STATE OF MISSISSIPPI
HAZARDOUS WASTE MANAGEMENT PERMIT

TO OPERATE A HAZARDOUS WASTE MANAGEMENT FACILITY
IN ACCORDANCE WITH THE REGULATIONS GOVERNING
HAZARDOUS WASTE MANAGEMENT

THIS CERTIFIES THAT

The Chemours Company FC LLC, DeLisle Plant

is hereby authorized to operate Hazardous Waste Treatment and Storage Units

located at

7685 Kiln DeLisle Road
Pass Christian, Mississippi
Harrison County

This permit is issued under the authority of the Mississippi Solid Wastes Disposal Law, and particularly Section 17-17-27 thereof, and rules adopted and promulgated thereunder, all of which authorize the Department of Environmental Quality to enforce all applicable requirements, under the Mississippi Hazardous Waste Management Regulations, and associated conditions included therein.

MISSISSIPPI ENVIRONMENTAL QUALITY PERMIT BOARD

Mark Williams

AUTHORIZED SIGNATURE
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

Issued: September 17, 2019
Expires: August 31, 2029

Permit No.: MSD096046792

1832 PER20140001

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PERMIT ATTACHMENTS

Attachments are taken directly from the application, but have been reformatted to fit the permit.

MODULE I – GENERAL PERMIT CONDITIONS

I.A. EFFECT OF PERMIT

Subject to Title 11 Miss. Admin. Code Pt. 3, Ch. 1 Mississippi Hazardous Waste Management Regulations (MHWMR) Rule 1.16 Part 270.4, compliance with this permit constitutes compliance, for purposes of enforcement, with Mississippi Solid Waste Disposal Law of 1974, Section 17-17-1, et seq. and Subtitle C of RCRA, except for those requirements not included in the permit but which become effective by statute or which are promulgated by MHWMR Rule 1.15 Part 268. Issuance of this permit does not convey any property rights of any sort nor any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of any state or local laws or regulations. Compliance with the terms of this permit does not constitute a defense to any order issued or any action brought under Sections 3008(a), 3008(h), 3013, or 7003 of RCRA; Sections 106(a), 104, or 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq., commonly known as CERCLA), or any other law providing for protection of public health or the environment.

I.B. PERMIT ACTIONS

I.B.1. Permit Modification, Revocation and Reissuance, and Termination

This permit may be modified, revoked and reissued, or terminated for cause, as specified in MHWMR Rule 1.16 Part 270.41, 270.42, or 270.43. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee, does not stay the applicability or enforceability of any permit condition.

I.B.2. Permit Renewal

This permit may be renewed as specified in MHWMR Rule 1.16 Part 270.30(b) and Permit Condition I.E.2. Review of any application for a permit renewal shall consider improvements in the state of control and measurement technology, as well as changes in applicable regulations.

I.C. SEVERABILITY

The provisions of this permit are severable, and if any portion of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

I.D. DEFINITIONS

For purposes of this permit, terms and conditions used herein shall have the same meaning as those in RCRA and MHWMR Rule 1.23 Part 124, Rule 1.1 Part 260, Rule 1.2 Part 261, Rule 1.7 Part 264, Rule 1.15 Part 268, and Rule 1.16 Part 270; unless this permit specifically provides otherwise. Where terms are not defined in the regulation, the permit, or EPA and/or MDEQ guidelines or publications, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

I.D.1. Executive Director

"Executive Director" means the Executive Director of the Mississippi Department of Environmental Quality or his designee or authorized representative.

I.D.2. Tank System

"Tank System" for the purposes of this permit includes the hazardous waste storage tanks, all secondary containment systems, and all ancillary equipment including pumps, accumulators, and piping from the hazardous waste tanks to the termination of the piping at another unit.

I.E. DUTIES AND REQUIREMENTS

I.E.1. Duty to Comply

The Permittee shall comply with all conditions of this permit except to the extent and duration noncompliance is authorized by an emergency permit. Any permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of Mississippi Hazardous Waste Management Regulations and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

I.E.2. Duty to Reapply

If the Permittee wishes to continue an activity allowed by this permit after the expiration date of this permit, the Permittee shall submit a complete application for a new permit at least 180 days prior to permit expiration.

I.E.3. Permit Expiration

Pursuant to MHWMR Rule 1.16 Part 270.50, this permit shall be effective for a fixed term not to exceed ten (10) years. This permit and all conditions herein will remain in effect beyond the expiration date if the Permittee has submitted a timely, complete application (per MHWMR Rule 1.16 Part 270.10, Rule 1.16 Part 270.13

through Part 270.29) and, through no fault of the Permittee, the Executive Director has not issued a new permit, as set forth in MHWMR Rule 1.16 Part 270.51.

I.E.4. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

I.E.5. Duty to Mitigate

In the event of noncompliance with this permit, the Permittee shall take all reasonable steps to minimize releases to the environment and shall carry out such measures, as are reasonable, to prevent significant adverse impacts on human health and the environment.

I.E.6. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, adequate laboratory and process controls, including appropriate quality assurance/quality control procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

I.E.7. Duty to Provide Information

The Permittee shall furnish to the Executive Director, within a reasonable time, any relevant information that the Executive Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit; or to determine compliance with this permit. The Permittee shall also furnish to the Executive Director, upon request, copies of records required by this permit.

I.E.8. Inspection and Entry

Pursuant to MHWMR Rule 1.16 Part 270.30(i), the Permittee shall allow the Executive Director, or an authorized representative, upon the presentation of credentials and other documents, as may be required by law, to:

I.E.8.a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

I.E.8.b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

I.E.8.c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

I.E.8.d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by Mississippi Solid Waste Disposal Laws, any substances or parameters at any location.

I.E.9. Monitoring and Records

The Executive Director may require such testing by the Permittee, and may make such modifications to this permit, deemed necessary to ensure implementation of new regulations or requirements, or to ensure protection of human health or the environment.

I.E.9.a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from Appendix I of MHWMR Rule 1.1 Part 261, the EPA Region IV Environmental Compliance Branch's *Field Branches Quality System and Technical Procedures* (FBQSTP) (most recent version), or an equivalent method approved by the Executive Director. Procedures for sampling contaminated media must be those identified in the EPA Region IV FBQSTP or an equivalent method approved by the Executive Director. Laboratory methods must be those specified in *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods SW-846, Standard Methods of Wastewater Analysis*, or an equivalent method approved by the Executive Director.

I.E.9.b. The Permittee shall retain at the facility or other appropriate location as approved by the Executive Director, records of all monitoring information, including all calibration and maintenance records, records of all data used to prepare documents required by this permit, the certification required by MHWMR Rule 1.7 Part 264.73(b)(9), and records of all data used to complete the application for this permit for a period of at least three (3) years from the date of the sample, measurement, report, certification, and/or application, or until corrective action is completed, whichever date is later. These periods may be extended by the request of the Executive Director at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility. The Permittee shall also maintain records for all groundwater monitoring wells and associated groundwater surface elevations for the duration of the post-closure care period.

I.E.9.c. Pursuant to MHWMR Rule 1.16 Part 270.30(j)(3), records of monitoring information shall specify:

i. The date, exact place, and time of sampling or measurements;

ii. The individuals who performed the sampling or measurements;

iii. The dates the analyses were performed;

iv. The individuals who performed the analyses;

v. The analytical techniques or methods used, including any method detection limits for said technique; and

vi. The results of such analyses.

I.E.10. Reporting Planned Changes

The Permittee shall give notice to the Executive Director, as soon as possible, of any planned physical alterations or additions that affect any regulated unit.

I.E.11. Reporting Anticipated Noncompliance

The Permittee shall give advance notice to the Executive Director of any planned changes in the permitted facility or activity that may result in noncompliance with the requirements of this permit.

I.E.12. Transfer of Permits

This permit may be transferred to a new owner or operator only after notice to the Executive Director and only if it is modified or revoked and reissued pursuant to MHWMR Rule 1.16 Part 270.40(b) or Part 270.41(b)(2) to identify the new permittee and incorporate such other requirements as may be necessary under the appropriate act. Before transferring ownership or operation of the facility during its operating life, or of a disposal facility during the post-closure period, the Permittee shall notify the new owner or operator in writing of the requirements of MHWMR Rule 1.7 Parts 264 and Rule 1.16 Part 270, of HSWA, and of this permit.

I.E.13. Twenty-Four Hour Reporting

I.E.13.a. The Permittee shall report to the Executive Director any noncompliance or any imminent or existing hazard from a release of hazardous waste or hazardous constituents that may endanger health or the environment. Any such information shall be reported orally within twenty-four (24) hours from the time the Permittee becomes aware of the circumstances. The report shall include the following:

i. Information concerning the release of any hazardous waste or hazardous constituents that may cause an endangerment to public drinking water supplies.

ii. Information of a release or discharge of hazardous waste or hazardous constituents, or a fire or an explosion at the facility which could threaten the environment or human health outside the facility.

I.E.13.b. The description of the occurrence and its cause shall include:

i. Name, address, and telephone number of the owner or operator;

ii. Name, address, and telephone number of the facility;

iii. Date, time, and type of incident;

iv. Name and quantity of materials involved;

v. The extent of injuries, if any;

vi. An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and

vii. Estimated quantity and disposition of recovered material that resulted from the incident.

I.E.13.c. A written submission shall also be provided within five days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and times; whether the noncompliance has been corrected; and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Executive Director may waive the five-day written notice requirement in favor of a written report within 15 days.

I.E.14. Obligation for Corrective Action

The Permittee is required to continue this permit for any period necessary to comply with the corrective action requirements of this permit.

I.E.15. Other Noncompliance

The Permittee shall report all other instances of noncompliance not otherwise required to be reported above at the time monitoring reports are submitted. The reports shall contain the information listed in Condition I.E.13. of this Permit.

I.E.16. Other Information

Whenever the Permittee becomes aware that it failed to submit any relevant facts in the permit application or in any report to the Executive Director, the Permittee shall promptly submit such facts or information.

I.F. SIGNATORY REQUIREMENT

All applications, reports, or information submitted to or requested by the Executive Director, a designee, or authorized representative, shall be signed and certified in accordance with MHWMR Rule 1.16 Part 270.11 and Part 270.30(k).

I.G. REPORTS, NOTIFICATIONS, AND SUBMISSIONS TO THE EXECUTIVE DIRECTOR

All reports, notifications, or other submissions that are required by this permit to be given or sent by certified mail to the Executive Director in care of the Chief, Waste Division at the following address:

Mississippi Department of Environmental Quality
515 E. Amite St.
PO Box 2261
Jackson, Mississippi 39225

I.H. CONFIDENTIAL INFORMATION

In accordance with MHWMR Rule 1.16 Part 270.12, the Permittee may claim confidential any information required to be submitted by this permit.

I.I. DOCUMENTS TO BE MAINTAINED

The Permittee shall maintain at the facility the following documents and all amendments, revisions and modifications thereto:

I.I.1. Waste Analysis Plan, as required by MHWMR Rule 1.7 Part 264.13(b) and this permit;

I.I.2. Inspection schedules, as required by MHWMR Rule 1.7 Part 264.15(b) and this permit;

I.I.3. Personnel training documentation, as required by MHWMR Rule 1.7 Part 264.16(d) and (e) and this permit;

I.I.4. Contingency Plan, as required by MHWMR Rule 1.7 Part 264.53 and this permit;

I.I.5. Operating record, as required by MHWMR Rule 1.7 Part 264.73 and this permit;

I.I.6. Closure Plan, as required by MHWMR Rule 1.7 Part 264.112(a) and this permit;

I.I.7. Financial assurance documentation, as required by MHWMR Rule 1.7 Part 264, Subpart H and this permit; and

I.I.8. All other documents required by Condition I.E.9. and this permit.

MODULE II - GENERAL FACILITY CONDITIONS

II.A. FACILITY DESCRIPTION

This permit is issued to The Chemours Company FC LLC [MSD 096 046 792] as described in the permit application submitted on August 11, 2016, and subsequent Class 1 permit modifications, and hereinafter referred to as "the application". This permit authorizes the Permittee to store hazardous wastes in the Deepwell Storage Vault, the Primary Filter Storage Tanks (2), the Thickener Tanks (2), and the Splitter Feed Tanks (2). This activity is identified and described in Attachment B of this permit.

II.B. DESIGN AND OPERATION OF FACILITY

The Permittee shall maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water that could threaten human health or the environment, as required by MHWMR Rule 1.7 Part 264.31.

II.C. REQUIRED NOTICES

II.C.1. Hazardous Waste Imports

The Permittee shall not receive hazardous waste from a foreign source.

II.C.2. Hazardous Waste from Off-Site Sources

The Permittee shall not receive any hazardous waste from an off-site source.

II.C.3. Transfer of Permit

Before transferring ownership or operation of the facility during its operating life, the owner or operator must notify the new owner or operator in writing of the requirements of MHWMR Rule 1.7 Part 264 and Rule 1.16 Part 270.

II.D. GENERAL WASTE ANALYSIS

The Permittee shall follow the waste analysis procedures required by MHWMR Rule 1.7 Part 264.13, as described in the Waste Analysis Plan in Attachment C of this permit.

II.E. SECURITY

The Permittee shall comply with the security provisions of MHWMR Rule 1.7 Part 264.14(b)(2) and 264.14(c).

II.F. GENERAL INSPECTION REQUIREMENTS

The Permittee shall follow the inspection schedules set out in Attachment D of this permit. The Permittee shall remedy any deterioration or malfunction discovered by an inspection, as required by MHWMR Rule 1.7 Part 264.15(c). Records of inspections shall be kept as required by MHWMR Rule 1.7 Part 264.15(d).

II.G. PERSONNEL TRAINING

The Permittee shall conduct personnel training as required by MHWMR Rule 1.7 Part 264.16. This training program shall follow the outline contained in Attachment E of this permit. The Permittee shall maintain training documents and records as required by MHWMR Rule 1.7 Part 264.16(d) and (e).

II.H. SPECIAL PROVISIONS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE

The Permittee shall comply with the requirements of MHWMR Rule 1.7 Part 264.17(a). The Permittee shall also follow the procedures for ignitable, reactive, or incompatible waste set forth in MHWMR Rule 1.7 Part 264, Appendix V.

II.I LOCATION STANDARDS

The facility is not located in an area described in MHWMR Rule 1.7 Part 264.18(a). The active hazardous waste management unit has a slab elevation above the 100-year flood plain to achieve compliance with MHWMR Rule 1.7 Part 264.18(b)(1).

II.J. PREPAREDNESS AND PREVENTION

II.J.1. Required Equipment

At a minimum, the Permittee shall equip the facility with the equipment designated in the Contingency Plan in Attachment F of this permit, as required by MHWMR Rule 1.7 Part 264.32 and Part 264.52(e).

II.J.2. Testing and Maintenance of Equipment

As required by MHWMR Rule 1.7 Part 264.33, the Permittee shall test and maintain the equipment specified above as necessary to ensure its proper operation in time of emergency.

II.J.3. Access to Communications or Alarm System

Personnel who handle hazardous waste at the facility's hazardous waste management units shall be provided with an emergency communication device unless they are in visual or voice contact with another worker, as per MHWMR Rule 1.7 Part 264.34(a).

II.J.4. Required Aisle Space

The Permittee shall maintain adequate aisle space as outlined in MHWMR Rule 1.7 Part 264.35 at all times.

II.J.5. Arrangements with Local Authorities

The Permittee shall have coordination agreements with State, local, and emergency response authorities as required by MHWMR Rule 1.7 Part 264.37 unless attempts to make such agreements are refused. If there is a refusal to enter into preparedness and prevention agreements with the Permittee, the Permittee must document this refusal in the operating record and notify the Executive Director within thirty (30) days. Authorities shall be notified of any changes that would affect their agreements.

II.K. CONTINGENCY PLAN

II.K.1. Implementation of Plan

The Permittee shall immediately carry out the provisions of the Contingency Plan submitted in the application and hereby incorporated into the permit as Attachment F; and follow emergency procedures described by MHWMR Rule 1.7 Part 264.56 whenever there is a fire, explosion, or release of hazardous waste or hazardous constituents that threatens or could threaten human health or the environment.

II.K.2. Copies of Plan

A copy of the Contingency Plan and any revisions thereto must be maintained at the site and provided to all entities that may be called upon to provide emergency services, as required by MHWMR Rule 1.7 Part 264.53.

II.K.3. Amendments to Plan

The Permittee shall review and immediately amend, if necessary, the Contingency Plan as required by MHWMR Rule 1.7 Part 264.54. Any modification of the plan shall be made in accordance with MHWMR Rule 1.16 Part 270.42.

II.K.4. Emergency Coordination

The Permittee shall comply with the requirements of MHWMR Rule 1.7 Part 264.55 concerning the emergency coordinator.

II.L. RECORDKEEPING AND REPORTING

II.L.1. Operating Record

In addition to the recordkeeping and reporting requirements specified elsewhere in this permit, the Permittee shall maintain a written operating record at the facility in accordance with MHWMR Rule 1.7 Part 264.73. At a minimum, the following information must be recorded and maintained in the operating record until final closure (as defined in MHWMR Rule 1.1 Part 260.10) of the facility unless an alternate time frame is expressed elsewhere in this permit or is otherwise authorized by the Executive Director:

II.L.1.a. The location of each hazardous waste within the facility and the quantity at each location.

II.L.1.b. Records and results of waste analyses performed as required by the permit.

II.L.1.c. Summary reports and details of all incidents that require implementation of the Contingency Plan, as specified in MHWMR Rule 1.7 Part 264.56(j).

II.L.1.d. Records of inspections, as required by MHWMR Rule 1.7 Part 264.15(d).

II.L.1.e. Monitoring, testing, and/or analytical data; and corrective action where required by MHWMR Rule 1.7 Part 264, Subpart F, and this permit.

II.L.1.f. Waste minimization certifications as required by MHWMR Rule 1.7 Part 264.73(b)(9), Module V of this permit, and Attachment H to this permit.

II.L.1.g. Copies of manifests as required by MHWMR Rule 1.3 Part 262.40(a).

II.L.1.h. Copies of all certifications required by MHWMR Rule 1.15 Part 268.7 and 268.8.

II.L.2. Reporting

The Permittee shall report, by March 1 of each calendar year, the types and amounts of hazardous waste treated, stored, recycled, and/or disposed during the preceding calendar year, per the requirements of MHWMR Rule 1.8.

II.M. CLOSURE

The requirements of this section apply to the Deepwell Storage Vault, the Primary filter Storage Tanks, the Splitter Feed Tanks, and the Thickener Tanks as identified in Module III of this permit.

II.M.1. Performance Standard

The Permittee shall close the hazardous waste unit as required by MHWMR Rule 1.7 Part 264.111 and in accordance with the closure plan submitted and hereby incorporated into this permit in Attachment G.

II.M.2. Amendments to Closure Plan

The Permittee shall amend the closure plan in accordance with MHWMR Rule 1.7 Part 264.112(c) whenever necessary.

II.M.3. Notification of Closure

The Permittee shall notify the Executive Director prior to the date he expects to begin closure in accordance with the schedule in MHWMR Rule 1.7 Part 264.112(d)(2).

II.M.4. Time Allowed for Closure

After receiving the final volume of hazardous waste, the Permittee shall treat or remove from the site all hazardous waste in accordance with the schedules specified in the closure plan.

II.M.5. Disposal or Decontamination of Equipment, Structures, and Soils

The Permittee shall decontaminate and/or dispose of all equipment, structures, and soils as required by MHWMR Rule 1.7 Part 264.114 and the closure plan.

II.M.6. Certification of Closure

The Permittee shall certify that the unit has been closed in accordance with the closure plan and MHWMR Rule 1.7 Part 264.115.

II.N. FINANCIAL REQUIREMENTS

II.N.1. Cost Estimate for Closure

The Permittee must have a detailed written estimate of the cost of closing the facility, as per MHWMR Rule 1.7 Part 264.142(a).

II.N.1.a. The Permittee must annually adjust the closure cost estimate for inflation as required by MHWMR Rule 1.7 Part 264.142(b).

II.N.1.b. The Permittee must revise the closure cost estimate whenever there is a change in the closure plan, as required by MHWMR Rule 1.7 Part 264.142(c).

II.N.1.c. The Permittee must keep at the facility the latest closure cost estimate as required by MHWMR Rule 1.7 Part 264.142(d).

II.N.2. Financial Assurance for Facility Closure

The Permittee shall demonstrate continuous compliance with MHWMR Rule 1.7 Part 264.143 by providing documentation of financial assurance as required by MHWMR Rule 1.7 Part 264.151 in at least the amount of the cost estimates required by Condition II.N.1. of this permit. Changes in the financial assurance mechanisms must be approved by the Executive Director pursuant to MHWMR Rule 1.7 Part 264.143.

II.N.3. Other Mechanism

The Permittee may satisfy the financial assurance requirements for closure as specified by MHWMR Rule 1.7 Part 264.146.

II.N.4. Liability Requirements

The Permittee shall demonstrate continuous compliance with the requirements of MHWMR Rule 1.7 Part 264.147 and the documentation requirements of MHWMR Rule 1.7 Part 264.151 including the requirements to have and maintain liability coverage as follows:

II.N.4.a. For sudden accidental occurrences in the amount of at least $1 million per occurrence with an annual aggregate of at least $2 million, exclusive of legal costs.

II.N.4.b. Coverage is not required for nonsudden accidental occurrences.

II.N.5. Incapacity of Owners or Operators, Guarantors, or Financial Institutions

The Permittee shall comply with MHWMR Rule 1.7 Part 264.148 whenever necessary.

II.O. SPECIAL CONDITIONS

Where a discrepancy exists between the wording of an item in the application and this permit, the permit requirements take precedence over the application.

MODULE III - TANK SYSTEMS

III.A. APPLICABILITY

The requirements of this module apply to the Deepwell Storage Vault, the Primary Filter Storage Tanks, the Thickener Tanks, the Splitter Feed Tanks, transfer pumps, injection pumps, accumulators, and all associated piping and containment systems; as described in Attachment B.

III.B. PERMITTED WASTE

III.B.1. The Permittee may store hazardous waste in the Deepwell Storage Vault, the Primary Filter Storage Tanks, the Splitter Feed Tanks, and the Thickener Tanks subject to the terms and conditions of this Permit and as follows:

Unit	Capacity (gallons)	Dimensions	Description of Hazardous Waste	Waste Codes
Deepwell Storage Vault	475,000	34' x 122' x 15' 10"(avg.) depth	Iron Chloride Solution	D002 D007 D008
Primary Filter Storage Tank #1	87,240	30' diameter x 19' high	Iron Chloride Solution	D002 D007 D008
Primary Filter Storage Tank #2	67,110	27' diameter x 18' high	Iron Chloride Solution	D002 D007 D008
Thickener Tank #1	126,240	40' diam. x 12' tall conical bottom 4.25' high	Iron Chloride Solution	D002 D007 D008
Thickener Tank #2	126,240	40' diam. x 12' tall conical bottom 4.25' high	Iron Chloride Solution	D002 D007 D008
Splitter Feed Tank #1 (654-2164-85)	12,150	12' diam. x 12' tall	Iron Chloride Solution	D002 D007 D008
Splitter Feed Tank #2 (654-2164-90)	12,150	12' diam. x 12' tall	Iron Chloride Solution	D002 D007 D008

III.B.2. The Permittee is prohibited from storing or treating hazardous waste that is not identified in Condition III.B.1., except as allowed under MHWMR Rule 1.3 Part 262.34.

III.C. SECONDARY CONTAINMENT

The Permittee shall operate and maintain the secondary containment systems in accordance with MHWMR Rule 1.7 Part 264.193.

III.D. OPERATING REQUIREMENTS

III.D.1. The Permittee shall not place hazardous waste in the tank systems if said wastes could cause the tank, its ancillary equipment, or a containment system to rupture, leak, corrode, or otherwise fail.

III.D.2. The Permittee shall prevent spills or overflows from the tanks or containment systems using the methods described in Attachment B.

III.E. RESPONSE TO LEAKS OR SPILLS

In the event of a leak or spill from a tank system, from a secondary containment system, or if a system becomes unfit for continued use, the Permittee shall remove the system from service immediately and complete the following actions:

III.E.1. Stop the flow of hazardous waste into the system and inspect the system to determine the cause of the release.

III.E.2. Remove waste and accumulated precipitation from the system within twenty-four (24) hours of the detection of the leak to prevent further release and to allow for inspection and repair of the system. If the Permittee finds that it will be impossible to meet this time period, the Permittee shall notify the Executive Director and demonstrate that the longer period is required.

III.E.2.a. If the collected material is a hazardous waste, it must be managed with all applicable requirements of the Mississippi Hazardous Waste Management Regulations.

III.E.3. Contain visible releases to the environment. The Permittee shall immediately conduct a visual inspection of all releases to the environment and based on that inspection shall:

III.E.3.a. Prevent further migration of the leak or spill to soils or surface water, and

III.E.3.b. Remove and properly dispose of any visible contamination of the soil or surface water.

III.E.4. Close the system in accordance with the Closure Plan in Attachment G unless the following actions are taken:

III.E.4.a. For a release caused by a spill that has not damaged the integrity of the system, the Permittee shall remove the released waste and make any necessary repairs to fully restore the integrity of the system before returning the tank system to service.

III.E.4.b. For a release caused by a leak from the primary tank system to the secondary containment system, the Permittee shall repair the primary system prior to returning it to service.

III.E.4.c. For a release to the environment caused by a leak from the aboveground portion of the tank system that does not have secondary containment and can be visually inspected the Permittee shall repair the tank system before returning it to service.

III.E.4.d. If the Permittee replaces a component of the tank system to eliminate the leak, that component must satisfy the requirements for new tank systems or components in MHWMR Rule 1.7 Part 264.192 and Part 264.193.

III.E.5. For all major repairs to eliminate leaks or restore the integrity of the tank system, the Permittee must obtain a certification by an independent, qualified registered professional engineer that the repaired system is capable of handling hazardous wastes without release for the intended life of the system before returning the system to service. Examples of major repairs are: installation of an internal liner, repair of a ruptured tank, or repair/replacement of the secondary containment unit.

III.F INSPECTION SCHEDULES AND PROCEDURES

III.F.1. The Permittee shall inspect the tank systems in accordance with the inspection schedule in Attachment D and shall complete the items below as part of those inspections.

III.F.2. The Permittee shall inspect the overfill controls in accordance with the inspection schedule in Attachment D.

III.F.3. The Permittee shall inspect the following components of the tank systems once each operating day:

III.F.3.a. Aboveground portions of the tank systems to detect deterioration or releases of waste;

III.F.3.b. Data gathered from monitoring and leak detection equipment to ensure that the tank system is being operated according to its design;

III.F.3.c. Construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system, to detect erosion or signs of releases of hazardous waste.

III.F.4. The Permittee shall document compliance with Conditions III.F.2. and III.F.3. and place this documentation in the operating record.

III.G. RECORDKEEPING AND REPORTING

III.G.1. The Permittee shall report to the Executive Director within twenty-four (24) hours of detection when a leak or spill occurs from a tank system or secondary containment system to the environment, unless:

III.G.1.a. The leak or spill consisted of one pound or less of hazardous waste and was immediately contained or cleaned up; or

III.G.1.b. The release was contained within the secondary containment system.

III.G.2. Within thirty (30) days of detecting a release to the environment from a tank system or secondary containment system, the Permittee shall report the following to the Executive Director:

III.G.2.a. Likely route of migration of the release;

III.G.2.b. Characteristics of the surrounding soil, including soil composition, geology, hydrogeology, and climate;

III.G.2.c. Results of any monitoring or sampling conducted in connection with the release. If the Permittee finds it will be impossible to meet this time period, the Permittee should provide the Executive Director with a schedule of when the results will be available. This schedule must be provided before the required thirty (30) day submittal period expires.

III.G.2.d. Proximity of downgradient drinking water, surface water, and populated areas; and

III.G.2.e. Description of response actions taken or planned.

III.G.3. The Permittee shall submit to the Executive Director all certifications of major repairs (as defined in Condition III.E.5.) to correct leaks within seven (7) days from returning the tank system to use.

III.G.4. The Permittee shall keep on file at the facility the written assessment of the integrity of the tank system.

III.H. CLOSURE AND POST-CLOSURE

III.H.1. At closure of a tank system the Permittee shall follow the procedures in the Closure Plan in Attachment G.

III.H.2. If the Permittee demonstrates that not all contaminated soils can be practically removed or decontaminated in accordance with the Closure Plan, then the Permittee shall close the tank system and perform post-closure care.

III.I. SPECIAL PROVISIONS

III.I.1. The Permittee shall not place ignitable or reactive waste into the tank system.

III.I.2. The Permittee shall not place incompatible wastes, or incompatible wastes and materials, into the tank system; including any secondary containment areas.

III.I.3 The Permittee shall inspect the rubber liner of each Thickener Tank at least once each calendar year for signs of damage or deterioration, and perform any needed repair or replacement.

MODULE IV - WASTE MINIMIZATION

IV.A. APPLICABILITY

Pursuant to MHWMR Rule 1.7 Part 264.73(b)(9); Section 3005(h) of RCRA, 42 U.S.C. 6925(h); and Section 49-31-1 et seq., Mississippi Code of 1972; the Permittee must certify, no less than annually, that:

IV.A.1. The Permittee has a program in place to reduce the volume and toxicity of hazardous waste generated to the degree determined by the Permittee to be economically practicable; and

IV.A.2. The proposed method of treatment, storage, or disposal is the most practical method available to the Permittee that minimizes the present and future threat to human health and the environment.

IV.B. SCOPE

The Waste Minimization program under Condition V.A. should address the objectives in Attachment H.

IV.C. RECORDKEEPING AND REPORTING

IV.C.1. Annually the Permittee shall submit a certification report of the types and quantities of waste generated, and the types and quantities of waste reduced/minimized. This certified report shall include a narrative study explaining the waste generation and minimization data, a description of goals and progress made in reducing/minimizing the generation of wastes, and a description of any impediments to the reduction and minimization of waste.

IV.C.2. The Permittee shall maintain copies of this certification in the facility operating record as required by Condition II.L.1.f. of this permit.

MODULE V - LAND DISPOSAL RESTRICTIONS

V.A. GENERAL RESTRICTIONS

V.A.1. MHWMR Rule 1.15 Part 268 identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances which an otherwise prohibited waste may continue to be placed on or in a land treatment, storage or disposal unit. The Permittee shall maintain compliance with the requirements of MHWMR Rule 1.15 Part 268. Where the Permittee has applied for an extension, waiver or variance under MHWMR Rule 1.15 Part 268, the Permittee shall comply with all restrictions on land disposal under this Module once the effective date for the waste has been reached pending final approval of such application.

V.B. LAND DISPOSAL PROHIBITIONS AND TREATMENT STANDARDS

V.B.1. A restricted waste identified in MHWMR Rule 1.15 Part 268 Subpart C may not be placed in a land disposal unit without further treatment unless the requirements of MHWMR Rule 1.15 Part 268 Subparts C and/or D are met.

V.B.2. The storage of hazardous wastes restricted from land disposal under MHWMR Part 268 is prohibited unless the requirements of MHWMR Rule 1.15 Part 268 Subpart E are met.

MODULE VI - ORGANIC AIR EMISSION REQUIREMENTS

VI.A. GENERAL INTRODUCTION

VI.A.1. In the June 21, 1990, Federal Register, EPA published the final rule for Phase I Organic Air Emission Standards (40 CFR Parts 264 and 265, Subparts AA and BB) for hazardous waste treatment, storage, and disposal facilities. Phase II Organic Air Emission Standards (40 CFR Parts 264 and 265, Subpart CC) was published in the Federal Register on December 6, 1994. The State of Mississippi adopted Subparts AA and BB in September 1990 and Subpart CC in December 2000. Subpart AA contains emission standards for process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, and air or steam stripping operations that process hazardous waste with an annual average total organic concentration of at least ten (10) parts per million (ppm) by weight. Subpart BB contains emission standards that address leaks from specific equipment (i.e. pumps, valves, compressors, etc.) that contains or contacts hazardous waste that has an organic concentration of at least ten (10) percent by weight. Subpart CC contains emissions standards for tanks, surface impoundments, or containers for which all hazardous waste entering a unit has an average volatile organic concentration at the point of waste origination of less than 500 parts per million (ppm) by weight.

VI.B. ORGANIC AIR EMISSION STANDARDS

VI.B.1. Prior to constructing any equipment with process vents subject to the requirements of MHWMR Rule 1.7 Part 264, Subpart AA, or installing any additional equipment subject to the requirements of MHWMR Rule 1.7 Part 264, Subpart BB, or installing any tanks, surface impoundments, and containers subject to the requirements of MHWMR Rule 1.7 Part 264, Subpart CC, the Permittee shall supply the specific Part B information required pursuant to MHWMR Rule 1.16 Part 270.24, Part 270.25, and Part 270.27, as applicable.

ATTACHMENT A

RCRA Hazardous Waste Part A Permit Application

OMB# 2050-0024; Expires 01/31/2017

SEND COMPLETED FORM TO: The Appropriate State or Regional Office.

United States Environmental Protection Agency
RCRA SUBTITLE C SITE IDENTIFICATION FORM

1. Reason for Submittal (MARK ALL BOX(ES) THAT APPLY)

Reason for Submittal:

- ☐ To provide an Initial Notification (first time submitting site identification information / to obtain an EPA ID number for this location)
- ☒ To provide a Subsequent Notification (to update site identification information for this location)
- ☐ As a component of a First RCRA Hazardous Waste Part A Permit Application
- ☐ As a component of a Revised RCRA Hazardous Waste Part A Permit Application (Amendment #_____)
- ☐ As a component of the Hazardous Waste Report (If marked, see sub-bullet below)
  - ☐ Site was a TSD facility and/or generator of >1,000 kg of hazardous waste, >1 kg of acute hazardous waste, or >100 kg of acute hazardous waste spill cleanup in one or more months of the report year (or State equivalent LQG regulations)

2. Site EPA ID Number

EPA ID Number: MSD096046792

3. Site Name

Name: DeLisle Plant

4. Site Location Information

Street Address: 7685 Kiln DeLisle Road

City, Town, or Village: Pass Christian | County: Harrison

State: MS | Country: USA | Zip Code: 39571

5. Site Land Type

☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other

6. NAICS Code(s) for the Site (at least 5-digit codes)

A. 32513 0 | C.

B. | D.

7. Site Mailing Address

Street or P.O. Box: P.O. Box 430

City, Town, or Village: Pass Christian

State: MS | Country: USA | Zip Code: 39571

8. Site Contact Person

First Name: Suzanne | MI: W | Last: Gibson

Title: Plant Environmental Consultant

Street or P.O. Box: P.O. Box 430

City, Town or Village: Pass Christian

State: MS | Country: 39571 | Zip Code: 39571

Email: suzanne.gibson@chemours.com

Phone: (228) 255-2479 | Ext.: ----- | Fax: (228) 255-2243

9. Legal Owner and Operator of the Site

A. Name of Site's Legal Owner: The Chemours Company FC, LLC | Date Became Owner: 02/01/2015

Owner Type: ☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other

Street or P.O. Box: 7685 Kiln DeLisle Road

City, Town, or Village: Pass Christian | Phone: (228) 255-2300

State: MS | Country: USA | Zip Code: 39571

B. Name of Site's Operator: The Chemours Company FC, LLC - DeLisle Plant | Date Became Operator: 02/01/2015

Operator Type: ☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other

EPA ID Number | M | S | D | 0 | 9 | 6 | 0 | 4 | 6 | 7 | 9 | 2 |

OMB#: 2050-0024; Expires 01/31/2017

10. Type of Regulated Waste Activity (at your site)
Mark "Yes" or "No" for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

A. Hazardous Waste Activities; Complete all parts 1-10.

Y ☑ N ☐ **1. Generator of Hazardous Waste**
If "Yes," mark only one of the following – a, b, or c.

- ☑ a. LQG: Generates, in any calendar month, 1,000 kg/mo (2,200 lbs/mo.) or more of hazardous waste; or Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lbs/mo) of acute hazardous waste; or Generates, in any calendar month, or accumulates at any time, more than 100 kg/mo (220 lbs/mo) of acute hazardous spill cleanup material.
- ☐ b. SQG: 100 to 1,000 kg/mo (220 – 2,200 lbs/mo) of non-acute hazardous waste.
- ☐ c. CESQG: Less than 100 kg/mo (220 lbs/mo) of non-acute hazardous waste.

If "Yes" above, indicate other generator activities in 2-10.

Y ☐ N ☑ **2. Short-Term Generator** (generate from a short-term or one-time event and not from on-going processes). If "Yes," provide an explanation in the Comments section.

Y ☐ N ☑ **3. United States Importer of Hazardous Waste**

Y ☐ N ☑ **4. Mixed Waste (hazardous and radioactive) Generator**

Y ☐ N ☑ **5. Transporter of Hazardous Waste**
If "Yes," mark all that apply.

- ☐ a. Transporter
- ☐ b. Transfer Facility (at your site)

Y ☑ N ☐ **6. Treater, Storer, or Disposer of Hazardous Waste Note: A hazardous waste Part B permit is required for these activities.**

Y ☐ N ☑ **7. Recycler of Hazardous Waste**

Y ☐ N ☑ **8. Exempt Boiler and/or Industrial Furnace**
If "Yes," mark all that apply.

- ☐ a. Small Quantity On-site Burner Exemption
- ☐ b. Smelting, Melting, and Refining Furnace Exemption

Y ☑ N ☐ **9. Underground Injection Control**

Y ☐ N ☑ **10. Receives Hazardous Waste from Off-site**

B. Universal Waste Activities; Complete all parts 1-2.

Y ☐ N ☑ **1. Large Quantity Handler of Universal Waste** (you accumulate 5,000 kg or more) [refer to your State regulations to determine what is regulated]. **Indicate types of universal waste managed at your site. If "Yes," mark all that apply.**

- a. Batteries ☐
- b. Pesticides ☐
- c. Mercury containing equipment ☐
- d. Lamps ☐
- e. Other (specify) _____ ☐
- f. Other (specify) _____ ☐
- g. Other (specify) _____ ☐

Y ☐ N ☑ **2. Destination Facility for Universal Waste**
Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities; Complete all parts 1-4.

Y ☐ N ☑ **1. Used Oil Transporter**
If "Yes," mark all that apply.

- ☐ a. Transporter
- ☐ b. Transfer Facility (at your site)

Y ☐ N ☑ **2. Used Oil Processor and/or Re-refiner**
If "Yes," mark all that apply.

- ☐ a. Processor
- ☐ b. Re-refiner

Y ☐ N ☑ **3. Off-Specification Used Oil Burner**

Y ☐ N ☑ **4. Used Oil Fuel Marketer**
If "Yes," mark all that apply.

- ☐ a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
- ☐ b. Marketer Who First Claims the Used Oil Meets the Specifications

D. **Eligible Academic Entities with Laboratories—Notification for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR Part 262 Subpart K**

- ❖ You can ONLY Opt into Subpart K if:
  - you are at least one of the following: a college or university; a teaching hospital that is owned by or has a formal affiliation agreement with a college or university; or a non-profit research institute that is owned by or has a formal affiliation agreement with a college or university; AND
  - you have checked with your State to determine if 40 CFR Part 262 Subpart K is effective in your state

Y☐ N☐ 1. Opting into or currently operating under 40 CFR Part 262 Subpart K for the management of hazardous wastes in laboratories **See the item-by-item instructions for definitions of types of eligible academic entities. Mark all that apply:**

☐ a. **College or University**

☐ b. **Teaching Hospital that is owned by or has a formal written affiliation agreement with a college or university**

☐ c. **Non-profit institute that is owned by or has a formal written affiliation agreement with a college or university**

Y☐ N☐ 2. Withdrawing from 40 CFR Part 262 Subpart K for the management of hazardous wastes in laboratories

11. **Description of Hazardous Waste**

A. **Waste Codes for Federally Regulated Hazardous Wastes.** Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if more spaces are needed.

D001	D002	D004	D005	D006	D007	D008
D009	D010	D011	D018	D035	D039	D040
F003	F005	U210				

B. **Waste Codes for State-Regulated (i.e., non-Federal) Hazardous Wastes.** Please list the waste codes of the State-Regulated hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed.

EPA ID Number | M | S | D | 0 | 9 | 6 | 0 | 4 | 6 | 7 | 9 | 2 |

OMB#: 2050-0024; Expires 01/31/2017

12. Notification of Hazardous Secondary Material (HSM) Activity

Y ☐ N ☑ Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 261.2(a)(2)(ii), 40 CFR 261.4(a)(23), (24), or (25)?

If "Yes," you must fill out the Addendum to the Site Identification Form: Notification for Managing Hazardous Secondary Material.

13. Comments

New EPA Form 8700-12 is submitted due to change in facility ownership only.

There is no change in facility operations.

14. Certification. 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 that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. For the RCRA Hazardous Waste Part A Permit Application, all owner(s) and operator(s) must sign (see 40 CFR 270.10(b) and 270.11).

Signature of legal owner, operator, or an authorized representative	Name and Official Title (type or print)	Date Signed (mm/dd/yyyy)
Mark H. Smith	Mark H. Smith	08/11/2016

ATTACHMENT B

Facility Description/List of Figures

General Facility Description

Figure 1 Facility Property Currently Owned

Figure 2 Facility Ownership Transactions

Figure 3 Facility Process Area

Figure 4 Iron Chloride System Flow Diagram

RCRA Part B Permit Application
DuPont DeLisle Plant
EPA ID MSD096046792

Iron Chloride Management

Module B-1
General Facility Description

This document provides a description of the DuPont DeLisle Plant hazardous waste management facility as required under the Resource Conservation and Recovery Act in accordance with Mississippi Hazardous Waste Management Regulations (MHWMR) Section 270.14(b)(1).

E. I. duPont de Nemours and Company owns and operates a titanium dioxide manufacturing facility in DeLisle, MS (DeLisle Plant). The facility is located on the north shore of St. Louis Bay in Harrison County. The plant is about one-quarter of a mile south of Interstate 10 at Exit 20 on Kiln-DeLisle Road. It is about 60 miles east of New Orleans, LA, and 20 miles west of Gulfport, MS. The DeLisle Plant is an existing, on-site facility approximately 2500 acres in size with a developed area of about 200 acres. The plant operates two identical production lines, Line 1 and Line 2.Line 1 began production in September 1979. Line 2 began production in October 1991.

Ilmenite ore is processed at the facility to separate titanium dioxide from other metal oxides. Titanium dioxide is a white pigment used in plastics, paints, paper, textile fibers, and in many other materials that require whiteness, brightness and opacity. The titanium dioxide is treated to impart the desired properties. The majority of the DeLisle Plant's product is used in paints and plastics.

The production lines each consist of three major process units: Reaction, Oxidation, and Finishing. The Reaction process reacts the raw materials; ilmenite ore, coke and chlorine; in a fluidized bed reactor. In this step, titanium dioxide in the ore is converted to titanium tetrachloride. Ore impurities, predominately iron oxides, are chlorinated along with the titanium dioxide to become metal chlorides. These metal chlorides comprise the hazardous waste by-product iron chloride solution. The titanium tetrachloride intermediate is purified and is sent to Oxidation where it is oxidized in a second reactor to form titanium dioxide. Chlorine gas regenerated in the Oxidation reactor is returned via closed loop for reuse in Reaction. The titanium dioxide from Oxidation is processed in Finishing to give the product its desired properties.

Waste Regulatory Status and Description

The DuPont DeLisle Plant generates, treats, stores and disposes of characteristically RCRA-hazardous iron chloride solution from the Reaction process. Determining when a secondary material is a solid waste under RCRA regulations is very complicated, particularly when streams are recycled, reused, and/or reclaimed. The nature of the material, the process of generation, the methods of recycle or reuse, the types of management units, whether the material is reclaimed, and how it is reclaimed must all be evaluated to determine a classification. The DeLisle Plant has iron chloride streams within the production process that are not classified as RCRA wastes when all of these issues are considered. The waste characterization described below applies to iron chloride solution that is classified as RCRA hazardous waste.

Iron chloride solution is a waste acid from the production of titanium tetrachloride by the chloride-ilmenite process. It became RCRA-hazardous when the Mississippi Department of Environmental Quality (MDEQ) adopted EPA's final Mining Waste Rule (54 Federal Register 36592, September 1, 1989). Two identical production lines generate the waste iron chloride solution and send it to a common management facility, which is called the Environmental Area.

The waste stream, as generated, is a liquid stream with a nominal four percent (4%) solids by weight. The solids are unreacted coke and ore that are entrained with the waste acid when it leaves the production process. These chloride process waste solids retain the mining waste exemption in RCRA regulations at MHWMR 261.4(b)(7)(ii)(S). The solids are separated from the acid in several stages, which include flocculation and mechanical filtration. Neutralization of these Bevill-exempt solids takes place after they are filtered from the iron chloride solution. If return to the production process is not possible, they are disposed in an on-site solid waste disposal facility. Analyses of these solids using the Toxicity Characteristic Leaching Procedure (TCLP) shows that all toxic constituents are well below the regulatory levels and are non-hazardous waste.

Final disposition of the waste acid is via four Class I injection wells permitted under the Underground Injection Control Program. The filtered waste has an approximate specific gravity ranging from 1.1 to 1.3.Tank storage is utilized between treatment stages and before injection.

Applicable waste codes for the DuPont DeLisle Plant's iron chloride solution are:

D002	Corrosive	pH < 2.0
D007	Toxic - Chromium	Cr > 5.0 mg/l
D008	Toxic – Lead	Pb > 5.0 mg/l

These characteristics are determined using process knowledge and monitoring data.

The DuPont DeLisle Plant operates a Recycle Water Storage Facility. The Recycle Water Vaults provide only tank storage for recirculating process water stream. Recirculation of process water does not constitute waste management. A notification that DuPont is claiming the conditional exclusion from the definition of solid waste under MHWMR 261.4(a)(17) was submitted to MDEQ on May 21, 1999, for this process stream.

Waste Handling Methods

The DuPont DeLisle Plant manages iron chloride solution in tanks and underground injection wells. This section provides a description of the waste handling methods as defined in the recordkeeping instructions in MHWMR Part 264 Appendix I.

It has been the policy of the DuPont Company to reduce wastes to the maximum extent possible. MDEQ's RCRA regulations recognize the benefits of minimization by providing exemptions for certain recycling activities. The DeLisle Plant has set goals to maximize the reuse of secondary materials in order to reduce emissions, preserve resources and improve process efficiency. Working toward that end, several recycling projects have been implemented at the DeLisle Plant that reduce the volume of landfilled solids. A portion of the solids entrained in the iron chloride solution and removed in the treatment process are reclaimed and returned to the production process to produce titanium dioxide.

Several tanks at the DuPont DeLisle Plant are operated according to the requirements of MHWMR 262.34. The Gravity Settlers, Primary Filters and Polish Filters are being managed as less-than-90-day treatment tanks. Therefore, these are not being included in this RCRA permit application.

This permit application seeks to include the seven tanks listed below and discussed in this RCRA permit application (these tanks were also included in the prior RCRA permit):

- Thickeners 1 and 2
- Splitter Feed Tanks 1 and 2
- Primary Filter Storage Tanks 1 and 2
- Deepwell Storage Vault

The description of waste handling methods is provided below for treatment, storage and disposal (TSD) units that require a RCRA permit.

Treatment

T45 – Thickening

The DeLisle Plant operates two RCRA treatment tanks for iron chloride management which are included in this permit application. The Thickener 1 tank was placed in service in 1982 and the Thickener 2 tank was placed in service in 1996.

Storage

S02 - Tank Storage

The DeLisle Plant operates five RCRA storage tanks for iron chloride management. The Deepwell Storage Vault (DWSV) has been operated under a RCRA permit since it was placed in service in 1996. Two Splitter Feed Tanks (operated since 2005) and two Primary Filter Storage Tanks (operated since 1994).

Disposal

D79 - Underground Injection

The filtered iron chloride solution is injected into one of four underground injection wells. These wells are called Deepwells 2, 3, 4 and 5. The deepwells operate under the Safe Drinking Water Act Underground Injection Control (UIC) Program under Permit Number MSI1001, which was most recently renewed/ reissued by MDEQ on December 11, 2007 and authorized an additional deepwell # 6. Deepwell 6 is not yet in operation. These are the only land-based disposal units for RCRA-hazardous waste at the DuPont DeLisle Plant.

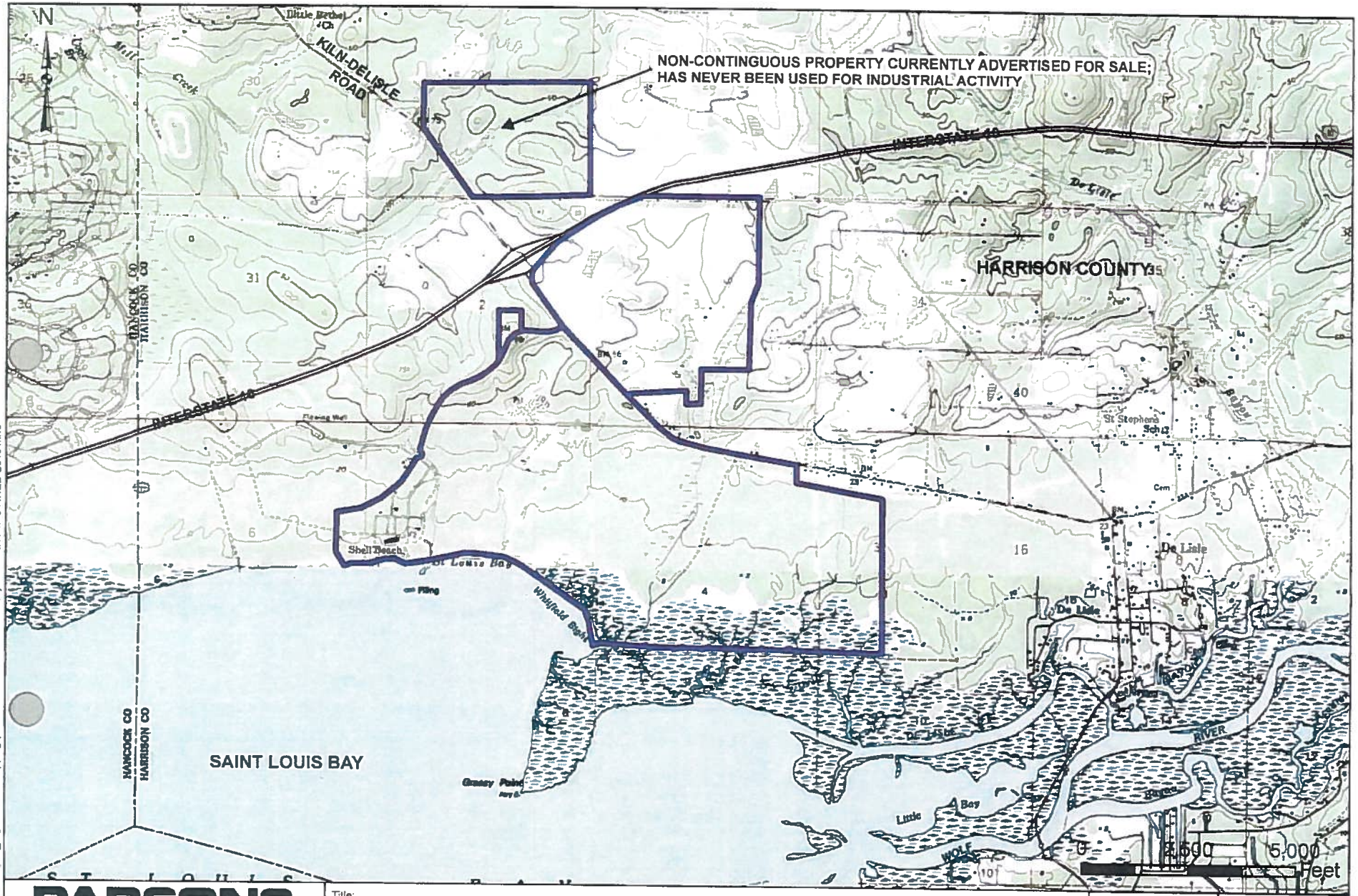
Land Disposal Restrictions (LDRs) for mineral processing wastes were promulgated in the Phase IV final rule May 26, 1998 (63 FR 28555). This rule set treatment standards for iron chloride solution effective August 24, 1998. EPA provided a two-year national capacity variance for underground injection of titanium dioxide mineral processing wastes, which expired on May 26, 2000. After that date, underground injected waste must be deactivated (DEACT) and must meet Universal Treatment Standards for all underlying hazardous constituents reasonably expected to be present. A "No-Migration Demonstration" petition was submitted to EPA Region IV to allow the DuPont DeLisle Plant to continue injection of this waste beyond May 26, 2000. EPA approved the petition on May 5, 2000. A copy of the approval notice was sent to MDEQ Hazardous Waste Permitting Division on May 12, 2000.

In addition to the restrictions for land disposal, 40 CFR 268.50 prohibits storage of hazardous waste that is restricted from land disposal unless certain conditions are met. These conditions and DeLisle Plant compliance relative to iron chloride solution are discussed below:

The DeLisle Plant stores iron chloride solution in tanks in accordance with MHWMR 262.34 (less than 90 day tanks) solely for the purpose of accumulation of such quantities to facilitate treatment and disposal. Each tank is clearly marked "Hazardous Waste", and the date each period of accumulation begins is recorded and maintained in the Environmental Area as part of the RCRA Operating Record.

The DeLisle Plant also stores iron chloride solution in a permitted storage tank called the Deepwell Storage Vault which has a volume of 475,000 gallons. Approximately 300-400 million gallons pass through this tank annually and are disposed in the on-site deepwells. That volume represents over 600 tank turn-overs each year. This material leaves the DWSV to enter the deepwells, and no other waste enters the deepwells except from the DWSV. Only a small stream is used to generate filter aid material. Therefore, records of deepwell disposal volumes and the volume of the tanks can be used to demonstrate that waste is not stored for longer than one year in the DWSV.

The Thickeners, Splitter Feed Tanks, and Primary Filter Storage Tanks are also permitted tanks and receive iron chloride solution. The Thickeners hold approximately 126,240 gallons each. Primary Filter Storage Tank 1 holds 87,240 gallons, and Primary Filter Storage Tank 2 holds 67,110 gallons. The Splitter Feed Tanks hold 12, 500 gallons each. Flow through each of these tanks is approximately half of the flow through the Deepwell Storage Vault. Therefore, the volume of the tanks and the rate of disposal can be used to demonstrate that the waste is not stored for longer than one year.



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PARSONS

Parsons Environment & Infrastructure

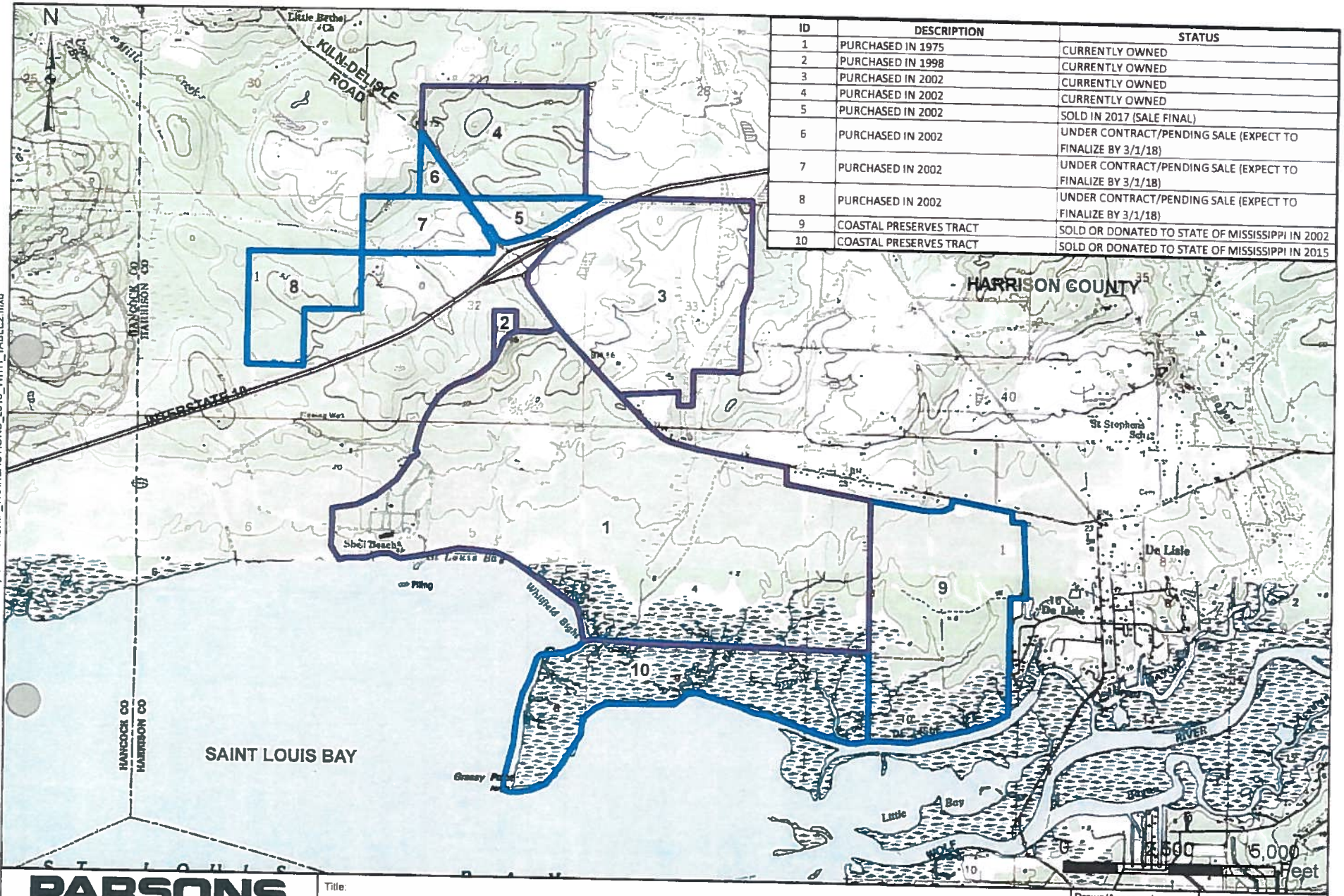
2200 West Loop South
Suite 200
Houston, Texas 77027

Title:

Currently Owned

Chemours DeLisle Plant

Drawn/Approved: RAH/SG	File Project Number: 450886.02060
Date: 2/22/2018	Figure Number: 1
Revised:	
File Name: CURRENTLY OWNED 2018	



ID	DESCRIPTION	STATUS
1	PURCHASED IN 1975	CURRENTLY OWNED
2	PURCHASED IN 1998	CURRENTLY OWNED
3	PURCHASED IN 2002	CURRENTLY OWNED
4	PURCHASED IN 2002	CURRENTLY OWNED
5	PURCHASED IN 2002	SOLD IN 2017 (SALE FINAL)
6	PURCHASED IN 2002	UNDER CONTRACT/PENDING SALE (EXPECT TO FINALIZE BY 3/1/18)
7	PURCHASED IN 2002	UNDER CONTRACT/PENDING SALE (EXPECT TO FINALIZE BY 3/1/18)
8	PURCHASED IN 2002	UNDER CONTRACT/PENDING SALE (EXPECT TO FINALIZE BY 3/1/18)
9	COASTAL PRESERVES TRACT	SOLD OR DONATED TO STATE OF MISSISSIPPI IN 2002
10	COASTAL PRESERVES TRACT	SOLD OR DONATED TO STATE OF MISSISSIPPI IN 2015

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PARSONS

Parsons Environment & Infrastructure

2200 West Loop South
Suite 200
Houston, Texas 77027

Title:

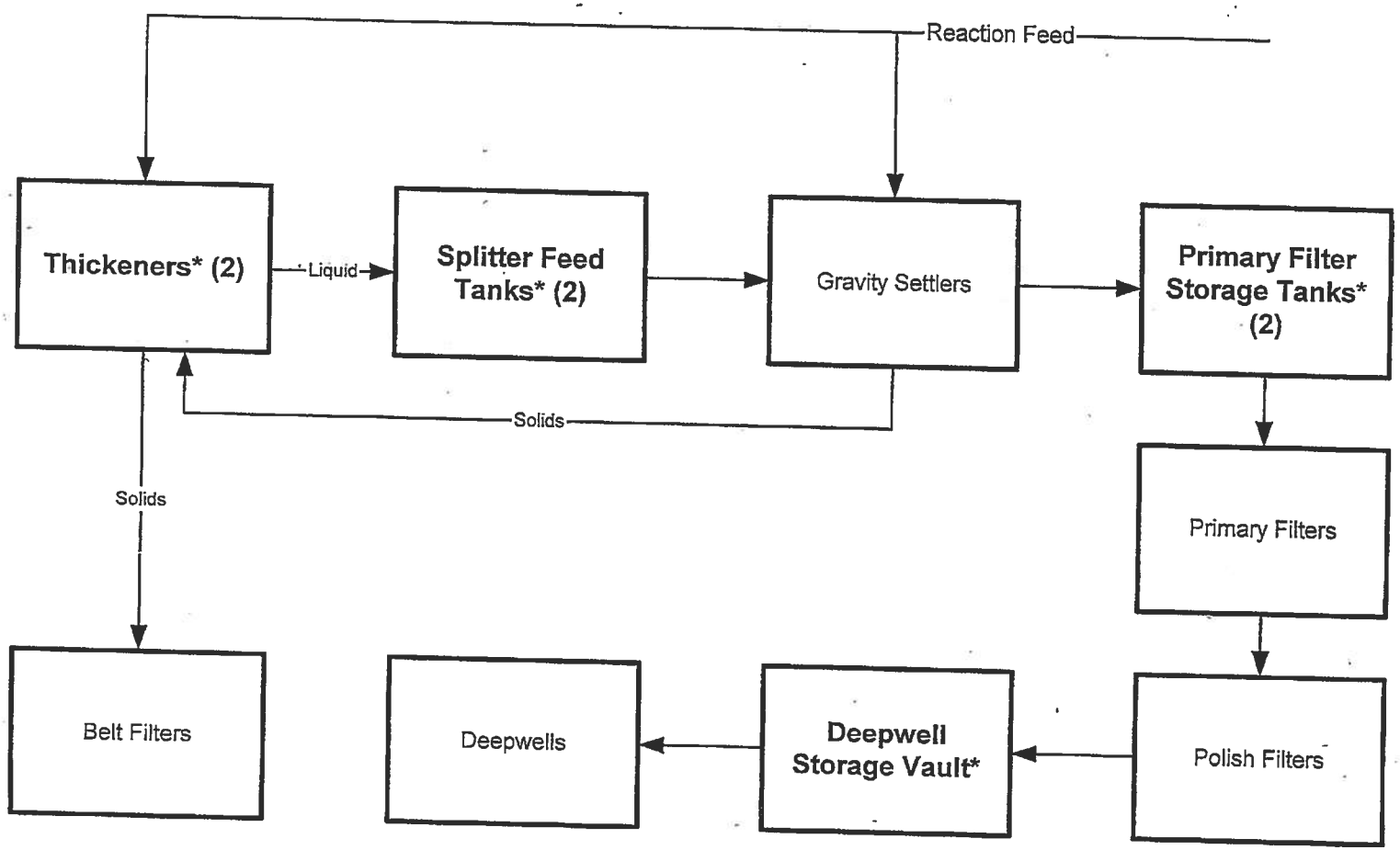
Ownership Transactions

Chemours DeLisle Plant

Drawn/Approved: RAH/SG	File Project Number: 450886.02060
Date: 2/22/2018	Figure Number: 2
Revised:	
File Name: OWNERSHIP_TRANSACTIONS_2018_WITH_TABLE2	


PRODUCTION WELLS
#3
#4
UIC7
DEEPWELL #5
HWM
OBSERVATION WELLS
BLAKE LAKE
UIC2
UIC1
UIC3
HWM
006
DEEPWELLS #2, #3, #4
DEVELOPED PLANT AREA
DERA WELL
001
D SCHARGE
Whitfield Bight
004
MONITOR DEEPWELL #1
Grassy Point
De Lisle
Little Bay
WOLF
ALEXANDER
Shallow Area
Flowing Well
N
O U I S
B A Y
○ – LOCAL DRINKING WATER WELLS
◎ – DEEPWELL INJECTION POINTS

Figure 3



* Permitted Tanks

DuPont DeLisle Plant Environmental Area Iron Chloride System Flow Diagram

ATTACHMENT C

Waste Analysis Plan

RCRA Part B Permit Application
DuPont DeLisle Plant
Iron Chloride Management

Module C
Waste Characteristics

This section provides waste characteristics for iron chloride solution. The information is provided in accordance with MHWMR 270.14(b)(2), 270.14(b)(3) and 264.13(a) and (b). The requirements of MHWMR 264.13(c) are not applicable because the DuPont DeLisle Plant does not accept waste from off-site facilities. No ignitable, reactive or incompatible wastes are handled at the facility; therefore, the requirements of MHWMR 264.17 are not applicable.

The DeLisle Plant does not manage hazardous waste in a landfill, incinerator, distillation, fractionation, thin-film evaporation, solvent extraction, air or steam stripping unit. Iron chloride solution does not contain organics in concentrations of 10 percent by weight or greater. The requirements of MHWMR 264 Subpart N, O, AA and BB as referenced in MHWMR 264.13(b)(6) do not apply. The DuPont DeLisle Plant does not treat iron chloride solution in a surface impoundment; therefore, the requirements of MHWMR 264.13(b)(7) and 268.4 do not apply. Applicability of other MHWMR 268 requirements is addressed in Module C-3.

The DuPont DeLisle Plant manages hazardous waste that contains more than 500 ppmw volatile organic compounds (VOCs) only at a 90-day hazardous waste container storage facility operated under MHWMR 262.34. Hazardous wastes managed at this facility are stored in containers smaller than 26 gallons or in containers less than or equal to 55 gallons that meet the Container Level 1 standards of MHWMR 264.1086(c). Therefore, the requirements of MHWMR 264.1083 as referenced in MHWMR 264.13(b)(6) do not apply to this waste analysis plan.

Module C-1
Chemical and Physical Analysis

The analytical data in this sectin provides all the information necessary to treat, store and dispose of the waste in accordance with MHWMR 264.

Waste analysis data are presented in Tables C-1 and C-2. Average, standard deviation, minimum and maximum values are reflected from samples collected between January 2009 and December 2013. Table C-1 represents monthly concentrations for iron (Fe), chlorides (Cl^-), specific gravity, total suspended solids (TSS) and total organic carbon (TOC). Temperature, hydrogen chloride (HCl) and water (H_2O) are ranges. Data in Table C-1 is collected for the Underground Injection Control Permit. Table C-2 represents quarterly averages for metals concentrations from analysis of composite samples. The data in Table C-2 is collected for threshold reporting determinations under the Toxic Release Inventory program.

A TCLP analysis of the iron chloride solution indicating leachable concentrations for chromium and lead has not been performed. In 55 Federal Register 26986 (June 29, 1990), the scope and application of the Toxicity Characteristic Leaching Procedure (TCLP - EPA Method 1311, Section 1.3) states:

> If an analysis of any one of the liquid fractions of the TCLP extract indicates that a regulated compound is present at such high concentrations that, even after accounting for dilution from the other fractions of the extract, the concentration would be equal to or above the regulatory level for that compound, then the waste is hazardous and it is not necessary to analyze the remaining fractions for the extract.

Section 2.1 of the method defines the waste, after filtration through a 0.6 to 0.8 um filter, as the TCLP extract for liquid wastes containing less than 0.5% dry solid materials. This stream is filtered in the field and contains approximately 10 mg/l solids. Therefore, total constituent analysis is used to determine toxicity of the waste. Also, pH analysis of this waste stream is not available. Measurement of pH at such low levels as the iron chloride waste stream requires special instruments. Even with special instruments, the pH probes are not resistant to such corrosive materials and must be replaced frequently. The waste contains a nominal 3% HCl by weight. Because pH is defined as the negative logarithm of the hydrogen ion activity, a solution with a specific gravity of 1.2 and 3% HCl has a pH of zero or less. According to chemical references, the pH of a Normal (1N, or 36 grams HCl per liter) hydrochloric acid solution is 0.1.

Table C-1
Waste Analysis of Iron Chloride Solution
Underground Injection Control Data
2009-2013

Parameter	Average	Range	
		Lower	Upper
Temperature, ^{o}C		2	111
Specific Gravity	1.198	1.082	1.25
Fe, ppm	71,560	49,600	87,200
Chlorides, ppm	261,000	91,000	550,000
TSS, ppm	9.2	1	32
TOC, ppm	2.8	<10	<10
% HCl		2.0	5.0
% H_2O		60	80

Table C-2
Waste Analysis of Iron Chloride Solution
Toxic Release Inventory Reporting

	2009-2013 Data Average (mg/kg)
Silver	0.70
Arsenic	0.86
Barium	16.3
Beryllium	0.26
Cadmium	0.48
Cobalt	13.1
Chromium	771.2
Copper	1.77
Mercury	0.03
Manganese	3050.8
Nickel	31.3
Lead	85.9
Antimony	0.
Selenium	1.18
Thallium	0.06
Vanadium	393.3
Zinc	91.5

Module C-2
Waste Analysis Plan

I. INTRODUCTION

The DuPont DeLisle Plant generates characteristically RCRA-hazardous waste acid from the production of titanium tetrachloride. This waste stream is generated and managed on site only in the operating area designated as the Environmental Area. No other locations on the plant manage waste iron chloride solution, and the waste is not transported off-site. The hazardous waste management units consist of tanks, associated piping, deep injection wellheads and underlying containment systems.

The waste stream consists of ferrous chloride, ferric chloride, miscellaneous metal chlorides, hydrogen chloride, and water. The stream is a wastewater containing lead and chromium above the toxicity characteristic regulatory levels and also contains vanadium, which is a constituent identified in MHWMR 264 Appendix IX. Other miscellaneous metals include aluminum, magnesium, and manganese. The concentrations of lead and chromium as well as the acidic nature of the material provide the basis for the hazard designations.

The tanks under this permit are the Thickener Tanks, Splitter Tanks, Primary Filter Storage Tanks, and Deepwell Storage Vault. The main difference in the waste streams managed in these tanks is the solids content. Solids in the untreated waste stream are removed in several steps, including thickening and filtration. The Thickeners are used to remove the bulk of the solids from the waste stream. The Splitter Tanks direct flow from the Thickener Tanks to 90-Day Lamella Tanks , which then feed flow to the Primary Filter Storage Tanks store the clarified waste prior to filtration to remove additional solids. The Deepwell Storage Vault is used to store the treated waste prior to disposal. The treated waste stream has a suspended solids content of approximately 10 milligrams per liter. The waste is disposed on site by deepwell injection into one of four injection wells permitted under the Underground Injection Control program.

The liquid waste stream has been determined to exhibit the following RCRA-hazardous characteristics:

D002 - pH < 2
D007 - Chromium > 5 mg/l
D008 - Lead > 5 mg/l

Analyses done in accordance with this waste analysis plan provide the DuPont DeLisle Plant with sufficient information for treatment, storage and disposal of iron chloride solution in accordance with all RCRA regulations and land disposal restrictions. Analytical parameters are selected based on process knowledge, raw materials and disposal standards for the waste stream. This plan will be reviewed and revised if the process generating the waste changes.

II. ANALYTICAL PARAMETERS AND METHODOLOGY

Weekly and monthly composite samples are analyzed in the laboratory on site or at an offsite laboratory. The analytical procedures used are from EPA Report SW-846 "Test Methods for Evaluating Solid Waste", which are described in DuPont Standard Job Procedures (SJPs).

DuPont SJPs are reviewed and revised on a periodic basis. Only controlled copies of these documents are followed during analytical procedures to assure that the latest revisions are used to perform the analysis. Uncontrolled copies are available for reference purposes only and are destroyed after use.

The Control Laboratory receives weekly samples of the filtered waste collected by an automatic sampler. The weekly sample is composited monthly for parameters listed in the plant's Underground Injection Control (UIC) operating permit. Following is a list of analyses relative to hazardous waste identification that are performed on the filtered iron chloride solution.

Analysis Schedule
Waste Iron Chloride Solution

Parameter	Frequency	SW-846 Procedure
Total Vanadium	Monthly	Method 7910, 3010, or equivalent EPA approved method
Total Chromium	Monthly	Method 7190, 3010, or equivalent EPA approved method
Total Lead	Monthly	Method 7420, 3010, or equivalent EPA approved method
Volatile Organics	Quarterly	Method 8260 or equivalent EPA approved method

1. Metals Analysis

Atomic absorption is the method of choice for metals analysis to assure precise and accurate analytical data. Direct aspiration atomic absorption spectroscopy is employed for analysis of metals. The method of Standard Additions is used for analysis of chromium, vanadium, and lead. This method provides for addition of one blank and several standards of known concentration to be added to aliquots of the sample. By nature, this method dictates the handling of data. Absorbance versus concentration is plotted and extrapolated to zero absorbance to determine the concentration of the sample. If either the Standard Additions curve or the calibration curve is not linear, the analysis is repeated.

If atomic absorption cannot be performed on site, inductive coupled plasma may be used for on-site analysis. As an alternative, the sample may be sent to an off-site laboratory for analysis using an EPA-approved method.

2. Volatile Organic Compounds

Volatile Organic Compounds are determined at an off-site laboratory using EPA Method 8260 or equivalent EPA approved method. The sample is transported with a chain of custody.

III. SAMPLE COLLECTION AND HANDLING

Flow-proportionate samples of the filtered iron chloride are collected on a continuous basis by an automatic sampler prior to deepwell injection. Weekly samples are sent to the Control Lab for analysis. They are stored in a refrigerator that is maintained at 4 degrees Centigrade or lower. A composite is made monthly from the weekly samples, and a lab number is assigned

when the composite is prepared. The monthly composite is analyzed in the site's Control Lab or at an offsite laboratory.

A grab sample for Volatile Organic Compounds is collected and sent off-site for analysis with a chain of custody. A portion of the monthly composite is also sent off-site for Total Organic Carbon analysis. Samples for other parameters may also be sent off-site for analysis if the Control Lab cannot run the analysis.

Samples are handled in new, clean glassware or other containers. Control Lab samples are disposed through lab drains, which go to wastewater treatment for neutralization, precipitation of solids and disposal.

IV. ANALYTICAL SUPPLIES AND EQUIPMENT

The site's Control Laboratory has developed procedures to maintain all supplies and equipment. Procedures include proper storage and dating of chemicals, use of reagent grade or high-purity chemicals, cleaning and handling of glassware, sample handling, equipment calibration, and preventive and corrective maintenance of equipment. When analysis is conducted offsite, the offsite laboratory manages equipment calibration and quality assurance procedures.

Analytical laboratory equipment is given proper oversight and maintenance care as well as repair of faulty components.

V. EQUIPMENT CALIBRATION

Stock standards for metals analysis are SPEX® standards or equivalent. New stock standards are purchased each year. Stock standards are stored in a cabinet separate from other chemicals. Acidified deionized distilled water is used for preparing standards, diluting solutions and zeroing ~~the~~ instruments.

VI. QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES

Detection limits of analytical equipment are determined during the year. In addition to in-house QA/QC measures, the Control Lab participates in an annual EPA quality assurance study. EPA sends an unknown sample to the Control Lab for analysis. EPA compares the reported data to known values to determine compliance.

VII. CORRECTIVE ACTION

If at any time standards are out of acceptable range, corrective action is taken. Corrective action includes inspecting the instrument, checking the standards and equipment, and reviewing the method of analysis.

VIII. RECORDKEEPING

Recordkeeping consists of various methods. Records are kept of instrument maintenance and repairs, are retained at the site in databases or files. Outside lab reports are also kept on file.

Module C-3
Additional Waste Analysis Requirements Pertaining to Land Disposal Restrictions

Land Disposal Restrictions (LDRs) for mineral processing wastes were promulgated in the Phase IV final rule May 26, 1998 (63 FR 28555). This rule set treatment standards for iron chloride solution effective August 24, 1998. EPA provided a two-year national capacity variance for underground injection of titanium dioxide mineral processing wastes, which expired on May 26, 2000. After that date, injected waste must be deactivated (DEACT) and must meet Universal Treatment Standards for all underlying hazardous constituents reasonably expected to be present. A "No-Migration Demonstration" petition was submitted to EPA Region IV to allow the DuPont DeLisle Plant to continue injection of this waste beyond May 26, 2000. EPA approved the petition on May 5, 2000. A copy of the approval notice was sent to MDEQ Hazardous Waste Permitting Division on May 12, 2000. A copy of the Federal Register Notice is provided in Attachment C-1. Since the DuPont DeLisle Plant operates under an approved petition, the reference in MHWMR 264.13(a)(1) to Part 268 standards does not impose additional waste analysis requirements.

ATTACHMENT D

Inspection Schedule

Module F-2
Inspection Schedule

The DeLisle Plant has developed an inspection schedule that meets the requirements of MHWMR 264.15 and 264.195 for the iron chloride hazardous waste management units. In addition to the inspections in the hazardous waste management area, general plant emergency and safety equipment is inspected according to separate procedures.

In accordance with MHWMR 270.14(b)(5), the procedures used to conduct the inspections of the Deepwell Storage Vault, Primary Filter Storage Tanks 1 and 2 and Thickeners 1 and 2 follow. The inspection logs Forms 8010 and 8016 are provided as Attachments F-1 and F-2.

SAFETY

Iron chloride waste is a corrosive, low pH ferrous chloride ($FeCl_2$), ferric chloride ($FeCl_3$), and other metal chlorides. This material also contains small amounts of lead and chromium. Acid goggles, rubber gloves, and rubber coats are required for handling and sampling. Since some of the lines to be inspected are elevated, extreme caution should be used when inspecting lines in order to avoid spills and leaks dripping on the inspection person. Also, the inspecting person should be continually aware of tripping hazards while inspecting overhead lines.

PURPOSE

This procedure is to be followed for compliance with state and EPA regulations and the DeLisle Plant requirements concerning the inspection of the hazardous waste treatment, storage and disposal facility (HWTSDF) within the Environmental Area.

The Code of Federal Regulations and the Mississippi Hazardous Waste Management Regulations (MHWMR) require that owners and operators of hazardous waste treatment, storage and disposal facilities follow this inspection procedure. The inspection logs documenting these inspections will become a part of the DeLisle Plant's RCRA Operating Record.

Inspections must be recorded in the inspection logs (Forms 8010 and 8016). These logs must document the date and time of inspection, inspector's name (not initials), and any observations and remedial measures. Reference should be made to any work order written. The date repairs or other corrective actions are completed will be included on the appropriate log by designated area supervision to insure follow-up.

Note 1: Observations of leaks, cracks, deterioration, etc. are to be noted on the daily inspection log sheet. Previous notations or open work orders do not relieve the auditor of noting any discrepancies that are observed on the daily audit tour.

Any deterioration or malfunction of equipment or structures revealed by the inspection must be remedied on a schedule that ensures that the problem does not lead to an environmental or human health hazard. When a hazard is imminent or has already occurred, remedial action must be taken immediately.

DESCRIPTION

The HWTSDF in the Environmental Area that are covered by this SJP are:

A. The feed lines from Reaction to the Thickeners or Gravity Settlers.
B. The lines from the Gravity Settlers to the Thickeners.
C. The lines from the Thickeners to the Splitter Feed Tanks.
D. The lines from the Splitter Feed Tanks to the Gravity Settlers.
E. The lines from the Gravity Settlers to the Primary Filter Storage Tanks.
F. The lines from the Primary Filter Storage Tanks to the Primary Filters.
G. The lines from the Polish Filters to the Primary Filter Storage Tanks.
H. The lines from the Filtrate Surge Tank to the Primary Filter Storage Tanks.
I. The secondary containment surrounding the Thickeners and Primary Filter Storage Tanks.
J. The lines from the polish filter discharge to the Deepwell Storage Vault.
K. The Deepwell Storage Vault itself, including the leak detection system and level indicators.
L. The secondary containment surrounding the Deepwell Storage Vault.
M. The lines exiting the vault including any flanges, accumulators, etc.
N. The deepwell injection pumps.
O. The lines exiting the deepwell injection pumps, including sumps and related equipment.

PROCEDURE

Environmental Area personnel for inspections are to start and end inspections as follows:

A. Start at the discharge of the Line 1 and Line II Liquids tank pump discharges and end at the junction box of the Gravity Settlers, Splitter Feed Tanks, Thickeners and Equalization Tank.
B. Start at the junction of the Gravity Settler, Splitter Feed Tanks, Thickener and Equalization Tank and end at the Equalization Tank manifold, Deck Tank and Header.
C. Start at the Equalization Tank and Header and end at the Thickeners.
D. Start at the Thickener overflow and end at the Splitter Feed Tanks.
E. Start at the Splitter Feed Tanks and end at the Splitter Feed Boxes.
F. Start at the Gravity Settler overflow and end at the Primary Filter Storage Tanks.
G. Start at the discharge of the polish filters and end where the line enters the top of the Deepwell Storage Vault on the North Side.
H. Start at the northeast corner of the vault covers and end at the northwest corner.
I. Start at the northwest corner of the vault and end at the southwest corner.
J. Start at the southwest corner of the vault and end at the southeast corner.
K. Start at the southeast corner of the vault and end at the northeast.
L. Start at the northeast corner and end at the northeast secondary containment sump.
M. Start at the northeast secondary containment sump and end at the southeast secondary containment sump.
N. Start at the southeast secondary containment sump and end at the southwest secondary containment sump.
O. Start at the northwest secondary containment sump and end at the northwest secondary containment sump.
P. Start at the northwest secondary containment sump and end at the emergency nozzle.
Q. Start at the emergency nozzle and end at the northeast secondary containment sump.
R. Start at the northeast secondary containment sump and end at the northeast corner of the Deepwell Storage Vault.
S. Start at the outlet line of the Deepwell Storage Vault and end at the discharge lines of each deepwell transfer pump.

T. Start at the discharge line of each deepwell transfer pump and end at each wellhead. Include the injection pumps and accumulators for each well.
U. Start at the Primary Filter Feed Pumps and end at the Filtrate Surge Tank.

ADDITIONAL AREA INSPECTION REQUIREMENTS

Once each week and after each incident requiring its use, environmental area personnel responsible for inspections must inspect and document the availability of the emergency and safety equipment:

1. Sandbags
2. Lime
3. Acid Suits

Missing items must be replaced at once.

Instrumentation that functions as overfill prevention will be inspected and calibrated annually. This instrumentation includes the high-level transmitters for the Primary Filter Storage Tanks and the Deepwell Storage Vault. The inspection records will be kept for a period of three years.

The control room technicians and/or field technicians must review monitoring data such as flow rate and level on a daily basis to insure that the tanks are being operated according to their design. This data must be recorded in the control room audit log.

REVISIONS

Any revision to this SJP must be approved by the plant's Environmental Consultant and/or the Hazardous Waste Coordinator.

ATTACHMENT E

Personnel Training

RCRA Part B Permit Application
DuPont DeLisle Plant
Iron Chloride Management

Module H
Personnel Training

This section provides an outline of the RCRA training at the DuPont DeLisle Plant. This information is provided to satisfy the requirements of MHWMR 270.14(b)(12) and meets the requirements of MHWMR 264.16.

Introductory Training

Initial training is conducted to acquaint new personnel with the basic requirements of RCRA for the DeLisle Plant. This training is a combination of computer-based training, as well as orientation by a designated and experienced area representative. The training covers the following subjects:

I. Introduction (RCRA Video, DVD, or equivalent briefing).

II. Waste Analysis Plan

III. Emergency Preparedness and Contingency Plan

A. Use, inspection and repair of emergency & monitoring equipment
B. Waste feed cut-off systems
C. Response to groundwater contamination (if discovered)
D. Response to spills
E. Shutdown of operations
F. Communication and alarm systems
G. Personal protective equipment
H. Early warning systems

IV. Recordkeeping and Reporting

V. Operating Record

VI. Inspection Requirements

VII. OSHA Requirements

A. Hazard communication
B. Medical surveillance
C. Safety and health
D. Decontamination

E. Training
F. New technology
G. Material handling
H. Emergency response

In addition to this general classroom training, specific tasks that are performed by each position are covered in job cycle checks on the job. Job cycle checks consist of an annual review of written standard job procedure (SJP).

Relevance to Job Position

All personnel working in the Environmental Area must know emergency procedures presented in the initial training. These procedures must be used by personnel in spill response, inspections, waste analysis, and daily operation of the area as a RCRA facility. General training on RCRA requirements is used in conjunction with annual job cycle checks to assure that each employee working in the hazardous waste management facility has sufficient information relative to the job position to operate and maintain the facility in a safe manner.

New Employees

New employees are provided with supervised on-the-job and classroom training before working in the area. This training provides the employee with knowledge about specific duties relative to his or her position. RCRA training is incorporated into this training. RCRA training is completed within six months of assignment to the area, and no employee without training is allowed to work unsupervised.

OSHA Training

In addition to information on RCRA compliance, employees are provided with information that satisfies 29 CFR 1910.120 (p). Several of these areas overlap with RCRA training with emphasis on personnel protection. This training enables employees to perform their assigned duties and functions in a safe and healthful manner so as not to endanger themselves or other employees.

Documentation

All training is documented in employee files, which are maintained by the Production Coordinator. Training materials showing the content of training are retained in the Production Coordinator's files. A job description is included with each employee's training records. 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 company.

Annual Review

Annual review of the RCRA training is conducted using a computer-based system as well as classroom and on-the-job training. The annual review program consists of the following modules:

I. Waste Analysis Plan

II. Emergency Preparedness and Contingency Plan

A. Response to leaks and spills
B. Communication and alarm systems
C. Personal protective equipment
D. Preparedness and prevention

III. Recordkeeping and Reporting

IV. Operating Record

V. Inspection Requirements

VI. OSHA Safety and Health Plan

Where the computer system is used, it presents information and then quizzes the student on the course material. It allows the employee to work at his/her own pace. The system scores the employee's quiz. If the employee does not meet the minimum score, he/she is required to repeat the course material until a passing score is achieved. There is no limit on the number of times an employee can repeat the course; however, that course must be completed by the end of the quarter in which it was assigned. The supervisor is notified electronically by the system of all incomplete courses by an employee.

Standard Job Procedures relevant to each employee's job are reviewed according to a set schedule.

Program Director

The DuPont DeLisle Plant RCRA training program is directed by the Senior Consultant, Environmental, for the DuPont DeLisle Plant. The Director of the program will, at a minimum, be trained in hazardous waste management procedures. The Director will have the training and resources necessary to effectively provide direction in hazardous waste management so that all regulatory requirements are fulfilled.

Course material is presented by qualified plant personnel. Continuing training for new personnel as well as annual refresher training are presented by the DuPont DeLisle Plant Environmental Area. The Production Coordinator is knowledgeable about area operations and works with the Director on various RCRA issues.

ATTACHMENT F

Contingency Plan

RCRA Part B Permit Application
Chemours DeLisle Plant
7685 Kiln-DeLisle Road
Pass Christian, MS 39571

Module G
Iron Chloride Management Contingency Plan

The following Contingency Plan fulfills the requirements of MHWMR 264 Subpart D. This plan is designed to minimize hazards to human health or the environment from any unplanned sudden or non-sudden release of hazardous waste iron chloride solution or its hazardous constituents to the air, soil, or surface water. Iron chloride solution does not pose the potential for fire or explosion.

Implementation

The provisions of the contingency plan are carried out immediately when there is a sudden or non-sudden release of hazardous waste or hazardous waste constituents, which could threaten human health or the environment.

Coordination Agreements

Iron chloride solution management is not likely to result in an incident that will require off-site emergency assistance. The DeLisle Plant maintains fire control equipment and trained fire and rescue teams. A medical emergency facility is located on-site with a nurse on duty during the day on weekdays and a doctor on site or on call. During shift hours, personnel trained in first aid are available. The Plant interfaces with a Community Advisory Committee, which has reviewed our emergency response plan. The Local Emergency Planning Committee and local emergency responders are also advised of our activities.

Emergency Coordinators

An emergency coordinator designated to take actions during an emergency is always present at the Chemours DeLisle Plant site. The primary emergency coordinator for the hazardous waste treatment, storage and disposal (TSD) facility is the Area Manager, Environmental. The first alternate emergency coordinator is the Team Manager, Environmental Area, Shift; one of four shift supervisors or a designated detailed supervisor is on plant at all times. The Emergency Coordinator is authorized to commit the necessary resources to implement the contingency plan. The primary emergency coordinator's name, addresses and telephone number is found in Table G-1. A list of the names, addresses and telephone numbers of the other alternates is maintained in the Environmental Area Control Room. At least one of these persons is on plant at all times.

Emergency Equipment

A list of emergency equipment is provided in Table G-2. This list includes the location, a physical description and capabilities of each item.

Evacuation

If evacuation of the area is necessary as a result of an incident involving iron chloride solution, the Serious Incident procedure would be followed. A serious incident is any emergency situation in the plant that has caused or may be expected to cause serious personal injury or property damage inside the plant or in the nearby community. The purpose of the procedure is to provide a method to evacuate endangered personnel and an organization whose responsibilities include control of the emergency, accounting for plant personnel, assessment of off-site impact, and interaction with off-plant emergency agencies. Evacuation routes from the Environmental Area are shown in Attachment G-1.

A plant-wide head-counting system is in place for all personnel and contractors at the Chemours DeLisle Plant. Each employee and visitor entering the site is issued a badge with an electronic sensing device. The individual's identity is entered into the computer along with a unique badge number. The holder registers his/her presence on the site by passing the badge in front of one of the "in" sensors located at the security gates. When leaving the plant, the holder passes the badge across the "out" sensor, and the computer recognizes the individual as "safe".

In the event of an incident, facility personnel would be notified by the Serious Incident Alert. The alert is comprised of the following sequences of tones and announcements:

- Series of staccato blasts lasting 10 seconds
- Two Announcements
  -- Short Space of Time --
- Series of staccato blasts lasting 10 seconds
- One Announcement

The announcements provide information on the nature of the problem and evacuation instructions.

In an emergency, the above tone is sounded, and all personnel on site proceed to one of the established rally points and pass their badges across the sensor. This individual is then considered safe. In the event that evacuation of a rally point is necessary, the evacuation path is decided by a leader in the group, and the group moves to the next location together.

Computer, radio, and phone systems are used to identify all personnel who are registered as present on-site but have not accounted for themselves at a rally point. A rescue team then attempts to locate those missing personnel. If the electronic system fails, a back-up radio or phone system is also in place.

Copies of the Contingency Plan

A copy of the contingency plan will be maintained at the facility. A copy of the plan will be submitted to the Mississippi Department of Environmental Quality. Iron chloride solution management is not likely to result in an incident that will require off-site emergency assistance; therefore, submission of copies of the plan to outside agencies is not required.

Amendment of the Contingency Plan

This contingency plan will be reviewed and immediately amended, if necessary, whenever the:

- facility permit is revised;
- plan fails in an emergency;
- facility changes in design, construction, operation, maintenance, or other circumstances that increases the potential for release;
- list of emergency coordinators changes; or
- list of emergency equipment changes.

Emergency Response Procedures for Iron Chloride Solution Releases

Whenever there is an imminent or actual emergency situation, the emergency coordinator or his designee will immediately:

- Activate internal facility alarms or communications systems, where applicable, to notify all facility personnel; and
- Notify appropriate State or local agencies with designated response roles if their help is needed.

Whenever there is a release, the Emergency Coordinator must immediately obtain emergency situation assessment from personnel in the area of release, including the character, exact source, amount, and extent of released material by observation, records or analysis.

Concurrently, the emergency coordinator must assess possible hazards to human health or the environment that may result from the release, considering direct and indirect effects. If the area outside the plant is threatened, he or she must contact appropriate local authorities, including the MDEQ Hazardous Waste Division, Mississippi Emergency Management Agency (MEMA) and/or the National Response Center (NRC). He or she must be available to help appropriate officials decide whether local areas should be evacuated.

The MDEQ Hazardous Waste Division , MEMA, and the NRC will be contacted at their current phone numbers which are kept readily available at the site. Information to these agencies must include:

- Name, address, and telephone number of the reporter,
- Name and address of the facility,
- Time and type of incident,
- Name and quantity of materials involved,
- Extent of any injuries, and
- Possible hazards to human health or the environment outside the facility.

During an emergency, the emergency coordinator must take all reasonable measures to insure that a release does not occur, recur or spread. These measures include, where applicable, stopping process operations, collecting or containing released waste, and removing or isolating containers.

If the facility stops operations in response to a release, the emergency coordinator must monitor for leaks, pressure build-up, gas generation, or ruptures in valves, pipes or other equipment.

Immediately after an emergency, the emergency coordinator must provide for treating, storing or disposing of recovered waste, contaminated soil or surface water or any other material that results from a release. Liquid wastes will be collected and managed in the recycle water system for eventual deepwell disposal. Contaminated soil will be analyzed for chromium and lead to determine if it exhibits any hazardous characteristics or determined to be nonhazardous using process knowledge. If hazardous, it will be treated to meet appropriate Land Disposal treatment standards and disposed in either a hazardous or nonhazardous waste landfill; if nonhazardous, it will be disposed in a nonhazardous landfill either on-site or off-site. Contaminated soils that exhibit hazardous characteristics will be stored in containers until disposal options can be determined.

The emergency coordinator must ensure that all emergency equipment listed in Table G-2 is cleaned and fit for its intended use before operations are resumed. This includes replacement of lime, sandbags and acid suits. The EPA Regional Administrator and appropriate State and local authorities must be notified that the facility is in compliance with this requirement before operations are resumed in the affected area. (Note: No wastes that are incompatible with iron chloride solution are managed at the DeLisle Plant.)

Recordkeeping

The incident must be noted in the operating record by the time, date, and details of any incident that requires implementing this contingency plan.

Written Report

Within 15 days after the incident, a written report must be submitted to the Regional Administrator. The report must include:

- Name, address, and telephone number of the owner or operator,
- Name and address of the facility,
- Date, time and type of incident,
- Name and quantity of materials involved,
- Extent of any injuries,
- An assessment of actual or potential hazards to human health or the environment, where this is applicable, and
- Estimated quantity and disposition of recovered material that resulted from the incident.

Spill Control Procedures

The RCRA permit-regulated systems at DeLisle are Thickeners 1 and 2, Primary Filter Storage Tanks 1 and 2, Splitter Feed Tanks 1 and 2, and the Deepwell Storage Vault as well as their associated pumps, valves, piping, accumulators, sumps, etc. Following are steps to be taken if a leak or failure develops in this tank system.

Tank System Leaks

If a leak develops from a tank system that poses an imminent threat to human health or the environment, the following actions must be taken.

- Stop flow into the tank system immediately and investigate the cause of the release.

- Remove waste from tank system.

  If the release is from the tank system, as much of the waste as is necessary must be removed to prevent further release to the environment and to allow safe inspection or repair. Waste must be removed within 24 hours after detection. If removal within 24 hours is not practicable, the area must demonstrate why it is not possible.

  If the emergency requires the Deepwell Storage Vault to be removed from service either temporarily or for a prolonged period of time, the tank can be deinventoried by injecting the waste into one of the deepwells. Alternately, the waste can be transferred in an emergency to one of the Recycle Water Vaults adjacent to it. The Primary Filter Storage Tanks or an adjacent Recycle Water Vault can be used as backup to the DWSV for continued plant operation when the DWSV must be out of service for prolonged periods. One Thickener can serve as a backup for the other Thickener in case of prolonged outage. This is also the case for the Primary Filter Storage Tanks. Other tanks or containers may be used as approved by the plant Environmental Consultant. All waste must be removed from the Recycle Water Vault at least once every 90 days when used as a backup for the DWSV.

- Contain visible releases to the environment.

  Prevent the migration of the leak or spill to soils or surface water. Remove and properly dispose of contaminated soil or surface water.

- Make necessary repairs prior to returning system to service.

  If the release was a spill that has not damaged the integrity of the system, the system may be returned to service as soon as the release is removed and repairs are made.

  If the release was a leak to the environment from a component of a tank system without secondary containment, the component must be provided with secondary containment before returning to service, unless the leaking portion is aboveground and can be visually inspected. All components of the Thickeners, Primary Filter Storage Tanks and Deepwell Storage Vault, including all ancillary equipment, have secondary containment except aboveground piping, flanges and connections that are exempt from this requirement.

  Any extensive repairs must be certified by an independent professional engineer. Certification must be submitted to EPA/State within seven days of returning the tanks system to use.

Table G-1
List of Emergency Coordinators

Name	Address	Telephone	
		Business	Home
David Quigley (Primary)	6264 Bell Creek Ct East Grand Bay AL 36541	(228) 255-2393 (228) 255-2123	(228) 806-3676
On Duty Shift Supervisor (Team Manager) or designated detailed Shift Supervisor (Alternate)	Chemours DeLisle Plant 7685 Kiln-DeLisle Road Pass Christian, MS 39571 Names and home addresses/phone numbers for alternates are posted in the Environmental Area Control Room	(228) 255-2134 / 2123	Not Applicable

Table G-2
List of Emergency Equipment

Item	Location	Description and Capabilities
Acid Suits	HCL Loading Shed Under Env Control Room	Chemical-resistant protective clothing used when handling corrosive material.
Telephones	Attachment G-1 (dots) Attachment G-4	Standard telephones capable of summoning emergency assistance. Operators also carry two-way radios for additional communications.
Safety Showers and Eye Wash Stations	Attachment G-1 (rectangles) Attachment G-5	Decontamination equipment for washing off or minimizing the effects of corrosive material on the skin and eyes.
Sand Bags	Gromore Bldg.	Containment materials to barricade spills in trenches or pools.
Lime	Gromore Bldg.	Neutralizing agent capable of minimizing effects of a release of acidic material on groundwater.
First Aid Supplies	Control Lab	Supplies for first aid treatment of cuts, burns, abrasions, fractures, etc.
Medical Supplies	Building 507	Supplies for medical treatment of cuts, burns, abrasions, fractures, etc.
Fire Extinguishers	Attachment G-6	Fire extinguishing capability
Respirators	Attachment G-7	Escape respirators and portable air packs

ATTACHMENT G

Closure Plan

RCRA Part B Permit Application
Chemours DeLisle Plant
Iron Chloride Management

Module I
Closure Plans
Financial Requirements

The Chemours DeLisle Plant manages hazardous waste iron chloride solution in tank systems. This section describes the plant's compliance with MHWMR 264 Subparts G and H, 264.197, and satisfies the requirements of 270.14 (b)(13), 270.14(b)(15), 270.14(b)(16),and 270.14(b)(17).

The closure requirements of MHWMR 264 Subparts I, K, L, M, N, O, W, and X are not applicable because the DeLisle Plant does not manage iron chloride in containers, surface impoundments, waste piles, land treatment facilities, landfills, incinerators, drip pads, or miscellaneous units.

This module provides written closure plans for seven tanks. Closure of tank systems is expected at the end of the facility life. Clean closure is the objective for these tank systems. All units meet the requirements of MHWMR 264.193; therefore, a contingent post-closure plan is not required.

Cost estimates in the Closure Plan were originally estimated in 2005, and have been revalidated and documented in 2019 dollars. The revised 2019 closure plan cost documentation is included in this section.

Financial assurance documentation for these tanks is provided to the agency annually as part of permit requirements.

Resource Conservation and Recovery Act

Closure Plan

Environmental Area
Tank Systems

Thickener 1
Thickener 2
Splitter Feed Tank 1
Splitter Feed Tank 2
Primary Filter Storage Tank 1
Primary Filter Storage Tank 2
Deepwell Storage Vault

The Chemours Company FC, LLC

DeLisle Plant

MSD096046792

ENVIRONMENTAL AREA
CLOSURE PLAN

TABLE OF CONTENTS

CHEMOURS DELISLE PLANT
MSD 096 046 792
ENVIRONMENTAL AREA
CLOSURE PLAN

1.0 INTRODUCTION

The following plan has been developed for closure of the Environmental Are RCRA tank facilities at The Chemours Company FC, LLC (Chemours) DeLisle Mississippi Plant (the Facility). This plan seeks to meet the closure performance standard of MFWMR 264.197 in order to minimize the potential for adverse impact from any constituents that may be present in the Facility. Closure procedures are detailed separately for each individual tank. Data generated during closure will be evaluated to determine the appropriate closure response option. Clean closure is the objective for these units. Therefore, the following closure procedures focus on clean closure activities. Closure activities and results will be documented and reported to the MDEQ in a closure certification report.

2.0 CLOSURE OBJECTIVES

2.1 Performance Standard

In accordance with MHWMR 264.111, the Closure Plan is designed to:

1.) minimize the need for further maintenance;

2.) control, minimize, or eliminate the post-closure escape of contaminants to ground or surface waters or to the atmosphere; and

3.) meet or exceed the specific closure requirements established for clean closure of this type of hazardous waste management unit.

The performance standard will be achieved through the procedures specified herein. These procedures are designed to achieve clean closure as defined in MHWMR 264.197. In general, the standard will be achieved by removal or decontamination of remaining hazardous wastes, waste constituents, contaminated subsoils, and waste residues from the tanks and ancillary waste processing equipment, followed by backfill of the remaining excavation with clean soil as necessary. Closure procedures for individual tanks are described in Section 3.0. If the tank facilities are clean closed with subsequent certification of closure, the unit will no longer be listed as a hazardous waste management unit. If clean closure, as described herein, is not feasible, a contingent post-closure plan will be prepared and submitted to MDEQ.

2.2 Closure Criteria

To characterize conditions around the tanks, samples of rinsate, structural supports, and soil will be obtained and analyzed for pH, chromium, lead and manganese. Upon receipt of the analytical results, the extent of material to be removed will be determined by comparing the concentrations of the constituents of interest with target concentrations. The target concentration is the maximum allowable concentration of a constituent that may remain in a medium without presenting a present or potential future risk to human health or the environment.

Based on the extent of soils requiring removal, a decision will be made to either attempt clean closure of the unit or to close the unit as a landfill. If soil samples indicate contamination above target concentrations, groundwater samples will be taken. If the volume of contaminated soil can be feasibly excavated and disposed, the underlying soils will be removed and disposed in an appropriate manner. If clean closure cannot be achieved, applicable landfill closure and post-closure requirements will be met.

2.1.1 Target Concentration – General

In establishing target concentrations, relevant health-based standards may be considered to the extent that site-specific conditions indicate them to be applicable. All sources of information used in setting target concentrations will be documented and presented to support the selected values.

Metals occur naturally in soils and in groundwater. Therefore, the concentration of metals detected in the samples will initially be compared to background concentrations at the site. Those concentrations of metals that exceed background levels will then be compared to target concentrations.

If sample concentrations significantly exceed background (for metals) and/or target concentrations, a risk assessment may be performed relative to those constituents that exceed the target concentrations. The assessment will quantify the risk associated with allowing actual constituent concentrations in the soil and groundwater to remain and allow determination of the potential threat to present and future populations and the environment.

2.1.2 Target Concentrations – Soil

Target concentrations will be based on EPA Regional Screening Levels for Soil Ingestion, Residential, or other EPA health-based concentrations that are recommended at the time of closure. Other risk-based concentrations for Soil Ingestion, Industrial exposure may potentially be used with prior MDEQ approval.

EPA has used an alternative approach to the conventional toxicity-based approach for evaluation of lead in soils. The EPA's alternative approach consists of correlating soil lead concentrations with target blood lead concentrations in children aged 6 months to 84 months. A 1998 memorandum from the Acting Assistant Administrator of EPA to the Regional Administrators titled *Clarification to the 1994 Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities* (EPA, 1998) reinforces EPA's 1994 recommendation that a soil lead level of 400 mg/kg be used as a screening level for sites subject to residential use. The 400 mg/kg screening level is intended to create no greater than a five percent chance of exceeding a blood lead level of 10 ug/dL in children aged 6 months to 84 months. The 10 ug/dL blood lead target concentration is considered to be the threshold concentration above which nervous system effects (e.g., varying degrees of change in mental capacity) could develop in the subject population. EPA developed a model called the Integrated Exposure Uptake Biokinetic Model (IEUBK) to allow for calculation of a soil lead level that correlated with a blood lead level of 10 ug/dL. The result of application of the IEUBK was the 400 mg/kg soil lead screening value for exposure of children. This level is also confirmed in the EPA Regional Screening Levels guidance dated May 2019.

2.1.3 Target Concentrations - Groundwater

The target concentrations for groundwater at the hazardous waste management facility boundary will consist of Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs), RBCs, WQCs, PQLs, or EPA Regional Screening Levels. The rationale for groundwater target concentration selection will be identical to that used for soils. Groundwater samples will be analyzed for total constituent concentrations. The data will then be compared to the appropriate target concentrations.

More information for the above target concentrations for soil and groundwater is discussed on pages 6 and 6a.

3.0 CLOSURE PROCEDURES

3.1 Introduction

Individual closure plans have been prepared for each RCRA permitted vessel to facilitate individual vessel closure. For closure of the entire facility, the individual plans should be implemented according to the following sequence:

Thickeners (2)
Primary Filter Storage Tanks (2)
Splitter Feed Tanks (2)
Deepwell Storage Vault (1)

If clean closure is not achievable, then the landfill closure procedure discussed in a later section will be implemented.

3.2 Background Levels

To determine background levels at the facility for the contaminants of interest, an area will be selected where background soil samples will be taken which has not been affected by routine operations, accidental or emergency incidents at the facility. The background samples will be taken at the same soil horizon as that which underlies the Environmental Area. Since the local stratigraphic units at the DeLisle site are essentially flat lying, the samples are anticipated to be taken from a depth of two to three feet below grade, equivalent to a level just below the depth of the tank supports. The area to be designated at the DeLisle Plant for background sampling will be determined upon initiation of closure. Within this area the locations will be determined using a two-dimensional random-sampling technique.

3.3 Chain of Custody

A chain of custody will be kept for all chemical samples taken during the evaluation and closure of the tanks. This will insure that there will be adequate documentation and control to identify and trace all samples from collection to completion of analysis. All sample bottles will be labeled and security sealed for shipment. A completed chain of custody will accompany all samples submitted for analysis and include a sample identification, type, date and time of collection, analyses requested, and the signature of each person receiving and/or relinquishing the samples. One part of the multi-part form will be maintained on site.

3.4 Closure Plan – Thickener 1

General

This plan identifies the procedure necessary to close the Thickener 1 tank system at the DeLisle Plant. Partial closure may occur if other hazardous waste management units at the facility will remain active.

Identification

EN:	654-2160-01
MANUFACTURER:	Envirotech Corporation
MATERIAL:	Rubber-lined carbon steel
CAPACITY:	126,240 Gallons
DIMENSIONS:	40' Diameter x 12' High
	Sloped Bottom 40' Diameter x 4.25' High

Waste Composition

The Thickener is used to separate and thicken the solids in the iron chloride solutions pumped from the Gravity Settlers underflow. In addition, the Thickener is periodically used as an initial solid separation step before the Gravity Settlers. This tank provides in-process inventory for the solids removal system in preparation for final dewatering and neutralization. The effluent is further processed for final deepwell disposal. The general composition and characteristics of the feed are as follows:

- 15% - ferrous chloride
- 3% - ferric chloride
- 3% - hydrochloric acid
- 3% - miscellaneous metal chlorides
- 64% - water
- 12% - solids (coke, ore, gangue)

The parameters on pages 6 and 6a will be analyzed for clean closure:

Maximum Waste Inventory

The maximum waste stored in this tank at one time is 126,240 gallons or approximately 1,431,313 pounds of iron chloride/solids solution.

Closure Discussion

Closure will begin on this tank after notifying the appropriate State agencies and after receipt of the final volume of waste in the tank. All remaining liquid waste will be treated to remove the hazardous characteristics and underlying hazardous constituents and/or disposed of via deepwell injection. Alternately, the waste can be pumped to the Recycle Water Storage facility for eventual deepwell disposal.

The tank will be opened, and the remaining solids will be collected via a vacuum truck or other appropriate technique. The solids will be stored in the Recycle Water Storage facility for subsequent neutralization and landfill. Alternatively, the solids will be neutralized and stored in the Solids Pond for subsequent landfill. The internal tank liner will then be hydroblasted to remove residual solids, and the wash liquid will be pumped to the Recycle Water Vaults. A high pH (<12 pH) water wash may follow the hydroblasting to neutralize any residual chlorides if necessary. This wash water will be pumped to the Recycle Water Vaults or sampled and analyzed to assure that hazardous characteristics have been removed. The discarded ancillary equipment will be flushed and/or steam cleaned, sampled and analyzed for possible contamination. The final clean water rinsate will be sampled and analyzed per the appropriate procedures. If the tank is to be reused for another service, closure will be considered complete upon verification that the internal and external liners have been decontaminated.

Samples will be collected from the tank lining and analyzed for Toxicity Characteristic Leaching Procedure (TCLP). At least four samples will be collected from the rubber liner to assure the tank has been decontaminated. One sample will be collected from each of the following locations:

- the cone bottom,
- the base of the wall above the cone bottom,
- half-way up the side of the wall, and
- near the top of the wall.

If the tank is to be dismantled, the external liner and foundation will be removed. At least four samples will be collected from the external liner to assure the debris is below Toxicity Characteristic Regulatory Levels. Sample locations will include stained areas, the sump and trenches. The surrounding area will be sampled and analyzed for possible contamination. Soil boring locations will be selected based on visual inspection. At least four soil samples will be collected beneath the base of the tank. The samples will be analyzed for total chromium and total lead by SW-846 Method 6010. All contaminated soils will be removed and/or neutralized.

After successful decontamination and disposal, closure certification will be obtained and submitted. If all contaminated soil cannot be remove or fully remediated, a post-closure care permit will be requested. Removal of all contaminated soils will be considered complete if the soils and any groundwater that is encountered meet the following target concentrations:

Closure Standards	Concentration	
	Soil, mg/kg	Groundwater, mg/L
pH	NA	>2
Chromium VI	230	0.1
Chromium III	120,000	22
Lead (inorganic)	400	0.015
Manganese	1,800	0.43

Results of total chromium in soil and groundwater will be compared to the chromium VI levels initially. If the chromium VI concentrations are exceeded, analysis will be done to determine the concentrations of trivalent and hexavalent chromium. Results will be compared to the above limits for the individual species.

Reference sources for the target concentrations above are shown on the next page 6a. Tap water concentrations are being used even though groundwater from cleanup areas does not go to drinking water intakes.

Closure Standards	Concentration	
	Soil, mg/kg	Groundwater, mg/L
pH	NA	>2
Chromium VI	230[1]	0.1[2]
Chromium III	120,000[3]	22[4]
Lead (inorganic)	400[5]	0.015[6]
Manganese	1,800[7]	0.43[8]

[1] EPA Regional Screening Level May 2019, Chromium VI, Resident Soil Table, Noncancer Child Hazard Index (HI)=1, Ingestion

[2] EPA National Primary Drinking Water Regulations Action Level for Total Chromium (MCL 100 ug/L or 0.1 mg/L);

[3] EPA Regional Screening Level May 2019, Chromium III, Resident Soil Table, Noncancer Child Hazard Index (HI)=1

[4] EPA Regional Screening Level May 2019, Chromium III, Resident Tapwater Table, Noncarcinogenic SL Child THI=1 (22,000 ug/L or 22 mg/L)

[5] EPA Regional Screening Level May 2019, Lead, Resident Soil Table, Noncancer Child Hazard Index (HI)=1

[6] EPA Regional Screening Level May 2019, Lead, Resident Tapwater Table, Noncancer Child Hazard Index (HI)=1 (MCL 15 ug/L or 0.015 mg/L); also EPA National Primary Drinking Water Regulations Action Level for Lead

[7] EPA Regional Screening Level May 2019, Manganese, Resident Soil Table, Noncancer Child Hazard Index (THI)=1

[8] EPA Regional Screening Level May 2019, Manganese, Resident Tapwater Tables, Noncancer Child Hazard Index (THI)=1 (430 ug/L or 0.43 mg/L)

Final Disposition

The tank, foundation, soil and discarded ancillary equipment will be decontaminated. All discarded materials will be either disposed of on site or in an approved landfill or other approved facility.

Closure Schedule

The following schedule will be followed if Thickener 1 will be closed during partial or final closure of the facility. Activities that are applicable during final closure are indicated and will not be included during partial closure. Final closure means closure of all hazardous waste units at the facility so that hazardous waste management activities subject to MHWMR 264 or 265 are no longer conducted unless subject to the provisions of MHWMR 262.34 (storage in tanks or containers for less than 90 days). Partial closure means closure of a hazardous waste management unit at a facility that contains other active hazardous waste management units; prior notification and certification of closure are not required during partial closure. Partial closure may include closure of this tank, its associated piping and underlying containment systems.

This schedule shall not preclude the DeLisle Plant from removing hazardous waste and decontaminating or dismantling equipment in accordance with the approved closure plan for partial or final closure at any time before or after notification of partial or final closure.

	Scheduled Event	Timing (Days)
1	Notify State of final closure if applicable (at least 45 days prior to step 3)	-15
2	Receipt of known final volume of hazardous waste	0
3	Expect to begin partial or final closure (within 30 days after step 2)	30
4	Demonstrate to Executive Director, MDEQ, that removal of all hazardous wastes will, of necessity, take longer than 90 days (at least 30 days prior to step 5)	60
5	Treat or remove all hazardous waste from unit (within 90 days after step 2)	90
6	Demonstrate to Executive Director, MDEQ, that partial or final closure will, of necessity, take longer than 180 days (at least 30 days prior to step 7)	120
7	Complete partial or final closure (180 days from step 2)	180
8	Certify that final closure is complete, if applicable (within 60 days from step 7)	240

Laboratory Procedure

Toxicity Characteristic Leaching Procedure (TCLP) will be used to verify the nonhazardous nature of the final wash solution and tank component samples. Total metals analysis will be performed on soils and groundwater using SW-846 Method 6010.

Contingent Post-Closure Care

In the event that a clean closure cannot be achieved, a groundwater monitoring system and a final cover with controls for run-on and run-off of precipitation as well as other post-closure requirements will be provided.

3.5 Closure Plan – Thickener 2

General

This plan identifies the procedure necessary to close the Thickener 2 tank system at the DeLisle Plant. Partial closure may occur if other hazardous waste management units at the facility will remain active.

Identification

EN:	654-2163-01
MANUFACTURER:	Elmco Process Equipment Company
MATERIAL:	Rubber-lined carbon steel
CAPACITY:	126,240 Gallons
DIMENSIONS:	40' Diameter x 12' High
	Sloped Bottom 40' Diameter x 4.25' High

Waste Composition

The Thickener is used to separate and thicken the solids in the iron chloride solutions pumped from the Gravity Settlers underflow. In addition, the Thickener is periodically used as an initial solid separation step before the Gravity Settlers. This tank provides in-process inventory for the solids removal system in preparation for final dewatering and neutralization. The effluent is further processed for final deepwell disposal. The general composition and characteristics of the feed are as follows:

- 15% - ferrous chloride
- 3% - ferric chloride
- 3% - hydrochloric acid
- 3% - miscellaneous metal chlorides
- 64% - water
- 12% - solids (coke, ore, gangue)

The parameters on page 6a will be analyzed for clean closure.

Maximum Waste Inventory

The maximum waste stored in this tank at one time is 126,240 gallons or approximately 1,431,313 pounds of iron chloride/solids solution.

Closure Discussion

Closure will begin on this tank after notifying the appropriate State agencies and after receipt of the final volume of waste in the tank. All remaining liquid waste will be treated to remove the hazardous characteristics and underlying hazardous constituents and/or disposed of via deepwell injection. Alternately, the waste can be pumped to the Recycle Water Storage facility for eventual deepwell disposal.

The tank will be opened, and the remaining solids will be collected via a vacuum truck or other appropriate technique. The solids will be stored in the Recycle Water Storage facility for subsequent neutralization and landfill. Alternatively, the solids will be neutralized and stored in the Solids Pond for subsequent landfill. The internal tank liner will then be hydroblasted to remove residual solids, and the wash liquid will be pumped to the Recycle Water Vaults. A high pH (<12 pH) water wash may follow the hydroblasting to neutralize any residual chlorides if necessary. This wash water will be pumped to the Recycle Water Vaults or sampled and analyzed to assure that hazardous characteristics have been removed. The discarded ancillary equipment will be flushed and/or steam cleaned, sampled and analyzed for possible contamination. The final clean water rinsate will be sampled and analyzed per the appropriate procedures. If the tank is to be reused for another service, closure will be considered complete upon verification that the internal and external liners have been decontaminated.

Samples will be collected from the tank lining and analyzed for Toxicity Characteristic Leaching Procedure (TCLP). At least four samples will be collected from the rubber liner to assure the tank has been decontaminated. One sample will be collected from each of the following locations:

- the cone bottom,
- the base of the wall above the cone bottom,
- half-way up the side of the wall, and
- near the top of the wall.

If the tank is to be dismantled, the external liner and foundation will be removed. At least four samples will be collected from the external liner to assure the debris is below Toxicity Characteristic Regulatory Levels. Sample locations will include stained areas, the sump and trenches. The surrounding area will be sampled and analyzed for possible contamination. Soil boring locations will be selected based on visual inspection. At least four soil samples will be collected beneath the base of the tank. The samples will be analyzed for total chromium and total lead by SW-846 Method 6010. All contaminated soils will be removed and/or neutralized.

After successful decontamination and disposal, closure certification will be obtained and submitted. If all contaminated soil cannot be remove or fully remediated, a post-closure care permit will be requested. Removal of all contaminated soils will be considered complete if the soils and any groundwater that is encountered meet the target concentrations shown on page 6a.

Results of total chromium in soil and groundwater will be compared to the chromium VI levels initially. If the chromium VI concentrations are exceeded, analysis will be done to determine the concentrations of trivalent and hexavalent chromium. Results will be compared to the above limits for the individual species.

Final Disposition

The tank, foundation, soil and discarded ancillary equipment will be decontaminated. All discarded materials will be either disposed of on site or in an approved landfill or other approved facility.

Closure Schedule

The following schedule will be followed if Thickener 2 will be closed during partial or final closure of the facility. Activities that are applicable during final closure are indicated and will not be included during partial closure. Final closure means closure of all hazardous waste units at the facility so that hazardous waste management activities subject to MHWMR 264 or 265 are no longer conducted unless subject to the provisions of MHWMR 262.34 (storage in tanks or containers for less than 90 days). Partial closure means closure of a hazardous waste management unit at a facility that contains other active hazardous waste management units; prior notification and certification of closure are not required during partial closure. Partial closure may include closure of this tank, its associated piping and underlying containment systems.

This schedule shall not preclude the DeLisle Plant from removing hazardous waste and decontaminating or dismantling equipment in accordance with the approved closure plan for partial or final closure at any time before or after notification of partial or final closure.

	Scheduled Event	Timing (Days)
1	Notify State of final closure if applicable (at least 45 days prior to step 3)	-15
2	Receipt of known final volume of hazardous waste	0
3	Expect to begin partial or final closure (within 30 days after step 2)	30
4	Demonstrate to Executive Director, MDEQ, that removal of all hazardous wastes will, of necessity, take longer than 90 days (at least 30 days prior to step 5)	60
5	Treat or remove all hazardous waste from unit (within 90 days after step 2)	90
6	Demonstrate to Executive Director, MDEQ, that partial or final closure will, of necessity, take longer than 180 days (at least 30 days prior to step 7)	120
7	Complete partial or final closure (180 days from step 2)	180
8	Certify that final closure is complete, if applicable (within 60 days from step 7)	240

Laboratory Procedure

Toxicity Characteristic Leaching Procedure (TCLP) will be used to verify the nonhazardous nature of the final wash solution and tank component samples. Total metals analysis will be performed on soils and groundwater using SW-846 Method 6010.

Contingent Post-Closure Care

In the event that a clean closure cannot be achieved, a groundwater monitoring system and a final cover with controls for run-on and run-off of precipitation as well as other post-closure requirements will be provided.

3.6 Closure Plan – Splitter Feed Tank 1

General

This plan identifies the procedure necessary to close the Splitter Feed Tank 1 system at the DeLisle Plant. Partial closure may occur if other hazardous waste management units at the facility will remain active.

Identification

EN:	654-2164-85
MATERIAL:	FRP
CAPACITY:	12,150 Gallons
DIMENSIONS:	12' Diameter x 12' High

Waste Composition

The Splitter Feed Tank is used to store iron chloride solutions from the manufacture of titanium dioxide. This tank provides in-process inventory between the Thickener 1 and Gravity Settlers. The general composition and characteristics of the solution are as follows:

17%	-	ferrous chloride
1%	-	ferric chloride
2%	-	hydrochloric acid
4%	-	miscellaneous metal chlorides
75%	-	water
1%	-	solids (coke, ore, gangue)

The parameters on page 6a will be analyzed for clean closure.

Maximum Waste Inventory

The maximum waste stored in this tank at one time is 12,150 gallons or approximately 126,650 pounds of iron chloride solution.

Closure Discussion

Closure will begin on this tank after notifying the appropriate State agencies and after receipt of the final volume of waste in the tank. All remaining liquid waste will be treated to remove the hazardous characteristics and underlying hazardous constituents and/or disposed of via deepwell injection. Alternately, the waste can be pumped to the Recycle Water Storage facility for eventual deepwell disposal.

The tank will be opened, and the remaining solids will be collected via a vacuum truck or other appropriate technique. The solids will be stored in the Recycle Water Storage facility for subsequent neutralization and landfill. Alternatively, the solids will be neutralized and stored in the Solids Pond for subsequent landfill. The internal tank liner will then be hydroblasted to remove residual solids, and the wash liquid will be pumped to the Recycle Water Vaults. A high pH (<12 pH) water wash may follow the hydroblasting to neutralize any residual chlorides if necessary. This wash water will be pumped to the Recycle Water Vaults or sampled and analyzed to assure that hazardous characteristics have been removed. The discarded ancillary equipment will be flushed and/or steam cleaned, sampled and analyzed for possible contamination. The final clean water rinsate will be sampled and analyzed per the appropriate procedures. If the tank is to be reused for another service, closure will be considered complete upon verification that the internal and external liners have been decontaminated.

At least four samples will be collected to assure the tank has been decontaminated. Samples will be collected from the tank walls using a hole saw. The sample locations will be wetted during collection to prevent dusting. They will be analyzed for Toxicity Characteristic Leaching Procedure (TCLP). One sample will be collected from each of the following locations:

- the wall near the base of the tank
- the wall near the top
- half-way up the wall
- the floor of the tank

If the tank is to be dismantled, the external liner and foundation will be removed. At least four samples will be collected from the external liner to assure the debris is below Toxicity Characteristic Regulatory Levels. Sample locations will include stained areas, the sump and trenches. The surrounding area will be sampled and analyzed for possible contamination. Soil boring locations will be selected based on visual inspection. At least four soil samples will be collected beneath the base of the tank. The samples will be analyzed for total chromium and total lead by SW-846 Method 6010. All contaminated soils will be removed and/or neutralized.

After successful decontamination and disposal, closure certification will be obtained and submitted. If all contaminated soils cannot be removed or fully remediated, a post-closure care permit will be requested. Removal of all contaminated soils will be considered complete if the soils and any groundwater that is encountered meet the target concentrations shown on page 6a.

Results of total chromium in soil and groundwater will be compared to the chromium VI levels initially. If the chromium VI concentrations are exceeded, analysis will be done to determine the concentrations of trivalent and hexavalent chromium. Results will be compared to the above limits for the individual species.

Final Disposition

The tank, foundation, soil and discarded ancillary equipment will be decontaminated. All discarded materials will be either disposed of on site or in an approved landfill or other approved facility.

Closure Schedule

The following schedule will be followed if Splitter Feed Tank 1 will be closed during partial or final closure of the facility. Activities that are applicable during final closure are indicated and will not be included during partial closure. Final closure means closure of all hazardous waste units at the facility so that hazardous waste management activities subject to MHWMR 264 or 265 are no longer conducted unless subject to the provisions of MHWMR 262.34 (storage in tanks or containers for less than 90 days). Partial closure means closure of a hazardous waste management unit at a facility that contains other active hazardous waste management units; prior notification and certification of closure are not required during partial closure. Partial closure may include closure of this tank, its associated piping and underlying containment systems.

This schedule shall not preclude the DeLisle Plant from removing hazardous waste and decontaminating or dismantling equipment in accordance with the approved closure plan for partial or final closure at any time before or after notification of partial or final closure.

	Scheduled Event	Timing (Days)
1	Notify State of final closure if applicable (at least 45 days prior to step 3)	-15
2	Receipt of known final volume of hazardous waste	0
3	Expect to begin partial or final closure (within 30 days after step 2)	30
4	Demonstrate to Executive Director, MDEQ, that removal of all hazardous wastes will, of necessity, take longer than 90 days (at least 30 days prior to step 5)	60
5	Treat or remove all hazardous waste from unit (within 90 days after step 2)	90
6	Demonstrate to Executive Director, MDEQ, that partial or final closure will, of necessity, take longer than 180 days (at least 30 days prior to step 7)	120
7	Complete partial or final closure (180 days from step 2)	180
8	Certify that final closure is complete, if applicable (within 60 days from step 7)	240

Laboratory Procedure

Toxicity Characteristic Leaching Procedure (TCLP) will be used to verify the nonhazardous nature of the final wash solution and tank component samples. Total metals analysis will be performed on soils and groundwater using SW-846 Method 6010.

Contingent Post-Closure Care

In the event that a clean closure cannot be achieved, a groundwater monitoring system and a final cover with controls for run-on and run-off of precipitation as well as other post-closure requirements will be provided.

3.7 Closure Plan – Splitter Feed Tank 2

General

This plan identifies the procedure necessary to close the Splitter Feed Tank 2 system at the DeLisle Plant. Partial closure may occur if other hazardous waste management units at the facility will remain active.

Identification

EN:	654-2164-90
MATERIAL:	FRP
CAPACITY:	12,150 Gallons
DIMENSIONS:	12' Diameter x 12' High

Waste Composition

The Splitter Feed Tank is used to store iron chloride solutions from the manufacture of titanium dioxide. This tank provides in-process inventory between the Thickener 2 and Gravity Settlers. The general composition and characteristics of the solution are as follows:

- 17% - ferrous chloride
- 1% - ferric chloride
- 2% - hydrochloric acid
- 4% - miscellaneous metal chlorides
- 75% - water
- 1% - solids (coke, ore, gangue)

The parameters on page 6a will be analyzed for clean closure.

Maximum Waste Inventory

The maximum waste stored in this tank at one time is 12,150 gallons or approximately 126,650 pounds of iron chloride solution.

Closure Discussion

Closure will begin on this tank after notifying the appropriate State agencies and after receipt of the final volume of waste in the tank. All remaining liquid waste will be treated to remove the hazardous characteristics and underlying hazardous constituents and/or disposed of via deepwell injection. Alternately, the waste can be pumped to the Recycle Water Storage facility for eventual deepwell disposal.

The tank will be opened, and the remaining solids will be collected via a vacuum truck or other appropriate technique. The solids will be stored in the Recycle Water Storage facility for subsequent neutralization and landfill. Alternatively, the solids will be neutralized and stored in the Solids Pond for subsequent landfill. The internal tank liner will then be hydroblasted to remove residual solids, and the wash liquid will be pumped to the Recycle Water Vaults. A high pH (<12 pH) water wash may follow the hydroblasting to neutralize any residual chlorides if necessary. This wash water will be pumped to the Recycle Water Vaults or sampled and analyzed to assure that hazardous characteristics have been removed. The discarded ancillary equipment will be flushed and/or steam cleaned, sampled and analyzed for possible contamination. The final clean water rinsate will be sampled and analyzed per the appropriate procedures. If the tank is to be reused for another service, closure will be considered complete upon verification that the internal and external liners have been decontaminated.

At least four samples will be collected to assure the tank has been decontaminated. Samples will be collected from the tank walls using a hole saw. The sample locations will be wetted during collection to prevent dusting. They will be analyzed for Toxicity Characteristic Leaching Procedure (TCLP). One sample will be collected from each of the following locations:

- the wall near the base of the tank
- the wall near the top
- half-way up the wall
- the floor of the tank

If the tank is to be dismantled, the external liner and foundation will be removed. At least four samples will be collected from the external liner to assure the debris is below Toxicity Characteristic Regulatory Levels. Sample locations will include stained areas, the sump and trenches. The surrounding area will be sampled and analyzed for possible contamination. Soil boring locations will be selected based on visual inspection. At least four soil samples will be collected beneath the base of the tank. The samples will be analyzed for total chromium and total lead by SW-846 Method 6010. All contaminated soils will be removed and/or neutralized.

After successful decontamination and disposal, closure certification will be obtained and submitted. If all contaminated soils cannot be removed or fully remediated, a post-closure care permit will be requested. Removal of all contaminated soils will be considered complete if the soils and any groundwater that is encountered meet the target concentrations shown on page 6a.

Results of total chromium in soil and groundwater will be compared to the chromium VI levels initially. If the chromium VI concentrations are exceeded, analysis will be done to determine the concentrations of trivalent and hexavalent chromium. Results will be compared to the above limits for the individual species.

Final Disposition

The tank, foundation, soil and discarded ancillary equipment will be decontaminated. All discarded materials will be either disposed of on site or in an approved landfill or other approved facility.

Closure Schedule

The following schedule will be followed if Splitter Feed Tank 2 will be closed during partial or final closure of the facility. Activities that are applicable during final closure are indicated and will not be included during partial closure. Final closure means closure of all hazardous waste units at the facility so that hazardous waste management activities subject to MHWMR 264 or 265 are no longer conducted unless subject to the provisions of MHWMR 262.34 (storage in tanks or containers for less than 90 days). Partial closure means closure of a hazardous waste management unit at a facility that contains other active hazardous waste management units; prior notification and certification of closure are not required during partial closure. Partial closure may include closure of this tank, its associated piping and underlying containment systems.

This schedule shall not preclude the DeLisle Plant from removing hazardous waste and decontaminating or dismantling equipment in accordance with the approved closure plan for partial or final closure at any time before or after notification of partial or final closure.

	Scheduled Event	Timing (Days)
1	Notify State of final closure if applicable (at least 45 days prior to step 3)	-15
2	Receipt of known final volume of hazardous waste	0
3	Expect to begin partial or final closure (within 30 days after step 2)	30
4	Demonstrate to Executive Director, MDEQ, that removal of all hazardous wastes will, of necessity, take longer than 90 days (at least 30 days prior to step 5)	60
5	Treat or remove all hazardous waste from unit (within 90 days after step 2)	90
6	Demonstrate to Executive Director, MDEQ, that partial or final closure will, of necessity, take longer than 180 days (at least 30 days prior to step 7)	120
7	Complete partial or final closure (180 days from step 2)	180
8	Certify that final closure is complete, if applicable (within 60 days from step 7)	240

Laboratory Procedure

Toxicity Characteristic Leaching Procedure (TCLP) will be used to verify the nonhazardous nature of the final wash solution and tank component samples. Total metals analysis will be performed on soils and groundwater using SW-846 Method 6010.

Contingent Post-Closure Care

In the event that a clean closure cannot be achieved, a groundwater monitoring system and a final cover with controls for run-on and run-off of precipitation as well as other post-closure requirements will be provided.

3.8 Closure Plan – Primary Filter Storage Tank 1

General

This plan identifies the procedure necessary to close the Primary Filter Storage Tank 1 system at the DeLisle Plant. Partial closure may occur if other hazardous waste management units at the facility will remain active.

Identification

EN:	654-2168-01
MANUFACTURER:	Ershigs
MATERIAL:	RTP
CAPACITY:	99,000 Gallons
DIMENSIONS:	30' Diameter x 19' High (sloped bottom)

Waste Composition

The Primary Filter Storage Tank is used to store iron chloride solutions from the manufacture of titanium dioxide. This tank provides in-process inventory between the first and second stages of solid separation prior to deepwell disposal. The general composition and characteristics of the solution are as follows:

16%	-	ferrous chloride
3%	-	ferric chloride
3%	-	hydrochloric acid
4%	-	miscellaneous metal chlorides
71%	-	water
3%	-	solids (coke, ore, gangue)

The parameters on page 6a will be analyzed for clean closure.

Maximum Waste Inventory

The maximum waste stored in this tank at one time is 99,000 gallons or approximately 1,032,089 pounds of iron chloride solution.

Closure Discussion

Closure will begin on this tank after notifying the appropriate State agencies and after receipt of the final volume of waste in the tank. All remaining liquid waste will be treated to remove the hazardous characteristics and underlying hazardous constituents and/or disposed of via deepwell injection. Alternately, the waste can be pumped to the Recycle Water Storage facility for eventual deepwell disposal.

The tank will be opened, and the remaining solids will be collected via a vacuum truck or other appropriate technique. The solids will be stored in the Recycle Water Storage facility for subsequent neutralization and landfill. Alternatively, the solids will be neutralized and stored in the Solids Pond for subsequent landfill. The internal tank liner will then be hydroblasted to remove residual solids, and the wash liquid will be pumped to the Recycle Water Vaults. A high pH (<12 pH) water wash may follow the hydroblasting to neutralize any residual chlorides if necessary. This wash water will be pumped to the Recycle Water Vaults or sampled and analyzed to assure that hazardous characteristics have been removed. The discarded ancillary equipment will be flushed and/or steam cleaned, sampled and analyzed for possible contamination. The final clean water rinsate will be sampled and analyzed per the appropriate procedures. If the tank is to be reused for another service, closure will be considered complete upon verification that the internal and external liners have been decontaminated.

At least four samples will be collected to assure the tank has been decontaminated. Samples will be collected from the tank walls using a hole saw. The sample locations will be wetted during collection to prevent dusting. They will be analyzed for Toxicity Characteristic Leaching Procedure (TCLP). One sample will be collected from each of the following locations:

- the wall near the base of the tank
- the wall near the top
- half-way up the wall
- the floor of the tank

If the tank is to be dismantled, the external liner and foundation will be removed. At least four samples will be collected from the external liner to assure the debris is below Toxicity Characteristic Regulatory Levels. Sample locations will include stained areas, the sump and trenches. The surrounding area will be sampled and analyzed for possible contamination. Soil boring locations will be selected based on visual inspection. At least four soil samples will be collected beneath the base of the tank. The samples will be analyzed for total chromium and total lead by SW-846 Method 6010. All contaminated soils will be removed and/or neutralized.

After successful decontamination and disposal, closure certification will be obtained and submitted. If all contaminated soils cannot be removed or fully remediated, a post-closure care permit will be requested. Removal of all contaminated soils will be considered complete if the soils and any groundwater that is encountered meet the target concentrations shown on page 6a.

Results of total chromium in soil and groundwater will be compared to the chromium VI levels initially. If the chromium VI concentrations are exceeded, analysis will be done to determine the concentrations of trivalent and hexavalent chromium. Results will be compared to the above limits for the individual species.

Final Disposition

The tank, foundation, soil and discarded ancillary equipment will be decontaminated. All discarded materials will be either disposed of on site or in an approved landfill or other approved facility.

Closure Schedule

The following schedule will be followed if Primary Filter Storage Tank 1 will be closed during partial or final closure of the facility. Activities that are applicable during final closure are indicated and will not be included during partial closure. Final closure means closure of all hazardous waste units at the facility so that hazardous waste management activities subject to MHWMR 264 or 265 are no longer conducted unless subject to the provisions of MHWMR 262.34 (storage in tanks or containers for less than 90 days). Partial closure means closure of a hazardous waste management unit at a facility that contains other active hazardous waste management units; prior notification and certification of closure are not required during partial closure. Partial closure may include closure of this tank, its associated piping and underlying containment systems.

This schedule shall not preclude the DeLisle Plant from removing hazardous waste and decontaminating or dismantling equipment in accordance with the approved closure plan for partial or final closure at any time before or after notification of partial or final closure.

	Scheduled Event	Timing (Days)
1	Notify State of final closure if applicable (at least 45 days prior to step 3)	-15
2	Receipt of known final volume of hazardous waste	0
3	Expect to begin partial or final closure (within 30 days after step 2)	30
4	Demonstrate to Executive Director, MDEQ, that removal of all hazardous wastes will, of necessity, take longer than 90 days (at least 30 days prior to step 5)	60
5	Treat or remove all hazardous waste from unit (within 90 days after step 2)	90
6	Demonstrate to Executive Director, MDEQ, that partial or final closure will, of necessity, take longer than 180 days (at least 30 days prior to step 7)	120
7	Complete partial or final closure (180 days from step 2)	180
8	Certify that final closure is complete, if applicable (within 60 days from step 7)	240

Laboratory Procedure

Toxicity Characteristic Leaching Procedure (TCLP) will be used to verify the nonhazardous nature of the final wash solution and tank component samples. Total metals analysis will be performed on soils and groundwater using SW-846 Method 6010.

Contingent Post-Closure Care

In the event that a clean closure cannot be achieved, a groundwater monitoring system and a final cover with controls for run-on and run-off of precipitation as well as other post-closure requirements will be provided.

3.9 Closure Plan – Primary Filter Storage Tank 2

General

This plan identifies the procedure necessary to close the Primary Filter Storage Tank 2 system at the DeLisle Plant. Partial closure may occur if other hazardous waste management units at the facility will remain active.

Identification

EN:	654-2168-24
MANUFACTURER:	Ershigs
MATERIAL:	RTP
CAPACITY:	70,000 Gallons
DIMENSIONS:	27' Diameter x 18' High (sloped bottom)

Waste Composition

The Primary Filter Storage Tank is used to store iron chloride solutions from the manufacture of titanium dioxide. This tank provides in-process inventory between the first and second stages of solid separation prior to deepwell disposal. The general composition and characteristics of the solution are as follows:

16%	-	ferrous chloride
3%	-	ferric chloride
3%	-	hydrochloric acid
4%	-	miscellaneous metal chlorides
71%	-	water
3%	-	solids (coke, ore, gangue)

The parameters on page 6a will be analyzed for clean closure.

Maximum Waste Inventory

The maximum waste stored in this tank at one time is 70,000 gallons or approximately 729,760 pounds of iron chloride solution.

Closure Discussion

Closure will begin on this tank after notifying the appropriate State agencies and after receipt of the final volume of waste in the tank. All remaining liquid waste will be treated to remove the hazardous characteristics and underlying hazardous constituents and/or disposed of via deepwell injection. Alternately, the waste can be pumped to the Recycle Water Storage facility for eventual deepwell disposal.

The tank will be opened, and the remaining solids will be collected via a vacuum truck or other appropriate technique. The solids will be stored in the Recycle Water Storage facility for subsequent neutralization and landfill. Alternatively, the solids will be neutralized and stored in the Solids Pond for subsequent landfill. The internal tank liner will then be hydroblasted to remove residual solids, and the wash liquid will be pumped to the Recycle Water Vaults. A high pH (<12 pH) water wash may follow the hydroblasting to neutralize any residual chlorides if necessary. This wash water will be pumped to the Recycle Water Vaults or sampled and analyzed to assure that hazardous characteristics have been removed. The discarded ancillary equipment will be flushed and/or steam cleaned, sampled and analyzed for possible contamination. The final clean water rinsate will be sampled and analyzed per the appropriate procedures. If the tank is to be reused for another service, closure will be considered complete upon verification that the internal and external liners have been decontaminated.

At least four samples will be collected to assure the tank has been decontaminated. Samples will be collected from the tank walls using a hole saw. The sample locations will be wetted during collection to prevent dusting. They will be analyzed for Toxicity Characteristic Leaching Procedure (TCLP). One sample will be collected from each of the following locations:

- the wall near the base of the tank
- the wall near the top
- half-way up the wall
- the floor of the tank

If the tank is to be dismantled, the external liner and foundation will be removed. At least four samples will be collected from the external liner to assure the debris is below Toxicity Characteristic Regulatory Levels. Sample locations will include stained areas, the sump and trenches. The surrounding area will be sampled and analyzed for possible contamination. Soil boring locations will be selected based on visual inspection. At least four soil samples will be collected beneath the base of the tank. The samples will be analyzed for total chromium and total lead by SW-846 Method 6010. All contaminated soils will be removed and/or neutralized.

After successful decontamination and disposal, closure certification will be obtained and submitted. If all contaminated soils cannot be removed or fully remediated, a post-closure care permit will be requested. Removal of all contaminated soils will be considered complete if the soils and any groundwater that is encountered meet the target concentrations shown on page 6a.

Results of total chromium in soil and groundwater will be compared to the chromium VI levels initially. If the chromium VI concentrations are exceeded, analysis will be done to determine the concentrations of trivalent and hexavalent chromium. Results will be compared to the above limits for the individual species.

Final Disposition

The tank, foundation, soil and discarded ancillary equipment will be decontaminated. All discarded materials will be either disposed of on site or in an approved landfill or other approved facility.

Closure Schedule

The following schedule will be followed if Primary Filter Storage Tank 2 will be closed during partial or final closure of the facility. Activities that are applicable during final closure are indicated and will not be included during partial closure. Final closure means closure of all hazardous waste units at the facility so that hazardous waste management activities subject to MHWMR 264 or 265 are no longer conducted unless subject to the provisions of MHWMR 262.34 (storage in tanks or containers for less than 90 days). Partial closure means closure of a hazardous waste management unit at a facility that contains other active hazardous waste management units; prior notification and certification of closure are not required during partial closure. Partial closure may include closure of this tank, its associated piping and underlying containment systems.

This schedule shall not preclude the DeLisle Plant from removing hazardous waste and decontaminating or dismantling equipment in accordance with the approved closure plan for partial or final closure at any time before or after notification of partial or final closure.

	Scheduled Event	Timing (Days)
1	Notify State of final closure if applicable (at least 45 days prior to step 3)	-15
2	Receipt of known final volume of hazardous waste	0
3	Expect to begin partial or final closure (within 30 days after step 2)	30
4	Demonstrate to Executive Director, MDEQ, that removal of all hazardous wastes will, of necessity, take longer than 90 days (at least 30 days prior to step 5)	60
5	Treat or remove all hazardous waste from unit (within 90 days after step 2)	90
6	Demonstrate to Executive Director, MDEQ, that partial or final closure will, of necessity, take longer than 180 days (at least 30 days prior to step 7)	120
7	Complete partial or final closure (180 days from step 2)	180
8	Certify that final closure is complete, if applicable (within 60 days from step 7)	240

Laboratory Procedure

Toxicity Characteristic Leaching Procedure (TCLP) will be used to verify the nonhazardous nature of the final wash solution and tank component samples. Total metals analysis will be performed on soils and groundwater using SW-846 Method 6010.

Contingent Post-Closure Care

In the event that a clean closure cannot be achieved, a groundwater monitoring system and a final cover with controls for run-on and run-off of precipitation as well as other post-closure requirements will be provided.

3.10 Closure Plan – Deepwell Storage Vault

General

This plan identifies the procedure necessary to close the Deepwell Storage Vault tank system at the DeLisle Plant. Partial closure may occur if other hazardous waste management units at the facility will remain active.

Identification

EN:	670-2260-13
MANUFACTURER:	Bekaplast
MATERIAL:	Polyethylene-lined Concrete
CAPACITY:	475,000 Gallons
DIMENSIONS:	34' Wide x 122' Long x 15.75' High

Waste Composition

The Deepwell Storage Vault is used to store iron chloride solutions from the manufacture of titanium dioxide. This tank provides in-process inventory after solid separation prior to deepwell disposal. The general composition and characteristics of the solution are as follows:

- 17% - ferrous chloride
- 3% - ferric chloride
- 3% - hydrochloric acid
- 4% - miscellaneous metal chlorides
- 73% - water

The parameters on page 6a will be analyzed for clean closure.

Maximum Waste Inventory

The maximum waste stored in this tank at one time is 475,000 gallons or approximately 4,950,000 pounds of iron chloride solution.

Closure Discussion

Closure will begin on this tank after notifying the appropriate State agencies and after receipt of the final volume of waste in the tank. All remaining liquid waste will be treated to remove the hazardous characteristics and underlying hazardous constituents and/or disposed of via deepwell injection. Alternately, the waste can be pumped to the Recycle Water Storage facility for eventual deepwell disposal.

The tank will be opened, and the remaining solids will be collected via a vacuum truck or other appropriate technique. The solids will be stored in the Recycle Water Storage facility for subsequent neutralization and landfill. Alternatively, the solids will be neutralized and stored in the Solids Pond for subsequent landfill. The internal tank liner will then be hydroblasted to remove residual solids, and the wash liquid will be pumped to the Recycle Water Vaults. A high pH (<12 pH) water wash may follow the hydroblasting to neutralize any residual chlorides if necessary. This wash water will be pumped to the Recycle Water Vaults or sampled and analyzed to assure that hazardous characteristics have been removed. The discarded ancillary equipment will be flushed and/or steam cleaned, sampled and analyzed for possible contamination. The final clean water rinsate will be sampled and analyzed per the appropriate procedures. If the tank is to be reused for another service, closure will be considered complete upon verification that the internal and external liners have been decontaminated.

At least four samples will be collected to assure the tank has been decontaminated. Samples will be collected from the tank walls using a hole saw. The sample locations will be wetted during collection to prevent dusting. They will be analyzed for Toxicity Characteristic Leaching Procedure (TCLP). One sample will be collected from each of the following locations:

- the wall near the base of the tank
- the wall near the top
- half-way up the wall
- the floor of the tank

If the tank is to be dismantled, the external liner and foundation will be removed. At least four samples will be collected from the external liner to assure the debris is below Toxicity Characteristic Regulatory Levels. Sample locations will include stained areas, the sump and trenches. The surrounding area will be sampled and analyzed for possible contamination. Soil boring locations will be selected based on visual inspection. At least four soil samples will be collected beneath the base of the tank. The samples will be analyzed for total chromium and total lead by SW-846 Method 6010. All contaminated soils will be removed and/or neutralized.

After successful decontamination and disposal, closure certification will be obtained and submitted. If all contaminated soils cannot be removed or fully remediated, a post-closure care permit will be requested. Removal of all contaminated soils will be considered complete if the soils and any groundwater that is encountered meet the target concentrations shown on page 6a.

Results of total chromium in soil and groundwater will be compared to the chromium VI levels initially. If the chromium VI concentrations are exceeded, analysis will be done to determine the concentrations of trivalent and hexavalent chromium. Results will be compared to the above limits for the individual species.

Final Disposition

The tank, foundation, soil and discarded ancillary equipment will be decontaminated. All discarded materials will be either disposed of on site or in an approved landfill or other approved facility.

Closure Schedule

The following schedule will be followed if Deepwell Storage Vault will be closed during partial or final closure of the facility. Activities that are applicable during final closure are indicated and will not be included during partial closure. Final closure means closure of all hazardous waste units at the facility so that hazardous waste management activities subject to MHWMR 264 or 265 are no longer conducted unless subject to the provisions of MHWMR 262.34 (storage in tanks or containers for less than 90 days). Partial closure means closure of a hazardous waste management unit at a facility that contains other active hazardous waste management units; prior notification and certification of closure are not required during partial closure. Partial closure may include closure of this tank, its associated piping and underlying containment systems.

This schedule shall not preclude the DeLisle Plant from removing hazardous waste and decontaminating or dismantling equipment in accordance with the approved closure plan for partial or final closure at any time before or after notification of partial or final closure.

	Scheduled Event	Timing (Days)
1	Notify State of final closure if applicable (at least 45 days prior to step 3)	-15
2	Receipt of known final volume of hazardous waste	0
3	Expect to begin partial or final closure (within 30 days after step 2)	30
4	Demonstrate to Executive Director, MDEQ, that removal of all hazardous wastes will, of necessity, take longer than 90 days (at least 30 days prior to step 5)	60
5	Treat or remove all hazardous waste from unit (within 90 days after step 2)	90
6	Demonstrate to Executive Director, MDEQ, that partial or final closure will, of necessity, take longer than 180 days (at least 30 days prior to step 7)	120
7	Complete partial or final closure (180 days from step 2)	180
8	Certify that final closure is complete, if applicable (within 60 days from step 7)	240

Laboratory Procedure

Toxicity Characteristic Leaching Procedure (TCLP) will be used to verify the nonhazardous nature of the final wash solution and tank component samples. Total metals analysis will be performed on soils and groundwater using SW-846 Method 6010.

Contingent Post-Closure Care

In the event that a clean closure cannot be achieved, a groundwater monitoring system and a final cover with controls for run-on and run-off of precipitation as well as other post-closure requirements will be provided.

4.0 CLOSURE CERTIFICATION

Certifications of closure will be submitted within sixty (60) days of closure completion. A facility representative and an independent registered professional engineer will certify closure. The certification to be made by the facility representative will state that active operation of the tanks or facility has permanently ceased. It will also state that all measures of the approved Closure Plan have been implemented. Certification by an independent registered professional engineer will be submitted. This certification will state that the engineer has reviewed the approved Closure Plan, is familiar with applicable rules and regulations, and has inspected the facility and found that the closure was performed in full accordance with the Plan.

5.0 FINANCIAL ASSURANCE

Financial assurance is in place and maintained for clean closure of the 7 RCRA tanks discussed in this closure plan. Financial assurance documentation required by MHWNR 264.143 is updated and provided annually to the agency as part of permit requirements.

6.0 CLEAN CLOSURE COST ESTIMATE

See cost estimate details which begin on next page in document dated March 12, 2019 (Parsons).

PARSONS

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March 12, 2019

via email: Suzanne.Gibson@Chemours.com

Ms. Suzanne Gibson
The Chemours Company FC, LLC – DeLisle Plant
Environmental, Health, and Safety Group
7685 Kiln DeLisle Road
Pass Christian, MS 39571

Subject: **RCRA Closure Plan 2019 Cost Revalidation – Chemours DeLisle Facility**

Dear Ms. Gibson,

Parsons is pleased to present the 2019 revalidated cost estimate in support of the RCRA Closure Plan for the Chemours DeLisle, Mississippi facility. The updated cost estimate was prepared in response to a request from the Mississippi Department of Environmental Quality (MDEQ) to provide a revalidated cost estimate in order to issue a new RCRA TSD permit to the facility.

This cover memo provides a brief description of the methods used to develop the updated cost estimate and provides a summary of the results following our team discussion in February 2019.

PROCEDURE

Parsons retained the individual line item work elements associated with the 2005 Closure Plan cost estimate addressing equipment demolition, waste disposal, and soil removal associated with the following equipment:

- Thickeners (2)
- Splitter Feed Tanks (2)
- Primary Filter Storage Tanks (2)
- Deepwell Storage Vault (1).

The 2005 Closure Plan was used in the cost update process. Parsons retained the quantity takeoffs for each individual line item, plus an additional item to address disposal of wash water waste.

Parsons used RSMeans 2019 Cost Works data to provide the basis for all line items except for the following:

- Waste disposal – transportation and disposal costs provided by Chemours.
- Analytical testing – A nominal lump sum was assumed.
- Closure report – A nominal lump sum was assumed.
- Project Management – The cost provided in 2005 was adjusted to 2019 dollars based on the Consumer Price Index (CPI).

Appendix A provides the cost code for each line item for which RSMeans Cost Works was applied, along with the assumptions pertaining to each line item when developing the overall revalidated cost estimate.

RESULTS

Parsons developed an Excel spreadsheet to develop the revalidated cost estimate, including individual tabs addressing detailed cost estimating for each line item plus a summary tab presenting the overall revalidated estimated cost. The 2019 cost estimate assumed coverage of all areas and line items from the 2005 plan, plus disposal of waste wash water.

The total for the revalidated cost estimate was **$4,907,000.** The output from the Excel spreadsheet including cost summary and individual estimating sheets is included as Appendix B.

• • •

Parsons appreciates the opportunity to assist Chemours with preparing this revalidated cost estimate. If you have any questions or concerns with this cost estimate, please do not hesitate to contact me at 315-552-9729 or ted.schoenberg@parsons.com.

Sincerely,

Ted Schoenberg, PhD, PE

Cc: Jeffrey Snell; Parsons
Project File

APPENDIX A

2019 COST ESTIMATE ASSUMPTIONS

Cost Estimate Assumptions

Line Item	Reference RSMeans Code	Assumptions
1. Pressure Clean External Liner	09 91 0330 0880	• External liner constitutes concrete containment/berm or similar • Three (3) cleaning passes (→ 3 x RSMeans unit cost)
2. Decontaminate Liner	04 01 3020 0820	• Decontamination will involve introduction of a chemical (e.g., sodium bicarbonate) to neutralize $FeCl_3$
3. Pressure Clean Piping	09 91 0330 0880	• Costed per external surface area of pipe • Pipe outside diameter = 8" • Design factor of 1.5 applied to unit cost to account for pipe shape and accessibility
4. Decontaminate Piping	N/A	• Nominal cost of $0.25/LF assumed for flushing; actual operation may be performed by Operations staff to prepare for Contractor demo.
5. Dismantle External Liner	02 41 1317 5500	• Reinforced concrete
6,7. Dismantle and Removal Equip and Ancillary: Thickeners, etc.	13 05 0575 0540	• "2/3" rule applied to scale unit cost of tank demo (up to 30,000 gal) for thickeners and filter storage tanks. • Cost added for demo'ing internal liner of thickeners • Ancillary cost assumed = 50% of cost to demo tanks
6,7. Dismantle and Removal Equip and Ancillary: Deepwell Vault	02 41 1317 5400	• Reinforced concrete assumed for floors and walls • Wall and floor thickness = 24-in • Cost added for demo'ing internal liner • Ancillary cost assumed = 50% of cost to demo tank
8. Dismantle and Remove Piping	02 41 1338 2900 + 02 41 1338 3100	• 6-inch piping • One fitting every 250 ft
9. Remove Soil	02 56 1310 0100	• Includes transfer to transport container
10. Transportation – Concrete from Containment Area External Liner	02 81 2010 1260/1270	• Unit cost taken as midway between average (-1260) and maximum (-1270) unit costs in RSMeans • Nominal distance to disposal facility = 50 miles

Cost Estimate Assumptions (Continued)

Line Item	Reference RSMeans Code	Assumptions
11. Transportation – Equipment Debris	02 81 2010 1260/1270	• Assume unit cost same as for concrete.
12. Transportation – $FeCl_3$ Waste	N/A	• $FeCl_3$ waste disposal to be managed as part of Operations.
13. Transportation – Wash Water	N/A; Unit costs provided by Chemours	• Wash water disposed of as hazardous waste • Maximum process tank capacity assumed as amount to be disposed • Load Capacity = 4,000 gal
14. Transportation – Soil	02 81 2010 1260/1270	• Volume per load = 25 C.Y. • Nominal distance to disposal facility = 100 miles
15. Disposal – Concrete, Piping, and Equip	Not Used	• Nominal unit cost of $25./ton assumed
16. Disposal – Tank Equipment	Not Used	• Same nominal unit cost as for concrete, piping, and equip ($25./ton)
17. Disposal – $FeCl_3$ Waste	N/A	• $FeCl_3$ waste disposal to be managed as part of Operations.
18. Disposal – Wash Water	N/A; Unit costs provided by Chemours	• Wash water disposed of as hazardous waste • Maximum process tank capacity assumed as amount to be disposed • Load Capacity = 4,000 gal
19. Disposal – Soil	02 81 2010 6000/6020	• Soil is disposed of as HW • 1 C.Y. soil = 0.72 Ton (within typical range)
20. Fill	31 23 2315 7000	• (No assumptions)
21. Analytical Testing	Not Used	• Nominal cost of $50,000 for thickeners, splitter tanks, and filter storage tanks • Nominal cost of $20,000 for deepwell vault
22. Closure Report	Not Used	• Nominal cost of $20,000 per site area ($40,000 total)
23. Project Management	Not Used	• 2005 cost adjusted to 2019 dollars through CPI

APPENDIX B

2019 COST ESTIMATE SPREADSHEET OUTPUT

Thickeners, Splitter Feed Tanks, Primary Filter Storage Tanks

Line #	Operation	Feature	Unit	Qty	Revalidated Cost Estimate (2019) Unit Cost - RSMeans Or As Provided	Revalidated Cost Estimate (2019) Extended Line Item Cost
1	Pressure Clean	External Liner	ft^2	29,252	$0.33	$9,653
2	Decontaminate	Liner	ft^2	16,400	$1.52	$24,928
3	Pressure Clean	Piping	ft	26,000	$1.04	$26,955
4	Decontaminate	Piping	ft	26,000	$0.25	$6,500
5	Dismantle	Containment Area External Liner	CY	966.4	$158	$152,691
6	Dismantle and Remove	Equipment	LS	1	$34,000	$34,000
7	Dismantle and Remove	Ancillary Equip	LS	1	$17,000	$17,000
8	Dismantle and Remove	Piping	ft	26,000	$9.80	$254,904
9	Removal	Soil from around equip	CY	2,167	$32.00	$69,344
10	Transportation	Concrete from Containment Area External Liner	CY	966.4	$10.45	$10,101
11	Transportation	Equipment Debris	CY	500	$10.45	$5,226
12	Transportation	$FeCl_3$ Waste	Gal	451,900	$0.00	$0.00
13	Transportation	Wash Water	Gal	120,000	$0.35	$42,000
14	Transportation	Soil	CY	2,167	$21	$45,066
15	Disposal	Concrete, Piping, and Equip	Ton	1,957	$25.00	$48,925
16	Disposal	Tank Equipment	Ton	100	$25.00	$2,500
17	Disposal	$FeCl_3$ Waste	Gal	451,900	$0.00	$0.00
18	Disposal	Wash Water	Gal	120,000	$3.15	$378,000
19	Disposal	Soil	CY	2,167	$183	$397,081
20	Fill	General	CY	2,167	$34.00	$73,678
21	Analytical Testing	General	LS	1	$50,000	$50,000
22	Closure Report	General	LS	1	$20,000	$20,000
						$1,668,552

Deepwell Storage Vault

Line #	Operation	Feature	Unit	Qty	Revalidated Cost Estimate (2019) Unit Cost - RSMeans Or As Provided	Revalidated Cost Estimate (2019) Extended Line Item Cost
1	Pressure Clean	External Liner	ft^2	27,000	$0.33	$8,910
2	Decontaminate	Liner	ft^2	9,800	$1.52	$14,896
3	Pressure Clean	Piping	ft	100,000	$1.04	$103,673
4	Decontaminate	Piping	LS	1	$0.25	$25,000
5	Dismantle	Containment Area External Liner	CY	2,450	$158	$387,100
6	Dismantle and Remove	Equipment	LS	1	$131,000	$131,000
7	Dismantle and Remove	Ancillary Equip	LS	1	$65,500	$65,500
8	Dismantle and Remove	Piping	ft	100,000	$9.80	$980,400
9	Removal	Soil from around equip	CY	2,000	$32.00	$64,000
10	Transportation	Concrete from Containment Area External Liner	CY	2,450	10.36	25,382
11	Transportation	Equipment Debris	CY	500	$10.36	$5,180
12	Transportation	$FeCl_3$ Waste	Gal	475,000	$0.00	$0.00
13	Transportation	Wash Water	Gal	120,000	$0.35	$42,000
14	Transportation	Soil	CY	2,167	$21	$41,440
15	Disposal	Concrete, Piping, and Equip	Ton	4,952	$25.00	$123,800
16	Disposal	Tank Equipment	Ton	100	$25.00	$2,500
17	Disposal	$FeCl_3$ Waste	Gal	475,000	$0.00	$0.00
18	Disposal	Wash Water	Gal	120,000	$3.15	$378,000
19	Disposal	Soil	CY	2,167	$183	$366,480
20	Fill	General	CY	2,000	$34.00	$68,000
21	Analytical Testing	General	LS	1	$20,000	$20,000
22	Closure Report	General	LS	1	$20,000	$20,000
						$2,873,261

Project Management

Line #	Operation	Feature	Unit	Qty	Revalidated Cost Estimate (2019) Unit Cost Adj (2005 → 2019)	Revalidated Cost Estimate (2019) Extended Line Item Cost
23	Project Management	General	LS	1	$365,000	$365,000
					(CPI Applied to 2005 Proj Mgt Cost)	$365,000

CPI
2005 to 2019
Reference: https://www.officialdata.org/us/inflation/2005?amount=100

1.2864 (Applied to 2005 Project Management Cost)

Updated (2019) Total
$4,907,000

Pressure Clean External Liner

Reference Category:	Exterior Surface Preparation, Pressure Wash Based on 2,500 lb. Operating Pressure, Aluminum or Vinyl			
Reference Code:	09 91 0330 0880			
Unit Cost:	$0.11	per	SF	Per pass
Assume	3	Passes		
Net Unit Cost:	$0.33	per	SF	

Summary:

	Thickeners, etc.	Deepwell Vault
Area (SF)	29,252	27,000
Line Item Cost	**$9,653**	**$8,910**

Decontaminate Liner

Reference Category:	Unit Masonry Cleaning, High Pressure Water and Chemical, Light Soil, Average Soil, Biological Staining		
Reference Code:	04 01 3020 0820	Reflect "typical" costs	
Unit Cost:	$1.52	per	SF
Summary:			

	Thickeners, etc.	Deepwell Vault
Area (SF)	16,400	9,800
Line Item Cost	**$24,928**	**$14,896**

It has been assumed for decontamination that unit cost will be similar as for pressure clean (per original closure plan); and furthe that decontamination may involve introduction of a chemical (e.g., sodium bicarbonate or similar) to neutralize acidic residu as part of the decontamination process for the $FeCl_3$ to eliminate potential characteristic hazard.

Pressure Clean Piping

Calculate similarly for Pressure Clean External Liner as follows:
1) Calculate approximate square-footage of pipe exterior based on an assumed diamete
2) Apply a design factor to the $/SF unit cost to address cleaning of piping versus flat surface

Assumptions:

Pipe Outside Diameter	8	in		
Design factor	1.5			

Reference Category:	Exterior Surface Preparation, Pressure Wash Based on 2,500 lb. Operating Pressure, Aluminum or Viny			
Reference Code:	09 91 0330 0880			
Unit Cost:	$0.11	per	SF	Per pass
Assume	3	Passes		
Net Unit Cost:	$0.33	per	SF	
Net Unit Cost w/Design Factor:	$0.50	per	SF	Design Factor Applied

Summary:

	Thickeners, etc.	Deepwell Vault	
Length (Ft)	26,000	100,000	
Area (SF)	54,454	209,440	
Line Item Cost	**$26,955**	**$103,673**	
Net Unit Cost ($/Ft):	$1.04	$1.04	Original / Reportable Units

Decontaminate Piping

Assume nominal unit cost of:	$0.25	per	LF

	Thickeners, etc.	Deepwell Vault
Length (Ft)	26,000	100,000
Line Item Cost	**$6,500**	**$25,000**

Demo External Liner

Reference Category:	Demolish, Remove Pavement and Curb, Concrete, 7"-24" thick, reinforcec		
Reference Code:	02 41 1317 5500		
Unit Cost:	$158.00	per	CY
Summary:			

	Thickeners, etc.	Deepwell Vault
Quantity (CY)	966.4	2,450
Line Item Cost	**$152,691**	**$387,100**

Demo Tanks and Ancillary Equipment

1. Thickeners, Splitter Feed Tanks, Primary Filter Storage Tanks

Reference Category:	Selective Demolition, Storage Tanks, Steel Wall, Single Wall, 15,000 thru 30,000 gallons (largest volume represented)
Reference Code:	13 05 0575 0540
Reference Cost:	$2,850 for 30,000 gal steel tank
Assumed Estimating Approach:	Apply "two-thirds rule": $(C2/C1) = (V2/V1)^{(2/3)}$ for tanks larger than 30,000 gal
	Calculate per tank

Tank	Volume (gal)	Unit Cost "2/3 Rule"	Comments
Thickener 1	126,240	$7,428	MOC = Rubber-lined carbon steel; liner appears costed separately in original closure plan
Thickener 2	126,240	$7,428	MOC = Rubber-lined carbon steel; liner appears costed separately in original closure plan
Splitter Feed Tank 1	12,150	$2,850	MOC = FRP
Splitter Feed Tank 2	12,150	$2,850	MOC = FRP
Primary Filter Storage Tank 1	99,000	$6,317	MOC = RTP
Primary Filter Storage Tank 1	70,000	$5,014	MOC = RTP
Total (Tanks Only)		**$31,888**	

Additional Cost for Thickener Liners

Tank Diameter	40 ft	
Tank Height	12 ft	
Wall Area per Thickener	1508 SF	
Floor Area per Thickener	1257 SF	
Total Liner Area (Two Tanks)	5529	
Liner Thickness	0.25 in	
Liner Volume =	115 CF	
	4.3 CY	
Unit Cost (per CY):	$158	Assume same as for concrete demo
Design Factor	3	For working inside tanks
Total Liner Removal Cost	$2,022	
TOTAL (Tanks + Liners)	**$34,000**	
Ancillary Equipment	Factor =	50%
TOTAL		**$17,000**

Comments

1) Unclear if steel tank demo costs applicable to FRP and RTP tanks - especially if their contractor can re-coup some costs for recycling steel

2. Deepwell Vault

Reference Category:	Demolish, Remove Pavement and Curb, Concrete, 7"-24" thick, plain
Reference Code:	02 41 1317 5500
Unit Cost:	$158.00 per CY
Summary:	

Tank Dimensions (Ft)	
Width	34
Length	122
Height	15.75
Assumed Thickness (in)	24

Quantity of Concrete	Area (SF)	Volume (CY)
Floor	4148	307
Walls	4914	364
Subtotal		671
Add design safety factor:		20%
Total estimated quantity:		806

TOTAL (Tank Only) **$127,271**

Additional Cost for Vault Liner

Total Wall Area	9062 SF	
Liner Thickness	0.25 in	
Liner Volume =	189 CF	
	7.0 CY	
Unit Cost (per CY):	$158	Assume same as for concrete demo
Design Factor	3	For working inside tanks
Total Liner Removal Cost	$3,314	
TOTAL (Tanks + Liners)	**$131,000**	
Ancillary Equipment	Factor =	50% of Tank Demo
TOTAL		**$65,500**

Demo Piping

Reference Category:	Selective Demolition, Water & Sewer Piping and Fittings, Cast Iron Pipe, 5" - 6" Diameter		
Reference Code:	02 41 1338 2900		
Unit Cost:	$9.55	per	Ft
PLUS			
Reference Category:	Selective Demolition, Water & Sewer Piping and Fittings, Cast Iron Fitting, 5" - 6" Diameter		
Reference Code:	02 41 1338 3100		
Unit Cost:	$63.50	per	Unit
ASSUME:			
Adapted to Pipe Units:	1 Fitting per	250	Ft
	$0.25	per	Ft
Total Unit Cost:			
Summary:	$9.80	per	Ft

	Thickeners, etc.	Deepwell Vault
Length (Ft)	26,000	100,000
Line Item Cost	**$254,904**	**$980,400**

This assumes pipe diameter is the same for the tanks and the vault.

Soil Excavation / Removal

Reference Category:	Containment of Hazardous Waste, 3/4 C.Y. excavator to 10' deep		
Reference Code:	02 56 1310 0100		
Unit Cost:	$32.00	per	CY
Summary:			

	Thickeners, etc.	Deepwell Vault
Quantity (CY)	2,167	2,000
Line Item Cost	**$69,344**	**$64,000**

Assume: Includes transfer to transport container.

Transportation - Concrete

For costing purposes, assume transportation is same as for HW but with disposal facility within 50 miles.

Reference Category:	Hazardous Waste Cleanup/Pickup/Disposal, Transportation to Disposal Site, Truckload = 80 drums or 25 C.Y. or 18 tons, Minimum/Maximum				
Reference Code:	02 81 2010.1260/1270				
Unit Cost:	Minimum	Maximum	Average		
	$3.71	$6.65	$5.18	per	Mile
Use Average unit cost					

Summary:
1) Calculate number of truck trips
2) Convert to cost per CY based on assumed mileage

Truck haul capacity	25 CY	Based on CostWorks category
Distance to Disposal Facility	50 mi	Assumption

	Thickeners, etc.	Deepwell Vault
Concrete (CY)	966	2,450
Number of truck trips	39	98
Total Miles	1,950	4,900
Line Item Cost	$10,101	$25,382
Unit Cost per Ton	$10.45	$10.36

Equipment Disposal

For costing purposes, assume transportation is same cost basis as for concrete on summary sheet.

$FeCl_3$ Disposal Using Client-Provided Information

Transportation

Unit Cost:	$1,400	per Load	Client Input
Load Size:	4,000	gal	Assumption
Summary:			

	Thickeners, etc.	Deepwell Vault
Volume $FeCl_3$ (gal)	451,900	475,000
Number of truck trips	113	119
Line Item Cost	**$158,200**	**$166,600**
Unit Cost per gal	$0.35	$0.35

Disposal

Unit Cost:	$3.15	per gal
Summary:		

	Thickeners, etc.	Deepwell Vault
$FeCl_3$ waste (gal)	451,900	475,000
Line Item Cost	**$1,423,485**	**$1,496,250**

$FeCl_3$ Disposal

$FeCl_3$ Disposal to be managed separately as part of operations.

Hazardous Waste Disposal - Soil

Transportation

Reference Category:	Hazardous Waste Cleanup/Pickup/Disposal, Transportation to Disposal Site, Truckload = 80 drums or 25 C.Y. or 18 tons, Minimum/Maximum				
Reference Code:	02 81 2010 1260/1270				
Unit Cost:	Minimum	Maximum	Average		
	$3.71	$6.65	$5.18	per	Mile
Use Average unit cost					

Summary:
1) Calculate number of truck trips
2) Convert to cost per CY based on assumed mileage

Truck volume	25	CY	Based on CostWorks category
Distance to TSD Facility	100	mi	Assumption

	Thickeners, etc.	Deepwell Vault
Quantity of Soil (CY)	2,167	2,000
Number of truck trips	87	80
Total Miles	8,700	8,000
Line Item Cost	$45,066	$41,440
Unit Cost per CY	$21	$21

Disposal

Reference Category:	Hazardous Waste Cleanup/Pickup/Disposal, Dumpsite Disposal Charge, Minimum/Maximum				
Reference Code:	02 81 2010 6000/6020				
Unit Cost:	Minimum	Maximum	Average		
	$129	$380	$255	per	Ton
Use Average unit cost					
Convert to $/CY	1 CY =	0.72	Ton		
Unit Cost ($/CY):	$183.24	per	Ton		

	Thickeners, etc.	Deepwell Vault
Soil (C.Y.)	2,167	2,000
Line Item Cost	$397,081	$366,480

Tank Equipment Disposal

Assume nominal unit cost of:	$25.00	($/Ton)

	Thickeners, etc.	Deepwell Vault
Tank Equipment (Ton)	1,957	4,952
Line Item Cost	**$48,925**	**$123,800**

Tank Equipment Disposal

For costing purposes, assume disposal is same cost basis as for concrete on summary sheet.

Pressure Cleaning

Reference Category:	Borrow, Loading and/or Spreading, Topsoil or loam from stockpile, shovel, 1 C.Y. bucket		
Reference Code:	31 23 2315 7000		
Unit Cost:	$34.00	per	BCY
Summary:			

	Thickeners, etc.	Deepwell Vault
Quantity (CY)	2,167	2,000
Line Item Cost	**$73,678**	**$68,000**

Todd A. Coomes, Corporate Counsel
The Chemours Company
1007 Market Street
Legal, WOB 655-9
Wilmington, DE 19899
Phone: (302)773-1306
Email: *todd.coomes@chemours.com*

March 28, 2019

SENT VIA CERTIFIED MAIL

Mississippi Department of Environmental Quality
Attention: William Rider
RCRA C – Hazardous Waste Branch
Waste Division
P.O. Box 2261
Jackson, Mississippi 39225

Re: Chemours DeLisle Plant
Corporate Guarantee for UIC and RCRA Tank Closure

Dear Mr. Rider:

Guarantee made this date of March 28, 2019, by The Chemours Company, a business corporation organized under the laws of the State of Delaware, herein referred to as guarantor. This guarantee is made on behalf of The Chemours Company FC, LLC of 1007 Market Street, Wilmington, DE 19899, which is a subsidiary.

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in 40 CFR264.143(f), 264.145(f), 265.143(e), and 265.145(e).

2. The Chemours Company FC, LLC owns and operates the following hazardous waste management facility covered by this guarantee: The Chemours DeLisle Plant, 7686 Kiln Delisle Road, Pass Christian, MS 39571. This guarantee covers the costs of closure of the Underground Injection Control well in the amount of $12,469,646.70 and of the tanks permitted under a RCRA operating permit in the amount of $4,907,000.

3. "Closure plans" and "post-closure plans" as used below refer to the plans maintained as required by subpart G of 40 CFR parts 264 and 265 for the closure and post-closure care of facilities as identified above.

4. For value received from The Chemours Company FC, LLC guarantor guarantees to MDEQ that in the event that The Chemours Company FC, LLC fails to perform corrective action at the above facility in accordance with the closure or post-closure plans and other permit or interim status requirements whenever required to do so, the guarantor shall do so or establish a trust fund as specified in subpart H of 40 CFR part 264 or 265, as applicable, in the name of The Chemours Company FC, LLC in the amount of the current corrective action estimate shown in Attachment A.

5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within 90 days, by certified mail, notice to the Administrator for EPA Region 4, the Executive Director of MDEQ and to The Chemours Company FC, LLC that he intends to provide alternate financial assurance as specified in subpart Hof 40 CFR part 264 or 265, as applicable, in the name of The Chemours Company FC, LLC. Within 120 days after the end of such fiscal year, the guarantor shall establish such financial assurance unless The Chemours Company FC, LLC has done so.

6. The guarantor agrees to notify the EPA Regional Administrator and Executive Director MDEQ by certified mail, of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within 10 days after commencement of the proceeding.

7. Guarantor agrees that within 30 days after being notified by an EPA Regional Administrator or the Executive Director MDEQ of a determination that guarantor no longer meets the financial test criteria or that he is disallowed from continuing as a guarantor of closure or post- closure care, he shall establish alternate financial assurance as specified in subpart Hof 40 CFR part 264 or 265, as applicable, in the name of The Chemours Company FC, LLC unless The Chemours Company FC, LLC has done so.

8. Guarantor agrees to remain bound under this guarantee notwithstanding any or all of the following: amendment or modification of the closure or post-closure plans, amendment or modification of the permit, the extension or reduction of the time of performance of closure or post-closure, or any other modification or alteration of an obligation of the owner or operator pursuant to 40 CFR part 264 or 265.

9. Guarantor agrees to remain bound under this guarantee for as long as The Chemours Company FC, LLC must comply with the applicable financial assurance requirements of subpart H of 40 CFR parts 264 and 265 for the above-listed facility, except as provided in paragraph 10 of this agreement.

10. Guarantor may terminate this guarantee by sending notice by certified mail to the EPA Regional Administrators for the Regions in which the facilities are located, the Executive Director MDEQ and to The Chemours Company FC, LLC provided that this guarantee may not be terminated unless and until the Chemours Company FC, LLC obtains and the EPA Regional Administrators and Executive Director MDEQ approve, alternate corrective action coverage complying with 40 CFR 264.143, 264.145, 265.143, and/or 265.145.

11. Guarantor agrees that if The Chemours Company FC, LLC fails to provide alternate financial assurance as specified in subpart H of 40 CFR part 264 or 265, as applicable, and obtain written approval of such assurance from the EPA Regional Administrator and the Executive Director MDEQ within 90 days after a notice of cancellation by the guarantor is received by the EPA Regional Administrator and the Executive Director MDEQ from guarantor, guarantor shall provide such alternate financial assurance in the name of The Chemours Company FC, LLC.

12. Guarantor expressly waives notice of acceptance of this guarantee by the EPA, MDEQ or by The Chemours Company FC, LLC. Guarantor also expressly waives notice of amendments or modifications of the closure and/or post-closure plans and of amendments or modifications of the facility permit(s).

I hereby certify that the wording of this guarantee is identical to the wording specified in 40 CFR 264.151(h) as such regulations were constituted on the date first above written.

Effective date: March 28, 2019

The Chemours Company, Guarantor

Todd A. Coomes, Corporate Counsel

Signature of witness or notary

The Chemours Company
1007 Market Street
PO Box 2047
Wilmington, DE 19899

302-773-1000 t
chemours.com

MARCH 22, 2019

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
ATTENTION: WILLIAM L. RIDER
RCRA C – HAZARDOUS WASTE BRANCH
WASTE DIVISION
P.O. BOX 2261
JACKSON, MISSISSIPPI 39225

LETTER FROM CHIEF FINANCIAL OFFICER

I am the chief financial officer of The Chemours Company. This letter is in support of this firm's use of the financial test to demonstrate financial assurance for closure and/or post-closure costs, as specified in subpart H of 40 CFR parts 264 and 265.

1. This firm is the owner or operator of the following facilities for which financial assurance for closure or post-closure care is demonstrated through the financial test specified in subpart H of 40 CFR parts 264 and 265. The current closure and/or post-closure cost estimates covered by the test are shown for each facility: None.

2. This firm guarantees, through the guarantee specified in subpart H of 40 CFR parts 264 and 265, the closure or post-closure care, of the following facilities owned or operated by the guaranteed party. The current cost estimates for the closure or post-closure care responsibility so guaranteed are shown for each facility: See Attachment. The firm identified above is the direct or higher-tier parent corporation of the owner or operator.

3. In States where EPA is not administering the financial requirements of subpart H of 40 CFR part 264 or 265, this firm, as owner or operator or guarantor, is demonstrating financial assurance for the closure or post-closure care, of the following facilities through the use of a test equivalent or substantially equivalent to the financial test specified in subpart H of 40 CFR parts 264 and 265. The current closure and/or post-closure cost estimates covered by such a test are shown for each facility: See Attachment.

4. This firm is the owner or operator of the following hazardous waste management facilities for which financial assurance for closure or, if a disposal facility, post-closure care, is not demonstrated either to EPA or a State through the financial test or any other financial assurance mechanism specified in subpart H of 40 CFR parts 264 and 265 or equivalent or substantially equivalent State mechanisms. The current closure and/or post-closure cost estimates not covered by such financial assurance are shown for each facility: None.

5. This firm is the owner or operator of the following UIC facilities for which financial assurance for plugging and abandonment is required under part 144. The current closure cost estimates as required by 40 CFR 144.62 are shown for each facility: See Attachment

This firm is required to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on December 31, 2018. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended 2018.

ALTERNATIVE I

1. Sum of current closure and post-closure cost estimate [total of all cost estimates shown in the five paragraphs above] $135.0 million

*2. Total liabilities [if any portion of the closure or post-closure cost estimates is included in total liabilities, you may deduct the amount of that portion from this line and add that amount to lines 3 and 4] $6,342.0 million

*3. Tangible net worth $839.0 million

*4. Net worth $1,020.0 million

*5. Current assets $3,293.0 million

*6. Current liabilities $1,709.0 million

7. Net working capital [line 5 minus line 6] $1,584.0 million

*8. The sum of net income plus depreciation, depletion, and amortization $1,279.0 million

*9. Total assets in U.S. (required only if less than 90% of firm's assets are located in the U.S.) $3,694.0 million

10. Is line 3 at least $10 million? (Yes/No) Y

11. Is line 3 at least 6 times line 1? (Yes/No) Y

12. Is line 7 at least 6 times line 1? (Yes/No) Y

*13. Are at least 90% of firm's assets located in the U.S.? If not, complete line 14 (Yes/No) N

14. Is line 9 at least 6 times line 1? (Yes/No) Y

15. Is line 2 divided by line 4 less than 2.0? (Yes/No) N

16. Is line 8 divided by line 2 greater than 0.1? (Yes/No) Y

17. Is line 5 divided by line 6 greater than 1.5? (Yes/No) Y

ALTERNATIVE II (NOT USED)

1. Sum of current closure and post-closure cost estimates [total of all cost estimates shown in the five paragraphs above]

2. Current bond rating of most recent issuance of this firm and name of rating service ____

3. Date of issuance of bond ____

4. Date of maturity of bond ____

*5. Tangible net worth [if any portion of the closure and post-closure cost estimates is included in "total liabilities" on your firm's financial statements, you may add the amount of that portion to this line]

*6. Total assets in U.S. (required only if less than 90% of firm's assets are located in the U.S.)

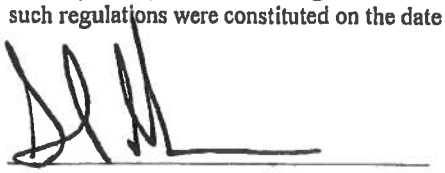
7. Is line 5 at least $10 million ? (Yes/No)

8. Is line 5 at least 6 times line 1? (Yes/No)

*9. Are at least 90% of firm's assets located in the U.S.? If not, complete line 10 (Yes/No)

10. Is line 6 at least 6 times line 1? (Yes/No)

I hereby certify that the wording of this letter is identical to the wording specified in 40 CFR 264.151(f) as such regulations were constituted on the date shown immediately below.



Mark E. Newman
Senior Vice President and Chief Financial Officer
The Chemours Company
1007 Market Street
Wilmington, DE 19899

March 22, 2019
Date

Report of Independent Accountants

To The Chemours Company:

We have performed the procedures enumerated below, which were agreed to by the Company and the Mississippi Department of Environmental Quality, solely to assist you in evaluating the selected financial data of The Chemours Company ("The Company") as contained in the accompanying letter dated March 22, 2019 from Mark E. Newman to the Mississippi Department of Environmental Quality. These procedures were performed solely to assist the specified parties in confirming selected financial data disclosed by the Company in the accompanying letter to comply with the financial test to demonstrate financial assurance for closure and/or post-closure costs, as specified in Subpart H of 40 CFR 264.151 (f) as adopted by reference in Title 11 Part 3 Chapter 1 Rule 1.7. Management is responsible for the Company's compliance with those requirements. The sufficiency of these procedures is solely the responsibility of the parties specified in this report. Consequently, we make no representation regarding the sufficiency of the procedures enumerated below either for the purpose for which this report has been requested or for any other purpose.

The procedures performed and results thereof are as follows:

1. We confirm that we have audited the consolidated financial statements of the Company as of and for the year ended December 31, 2018. Our report dated February 15, 2019, with respect thereto, is included in the Company's 2018 Annual Report on Form 10-K.

2. We compared the amount entitled "Total Liabilities" in the accompanying letter to the Company's calculation of total liabilities, derived from the Company's December 31, 2018 consolidated financial statements and/or underlying accounting records which support the consolidated financial statements and found such amount to be in agreement.

3. We compared the amount entitled "Tangible Net Worth" in the accompanying letter to the Company's calculation of tangible net worth, derived from the Company's December 31, 2018 consolidated financial statements and/or underlying accounting records which support the consolidated financial statements and found such amount to be in agreement.

4. We compared the amount entitled "Net Worth" in the accompanying letter to the Company's calculation of total net worth, derived from the Company's December 31, 2018 consolidated financial statements and/or underlying accounting records which support the consolidated financial statements and found such amount to be in agreement.

5. We compared the amount entitled "Current Assets" in the accompanying letter to the Company's calculation of current assets derived from the Company's December 31, 2018 consolidated financial statements and/or underlying accounting records which support the Company's December 31, 2018 consolidated financial statements and found such amount to be in agreement.

6. We compared the amount entitled "Current Liabilities" in the accompanying letter to the Company's calculation of current liabilities derived from the Company's December 31, 2018 consolidated financial statements and/or underlying accounting records which support the

Company's December 31, 2018 consolidated financial statements and found such amount to be in agreement.

7. We compared the amount entitled "Net Income Plus Depreciation, Depletion, and Amortization" in the accompanying letter to the Company's calculation of net income plus depreciation, depletion, and amortization derived from the Company's December 31, 2018 consolidated financial statements and/or underlying accounting records which support the Company's December 31, 2018 consolidated financial statements and found such amount to be in agreement.

8. We compared the amount entitled "Total Assets in U.S." in the accompanying letter to the Company's calculation of total assets in U.S. derived from the Company's December 31, 2018 consolidated financial statements and/or underlying accounting records which support the Company's December 31, 2018 consolidated financial statements and found such amount to be in agreement.

9. We recomputed the ratio of the Company's total assets in the U.S. to the Company's total consolidated assets, derived from the Company's December 31, 2018 consolidated financial statements and/or underlying accounting records, to note that the Company's conclusion that total assets in the U.S. is less than 90% of the Company's consolidated total assets is correct.

This agreed-upon procedures engagement was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants. We were not engaged to and did not conduct an examination or review, the objective of which would be the expression of an opinion or conclusion, respectively, on financial compliance. Accordingly, we do not express such an opinion or conclusion. Had we performed additional procedures, other matters might have come to our attention that would have been reported to you.

This report relates only to the data specified in the steps above, and accordingly, we do not express an opinion or any form of assurance on any other data appearing in the Company's letter.

This report is intended solely for the information and use of you and the Mississippi Department of Environmental Quality, and is not intended to be, and should not be used by anyone other than these specified parties.

PricewaterhouseCoopers LLP

March 22, 2019

2019 Chemours Financial Assurance Attachment A
3/28/2019

	A	B	C	D	E	F	G	H	I	J
1	SITE	Owned or non-owned Facility	AGENCY	EPA ID#	CORRECTIVE ACTION (RCRA)	CLOSURE	POST CLOSURE	UIC	Mining Acts	*2019 GRAND TOTAL
2	Beaumont Works - 5470 North Twin City Highway, Beaumont, TX 77705	OWN	TCEQ	EPA ID # TXD008081101			$ 15,719,571.45			$ 15,719,571.45
3	Beaumont Works - 5470 North Twin City Highway, Beaumont, TX 77705	OWN	TCEQ	EPA ID# TXD008081101			$ 1,951,165.28			$ 1,951,165.28
4	Chambers Works - Shell Road, Route 130, Deepwater, NJ 08023	OWN	EPA2	EPA ID# NJD 002385730	$ 11,616,000.00					$ 11,616,000.00
5	De Lisle - 7685 Kiln-DeLisle Road, Pass Christian, MS 39571	OWN	MDEQ	EPA ID# MSD096046792		$4,907,000.00				$4,907,000.00
6	De Lisle UIC - 7685 Kiln-DeLisle Road, Pass Christian, MS 39571	OWN	MDEQ	EPA ID# MSD096046792				$12,469,646.70		$12,469,646.70
7	Edge Moor Plant - 450 Hay Road, Wilmington, DE 19809	NON-OWNED	DNREC	EPA ID# DED00800284			$ 2,718,202.74			$ 2,718,202.74
8	Florida Mine - Starke, FL 32091	OWN	FLDEP	EPA ID# FLD0040529200					$7,169,534.77	$7,169,534.77
9	Johnsonville - DuPont Road, New Johnsonville, TN 37134	OWN	TNDEC	EPA ID# TND 004044491		$6,568,770.35	$ 13,420,791.68			$ 19,989,562.03
10	Martin Aaron Superfund - 1542 South Broadway, Camden, NJ 08104	NON-OWNED	EPA2	EPA ID# NJD 014623854	$ 4,004,456.90					$ 4,004,456.90
11	Pascagoula- 1001 Industrial Road, Pascagoula, MS 39581	OWN	EPA4	EPA ID# MSD 033417031	$ 3,748,965.00					$ 3,748,965.00
12	Pascagoula - 1001 Industrial Road, Pascagoula, MS 39581	OWN	MDEQ	EPA ID# MSD 033417031		$390,665.15	$ 3,466,366.89			$ 3,857,032.04
13	Pompton Lakes - 2000 Cannonball Road, Pompton Lakes, NJ 07442	OWN	EPA2	EPA ID# NJD 002173946	$ 9,924,849.00					$ 9,924,849.00
14	Pompton Lakes - 2000 Cannonball Road, Pompton Lakes, NJ 07442	OWN	NJDEP	EPA ID# NJD 002173946		$749,318.31				$ 749,318.31
15	Potomac River Works - RR2, Box 217, Martinsburg, WV 25401	NON-OWNED	WVDEP	EPA ID# WVD 041952714	$ 4,982,375.36					$ 4,982,375.36
16	Washington Works - 8480 DuPont Road, Washington, WV 26181	OWN	WVDEP	EPA ID# WVD 045875291	$ 1,975,000.00					$ 1,975,000.00
17	TOTALS				$ 36,251,646.26	$12,615,753.81	$ 37,276,098.04	$12,469,646.70	$7,169,534.77	$ 105,782,679.58
18										*The grand total changed from $134,982,957.92 to $105,782,679.58 because some obligations were very recently reduced and for other obligations Chemours had to adjust for inflation

ATTACHMENT H

Waste Minimization Objectives

WASTE MINIMIZATION CERTIFICATION OBJECTIVES

The Waste Minimization Program should include the following elements:

1. Top Management Support

   - Dated and signed policy describing management support for waste minimization and for implementation of a waste minimization plan.
   - Description of employee awareness and training programs designed to involve employees in waste minimization planning and implementation to the maximum extent feasible.
   - Description of how a waste minimization plan has been incorporated into management practices so as to ensure ongoing efforts with respect to product design, capital planning, production operations, and maintenance.

2. Characterization of Waste Generation

   - Identification of types, amounts, and hazardous constituents of waste streams, with the source and date of generation.

3. Periodic Waste Minimization Assessments

   - Identification of all points in a process where materials can be prevented from becoming a waste, or can be recycled.
   - Identification of potential waste reduction and recycling techniques applicable to each waste, with a cost estimate for capital investment and implementation.
   - Description of technically and economically practical waste reduction/recycling options to be implemented, and a planned schedule for implementation.
   - Specific performance goals, preferably quantitative, for the source reduction of waste by stream. Whenever possible, goals should be stated as weight of waste generated per standard unit of production, as defined by the generator.

4. Cost Allocation System

- Identification of waste management costs for each waste, factoring in liability, transportation, recordkeeping, personnel, pollution control, treatment, disposal, compliance and oversight costs to the extent feasible.

- Description of how departments are held accountable for the wastes they generate.

- Comparison of waste management costs with costs of potential reduction and recycling techniques applicable to each waste.

5. Technology Transfer

- Description of efforts to seek and exchange technical information on waste minimization from other parts of the company, other firms, trade associations, technical assistance programs, and professional consultants.

6. Program Evaluation

- Description of types and amounts of hazardous waste reduced or recycled.

- Analysis and quantification of progress made relative to each performance goal established and each reduction technique to be implemented.

- Amendments to waste minimization plan and explanation.

- Explanation and documentation of reduction efforts completed or in progress before development of the waste minimization plan.

- Explanation and documentation regarding impediments to hazardous waste reduction specific to the individual facility.