI.D.4.b.

f. Please provide a discussion of the types of corrective action that will be employed to address contaminated media.
g. Please provide detailed descriptions of GW recovery and other remedial technologies such as vapor extraction, interceptor trenches, hydraulic containment, barrier walls, etc., including radius of influence, estimated optimum recovery rates, location of collection, storage or disposal facilities.
h. Please provide a detailed description of the groundwater monitoring system including placement of monitoring wells, hydrogeologic characteristics of monitored units and well completion details.
i. Please provide a Sampling and Analysis plan for the proposed PMZ that includes development of COCs to be monitored, sampling methodology, sample handling procedures, sampling frequency and statistical procedures

for evaluating analytical results.

j. Please propose a methodology for evaluating the effectiveness of remedial measures and potential remedial system enhancements.
k. Please propose a reporting schedule to provide updated information on the installation and operation of remedial and monitoring systems.
l. Please provide a thorough detailed description of an estimate of all costs that will be incurred by implementing, operating, and maintaining the corrective action and monitoring systems addressed by the compliance plan.
m. Please provide draft language intended to comply with the deed notification requirements of 350.111, and schedule to verify compliance with institutional control requirements in accordance with 30 TAC 350.31(g) which provides notice of the existence and location of the PMZ and which prevents exposure to groundwater from this zone until such a time as constituents of concern may be reduced to below the GWPS.
n. Schedule for notification requirements if an unexpected event occurs, or a condition is detected, during post-response action care period which indicates that additional response actions will be required at an affected property pursuant to 30 TAC 350.33(k).
o. Please provide a summary of the approved soil response action plan.
p. Please provide a discussion of areas of ecological impact, if any, and development of associated PCLs.
q. Please provide a discussion of how NAPL occurrences, if any, will be addressed inside the PMZ.
r. Please provide a schedule of implementation for items not completed at the time of application {See also Section XI.D.8.}

7. Waste Management Units/Areas Monitored Under Alternative Corrective Action Program for Co-mingled plumes Alternative groundwater Corrective Action Program apply, pursuant 30 TAC 335.151, 335.156 and 350, for commingled release from RCRA-regulated unit and from one or more SWMUs and/or AOC.

   a. Complete Sections XI.D.1. through 4.;
   b. In addition to the CP Attachment A maps in Section XI.D.4.b., CP Attachment A maps should clearly depict those waste management unit or areas of the facility which have commingled plumes and the alternative corrective action applies.
   c. Please provide a schedule of implementation for items not completed at the time of application {See also Section XI.D.8.}

8. Implementation Schedule
   Itemize and discuss, in detail, the estimated time schedule necessary for any testing and assessments, system design, construction and installation, and final implementation of the groundwater monitoring program for each Regulated Unit and solid waste management unit. If the schedule of implementation for items are not completed at the time of the application or are not completed at the time of issuance of the final draft Compliance Plan, then the items should be added to the CP Table VIII - (Compliance Schedule) of the application.

E. Cost Estimates For Financial Assurance

As required by 30 TAC 335.156 and 335.167, the applicant must provide cost estimates for groundwater monitoring and corrective action to determine the amount of financial assurance. Please complete the applicable parts of this form. Cost estimates should be filled out for each proposed corrective action/monitoring system at the site; or any additional corrective action system not covered in this Part. Please note, the Executive

Director may request from the applicant documentary evidence for cost estimates.

If an item is not applicable, please mark it NA. Please Complete the following tables, as applicable:

1. CP Table XI.E. - General Infomation
2. CP Table XI.E.1. - Corrective Action Program Cost Estimate
3. CP Table XI.E.2.e - Groundwater Monitoring Cost Estimate
4. CP Table XI.E.3. - Financial Assurance Summary

Attachment A

Alternate Concentration Limits

Alternate Concentration Limits (ACLs) must be submitted by hazardous waste facility owners or operators who seek ACLs for any hazardous constituent as provided by 30 TAC 335.160(b) as a part of a compliance monitoring or corrective action program. An ACL demonstration should follow the guidance provided in this attachment. Compliance Plan Application, Section XI.B.2.b. outlines when an ACL demonstration must be conducted. Where possible in "Attachment A", the applicant may copy information previously submitted to the Commission and reference the information submitted in other Sections (Sections I and XI.B. through E.) of this Compliance Plan Application.

Alternate Concentration Limit Demonstration

An ACL petition is based on a demonstration that hazardous constituents detected in the groundwater will not pose a substantial present or future threat to human health or the environment at the ACL levels. Potential adverse effects on both groundwater quality and hydraulically connected surface water quality must be addressed. Using Environmental Protection Agency published lists of 40 CFR Part 264 Appendix IX hazardous constituents, the applicant must submit a list of all contaminants in the groundwater. For all the petitioned ACL constituents, the applicant must address all known synergistic and additive effects on human health and the environment to develop appropriate ACL levels.

Required Information for Alternate Concentration Limits

In addition to rule specific requirements (i.e., 30 TAC Chapter 335 Subchapter S RRR, or 30 TAC Chapter 350 TRRP), the following items must be addressed for each hazardous constituent for which an alternate concentration is sought (CP Tables III and IV, XII.B.). If the information required in this part has been furnished in other parts of Compliance Plan Application, please provide an adequate reference.

1. Potential adverse effects on groundwater quality, considering:
    a. The physical and chemical characteristics of the waste in the Regulated Unit, Solid Waste Management Unit(SWMU) or Area of Concern (AOC), including its potential for migration;
    b. The hydrogeological characteristics of the facility and surrounding land;
    c. The quantity of groundwater r and the direction of groundwater flow;
    d. The proximity and withdrawal rates of groundwater users;
    e. The current and future uses of groundwater in the area;
    f. The existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater quality;
    g. The potential for health risks caused by human exposure to waste constituents;
    h. The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and,
    i. The persistence and permanence of the potentially adverse effects.

2. Potentially adverse effects on hydraulically connected surface water quality, considering:
    a. The volume and physical and chemical characteristics of the waste in the Regulated Unit, Solid Waste Management Unit (SWMU) or Area of Concern (AOC);

b. The hydrogeological characteristics of the facility and surrounding land;
c. The quantity and quality of groundwater, and the direction of groundwater flow;
d. The patterns of rainfall in the region;
e. The proximity of the Regulated Unit to surface waters;
f. The current and future uses of surface waters in the area and any water quality standards established for those surface waters;
g. The existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality;
h. The potential for health risks caused by human exposure to waste constituents;
i. The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and,
j. The persistence and permanence of the potentially adverse effects.

Attachment B

Well Design And Construction Specifications

The following well design and construction specifications should be used as guidance when designing a groundwater Compliance Monitoring Program (Section XI.C.) or a Corrective Action Program (Section XI.D.). This guidance is provided to establish minimum well design and construction specifications for the Compliance Plan.

1. Well drilling methods that minimize potential adverse effects on the quality of water samples withdrawn from the well and that minimize or eliminate the introduction of foreign fluids into the borehole must be utilized.

2. All wells shall be constructed such that the wells can be routinely sampled with a pump, bailer, or alternate sampling device. Piping associated with recovery wells should be fitted with sample ports or an acceptable alternative sampling method to facilitate sampling of the recovered groundwater on a well by well basis.

3. Above the saturated zone the well casing may be two (2) inch diameter or larger schedule 40 or 80 polyvinyl chloride (PVC) rigid pipe or stainless steel or polytetrafluoroethylene (PTFE or "teflon") or an approved alternate material. The PVC casing must bear the National Sanitation Foundation logo for potable water applications (NSF pw). Solvent cementing compounds shall not be used to bond joints and all connections shall be flush threaded. In and below the saturated zone, the well casing shall be stainless steel or PTFE.

   PVC or fiberglass reinforced resin may be used as an alternate well casing material in and below the saturated zone provided that it yields samples for groundwateruality analysis that are unaffected by the well casing material.

4. Any well that has deteriorated due to incompatibility of the casing material with the groundwater contaminants or due to any other factors must be replaced.

5. Well casings and screens shall be steam cleaned prior to installation to remove all oils, greases, and waxes. Well casings and screens made of fluorocarbon resins shall be cleaned by detergent washing.

6. Screen length shall not exceed ten (10) feet within a given transmissive zone unless otherwise approved by the executive director. Screen lengths exceeding ten (10) feet may be installed in groundwater recovery or injection wells to optimize the groundwater remediation process in accordance with standard engineering practice.

7. The intake portion of a well shall be designed and constructed so as to allow sufficient water flow into the well for sampling purposes and minimize the passage of formation materials into the well during pumping. The intake portion of a well shall consist of commercially manufactured stainless steel or PTFE screen or approved alternate material. The annular space between the screen and the borehole shall be filled with clean siliceous granular material (i.e., filter pack) that has a proper size gradation to provide mechanical retention of the formation sand and silt. The well screen slot size shall be compatible

with the filter pack size as determined by sieve analysis data. The filter pack should extend no more than three (3) feet above the well screen. A silt trap, no greater than one (1) foot in length, may be added to the bottom of the well screen to collect any silt that may enter the well. The bottom of the well casing shall be capped with PTFE or stainless steel or approved alternate material.

Groundwater recovery and injection wells shall be designed in accordance with standard engineering practice to ensure adequate well production and accommodate ancillary equipment. Silt traps exceeding one (1) foot may be utilized to accommodate ancillary equipment. Well heads shall be fitted with mechanical wellseals, or equivalent, to prevent entry of surface water or debris.

8. A minimum of two (2) feet of pellet or granular bentonite shall immediately overlie the filter pack in the annular space between the well casing and borehole. Where the saturated zone extends above the filter pack, pellet or granular bentonite shall be used to seal the annulus. The bentonite shall be allowed to settle and hydrate for a sufficient amount of time prior to placement of grout in the annular space. Above the minimum two (2) foot thick bentonite seal, the annular space shall be sealed with a cement/bentonite grout mixture. The grout shall be placed in the annular space by means of a tremie pipe or pressure grouting methods equivalent to tremie grouting standards.

   The cement/bentonite grout mixture or TCEQ approved alternative grout mixture shall fill the annular space to within two (2) feet of the surface. A suitable amount of time shall be allowed for settling to occur. The annular space shall be sealed with concrete, blending into a cement apron at the surface that extends at least two (2) feet from the outer edge of the monitor well for above ground completions. Alternative annular space seal material may be proposed with justification and must be approved by the executive director prior to installation.

   In cases where flush to ground completions are unavoidable, a protective structure such as a utility vault or meter box should be installed around the well casing and the concrete pad design should prevent infiltration of water into the vault. In addition, the following requirements must also be met 1) the well/cap juncture is watertight; 2) the bond between the cement surface seal and the protective structure is watertight; and 3) the protective structure with a steel lid or manhole cover has a rubber seal or gasket.

9. Water added as a drilling fluid to a well shall contain no bacteriological or chemical constituents that could interfere with the formation or with the chemical constituents being monitored. For groundwater recovery and injection wells, drilling fluids containing freshwater and treatment agents may be utilized in accordance with standard engineering practice to facilitate proper well installation. In these cases, the water and agents added should be chemically analyzed to evaluate their potential impact on in-situ water quality and to assess the potential for formation damage. All such additives shall be removed to the extent practicable during well development.

10. Upon completion of installation of a well, the well must be developed to remove any fluids used during well drilling and to remove fines from the formation to provide a particulate free discharge to the extent achievable by accepted completion methods and by commercially available well screens. Development

shall be accomplished by reversing flow direction, surging the well or by air lift procedures. No fluids other than formation water shall be added during development of a well unless the aquifer to be screened is a low yielding water bearing aquifer. In these cases, the water to be added should be chemically analyzed to evaluate its potential impact on in-situ water quality, and to assess the potential for formation damage.

For recovery and injection wells, well development methods may be utilized in accordance with standard engineering practice to remove fines and maximize well efficiency and specific capacity. Addition of freshwater and treatment agents may be utilized during well development or re development to remove drilling fluids, inorganic scale or bacterial slime. In these cases, the water and agents added should be chemically analyzed to evaluate their potential impact on in-situ water quality and to assess the potential for formation damage. All such additives shall be removed to the extent practicable during well development.

11. Each well shall be secured and/or designed to maintain the integrity of the well borehole and groundwater.

12. The above ground portion of the well must be protected by bumper guards and/ or metal outer casing protection when wells are located in traffic areas or outside the secured plant area.

13. The attached Table of Well Construction Details (Item 13) is to be completed or updated for each well installed and kept on site. Items in the table that require a yes or no answer indicate diagrams plans, or procedures that shall be kept on site and made available to inspection. The completed table and other records shall include all the following information:

- name/number of well (well designation);
- intended use of the well(sampling, recovery, etc.);
- date/time of construction;
- drilling method and drilling fluid used;
- well location (+ 0.5 ft.);
- bore hole diameter and well casing diameter;
- well depth (+ 0.1 ft.);
- drilling and lithologic logs;
- depth to first saturated zone;
- casing materials;
- screen materials and design;
- casing and screen joint type;
- screen slot size/length;

- filter pack material/size;
- filter pack volume (how many bags, buckets, etc.);
- filter pack placement method;
- sealant materials;
- sealant volume (how many bags, buckets, etc.);
- sealant placement method;
- surface seal design/construction;
- well development procedure;
- type of protective well cap;
- ground surface elevation (+ 0.01 ft. MSL);
- top of casing elevation (+ 0.01 ft. MSL); and,
- detailed drawing of well (include dimensions).

14. Construction or plugging and abandonment of each well shall be completed in accordance with the requirements of 16 TAC Chapter 76 and must be reported/ certified to the TCEQ that such proper construction or plugging and abandonment has occurred following installation or plugging and abandonment. Well completion logs for each newly installed or replaced well shall be included with the report. The certification shall be prepared by a qualified geologist or geotechnical engineer. Each well certification shall be accompanied by a certification report, including an accurate log of the soil boring, which thoroughly describes and depicts the location, elevations, material specifications, construction details, and soil conditions encountered in the boring for the well. A copy of the certification and certification report shall be kept on site, and a second copy shall be submitted to the executive director.

15. The well number must be clearly marked and maintained on each well at the site.

16. The elevation of the top of each well casing must be measured in feet above mean sea level to the nearest 0.01 foot.

17. Wells must be replaced at any time the well integrity or materials of construction or well placement no longer enable the well to yield samples representative of groundwater quality.

18. Soil test borings shall be plugged and wells removed from service with a cement/bentonite grout mixture so as to prevent the preferential migration of fluids in the area of the borehole. Certification of each plugging shall be reported in accordance with Provision 14. The plugging of wells shall be in accordance with 16 TAC Chapter 76 dealing with Well Drilling, Completion, Capping and Plugging.

19. A well's screened interval shall be appropriately designed and installed to meet the well's specific objective (i.e., either DNAPL, LNAPL, both, or other objective of the well). All wells designed to detect, monitor, or recover DNAPL must be drilled to intercept the bottom confining layer of the aquifer. The screened interval to detect DNAPL should extend from the top of the lower confining layer to above the portion of the aquifer saturated with DNAPL. The screened interval for all wells designed to detect, monitor, or recover LNAPL must extend high enough into the vadose zone to provide for fluctuations in the seasonal water table. In addition, the sandpacks for the recovery or monitoring well's screened interval shall be coarser than surrounding media to ensure the movement of NAPL to the well.

Attachment C - Sampling And Analysis Plan

Introduction and Purpose

This Attachment was prepared for the purpose of providing guidance for the preparation of a Groundwater Sampling and Analysis Plan (SAP) to meet the requirements of 30 Texas Administrative Cod (TAC) 335.163(4) and (5) and also 40 CFR 270.30(j). This guidance is based on the publication, RCRA Groundwater Monitoring: Draft Technical Guidance (TEGD Update) (November 1992, USEPA), and its updates, and is not intended to be rule or policy, or include all acceptable practices.

When preparing the SAP, the applicant may insert copies of areas of the Compliance Plan Application already completed which provides any necessary information for completion of the SAP. The SAP should include the information described in the following sections. When certain sections are not applicable, please provide justification for omission from the SAP.

1. Pre Field Activity
    a. The log book format should be outlined in the SAP and should contain at a minimum:
        - the names of those conducting the sampling event;
        - the purpose and provision(s) of the compliance plan requiring the sampling event;
        - weather conditions at time of sampling;
        - date and time of collection;
        - well identification;
        - integrity of well;
        - monitoring well measurements, including: total well depth; static water level depth; measurement techniques; height of water column; well volume; and, notation of the presence or absence of accumulated silt (including thickness and measurement procedures);
        - notation of the presence or absence of NAPLs (including thickness and detection method);
        - well purging procedures, including equipment, purge volume, pumping rate, and well purge time;
        - sampling methods, including well sampling sequence, sampling equipment and withdrawal procedures;
        - visual and measured water quality parameters required for analysis, such as appearance, pH, conductivity, temperature and turbidity; and,
        - sample preservation and handling procedures, including types of sample bottles, sample identification numbers, preservatives used, and internal temperature of field and shipping containers.
    b. The SAP should reference the Provisions or Tables within the Compliance Plan regarding monitor well designations, parameters to be monitored, and sampling frequency, rather than utilizing detailed lists.
    c. The SAP should include examples of the log book format, chain of custody, and information to be included on the container labels and seals.
    d. The SAP should reference both the Health and Safety Plan, and Field Emergency Contingency Plan. These Plans should be checked to determine if they adequately address health and safety issues that may occur during a sampling event.
2. Prior to Purging Well

a. A. Procedures for evaluating the physical condition and integrity of the well should include:
   - inspecting the casing and cap for cracks, signs of deterioration or tampering;
   - determination if the cap and monitoring well are secure;
   - inspecting the well pad for cracks, or signs of deterioration, erosion, settling, and/or animal and insect burrowing; and,
   - where appropriate, inspect any dedicated equipment for signs of cleanliness, structural integrity and deterioration.

b. Procedures and equipment used for measuring groundwater elevations, well depths, silt accumulation, and Non Aqueous Phase Liquids (NAPLs) should be included in the SAP. Water levels should be measured from the surveyed datum on the top of the well casing, with a precision of ±0.01 foot. If present, accumulated silt and light/dense NAPLs should be measured for thickness.

c. Procedures for monitoring site specific weather conditions at the time of sampling should be incorporated into the SAP, including precipitation (when applicable), temperature, and approximate wind speed and direction.

3. Sampling Preparation Activity

a. Well purging methods:

(1) A sampling contingency plan should be developed for wells which are purged to dryness or purged such that full recovery exceeds two hours. In such instances, samples should be taken as soon as a sufficient volume of groundwater has entered the well to enable the collection of the necessary groundwater samples.

(2) In all instances of purging, the SAP should describe in detail the equipment used (dedicated or non dedicated), purging rate, and the method for determining volume purged.

(3) Although purging and sampling by bailers is acceptable, the EPA recommends the use of dedicated pumping equipment designed for low flow rates.

(4) When utilizing micropurging methods, the purge rate may range between 0.1 to 0.5 liter/minute. During micropurging, drawdown should not exceed 0.1 meter. The applicant should provide justification for any alternate sampling procedure. The SAP should also specify the well screen interval at which the pump intake is placed and a copy of the boring log for each well utilizing micropurging. In line measurements of redox, dissolved O2 and turbidity during purging of groundwater should stabilize within 10% over at least two measurements prior to sampling.

b. Field filtering of groundwater samples should not be conducted unless the applicant has provided a justification and field filtration is approved by the TCEQ. If samples are field filtered, a 10 micron filter should be used while still fulfilling the data quality objectives for the groundwater monitoring program.

c. The container type, size, and labeling method for each procedure performed should be referenced and/or tabulated in the SAP.

d. Sample blanks, field blanks, trip blanks and split sampling procedures, including frequency and preservation should be specified in the SAP as quality control checks for each sampling event. The preparation, analysis,

and evaluation of replicates, duplicates and spikes should also be included.

4. Well Sampling
   a. Well sampling equipment, collection procedures, and sampling sequence of wells, should be specified in the SAP. The SAP should include sampling equipment that is constructed of inert material, which should not alter analyte concentration due to loss of analyte via absorption, or gain via desorption, degradation or corrosion.
   b. Field QA/QC and sample preservation methods used to control pH, chemical addition and refrigeration of samples should be described in the SAP and follow the methods described in the current editions of EPA Report SW 846, "Test Methods for Evaluating Solid Waste" and American Society for Testing and Materials (ASTM) Standard Test Methods or other methods accepted by the TCEQ. The SAP should indicate that chemical preservatives are to be added to samples in the field and not in the laboratory. The SAP should indicate that coolants used for refrigerating samples need to be contained (e.g. blue ice).
   c. Procedures for sampling inorganics and volatile/semi volatile organics should be described in the SAP and follow the methods of SW 846 and ASTM or other methods accepted by the TCEQ.
5. Post Sampling Activity
   a. Decontamination procedures should be included in the SAP when dedicated equipment is not used for purging and sampling, or when dedicated equipment is stored outside the well. The procedures should include disassembly, cleaning of equipment, packaging and storage of equipment when not in use.
   b. Analytical methods and holding times should be tabulated in the SAP in accordance with SW 846 and ASTM or other methods accepted by the TCEQ.
   c. Chain of custody and shipping procedures should be described and intended to prevent misidentification of samples, to identify and prevent tampering of the samples during shipping and storage, and allow easy tracking of the shipment from the field to final analyses. A Chain of Custody Form should accompany each sample shipment and include the following information:
      - sample identification number;
      - signature of collector;
      - date and time of collection;
      - sample type (e.g. groundwater);
      - identification of sampling point (well);
      - number of containers;
      - parameters requested for analysis;
      - preservatives used;
      - signature(s) of person(s) involved in the chain of possession;
      - inclusive dates and time of possession;
      - internal temperature of shipping container when samples were sealed into the container for shipping; and,
      - internal temperature of container upon opening in the laboratory.

Samples should be shipped in coolers or similar containers designed to keep samples at a constant 4˚C and prevent breakage. Containers used for sample shipment should be

sealed with the seal signed and dated by the sampler.

d. Disposal methods of contaminated equipment, wash water and purged groundwater should be described.

e. Laboratory QA/QC procedures should include control samples as defined in Chapter I of SW 846. An appropriate statistical method/procedure should be used to monitor and document performance and to implement an effective program to resolve testing problems (instrument maintenance). Data from the control samples (i.e. spiked samples, duplicates and blanks) should be used as a measure of performance or as an indicator of potential source of cross contamination (i.e. from instrumentation). QA/QC documentation for reporting values should be tabulated on laboratory data sheet and include: target analyte; unit of measure (e.g. ppm); method analyses; and, time/dates of sample collection and analyses.

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section XI: Appendix XI.1 - Compliance Plan

APPENDIX XI.1
COMPLIANCE PLAN

Hazardous Waste Permit Renewal Application

BASF Beaumont Agro Plant, Beaumont, Texas
Hazardous Waste Permit No. 50219

APPENDIX XI.1
COMPLIANCE PLAN

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas
Hazardous Waste Permit No. 50219

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Hazardous Waste Permit Renewal Application
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ATTACHMENTS

Attachment XI.1 Termination of Corrective Action at SWMA Approval Letter

CP ATTACHMENTS

CP Attachment A Maps
CP Attachment B Well Design and Construction Specifications ***– Not Applicable***
CP Attachment C Sampling and Analysis Plan ***– Not Applicable***

APPENDIX XI.1
COMPLIANCE PLAN

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas
Hazardous Waste Permit No. 50219

INTRODUCTION

This document has been prepared for the BASF Corporation (BASF) hazardous waste permit renewal application. It serves as a comprehensive review and update to the previous Compliance Plan application for the BASF Beaumont facility that was most recently modified in 2024.

COMPLIANCE PLAN APPLICATION

The TCEQ compliance plan application addresses the following topics:

A. Site Specific Information

B. Groundwater Protection Standards (GWPS) **– *Not Applicable***

C. Compliance Monitoring Program **– *Not Applicable***

D. Corrective Action Program **– *Not Applicable***

E. Cost Estimates for Financial Assurance **– *Not Applicable***

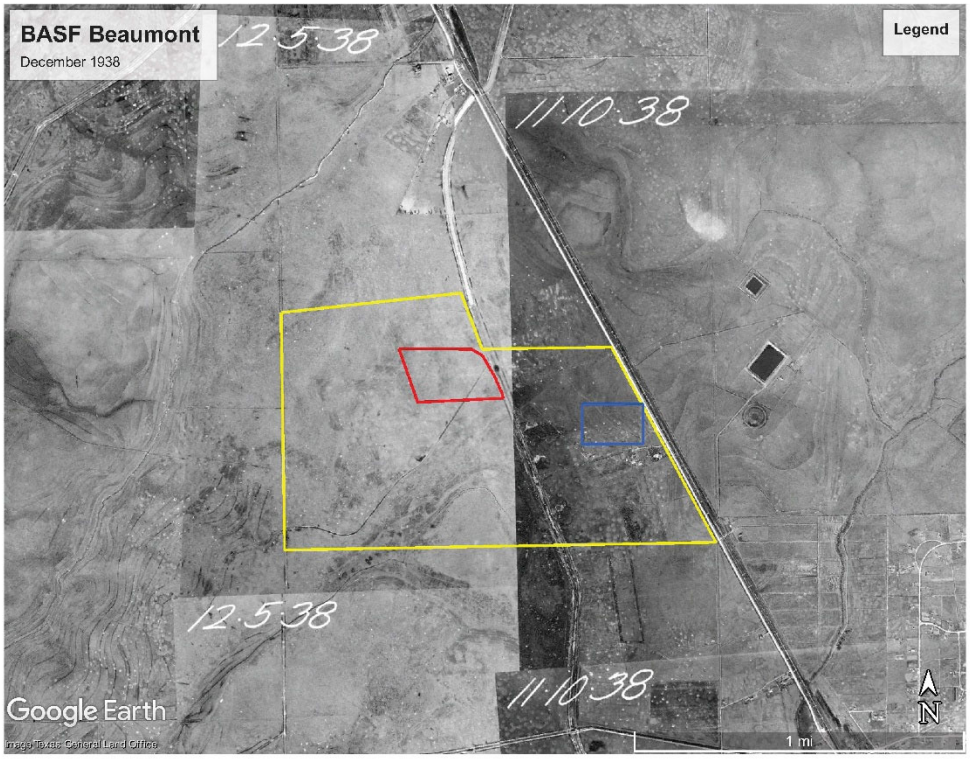
Information responsive to the application requirements is summarized below. Cross-references to other sections of the application are provided, where appropriate. To facilitate review, the section numbering and contents follow the order of the TCEQ Part B Application Form (TCEQ-00376 Rev. 03/01/2023).

XI.A Site Specific Information

General Site Information

The BASF Beaumont Agro Plant is located at 14385 West Port Arthur Road, in the city of Beaumont, Jefferson County, Texas. General site information is provided as follows:

- *Overall plan view map*: A plan view map of the entire facility is provided in CP Attachment A, Sheet 1 of 2.
- *Facility Solid Waste Management Unit (SWMU), Area of Concern (AOC) and On-site Permitted Waste Management Units*: A plan view map showing the entire facility, as well as current and former SWMU and AOCs, and the current on-site permitted waste management units consisting of 7 RCRA-permitted tanks for the management of non-hazardous waste, is provided in CP Attachment A, Sheet 2 of 2.
- *Historical aerial photographs*: Changes in land use over time in the vicinity of the BASF property are shown below: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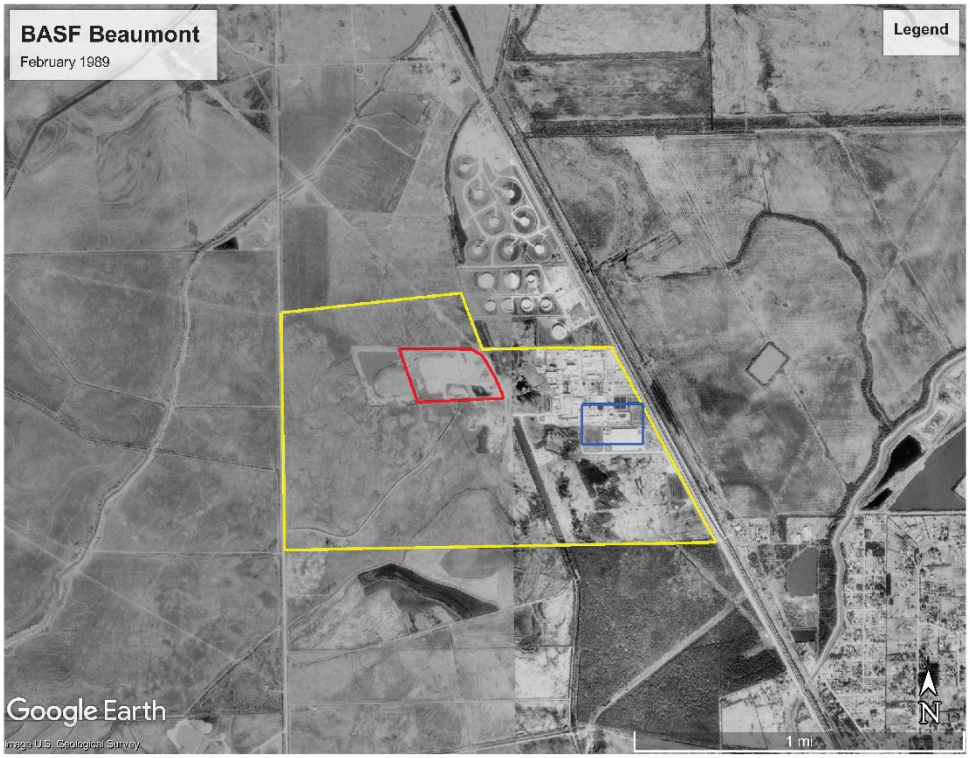
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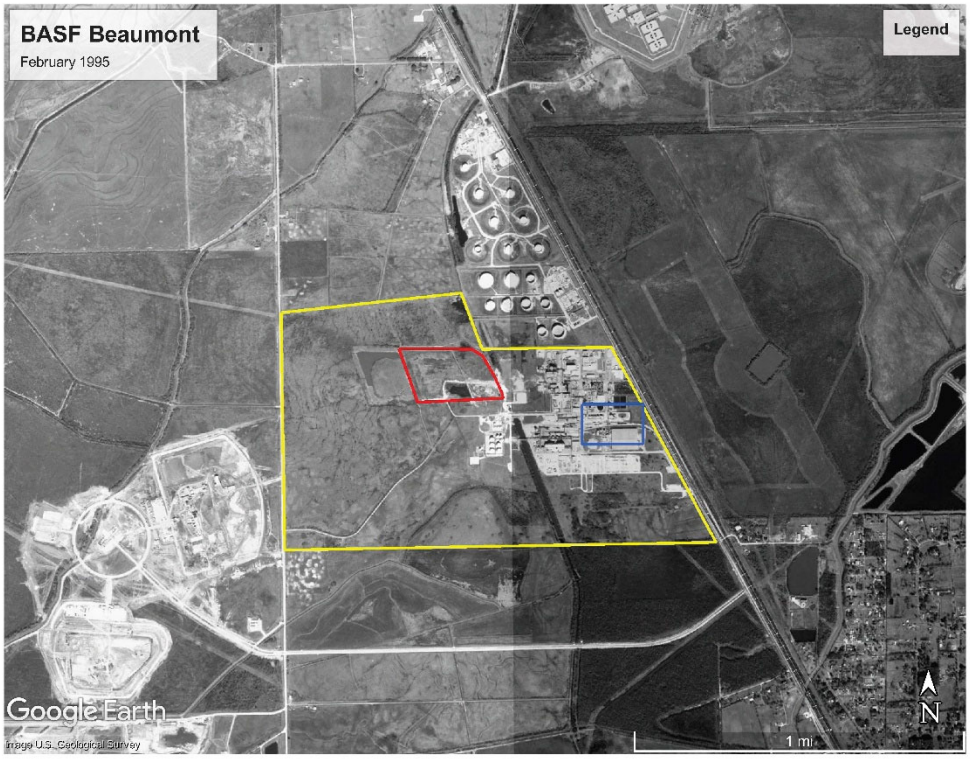
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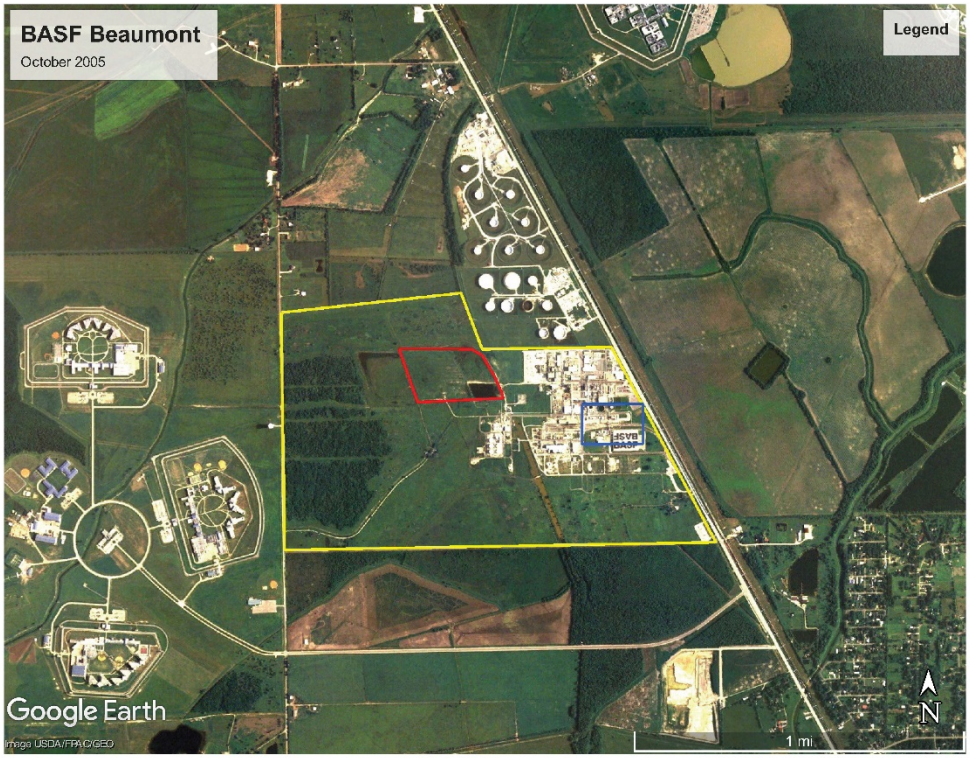
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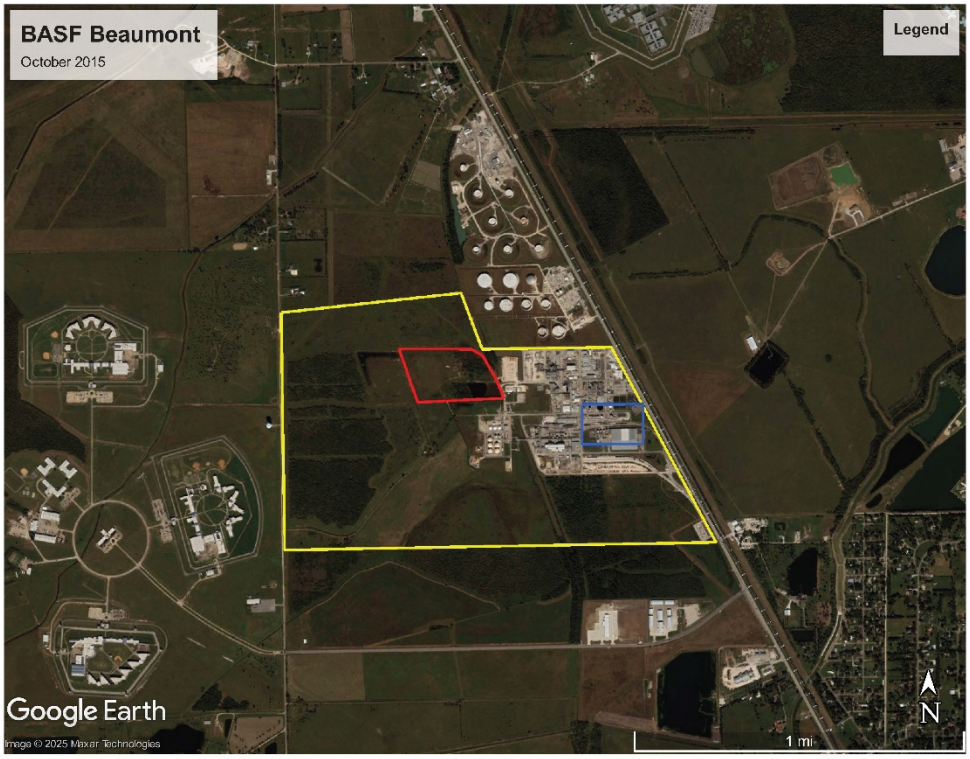
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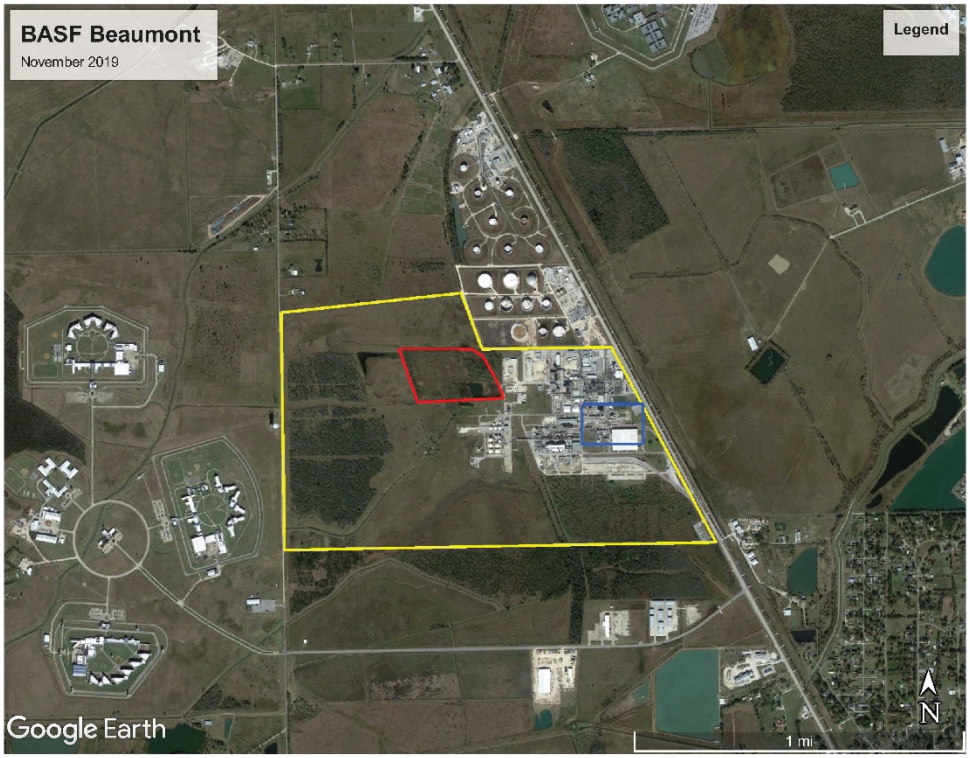
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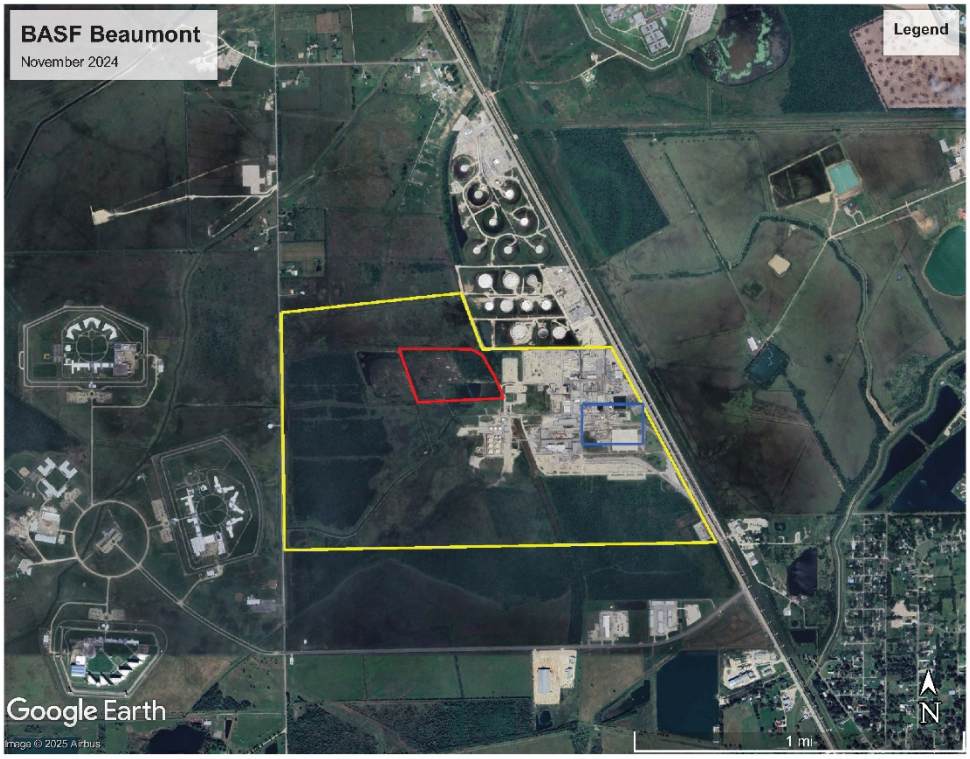

Waste Management

There are several nonhazardous waste management units (i.e., tanks) addressed in the BASF Beaumont hazardous waste permit. However, these units are not regulated under 30 TAC 335.167. Additionally, the TCEQ recently approved the termination of groundwater monitoring for the former Solid Waste Management Area (SWMA, i.e., Ponds 1A, 1B, 2A and 2B) in a letter dated 15 January 2025, which was clean closed in 1988 (see Attachment XI.1).

In the RCRA Facility Assessment report submitted to the TCEQ on 19 September 2024, BASF identified a new AOC associated with the release of 1,2,4-trichlorobenzene (TCB) in the FFP Loading/Unloading Rack Area, located in the eastern portion of the BASF plant. Further investigation of the TCB AOC is being conducted in accordance with 30 TAC 350.

Information associated with the former SWMA and TCB AOC are summarized in Table XI.A.1. There are no other SWMUs, or AOCs regulated under 30 TAC 335.167 which are recommended for further investigation or corrective action.

Facility History

There are no waste management units and areas subject to groundwater corrective action as documented in CP Table I. Only the TCB AOC is recommended for further investigation, as noted in CP Table II.

Site Geology, Hydrogeologic Conditions, and Relationship to Surface Water

This section is not applicable to this application since i) the Compliance Action Program objectives have been achieved at the former SWMA as document in the TCEQ letter dated 15 January 2025 (see Attachment XI.1), and ii) the TCB AOC is undergoing further investigation for the affected property assessment (APA) in accordance with 30 TAC 350 (i.e., Texas Risk Reduction Program or TRRP).

XI.B Groundwater Protection Standards

Hazardous Constituents on Groundwater

This section is not applicable to this application, as summarized in CP Table III. The groundwater protection standards with the former SWMA have been achieved, as document in the TCEQ letter dated 15 January 2025 (see Attachment XI.1), and the TCB AOC is undergoing further investigation for the APA in accordance with 30 TAC 350.

XI.C Compliance Monitoring Program

This section is not applicable to this application, as summarized in CP Table IV. The compliance monitoring program associated with the former SWMA has been achieved, as document in the TCEQ letter dated 15 January 2025 (see Attachment XI.1), and the TCB AOC is undergoing further investigation for the APA in accordance with 30 TAC 350.

XI.D Corrective Action Program

This section is not applicable to this application, as summarized in CP Tables V through IX. The corrective action program associated with the former SWMA has been achieved, as document in the TCEQ letter dated 15 January 2025 (see Attachment XI.1). The location of the deed recorded plume management zone (PMZ) associated with the former SWMA is presented on CP Attachment A, Sheet 1 of 2 and provided as Attachment XI.1 to this appendix. TCB AOC is undergoing further investigation for the APA in accordance with 30 TAC 350.

XI.E Cost Estimates and Financial Assurance

This section is not applicable to this application, as summarized in Tables XI.E.1 through XI.E.3. The corrective action program associated with the former SWMA has been achieved, as document in the TCEQ letter dated 15 January 2025 (see Attachment XI.1), and the TCB AOC is undergoing further investigation for the APA in accordance with 30 TAC 350.

REFERENCES

TCEQ, 2025. Letter Re: “Transmittal of Class 3 Permit Modification, BASF Corporation, Jefferson County, Hazardous Waste Permit No. 50219, Industrial Solid Waste Registration No. 30053, EPA Identification No. TXD067261412, Tracking No. 29714498; RN100634922/CN600124895,” Signed by Charly Fritz, Deputy Director, 15 January 2025.

APPENDIX XI.1
COMPLIANCE PLAN

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas
Hazardous Waste Permit No. 50219

TABLES

Table X.A.1 Facility History for Waste Management Units
Table XI.E.1 Corrective Action Program Cost Estimate **– *Not Applicable***
Table XI.E.2.e Groundwater Monitoring Cost Estimate **– *Not Applicable***
Table XI.E.3 Financial Assurance Summary **– *Not Applicable***

Table XI.A.1. - Facility History for Waste Management Units

Name of Waste Management Unit[1]	Type of Waste Management Unit	Notice of Registration Unit Number	Date Waste Was *First* Placed in Unit	EPA Waste Code	Estimated Capacity of Unit	Quantity of Waste Left in Place	Date Waste Was Last Placed in Unit[2]	Date of Unit Closure or Projected Closure	Date Unit Certified Closed[3]	Is There Evidence of a Release of Hazardous Constituent(s)[4] to Groundwater? (Yes, No, or Unknown)
1.Solid Waste Management Area - Ponds 1A, 1B, 2A, and 2B	Closed Surface Impound-ments	010	1/1/1968	Non-Haz	Not Applicable	0	1/1/1987	1/1/1988	9/23/2009	No. Unit has not received waste since unit closure date and Corrective Action objects have been achieved.
2.Dicamba Release	AOC	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	2/9/2021	5/24/2021	No
3.TCB Release	AOC	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Investigation ongoing	Investigation ongoing	Yes

Footnotes:

1. Indicate by asterisk (*) those waste management units that have received any hazardous waste constituent listed in Appendix VIII of 40 CFR Part 261.

2. For the purposes of this Compliance Plan Application, a waste management unit receiving hazardous waste after July 26, 1982, shall be considered a RCRA-regulated Unit. A waste management unit that ceased receiving hazardous waste on or before that date shall be considered a Solid Waste Management Unit (SWMU).

3. The date the applicant submitted certification of closure to the Commission.

4. Hazardous constituents are those hazardous constituents listed in Appendix IX of 40 CFR Part 264.

TABLE XI.E.1. – CORRECTIVE ACTION PROGRAM COST ESTIMATE

Reserved - Not applicable to this application.

1. Pumping Capacity Per Year:		
A. Daily average system pumping rate	0	gal/day
B. Annual groundwater volume recovered	0	gal/yr
2. Off-Site Liquid Treatment / Disposal Cost:		
A. Volume of treated contaminated water to be disposed of off-site yearly		gal/yr
B. Transportation of liquid waste disposed of off-site yearly		
(1) Transportation cost per gallon		$/gal
(2) Gallons of contaminated water shipped per year		gal/yr
(3) Annual cost of transportation (1 x 2)		$/yr
C. On-site yearly storage cost prior to off-site disposal		$/yr
D. Off-site yearly treatment cost of liquid waste		
(1) Treatment charge per gallon		$/gal
(2) Total volume to be treated per year		gal/yr
(3) Annual treatment cost (1 x 2)		$/yr
E. Off-site disposal cost of liquid waste per year		
(1) Disposal charge per gallon		$/gal
(2) Total volume to be disposed per year		gal/yr
(3) Annual disposal cost (1 x 2)		$/yr
***ANNUAL OFF-SITE LIQUID TREATMENT / DISPOSAL COST** (2B3 + 2C +2D3 + 2E3)	0	$
3. On-site Waste Water Treatment System Cost and On-site Treatment / Disposal Cost: Submit a cost estimate for a treatment system specifically designed and used exclusively for the groundwater corrective action program and operational after some start up maintenance. Estimates to clean out the system should also be included in the following cost.		
A. Initial capital expenditure for treatment system including start up maintenance		$
***ON-SITE WASTE WATER TREATMENT SYSTEM CAPITAL COST** (3A)		$
B. Gallons of contaminated water to be treated on-site per year		gal/yr
C. Cost of on-site treatment per gallon		$/gal
D. Cost of sludge, or solids disposal per year		$/yr
E. Cost per year of maintenance on treatment system and recovery system, along with any additional equipment and repairs needed for the systems		$/yr
F. Cost of on-site disposal per year		$/yr
***ANNUAL ON-SITE TREATMENT / DISPOSAL COST** [(3B X 3C) + 3D + 3E + 3F]	0	$
4. Inspections, Maintenance and Operation Cost for the Corrective Action Program:		
A. Operator's time on-site for inspections and maintenance per year		hour/yr
B. Charge of salary per hour		$/hr
C. Annual cost of labor (4A x 4B)		$/yr
D. Replacement of parts and equipment per year		$/yr
E. Electricity cost per year		$/yr
***ANNUAL INSPECTIONS / MAINTENANCE / OPERATION COST FOR THE CORRECTIVE ACTION PROGRAM** (4C + 4D + 4E)	0	$

TABLE XI.E.2. – GROUNDWATER MONITORING COST ESTIMATE

Reserved - Not applicable to this application.

1. Annual Sampling and Analysis Cost:

A. Background Wells
- (1) Number of wells _____
- (2) Sample analysis cost per well _____ $/well
- (3) Number of sampling events per year **(see note 1)** _____ /yr
- (4) Sampling cost (1 x 2 x 3) _____ $

B. Point of Compliance Wells
- (1) Number of wells _____
- (2) Sample analysis cost per well _____ $/well
- (3) Number of sampling events per year _____ /yr
- (4) Sampling cost (1 x 2 x 3) _____ $

C. Recovery Wells
- (1) Number of wells _____
- (2) Sample analysis cost per well _____ $/well
- (3) Number of sampling events per year _____ /yr
- (4) Sampling cost (1 x 2 x 3) _____ $

D. Corrective Action Observation Wells
- (1) Number of wells _____
- (2) Sample analysis cost per well _____ $/well
- (3) Number of sampling events per year _____ /yr
- (4) Sampling cost (1 x 2 x 3) _____ $

E. Point of Exposure Wells
- (1) Number of wells _____
- (2) Sample analysis cost per well _____ $/well
- (3) Number of sampling events per year _____ /yr
- (4) Sampling cost (1 x 2 x 3) _____ $

F. Supplemental Wells
- (1) Number of wells _____
- (2) Sample analysis cost per well _____ $/well
- (3) Number of sampling events per year _____ /yr
- (4) Sampling cost (1 x 2 x 3) _____ $

G. Field Quality Control Sampling
- (1) Number of wells _____
- (2) Sample analysis cost per well _____ $/well
- (3) Number of sampling events per year _____ /yr
- (4) Sampling cost (1 x 2 x 3) _____ $

2. Sampling Labor Cost:

- A. Hours of sampling per well _____ hrs/well
- B. Number of sampling employees per well _____
- C. Charge per hour. **See Note 3** _____ $/hr
- D. Total number of wells to be sampled annually _____ Wells
- E. Total number of wells sampled semi-annually _____ Wells
- F. Total number of wells sampled quarterly _____ Wells
- G. Total number of wells sampled monthly _____ Wells
- H. Total number of wells sampled per year (2D) + (2E x 2) + (2F x 4) + (2G x 12) _____ total wells sampled/yr
- I. Sampling Labor Cost (2A x 2B x 2C x 2H) _____ $
- ***ANNUAL GROUNDWATER MONITORING COST** _____ $

3. Well Installation (typical cost):

- A. Monitor well installation cost per well _____ $/well
- B. Number of monitor wells to be installed _____ Wells
- C. Cost of monitor well system (A x B) _____ $
- D. Recovery well installation cost per well _____ $/well
- E. Number of Recovery Wells to be installed _____ Wells
- F. Cost of Recovery well system (D x E) _____ $
- ***TOTAL WELL INSTALLATION COST** (3C + 3F) _____ $

4. Administrative Cost: _____

- A. Annual cost for record-keeping and report preparation _____ $
- ***ANNUAL ADMINISTRATIVE COST** (4A) _____ $

5. Inspection and Maintenance Cost for the Monitoring Program:

- A. Operator's time (hours) on-site for inspections and maintenance per year _____ hour/yr
- B. Charge or salary per hour _____ $/hr
- C. Annual cost of labor (4A x 4B) _____ $/yr
- D. Replacement of parts and equipment per year _____ $/yr
- ***ANNUAL INSPECTIONS / MAINTENANCE COST FOR THE GROUNDWATER MONITORING PROGRAM (5C + 5D)** _____ $

Notes:

1. **Costs are presented in 2025 dollars.**

TABLE XI.E.3. – FINANCIAL ASSURANCE SUMMARY

Reserved - Not applicable to this application.

ANNUAL OFF-SITE LIQUID TREATMENT / DISPOSAL COST	**$** _____
ANNUAL ON-SITE TREATMENT / DISPOSAL COST	**$** _____
ANNUAL INSPECTION / MAINTENACE / OPERATION COST FOR THE CORRECTIVE ACTION PROGRAM	**$** _____
ANNUAL GROUNDWATER MONITORING COST	**$** _____
ANNUAL ADMINISTRATIVE COST	**$** _____
ANNUAL INSPECTION AND MAINTENANCE COST FOR THE GROUNDWATER MONITORING PROGRAM	**$** _____
ANNUAL SUB TOTAL	**$** _____
TOTAL YEARS USED FOR CALCULATING FINANCIAL ASSURANCE	_____ **Yrs**
REMEDIATION COST (Annual Sub Total x Total Years Used)	**$** _____
ON-SITE WASTE WATER TREATMENT SYSTEM CAPITAL COST	**$** _____
TOTAL WELL COST	**$** _____
10% Contingency	**$** _____
UNIT TOTAL COST (nearest $1000)	**$**

Notes:
1. **Costs are presented in 2025 dollars.**

APPENDIX XI.1
COMPLIANCE PLAN

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas
Hazardous Waste Permit No. 50219

CP TABLES

CP Table I	Waste Management Units and/or Areas Subject to Groundwater Corrective Action and Compliance Monitoring **– *Reserved***
CP Table II	Solid Waste Management Units and/or Areas of Concern for which Corrective Action applies pursuant to 30 TAC 335.167
CP Table III	CORRECTIVE ACTION PROGRAM Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard **– *Reserved***
CP Table IIIA	CORRECTIVE ACTION PROGRAM Table of Indicator Parameters and the Groundwater Protection Standard **– *Reserved***
CP Table IV	COMPLIANCE MONITORING PROGRAM Table of Hazardous and Solid Waste Constituents and Practical Quantitation Limits or Method Quantitation Limits for Compliance Monitoring **– *Not Applicable***
CP Table IVA	COMPLIANCE MONITORING PROGRAM Table of Detected Hazardous Constituents and the Groundwater Protection Standard for Compliance Monitoring **– *Not Applicable***
CP Table V	Designation of Wells by Function
CP Table VI	Compliance Period for RCRA-Regulated Units **– *Not Applicable***
CP Table VII	Reporting Requirements **– *Reserved***
CP Table VIII	Compliance Schedule **– *Reserved***
CP Table IX	Description of Uppermost Aquifer **– *Reserved***

CP Table I: Waste Management Units and Areas Subject to Groundwater Corrective Action and Compliance Monitoring

A. Corrective Action[1] (30 TAC Section 335.166)

Unit Name	Notice of Registration (NOR) Number, if applicable
Reserved	

B. Compliance Monitoring[1] (30 TAC Section 335.165)

Unit Name	Notice of Registration (NOR) Number, if applicable
Reserved	

C. Corrective Action[2] (30 TAC Section 335.167)

Unit Name	Notice of Registration (NOR) Number, if applicable	Unit Type (SWMU or AOC)
Reserved		

D. Alternative Corrective Action[3] (30 TAC Section 335.151)

Unit Name	Notice of Registration (NOR) Number, if applicable	Unit Type (RCRA-regulated unit, SWMU, or AOC)
Reserved		

E. Facility Operations Area (FOA)[4] (30 TAC Section 335.156 and Chapter 350 Subchapter G)

Unit Name	Notice of Registration (NOR) Number, if applicable	Unit Type (RCRA-regulated unit, SWMU, or AOC)
Reserved		

Footnotes:

1. Program applies to RCRA-regulated units only.

2. Program applies to releases from solid waste management units (SWMUs) and/or areas of concern (AOCs).

3. Program applies to commingled releases from a RCRA-regulated unit(s) and from one or more SWMUs and/or AOCs.

4. List the RCRA-regulated units, SWMUs, and/or AOCs which are located within the FOA boundary that are subject to Corrective Action.

List the RCRA-regulated units, SWMUs, and/or AOCs which are located outside of the FOA boundary and are subject to Compliance Monitoring and/or Corrective Action separately in CP Table I.A., I.B., I.C., or I.D. as appropriate.

CP Table II: Solid Waste Management Units and/or Areas of Concern Addressed in Permit Section XI.H. for which Corrective Action Applies Pursuant to 30 TAC Section 335.167

Unit Name[3]	NOR Number, if applicable	SWMU or AOC	Affected Media[1]	Date Program Requirement and Remedy Standard Completed[2]
Solid Waste Management Area - Ponds 1A, 1B, 2A, and 2B	010	SWMU	Soil, GW	Remedy Standard A (clean-closed) and post-closure care monitoring completed. NFA letter received on 15 January 2025.
Dicamba		AOC	Soil	Remedy Standard A (removal via excavation) completed. NFA letter received on 24 May 2021.
TCB		AOC	Soil, GW	Investigation ongoing in accordance with 30 TAC 350.

SWMU = Solid Waste Management Unit; AOC = Area of Concern; NOR = Notice of Registration

Footnotes:

1. Specify the affected media [i.e., soil, groundwater (GW), surface water (SW), or sediment (SED)].

2. For each SWMU or AOC which has completed the Corrective Action Program objectives, specify the Remedy Standard (or Risk Reduction Standard) that was completed, the date of the Commission's No Further Action (NFA) approval letter for all affected media of concern, and the land use used to obtain NFA.

3. For sites with an authorized Facility Operations Area (FOA), list all SWMUs and/or AOCs located within the FOA boundary and outside of the FOA boundary that are subject to Corrective Action at the site.

   Please separate the SWMUs and/or AOCs that are located within the FOA boundary from the SWMUs and/or AOCs that are located outside of the FOA boundary.

Notes:

a) CP Table II lists SWMUs and/or AOC which have been identified in the RCRA Facility Assessment (RFA) Report as having a release(s) or potential releases of hazardous waste, hazardous constituents, or other chemicals of concern. The Permittee is thus required to meet Corrective Action objectives in accordance with Permit Section XI.H. and 30 TAC Section 335.167.

b) The Permittee shall update CP Table II when a new SWMU and/or AOC which requires Corrective Action is identified.

c) The Permittee shall also update CP Table II when the Corrective Action status of an affected media for a SWMU or AOC has changed as outlined in Footnote No. 2.

d) SWMUs and/or AOCs shall not be deleted from this table when the Corrective Action objectives have been completed and a NFA determination has been approved for the SWMU and/or AOC. In accordance with Permit Section XI.H., CP Table II is intended to be a historical record of the facility's corrective actions and to reflect when the Corrective Action objectives have been met for each SWMU/AOC.

e) There may be cases in which the Permittee fulfills the Corrective Action objectives for soils at a SWMU/AOC, but long-term monitoring and corrective action may be necessary to meet the groundwater Corrective Action objectives. In such instances, the SWMU/AOC would be listed in CP Table I.C and would be subject to all applicable provisions of this Compliance Plan. If a release from a SWMU/AOC is commingled with a RCRA-regulated unit, then the unit and the SWMU/AOC would be listed in CP Table I.D. In accordance with Permit Section XI.H, once the Corrective Action objectives for groundwater are completed, then the Permittee shall modify or amend the Compliance Plan to reassign the SWMU/AOC in CP Table I.C (or CP Table I.D) to CP Table II. CP Table II should reflect the new status of the SWMU/AOC and include the Remedy Standard (or Risk Reduction Standard) that was completed, the date of the NFA approval letter for all affected media of concern, and the land use used to obtain NFA.

CP Table III: Corrective Action Program Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard

Unit Name	**Column A** Hazardous Constituents	**Column B** Groundwater Protection Standards (mg/L) at the POC[1, 3]		**Column C** Groundwater Protection Standards (mg/L) at the POE, APOE, or FBOC[2, 3]	
Reserved					

Notes:

a) If the Corrective Action Program (Provision XI.E.) does not apply to the RCRA-regulated units, SWMUs, or AOCs at the facility, delete the contents of the table and add "Reserved" to the first row of CP Table III.

b) CP Table III represents the long list of hazardous constituents that are reasonably expected to be in, or derived from, the waste placed in each RCRA-regulated unit, SWMU, and/or AOC listed in the table. CP Table III also lists the hazardous constituents that have been historically detected in the groundwater for each RCRA-regulated unit, SWMU, and/or AOC. These hazardous constituents are monitored in accordance with Provision XI.F.3.c.(1).

c) In accordance with Provision XI.D.6., the Groundwater Protection Standards (GWPS) must be met before the Corrective Action Program can be terminated for the RCRA-regulated unit, SWMU, and/or AOC.

d) If applicable, "Appendix IX" can be used in Column A for a unit instead of listing each chemical of concern (COC). The Permittee may petition the Executive Director for the deletion of a specific COC from the Appendix IX analysis if the Permittee can demonstrate that the COC was never used in the facility's operations nor was disposed of in the unit.

e) Attenuation monitoring point (AMP) wells, corrective action system (CAS) wells, and corrective action observation (CAO) wells should not be listed in CP Table III. These wells should only be depicted in the CP Attachment A maps. Once an AMP, CAS, or CAO

well meets its respective attenuation action levels (AALs) or GWPS, then the Permittee may propose to discontinue monitoring that well without modification to the Permit. If the AMP, CAS, or CAO well is listed in CP Table III, then any proposed change to the well would require modification to the Permit. Changes to the wells depicted in the CP Attachment A maps can be approved in the Groundwater Monitoring Report required by CP Table VII and Provision XI.G.3 and become a part of the Permit by reference.

f) POC = point of compliance; POE = point of exposure; APOE = alternate point of exposure (only applicable for an authorized plume management zone [PMZ]); and FBOC = Facility Operation Area (FOA) Boundary of Compliance (only applicable for an authorized FOA).

Footnotes:

1. Use Column B to specify the GWPS assigned at the POC for a RCRA-regulated unit subject to Corrective Action or for a SWMU/AOC subject to the Risk Reduction Rules. Put "N/A" if not applicable.

2. Use Column C to specify the GWPS assigned at the POE, APOE (PMZ only), or FBOC (authorized FOA only). Put "N/A" if not applicable.

3. For each COC, include the appropriate GWPS designation to demonstrate that the Corrective Action Program objectives are being achieved either under the Risk Reduction Rules (RRR) pursuant to 30 TAC Chapter 335 or the Texas Risk Reduction Program (TRRP) pursuant to 30 TAC Chapter 350. The RRR and TRRP GWPS designations and definitions may not be combined pursuant to 30 TAC Section 350.2(m).

   ACL = alternative concentration limit; PCL = protective concentration level; RSA = Remedy Standard A; RSB = Remedy Standard B

RRR GWPS Designations and Definitions

MSC	ACL pursuant to 30 TAC Section 335.160(b) based upon the groundwater Medium-Specific Concentration (MSC), Residential (or Industrial) Risk Reduction Standard No. 2 (or No. 3) specified in 30 TAC Section 335 Subchapter S.
MCL	ACL pursuant to 30 TAC Section 335.160(b) based upon the Groundwater Maximum Contaminant Level (MCL) specified in 40 CFR Part 141, National Primary Drinking Water Regulations Subparts B and G.
SMCL	ALC pursuant to 30 TAC Section 335.160(b) based upon the Groundwater Secondary Maximum Contaminant Level (SMCL) specified in 40 CFR Part 143, National Secondary Drinking Water Regulations.
AL	ACL pursuant to 30 TAC Section 335.160(b) based upon the Action Level (AL) specified in 40 CFR Part 141, National Primary Drinking Water Regulations Subpart I.
BKG	Background as determined in accordance with Provision XI.F.1.
ND	Non-detectable at the practical quantitation limit (PQL) as determined by the analytical methods of the most recent edition of EPA SW-846, and as listed in the July 8, 1987, edition of the Federal Register and later editions. The PQL is the lowest concentration of an analyte in groundwater that can be reliably

determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions.

TRRP GWPS Designations and Definitions

$^{GW}GW_{Ing}$	ACL pursuant to 30 TAC Section 335.160(b) and 30 TAC Chapter 350 which is based upon the groundwater ingestion PCL determined under RSA or RSB (Residential or Commercial/Industrial) for Class 1 or Class 2 groundwater. The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table. In accordance with 30 TAC Section 350.72(b), $^{GW}GW_{Ing}$ PCLs may need to be adjusted to lower concentrations to meet the cumulative carcinogenic risk level (less than or equal to 1x10E-4) and hazard index criteria (less than or equal to 10) when there are more than 10 carcinogenic and/or more than 10 noncarcinogenic chemicals of concern within a source medium.
$^{GW}GW_{Class3}$	ACL pursuant to 30 TAC Section 335.160(b) and 30 TAC Chapter 350 which is based upon the groundwater PCL determined under RSA or RSB (Residential or Commercial/Industrial) for Class 3 groundwater. The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table.
$^{Air}GW_{Inh-V}$	ACL pursuant to 30 TAC Section 335.160(b) and 30 TAC Chapter 350 which is based upon the inhalation of volatile constituents from groundwater PCL determined under RSA or RSB (Residential or Commercial/Industrial) for Class 1, 2, or 3 groundwater. The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table.
^{SW}GW	ACL pursuant to 30 TAC Section 335.160(b) and 30 TAC Chapter 350 which is based upon the groundwater-to-surface water PCL determined under RSA or RSB (Residential or Commercial/Industrial). The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table.
^{SED}GW	ACL pursuant to 30 TAC Section 335.160(b) and 30 TAC Chapter 350 which is based upon the groundwater-to-sediment PCL determined under RSA or RSB (Residential or Commercial/Industrial). The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table.
^{ECO}GW	ACL pursuant to 30 TAC Section 335.160(b) and 30 TAC Chapter 350 which is based upon the groundwater PCL protective of ecological receptor(s) determined under RSA or RSB (Residential or Commercial/Industrial). The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table.
BKG	Background as determined in accordance with Provision XI.F.1.
ND	Non-detectable at the method quantitation limit (MQL) as determined by the analytical methods of the most recent edition of EPA SW-846 and as listed in the

July 8, 1987, edition of the Federal Register and later editions. The MQL is defined in 30 TAC Section 350.4(54) as the lowest non-zero concentration standard in the laboratory's initial calibration curve and is based on the final volume of extract (or sample) used by the laboratory.

CP Table IIIA: Corrective Action Program Table of Indicator Parameters and the Groundwater Protection Standard

Unit Name	**Column A** Hazardous Constituents	**Column B** Groundwater Protection Standards (mg/L) at the POC[1, 3]		**Column C** Groundwater Protection Standards (mg/L) at the POE, APOE, or FBOC[2, 3]	
Reserved					

Notes:

a) If the Corrective Action Program (Provision XI.E.) does not apply to the RCRA-regulated units, SWMUs, or AOCs at the facility, delete the contents of the table and add "Reserved" to the first row of CP Table IIIA.

b) CP Table IIIA represents the short list of hazardous constituents (i.e., indicator parameters) developed from CP Table III and are monitored on a frequency specified in CP Table VIII to verify that the ground water protection standards (GWPS) are met.

c) In accordance with Provision XI.D.6, the GWPS must be met before the Corrective Action Program can be terminated for the RCRA-regulated unit, SWMU and/or AOC.

d) If applicable, "Appendix IX" can be used in Column A for a unit instead of listing each chemical of concern (COC). The Permittee may petition the Executive Director for the deletion of a specific COC from the Appendix IX analysis if the Permittee can demonstrate that the COC was never used in the facility's operations nor was disposed of in the unit.

e) Attenuation monitoring point (AMP) wells, corrective action system (CAS) wells, and corrective action observation (CAO) wells should not be listed in CP Table IIIA. These wells should only be depicted in the CP Attachment A maps. Once an AMP, CAS, or CAO well meets its respective attenuation action levels (AALs) or GWPS, then the Permittee may propose to discontinue monitoring that well without modification to the Permit. If the AMP, CAS, or CAO well is listed in CP Table IIIA, then any proposed change to the well would require modification to the Permit. Changes to the wells depicted in the CP Attachment A maps can be approved in the Groundwater Monitoring Report required by CP Table VII and Provision XI.G.3 and become a part of the Permit by reference.

f) POC = point of compliance; POE = point of exposure; APOE = alternate point of exposure (only applicable for an authorized plume management zone [PMZ]); FBOC = Facility Operations Area (FOA) Boundary of Compliance (only applicable for an authorized FOA).

Footnotes:

1. Use Column B to specify the GWPS assigned at the POC for a RCRA-regulated unit subject to Corrective Action or for a SWMU/AOC subject to the Risk Reduction Rules. Put "N/A" if not applicable.

2. Use Column C to specify the GWPS assigned at the POE, APOE, or FBOC. Put "N/A" if not applicable.

3. For each COC, include the appropriate GWPS designation to demonstrate that the Corrective Action Program objectives are being achieved either under the Risk Reduction Rules (RRR) pursuant to 30 TAC Chapter 335 or the Texas Risk Reduction Program (TRRP) pursuant to 30 TAC Chapter 350. The RRR and TRRP GWPS designations and definitions may not be combined pursuant to 30 TAC Section 350.2(m).

   ACL = alternative concentration limit; PCL = protective concentration level; RSA = Remedy Standard A; RSB = Remedy Standard B

RRR GWPS Designations and Definitions

MSC	ACL pursuant to 30 TAC Section 335.160(b) based upon the groundwater Medium-Specific Concentration (MSC), Residential (or Industrial) Risk Reduction Standard No. 2 (or No. 3) specified in 30 TAC Section 335 Subchapter S.
MCL	ACL pursuant to 30 TAC Section 335.160(b) based upon the groundwater Maximum Contaminant Level (MCL) specified in 40 CFR Part 141, National Primary Drinking Water Regulations Subparts B and G.
SMCL	ALC pursuant to 30 TAC Section 335.160(b) based upon the groundwater Secondary Maximum Contaminant Level (SMCL) specified in 40 CFR Part 143, National Secondary Drinking Water Regulations.
AL	ACL pursuant to 30 TAC Section 335.160(b) based upon the Action Level (AL) specified in 40 CFR Part 141, National Primary Drinking Water Regulations Subpart I.
BKG	Background as determined in accordance with Provision XI.F.1.
ND	Non-detectable at the practical quantitation limit (PQL) as determined by the analytical methods of the most recent edition of EPA SW-846 and as listed in the July 8, 1987, edition of the Federal Register and later editions. The PQL is the lowest concentration of an analyte in groundwater that can be reliably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions.

TRRP GWPS Designations and Definitions

$^{GW}GW_{Ing}$	ACL pursuant to 30 TAC Section 335.160(b) and 30 TAC Chapter 350 which is based upon the groundwater ingestion PCL determined under RSA or RSB

(Residential or Commercial /Industrial) for Class 1 or Class 2 groundwater. The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table. In accordance with 30 TAC Section 350.72(b), $^{GW}GW_{Ing}$ PCLs may need to be adjusted to lower concentrations to meet the cumulative carcinogenic risk level (less than or equal to 1x10E-4) and hazard index criteria (less than or equal to 10) when there are more than 10 carcinogenic and/or more than 10 noncarcinogenic chemicals of concern within a source medium.

$^{GW}GW_{Class3}$ ACL pursuant to 30 TAC Section 335.160(b) and 30 TAC Chapter 350 which is based upon the groundwater PCL determined under RSA or RSB (Residential or Commercial /Industrial) for Class 3 groundwater. The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table.

$^{Air}GW_{Inh\text{-}V}$ ACL pursuant to 30 TAC Section 335.160(b) and 30 TAC Chapter 350 which is based upon the inhalation of volatile constituents from groundwater PCL determined under RSA or RSB (Residential or Commercial /Industrial) for Class 1, 2, or 3 groundwater. The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table.

^{SW}GW ACL pursuant to 30 TAC Section 335.160(b) and 30 TAC Chapter 350 which is based upon the groundwater-to-surface water PCL determined under RSA or RSB (Residential or Commercial/Industrial). The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table.

^{SED}GW ACL pursuant to 30 TAC Section 335.160(b)and 30 TAC Chapter 350 which is based upon the groundwater-to-sediment PCL determined under RSA or RSB (Residential or Commercial/Industrial). The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table.

^{ECO}GW ACL pursuant to 30 TAC Section 335.160(b) and 30 TAC Chapter 350 which is based upon the groundwater PCL protective of ecological receptor(s) determined under RSA or RSB (Residential or Commercial/Industrial). The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table.

BKG Background as determined in accordance with Provision XI.F.1.

ND Non-detectable at the method quantitation limit (MQL) as determined by the analytical methods of the most recent edition of EPA SW-846 and as listed in the July 8, 1987, edition of the Federal Register and later editions. The MQL is defined in 30 TAC Section 350.4(54) as the lowest non-zero concentration standard in the laboratory's initial calibration curve and is based on the final volume of extract (or sample) used by the laboratory.

CP Table IV: Compliance Monitoring Program Table of Hazardous and Solid Waste Constituents and Quantitation Limits

Unit Name	Column A Hazardous Constituents	Column B Concentration Limits (mg/L)[1, 2]	
Reserved			

Notes:

a) If there are no RCRA-regulated units subject to the Compliance Monitoring Program pursuant to 30 TAC Section 335.165, delete the contents of the table and add "Reserved" to the first row of CP Table IV.

b) CP Table IV represents the long list of hazardous constituents that are reasonably expected to be in, or derived from, waste placed in a RCRA-regulated unit but may not be detected in the groundwater above the chemical of concern's (COC) concentration limit.

c) If applicable, "Appendix IX" can be used in Column A for a RCRA-regulated unit instead of listing each COC. The Permittee may petition the Executive Director for the deletion of a specific COC from the Appendix IX analysis if the Permittee can demonstrate that the COC was never used in the facility's operations nor was disposed of in the unit.

d) CP Table IV chemicals of concern (COCs) are to be monitored annually in accordance with Provision XI.F.3.c(2)(b). Any CP Table IV COCs detected in the groundwater at a concentration greater than the COC's concentration limit should be added to CP Table IVA through permit modification or amendment.

Footnotes:

1. Use Column B to specify the concentration limit assigned at the point of compliance (POC).

2. For each COC, include the appropriate concentration limit designation according to either the Risk Reduction Rules (RRR) pursuant to 30 TAC Chapter 335 or the Texas Risk Reduction Program (TRRP) pursuant to 30 TAC Chapter 350. The RRR and TRRP concentration limit designations and definitions may not be combined pursuant to 30 TAC Section 350.2(m).

RRR Concentration Limit Designations and Definitions

ND Non-detectable at the practical quantitation limit (PQL) as determined by the analytical methods of the EPA SW-846 most recent edition, and as listed in the July 8, 1987, edition of the Federal Register and later editions. The PQL is the lowest concentrations of analytes in groundwater that can be reliably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions.

BKG Background as determined in accordance with Provision XI.F.1.

TRRP Concentration Limit Designations and Definitions

ND Non-detectable at the method quantitation limit (MQL) as determined by the analytical methods of the EPA SW-846 most recent edition, and as listed in the July 8, 1987, edition of the Federal Register and later editions. The MQL is defined in 30 TAC Section 350.4(54) as the lowest non-zero concentration standard in the laboratory's initial calibration curve and is based on the final volume of extract (or sample) used by the laboratory.

BKG Background as determined in accordance with Provision XI.F.1.

CP Table IVA: Compliance Monitoring Program Table of Detected Hazardous Constituents and the Groundwater Protection Standard

Unit Name	**Column A** Hazardous Constituents	**Column B** Groundwater Protection Standards (mg/L)[1, 2]	
Reserved			

Notes:

a) If there are no RCRA-regulated units subject to the Compliance Monitoring Program pursuant to 30 TAC Section 335.165, delete the contents of the table and add "Reserved" to the first row of CP Table IVA.

b) CP Table IVA represents the short list of hazardous constituents released from a RCRA-regulated unit which are detected in the groundwater above the concentration limits specified in CP Table IV, Column B.

c) CP Table IVA chemicals of concern (COCs) are monitored in accordance with the frequency specified in CP Table VIII to verify the groundwater protection standards (GWPS) are met.

Footnotes:

1. Use Column B to specify the GWPS assigned at the point of compliance (POC).

2. For each COC, include the appropriate GWPS designation that applies to verify the Compliance Monitoring Program objectives are being achieved either under the Risk Reduction Rules (RRR) pursuant to 30 TAC Chapter 335 or the Texas Risk Reduction Program (TRRP) pursuant to 30 TAC Chapter 350. The RRR and TRRP GWPS designations and definitions may not be combined pursuant to 30 TAC Section 350.2(m).

   ACL = alternative concentration limit; PCL = protective concentration level; RSA = Remedy Standard A; RSB = Remedy Standard B.

RRR GWPS Designations and Definitions

MSC ACL pursuant to 30 TAC Section 335.160(b) based upon the Groundwater Medium-Specific Concentration, Residential (or Industrial) Risk Reduction Standard No. 2 (or No. 3) specified in 30 TAC Section 335 Subchapter S.

MCL ACL pursuant to 30 TAC Section 335.160(b) based upon the Groundwater Maximum Contaminant Level specified in 40 CFR Part 141, National Primary Drinking Water Regulations Subparts B and G.

SMCL ACL pursuant to 30 TAC Section 335.160(b) based upon the Groundwater Secondary Maximum Contaminant Level specified in 40 CFR Part 143, National Secondary Drinking Water Regulations.

AL ACL pursuant to 30 TAC Section 335.160(b) based upon the Action Level (AL) specified in 40 CFR Part 141, National Primary Drinking Water Regulations Subpart I.

BKG Background as determined in accordance with Provision XI.F.1.

ND Non-detectable at the practical quantitation limit (PQL) as determined by the analytical methods of the EPA SW-846 most recent edition, and as listed in the July 8, 1987, edition of the Federal Register and later editions. The PQL is the lowest concentrations of analytes in groundwater that can be reliably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions.

TRRP GWPS Designations and Definitions

$^{GW}GW_{Ing}$ ACL pursuant to 30 TAC Section 335.160(b) and 30 TAC Chapter 350 which is based upon the groundwater ingestion PCL determined under RSA or RSB (Residential or Commercial/Industrial) for Class 1 or Class 2 groundwater. The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table. In accordance with 30 TAC Section 350.72(b), $^{GW}GW_{Ing}$, PCLs may need to be adjusted to lower concentrations to meet the cumulative carcinogenic risk level (less than or equal to 1x10E-4) and hazard index criteria (less than or equal to 10) when there are more than 10 carcinogenic and/or more than 10 noncarcinogenic chemicals of concern within a source medium.

$^{GW}GW_{Class3}$ ACL pursuant to 30 TAC Section 335.160(b) and 30 TAC Chapter 350 which is based upon the groundwater PCL determined under RSA or RSB (Residential or Commercial/Industrial) for Class 3 groundwater. The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table.

$^{Air}GW_{Inh\text{-}V}$ ACL pursuant to 30 TAC Section 335.160(b) and 30 TAC Chapter 350 which is based upon the inhalation of volatiles from groundwater PCL determined under RSA or RSB (Residential or Commercial/Industrial) for Class 1, 2, or 3 groundwater. The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table.

^{SW}GW ACL pursuant to 30 TAC Section 335.160(b) and 30 TAC Chapter 350 which is

based upon the groundwater-to-surface water PCL determined under RSA or RSB (Residential or Commercial/Industrial). The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table.

^{SED}GW ACL pursuant to 30 TAC Section 335.160(b) and 30 TAC Chapter 350 which is based upon the groundwater-to-sediment PCL determined under RSA or RSB (Residential or Commercial/Industrial). The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table.

^{ECO}GW ACL pursuant to 30 TAC Section 335.160(b) and 30 TAC Chapter 350 which is based upon the groundwater PCL protective of ecological receptor(s) determined under RSA or RSB. The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table.

BKG Background as determined in accordance with Provision XI.F.1.

ND Non-detectable at the method quantitation limit (MQL) as determined by the analytical methods of the EPA SW-846 most recent edition, and as listed in the July 8, 1987, edition of the Federal Register and later editions. The MQL is defined in 30 TAC Section 350.4(54) as the lowest non-zero concentration standard in the laboratory's initial calibration curve and is based on the final volume of extract (or sample) used by the laboratory.

CP Table V: Designation of Wells

Point of Compliance (POC) Wells

Unit Name	Well Numbers
Reserved	

Point of Exposure (POE) Wells

Unit Name	Well Numbers
Reserved	

Alternate Point of Exposure (APOE) Wells

Unit Name	Well Numbers
Reserved	

Background Wells

Unit Name	Well Numbers
Reserved	

FOA Boundary of Compliance (FBOC) Wells

Unit Name	Exposure Pathway	Well Numbers
Reserved		

Note:
Attenuation monitoring point (AMP) wells, corrective action system (CAS) wells, and corrective action observation (CAO) wells required by Permit Section XI.B.2. should not be listed in CP Table V. These wells should only be depicted in the CP Attachment A maps. Once an AMP, CAS, or CAO well meets its respective attenuation action levels (AALs) or GWPS, then the Permittee may propose to discontinue monitoring that well without modification to the Permit. If the AMP, CAS, or CAO well is listed in CP Table V, then any proposed change to the well would require modification to the Permit. Changes to the wells depicted in the CP Attachment A maps can be approved in the Groundwater Monitoring Report required by Provision XI.G.3. and CP Table VII and become a part of the Permit by reference.

CP Table VI: Compliance Period and Post Closure Period for RCRA-Regulated Units

Permitted Unit	Year or Number of Years
Year Waste Management Activities Initiated	Not Applicable
Year Closed	Not Applicable
Compliance Period	Not Applicable
Compliance Period Begin Date	Not Applicable
Compliance Period End Date	Not Applicable
Post Closure Care Period	Not Applicable
Post Closure Care Period Begin Date	Not Applicable
Post Closure Care Period End Date	Not Applicable

CP Table VII: Reporting Requirements

Item	Program	Reporting Frequency	Requirements
1.	All programs	Not Applicable	Each report shall be certified by a qualified engineer and/or geoscientist.
2.	Corrective Action and/or Compliance Monitoring	Not Applicable	A table of all modifications and amendments made to this Compliance Plan with their corresponding approval dates by the Executive Director (or the Commission) and a brief description of each action;
3.	Corrective Action and/or Compliance Monitoring	Not Applicable	A summary of any activity and/or response actions implemented since the last reporting period within an area subject to an institutional control.
4.	Corrective Action and/or Compliance Monitoring	Not Applicable	Tabulation of well casing elevations in accordance with CP Attachment C;
5.	Corrective Action and/or Compliance Monitoring	Not Applicable	Provide a certified well installation diagram for any new monitoring well installed or replaced during the reporting period. Provide the certification for all wells plugged and abandoned during the reporting period;
6.	Corrective Action and/or Compliance Monitoring	Not Applicable	Recommendation for any changes to the program;
7.	Corrective Action and/or Compliance Monitoring	Not Applicable	Any other items requested by the Executive Director;

Item	Program	Reporting Frequency	Requirements
8.	Corrective Action and/or Compliance Monitoring	Not Applicable	Prepare water table maps from the groundwater data collected pursuant to Permit Section XI. F. and reported in accordance with Provision XI.G.3. The Permittee shall also include in the report an evaluation of the following parameters: a. Development and maintenance of a cone of depression during operation of the groundwater recovery system(s), if applicable; b. Direction and gradient of groundwater flow; c. Effectiveness of hydrodynamic control of the contaminated groundwater zone during operation of the groundwater recovery system(s), if applicable; and d. Estimation of the rate and direction of groundwater contamination migration.
9.	Corrective Action and/or Compliance Monitoring	Not Applicable	The Permittee shall submit the groundwater monitoring report required by Provision XI.G.3. to each recipient listed in Provision XI.J.3. The report must include all applicable information listed in this table (CP Table VII: Reporting Requirements) for the reporting period. If both Corrective Action and Compliance Monitoring Programs are authorized, then the report shall contain the applicable information required for both programs.
10.	Corrective Action and/or Compliance Monitoring	Not Applicable	Discuss the Corrective Action System(s) authorized under Provision XI.B.3. that was in operation during the reporting period. Provide a narrative summary of the evaluations made for each system for the preceding reporting period in accordance with Permit Sections XI.E., XI.F., and XI.G. The reporting periods shall be January 1st through June 30th and July 1st through December 31st for the Corrective Action Program, unless an alternative schedule is approved by the Commission. The reporting period for the Compliance Monitoring Program shall be based on the calendar year.
11.	Corrective Action and/or Compliance Monitoring	Not Applicable	Discuss the method(s) used to manage recovered/purged groundwater in accordance with Provision XI.B.8. The Permittee shall maintain this information as part of the facility's operating record and make it available for inspection upon request.

Item	Program	Reporting Frequency	Requirements
12.	Corrective Action and/or Compliance Monitoring	Not Applicable	Provide an updated table and map of all monitoring and corrective action system wells. The wells to be sampled shall be those wells proposed in the Compliance Plan Application referenced in Provision I.B. and any changes subsequently approved by the Executive Director pursuant to Provisions XI.B.2. and XI.B.3. Provide in chronological order a list of those wells which have been added to, or deleted from, the groundwater monitoring program and remediation systems since original issuance of the Compliance Plan. Include the date of the Commission's approval for each well;
13.	Corrective Action and/or Compliance Monitoring	Not Applicable	Provide the results of the chemical analyses, submitted in a tabulated format acceptable to the Executive Director, which clearly indicates each chemical of concern (COC) that exceeds the Groundwater Protection Standard (GWPS) or Concentration Limit. Copies of the original laboratory report(s) which contain the appropriate quality control and quality assurance data and the detection limit for each COC shall be provided if requested by the Executive Director;
14.	Corrective Action and/or Compliance Monitoring	Not Applicable	Tabulation of all water level elevations, depth to water measurements, and total depth of well measurements collected since the previous groundwater monitoring report was submitted as required by Provisions XI.F.3.d.(1) and XI.F.3.d.(4). Also include in the table an evaluation of the silt accumulated in each well and clearly indicate the wells which require corrective action for silt accumulation as required by Provision XI.F.3.d.(4).;
15.	Corrective Action and/or Compliance Monitoring	Not Applicable	Provide potentiometric surface maps showing the elevation of the water table at the time of sampling, delineation of the radius of influence of the Corrective Action System, and the direction of groundwater flow gradients outside any radius of influence;
16.	Corrective Action and/or Compliance Monitoring	Not Applicable	Tabulation of all data evaluation results pursuant to Provision XI.F.4. Include the compliance status of each well regarding the Corrective Action objectives, GWPS, and/or Concentration Limits;

Item	Program	Reporting Frequency	Requirements
17.	Corrective Action and/or Compliance Monitoring	Not Applicable	Provide an updated summary as required by CP Table VIII;
18.	Corrective Action and/or Compliance Monitoring	Not Applicable	Provide a summary of any changes made to the groundwater monitoring program and/or Corrective Action Program. Include a summary of well inspections, repairs, and any operational difficulties;
19.	Corrective Action and/or Compliance Monitoring	Not Applicable	Include a notation of the presence or absence of light and/or dense non-aqueous phase liquids (NAPLs) in each well during each sampling event. Provide a tabulation of the depth and thickness of the NAPL, if detected, for each well;
20.	Corrective Action only	Not Applicable	Provide quarterly tabulations of the quantities of recovered groundwater and NAPLs, and graphs of monthly recorded flow rates versus time for the corrective action recovery wells in operation during the reporting period. Also provide a narrative summary which describes and evaluates the NAPL recovery program;
21.	Corrective Action only	Not Applicable	Tabulation of the total contaminant mass recovered from each groundwater recovery system in operation during the reporting period;
22.	Corrective Action only	Not Applicable	Provide maps of the area(s) where GWPSs are exceeded. Depict the concentrations of CP Table IIIA COCs, and any newly detected CP Table III COCs, as isopleth contours or discrete concentrations if isopleth contours cannot be inferred. Clearly delineate the area(s) where concentrations of COCs exceed the GWPS. Depict the boundary of the plume management zone (PMZ), if applicable;
23.	Corrective Action only	Not Applicable	Provide maps and tables which include the extent and thickness of detected light and/or dense NAPLs;

Item	Program	Reporting Frequency	Requirements
24.	Corrective Action only	Not Applicable	Annually provide a Corrective Measures Implementation (CMI) Progress Report or Response Action Effectiveness Report (RAER) in accordance with Provision XI.H.6. The Permittee must also include a narrative summary of the status of the approved final corrective measures conducted in accordance with the approved CMI Workplan or Response Action Plan and must demonstrate that the requirements of Provisions XI.H.6 and XI.H.7. are being met. The CMI Progress Report must include: a) A summary of the response actions taken since the last reporting period; b) An estimate of the percentage of the response action(s) which has been completed; c) An estimate in years of the additional time necessary to complete the response action(s); d) A determination whether sufficient progress is being made to complete the response actions within a reasonable timeframe; and e) Any other reasonable information required by the Executive Director. The RAER must include: f) The information required by Title 30 Texas Administrative Code (TAC) Section 350.93; or g) The Permittee may complete and submit the RAER Form (TCEQ Form 10327/RAER). The required CMI Progress Report/RAER may be submitted as a separate section in the groundwater monitoring report required by Provisions XI.G.3. Alternatively, the required elements of the CMI Progress Report/RAER may be incorporated within the groundwater monitoring report, but each requirement must be clearly identified within the groundwater monitoring report.

Item	Program	Reporting Frequency	Requirements
25.	Corrective Action only	Not Applicable	The Permittee must include a narrative summary of the status of each Solid Waste Management Unit (SWMU) and/or Area of Concern (AOC) subject to the requirements of Permit Section XI.H. The Permittee must also discuss the Interim Corrective Measures (ICM) Program for each applicable SWMU and/or AOC and document that the objectives of Provision XI.H.8.b. are being achieved.
26.	PMZ	Not Applicable	Provide a summary evaluating the effectiveness of the Corrective Action system in controlling migration beyond the downgradient boundary and vertical limit of the PMZ to achieve the GWPS. The summary shall include an evaluation of whether the attenuation action levels are exceeded at their respective attenuation monitoring points pursuant to 30 TAC Sections 350.33(f)(4)(A) and 350.33(f)(4)(D)(ii);
27.	PMZ	Not Applicable	Provide an estimate of the percentage of the response action which has been completed within the PMZ;
28.	PMZ	Not Applicable	Include an estimate in years of the additional time necessary to complete the response actions for the PMZ;
29.	PMZ	Not Applicable	Provide a determination whether sufficient progress is being made to achieve the selected remedy standard within a reasonable time frame given the circumstance of the affected property within the PMZ.
30.	Facility Operations Area (FOA) only	Not Applicable	Provide additional reporting requirements to fulfill the requirements of 30 TAC Section 350.134 and 30 TAC Section 350.135. These requirements include, but are not limited to: a. Provide an average of both lost workday injury case rates and injury incidence rates for the most recent three (3) year period compared to the most recent specific industry national average published by the Bureau of Labor Statistics; b. Document that the worker health and safety program meet the requirements of the Occupational Safety and Health Administration (OSHA) by providing records of the OSHA compliance history or the results of the most recent audit of the health and safety programs by the OSHA or a third party certified professional

Item	Program	Reporting Frequency	Requirements
			industrial hygienist and safety specialist. An audit is required anytime there is a significant change to the health and safety program, or at a minimum every three (3) years, the results of which indicate the program is satisfactory; c. Document a compliance history ranking of average or better for the TCEQ; d. Document the pollution prevention program that has a goal of prevention of releases of COCs to environmental media within the FOA; e. Provide a statement that the program required in 30 TAC Section 350.134(a)(7) to protect workers within the FOA from environmental media having concentrations of COCs greater than protective concentration levels (PCLs) or action levels based on the health and safety program is still in effect. In addition, the Permittee shall provide, for the preceding year, an updated map delineating areas where the Soil Response Action Plan has been implemented pursuant to 30 TAC Section 350.135(a)(5); f. Document there have not been any significant outstanding non-compliance issues resulting from inspections for compliance with the RCRA permit or Order, if any; g. Document areas of ecological impact identified within the FOA and procedures for responding to these identified ecologically impacted areas on a continual basis. Review any ecologically impacted areas annually and report any new ecological impacts within thirty (30) days of verification of impact; h. Document activity associated with tracking and responding to releases to soil and groundwater above reportable quantities, which occur within the FOA after the issuance of the Compliance Plan, in accordance with 30 TAC Section 350.135(a)(7); i. Document any NAPL occurrences and any procedure(s) used to address known NAPLs and any NAPLs identified during the operational life of the FOA. This should

Item	Program	Reporting Frequency	Requirements
			include any previously discovered NAPL occurrences; and j. Provide documentation that access is restricted to the FOA.

CP Table VIII: Compliance Schedule

Item	**Compliance Schedule** (from the date of issuance of the Compliance Plan unless otherwise specified)	**Regulatory Citation**	**Requirement**
	Reserved		

Note:

Please note that Corrective Action monitoring is conducted on semiannual basis unless a less frequent monitoring schedule is approved based on plume stability and achievement of Corrective Action objectives.

CP Table IX: Description of Uppermost Aquifer

The term "Uppermost Aquifer" as referenced in this Compliance Plan refers to the **Not applicable to this application.**

APPENDIX XI.1
COMPLIANCE PLAN

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas
Hazardous Waste Permit No. 50219

ATTACHMENTS

Attachment XI.1 Termination of Corrective Action at SWMA Approval Letter

APPENDIX XI.1
COMPLIANCE PLAN

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas
Hazardous Waste Permit No. 50219

ATTACHMENT XI.1

Attachment XI.1 Termination of Corrective Action at SWMA Approval Letter

Brooke Paup, *Chairwoman*
Bobby Janecka, *Commissioner*
Catarina R. Gonzales, *Commissioner*
Kelly Keel, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 15, 2025

Ms. Kendra Derrick
EHS Specialist
BASF Corporation
14385 West Port Arthur Road
Beaumont, Texas 77705

Re: Transmittal of Class 3 Permit Modification
BASF Corporation, Jefferson County
Hazardous Waste Permit No. 50219
Industrial Solid Waste Registration No. 30053
EPA Identification No. TXD067261412
Tracking No. 29714498; RN100634922/CN600124895

Dear Ms. Derrick:

Enclosed, please find a signed copy of the above-referenced Class 3 permit modification issued pursuant to the Texas Health and Safety Code, Chapter 361, in response to your application dated April 5, 2024.

This action is taken under authority delegated to the executive director of the Texas Commission on Environmental Quality.

Please direct questions regarding the Class 3 permit modification to Mr. Vahab Haghighatian, P.E., P.G. of the Industrial and Hazardous Waste Permits Section by email at Vahab.Haghighatian@tceq.texas.gov, by phone at (512) 239-6081, or at the letterhead address provided in the correspondence. If you respond in writing, please include mail code MC 130 in the mailing address.

Sincerely,

Charly Fritz, Deputy Director
Waste Permits Division

CF/VH/kjm

Enclosure

cc: Mr. Christ Niamike, P.E. - GSI Environmental Inc – Houston

Texas Commission on Environmental Quality

Class 3 Permit Modification

Permittee Name	BASF Corporation	**Hazardous Waste Permit No.**	50219
City	Beaumont	**County**	Jefferson
Customer No.	CN600124895	**Solid Waste Registration No.**	30053
Regulated Entity No.	RN100634922	**EPA Identification No.**	TXD067261412
Application Date	April 5, 2024	**Application Received Date**	April 10, 2024
Request	Class 3 Permit Modification	**Tracking No.**	29714498

The Texas Commission on Environmental Quality (TCEQ) reviewed the permit application for consistency with the goals and policies of the Texas Coastal Management Program (CMP) in accordance with the regulations of the Coastal Coordination Council and determined that the permit is consistent with the applicable CMP goals and policies. [30 TAC Section 281.43(a)(1)]

The above permit is modified as

follows: **Continuation Sheet 6 of 38**

Section I.B. Incorporated Application Materials

Incorporate the application dated above and its subsequent revisions, as included in the attached "Table of Permit Modifications and Amendments," into this permit.

Tables

Replace the following existing Compliance Plan (CP) tables with the attached revised tables:

- CP Table I: Waste Management Units and Areas Subject to Groundwater Corrective Action and Compliance Monitoring - Reserved
- CP Table II: Solid Waste Management Units and/or Areas of Concern Addressed in Permit Section XI.H. for which Corrective Action Applies Pursuant to 30 TAC Section 335.167
- CP Table III: Corrective Action Program Table of Detected Hazardous and Solid Waste Constituents and the Groundwater Protection Standard - Reserved

- CP Table IIIA: Corrective Action Program Table of Indicator Parameters and the Groundwater Protection Standard - Reserved
- CP Table V: Designation of Wells - Reserved
- CP Table VII: Reporting Requirements - Reserved
- CP Table VIII: Compliance Schedule - Reserved

This Class 3 Permit Modification is part of Permit No. 50219 and should be attached thereto.

Issued Date: January 9, 2025

K Keel

For the Commission

APPENDIX XI.1
COMPLIANCE PLAN

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas
Hazardous Waste Permit No. 50219

CP ATTACHMENTS

CP Attachment A Maps

Sheet 1 of 2 Facility Site Map

Sheet 2 of 2 Facility SWMU, AOC and Onsite Permitted Waste Management Units

N

LEGEND

- BASF Beaumont Property Boundary
- Closed SWMA Area (Ponds 1A, 1B, 2A, and 2B)
- Approximate Former Dicamba AOC and on-going TCB AOC locations
- Solid Waste Management Area PMZ

Notes

1. SWMA = Solid waste management area, clean closed in 1980s.
2. AOC = Area of concern; TCB = 1,2,4-Trichlorobenzene.
3. Background Imagery: ESRI World Imagery - 1m Color InfraRed NAIP imagery; last modified 1/29/2025.

Feet
0 1,000 2,000

Projected Coordinate System
Datum: NAD 1983
STP: Texas South Central, 4204 (ft)

GSI ENVIRONMENTAL
Texas Geoscience Firm Registration Number: 50243

FACILITY SITE MAP

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No.	10426-100	Drawn By:	CDM
Issued:	10-Jun-2025	Chk'd By:	KCN
Map ID:	**011_01**	Appv'd By:	JMM

CP ATTACHMENT A, SHEET 1 OF 2

N

LEGEND

- BASF Beaumont Property Boundary
- Closed SWMA Area (Ponds 1A, 1B, 2A, and
- Approximate Former Dicamba AOC and on-going TCB AOC locations
- Location of Onsite Permitted Waste Management Units (Non-Hazardous)

Notes

1. SWMA = Solid waste management area, clean closed in 1980s.
2. AOC = Area of concern; TCB = 1,2,4-Trichlorobenzene.
3. Onsite permitted waste management units consist of 7 RCRA-permitted wastewater tanks (F-414A, F-414B, F-414C, WB-502A, WB-502B, WB-1765 and WB-1767) that manage nonhazardous wastewater.
4. Background Imagery: USGS Port Acres Quadrangle - 2022; Texas - Jefferson County, 7.5-Minute Series; Scale 1:24,000.

Feet
0 1,000 2,000

Projected Coordinate System
Datum: NAD 1983
STP: Texas South Central, 4204 (ft)

GSI ENVIRONMENTAL
Texas Geoscience Firm Registration Number: 50243

FACILITY SWMU, AOC AND ONSITE PERMITTED WASTE MANAGEMENT UNITS

Hazardous Waste Permit Renewal Application
Hazardous Waste Permit No. 50219
BASF Beaumont Agro Plant, Beaumont, Texas

GSI Job No.	10426-100	Drawn By:	CDM
Issued:	10-Jun-2025	Chk'd By:	KCN
Map ID:	**011_02**	Appv'd By:	JMM

CP ATTACHMENT A, SHEET 2 OF 2

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B Section XII – Hazardous Waste Permit Application Fee

Contents

- Part B Application Form, Section XII
- Part B, Section XII: Tables

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B Application Form, Section XII

XII. Hazardous Waste Permit Application Fee

Provide all Part B responsive information in Appendix XII. When preparing the physical format organize your submittal using the Format of Hazardous Waste permit Application and Instructions.

In accordance with 30 TAC 305.53, complete Tables XII.A. - Hazardous Waste Units (For Application Fee Calculations) and XII.B. - Hazardous Waste Permit Application Fee Worksheet. Use the following information in calculating your fee. The application fee will be non-refundable once an initial review of the application has been completed. The applicant's fees are subject to evaluation by the technical staff of the Texas Commission on Environmental Quality (TCEQ). However, the TCEQ reserves the right to assess further fees as may be necessary.

A. The minimum permit application fee for a permit or a permit renewal for each hazardous waste facility to be used for Storage, Processing, Disposal, or Closure/Post-Closure Care (disposal has already occurred) of hazardous waste shall be $2,000, plus notice fee, and the maximum shall be $50,000, calculated according to these instructions:

1. Process Analysis - $1,000.00.

2. Management/Facility Analysis - $500.00.

3. A facility unit(s) analysis of $500 per unit is charged for the following:

   a. each cell of a landfill (note that multiple cells that are identical in type and use are subject to a single $500 fee);

   b. tanks and container storage areas (note that multiple tanks and container storage areas that are identical in type and use are subject to a single $500 fee)

   c. identical in type and use means the following:

      (1) made of the same material and same design;
      (2) the same size/capacity within + 10%;
      (3) store the same waste (as identified by USEPA hazardous waste number - 40 CFR 261 Subparts C & D); and
      (4) have the same management characteristics (e.g., storage only).

   d. Each incinerator, boiler/industrial furnace unit, surface impoundment, waste pile, land treatment unit, drip pad, miscellaneous unit, or containment building.

4. Site Evaluation - $100 per acre of surface used for hazardous waste management up to 300 acres. No additional fee thereafter. This shall be calculated as any acreage which will be permitted to manage hazardous waste. This shall include, for example, the entire area within the secondary containment of a tank farm, the area within a fence that surrounds individual units (other than the facility fence), or the area defined by the toe of the dike surrounding a landfill or impoundment, etc.

5. An applicant shall also include with each initial application a fee of $50 to be applied toward the cost of providing the required notice. An additional notice

fee of $15 is required with each application for renewal.

B. The application fee for a major amendment or a Class 2 or 3 modification to a hazardous waste permit for operation, closure, or post-closure care is subject to the fees listed below:

1. A management/facility analysis fee of $500.

2. The notice fee is $50.

3. If a unit is added or a unit area is expanded for any purpose, $100 per additional acre is assessed, until the total additional acreage reaches 300 acres.

4. If one or more of the following reports are added or are significantly revised, the process analysis fee of $1000 is assessed:

   a. waste analysis plan;

   b. site-specific or regional geology report;

   c. site-specific or regional geohydrology report;

   d. groundwater and/or unsaturated zone monitoring;

   e. closure and/or post-closure care plan; or

   f. RCRA Facility Assessments (RFAs), or corrective action reports;

   g. Alternate Concentration Limit (ACL) demonstration or Development of Protective Concentration Limits (PCLs);

   h. Regulated Unit Facility Assessment, Corrective Action (CA) work plans or reports for Regulated Units; and/or

   i. RCRA Facility Investigation (RFI)/Affected Property Assessment (APA), Remedy Selection, Corrective Measure Implementation (CMI)/Remedial Action Plan for solid waste management units, and/or areas of concern;

   j. Facility Operations Area (FOA).

5. A unit analysis fee of $500 per unit is assessed if any of the following occur:

   a. if a unit is added (even if identical to units already in place, using the criteria discussed in A.3 above);

   b. if there are design changes in an existing unit; or

   c. if a unit status changes from closure to post-closure care;

   d. Changes in the number, location, depth, or design of wells approved in compliance plan or a permit (unless it is a replacement well);

   e. Changes in point of compliance and compliance monitoring program;

   f. Changes in Groundwater Protection Standards, indicator parameters, Alternate Concentration Limits or Protective Concentration Limits; and/or

   g. Changes in corrective action program.

C. The application fee for a minor amendment, a Class 1, or a Class 1^1 modification of a

hazardous waste permit is $100 plus the notice fee of $50.

GSI Job No. 10426

Hazardous Waste Permit Renewal Application
BASF Beaumont Agro Plant, Beaumont, Texas

Hazardous Waste Permit No. 50219

Part B, Section XII: Tables

Contents

- Table XII.A – Hazardous Waste Units (For Application Fee Calculations)
- Table XII.B – Hazardous Waste Permit Application Fee Worksheet

Table XII.A. - Hazardous Waste Units (For Application Fee Calculations)

Verbal Description of Unit	Rated Capacity (Gallons)	Surface Acreage[1]	# of Unit Types[2]	Identical Unit Justification[3]
Tanks F-414A, F-414B, and F-414C	196,202	0.64	1	Tanks F-414A, F-414B, and F-414C meet the criteria for identical tanks (i.e., made of same material and same design, have same size/capacity within 10%, store the same waste, and have the same management characteristics)
Tank WB-1767	150,000	0.22	1	NA
WB-502A, WB-502B, and WB-1765	1,000,000	1.6	1	Tanks WB-502A, WB-502B, and WB-1765 meet the criteria for identical tanks (i.e., made of same material and same design, have same size/capacity within 10%, store the same waste, and have the same management characteristics)
		Total[4] 2.46	Total[4] 3	

1. Number of calculated acres.
2. Enter number of units except for units identical in type and use which only count toward a single $500.00 fee.
3. Explain justification for any units claimed as identical in type and use.
4. Enter these totals on the worksheet.
5. NA = Not applicable.

Table XII.B. - Hazardous Waste Permit Application Fee Worksheet

Name of Facility: BASF Beaumont Agro Plant

Solid Waste Registration Number: 30053

1. Process Analysis - $1,000..... $ 1,000.00
2. Facility Management Analysis - $500..... $ 500.00
3. Unit Analysis - 3 units @ $500 per unit..... $ 1,500.00
4. Site Evaluation - 2.46 acres @ $100 per acre..... $ 246.00

   (Maximum of 300 acres)
5. Minor amendment, Class 1, or Class 1[1] modification - $100..... $ 100.00
6. Cost of Providing Notice - $50 (+ $15 for a renewal)..... $ 65.00

Pay This Amount **Total** $ 3,411.00

Pay Online through ePay portal www3.tceq.texas.gov/epay/

Enter ePay Trace Number: 582EA000657734

For Payment by check, make checks Payable To:

Texas Commission on Environmental Quality - Fund 549
(your canceled check will be your receipt)

Complete And Return With Payment To:

Texas Commission on Environmental Quality
Financial Administration Division - MC 214
P.O. BOX 13088
Austin, Texas 78711-3088

The applicant's fees are subject to evaluation by the technical staff of the Texas Commission on Environmental Quality (TCEQ). However, the TCEQ reserves the right to assess further fees as may be necessitated.

Please do not submit a photocopy of the check (or equivalent transaction submittal) with your application packet but provide only the following account information:

Check No.	Date of Check	Check Amount
EPay Vouchers: 582EA000657734	March 4, 2025	$3,411.00 (total) $3,346.00, $50.00, and $15.00