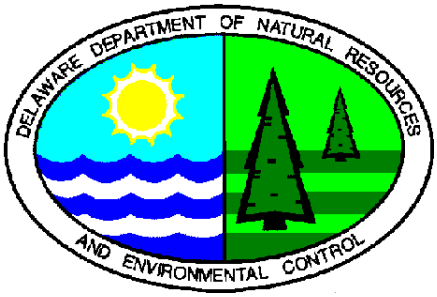

APPLICATION FOR A COASTAL ZONE ACT PERMIT

State of Delaware
Department of Natural Resources & Environmental Control
Office of the Secretary

December 3, 2014
Ethylene Oxide from Ethanol
Croda Inc.

Table of Contents

Permit Application Instructions

1. Complete all parts of the application. For sections which are not applicable to your project, do not leave blank; present a statement that clearly states why the section is not applicable to your project.

2. Because all applicants' projects are different, this word document template will provide you flexibility for needed space to answer the questions. Please insert additional lines for text where needed for your application. If appropriate, attach extra pages referencing each answer by the corresponding section and question number.

3. Submit eight complete hard copies of the permit application to:

   Office of the Secretary
   Department of Natural Resources & Environmental Control
   State of Delaware
   89 Kings Highway
   Dover, DE 19901

   In addition to the eight hard copies, submit a complete electronic "pdf" copy of the permit application and a copy of the Offset Matrix in Microsoft Word format on cd-rom.

4. Comply, if required, or as requested by the DNREC Secretary, with 7 Delaware Code, Chapter 79, Section 7902. If requested, but not completed, your application will not be considered administratively complete until this form is reviewed.

5. Be sure to include your permit application fee of $3,000; otherwise the application will not be considered administratively complete. Make checks payable to the "State of Delaware."

6. Be advised that the application for a Delaware Coastal Zone Act Permit is a public document, which may be displayed at DNREC offices, public libraries, and the web, among others. If this application requires you to place confidential information or data in the application to make it administratively complete, note the Delaware Freedom of Information Act (29 Delaware Code, Chapter 100) and DNREC's Freedom of Information Act Regulation, Section 6 (Requests for Confidentiality), for the proper procedure in requesting confidentiality.

Note: This application template was last revised by DNREC on January 30, 2008. Please discard any previous versions.

PART 1

CERTIFICATION BY APPLICANT

Under the penalty of perjury pursuant to 11 Delaware Code §1221-1235, I hereby certify that all the information contained in this Delaware Coastal Zone Act Permit Application and in any attachments is true and complete to the best of my belief.

I hereby acknowledge that any falsification or withholding of information will be grounds for denial of a Coastal Zone Permit.

I also hereby acknowledge that all information in this application will be public information subject to the Delaware Freedom of Information Act, except for clearly identified proprietary information agreed to by the Secretary of the Department of Natural Resources & Environmental Control.

Robert Stewart
Print Name of Applicant

_____
Signature of Applicant

Site Director
Title

December 2, 2014
Date

PART 2

APPLICANT INFORMATION AND SITE IDENTIFICATION

2.1 Identification of the applicant:

Company Name: **Croda Inc.**
Address: **315 Cherry Lane, New Castle, DE 19720**
Telephone: **302-429-5500**
Fax: **302-429-5304**

2.2 Primary contact: Please list the name, phone number and email of a preferred contact within your company in case the DNREC needs to contact you regarding this permit application. **Robert J. Touhey, 302-429-5269**
robert.touhey@croda.com

2.3 Authorized agent (if any): **N/A**

Name:
Address:
Telephone:
Fax:

If you have an authorized agent for this permit application process, provide written authorization from client for being the authorized agent.

2.4 Project property location (street address): **315 Cherry Lane, New Castle**

2.5 In a separate attachment, provide a general map of appropriate scale to clearly show the project site. **See Attachment D**

2.6 Is the applicant claiming confidentiality in any section of their application?
YES
NO

If yes, see instructions on page 3.

PART 3

PROJECT SUMMARY

Provide a one-page summary describing the proposed project. Include a brief quantitative description of the anticipated environmental impacts, and how the Environmental Offset Proposal will "clearly and demonstrably" more than offset any negative impacts.

This project will provide for the on-site manufacture of ethylene oxide from ethanol feedstock in a continuous multi-step catalyzed process. The process begins with the dehydration of ethanol which produces ethylene vapor together with water vapor. The ethylene vapor is partially oxidized in a catalytic converter to form ethylene oxide. The resultant ethylene oxide is purified and sent to on-site storage for consumption by existing alkoxylation reactor systems.

Ethanol will be delivered to the site in railcars or tank trucks, and transferred to storage tanks. There are no storage facilities for ethylene included in this project, because it is immediately consumed once it is produced. Ethylene oxide produced by the plant will be stored in tanks on-site and distributed as needed to the existing alkoxylation unit operations via pipeline. A byproduct of the process will be technical grade monoethylene glycol which may be sold to off-site end users.

The installation of the ethanol to ethylene oxide plant will provide Croda with a sustainable source of ethylene oxide furthering the goals of the company's sustainability strategy. This "green technology" marks another milestone in reducing the nation's dependence on petroleum-based products. It will also eliminate the transportation of ethylene oxide into the facility via railcars that currently travel from Gulf Coast manufacturing facilities to the Atlas Point site. Other raw materials will be transported to the site to support the ethanol to ethylene oxide plant production but are deemed to be less hazardous than the transportation of ethylene oxide itself.

The proposed facility will be constructed within the historic Coastal Zone "footprint" of the Atlas Point site. The facilities will occupy an area of the site that previously had various chemical production and storage tank facilities that have been recently demolished. Therefore, this project will not create any new significant impacts such as noise, visual impact and light pollution over those that had been there previously.

The environmental impacts of the project are expected to be minimal given the history of the site. Any new environmental impacts will be offset with specific improvements made to the site. Croda has made every effort to minimize the air emissions from the proposed facility through a combination of recycling gas streams and the use of highly effective control devices. Croda proposes to offset the new air emissions through a combination of voluntary environmental improvement projects and the acquisition of emission credits.

PART 4

PROJECT PROPERTY RECORD AND EVIDENCE OF LOCAL ZONING AND PLANNING APPROVAL

PROJECT PROPERTY RECORD

4.1 Name and address of project premises owner(s) of record:
Croda Inc.
315 Cherry Lane
New Castle, DE 19720

4.2 Name and address of project premises equitable owner(s):
Same as above

4.3 Name and address of lessee(s): **N/A**

4.4 Is the project premises under option by permit applicant? **No**

4.5 What is the present zoning of the land for this entire project site?
Heavy Industrial (HI)

EVIDENCE OF LOCAL ZONING AND PLANNING APPROVAL

See Attachment A New Castle County Zoning Verification

I, _____, for _____

(Name of County, City of Town)

do hereby affirm that the project proposed by_____

(Name of Applicant)

located at _____, in

(Address)

the _____ zoning district is in

full compliance with the zoning code as it applies to this project.

The above named applicant's project is in compliance with the adopted comprehensive development plan for the geographic area within which the project will be located.

_____

(Signature)

_____

(Title)

_____

(Date)

This part is essential for a complete Coastal Zone Act Permit Application. No application will be considered administratively complete without it. While the applicant is strongly advised to use this form, the local zoning jurisdiction may utilize a different form or document to demonstrate "evidence of local zoning approval," provided such documents are signed and dated by the proper official.

PART 5

PROJECT OPERATIONS

5.1 Describe the characteristics of the manufactured product and all the process and/or assembly operations utilized by the proposed project. Include in the description (use attachments if necessary):

a. the raw materials, intermediate products, by-products and final products and characteristics of each. Review any materials' risk of carcinogenicity, toxicity, mutagenicity and/or the potential to contribute to the formation of smog. Provide material safety data sheets (MSDS) if available;

The following are the principal raw materials, intermediate, final products and byproducts. SDSs as noted are in Attachment B

- **ethanol (raw material) SDS**
- **oxygen (raw material) SDS**
- **ethylene (intermediate) SDS**
- **ethylene oxide (final product) SDS**
- **mono- and di-ethylene glycol (byproduct) SDS**
- **acetaldehyde (trace byproduct)**
- **formaldehyde (trace byproduct)**

b. the step-by-step procedures or processes for manufacturing and/or assembling the product(s). Provide a flow diagram to illustrate procedures;

See Attachment C - basic flow diagram

The process steps are:

- **ethanol dehydration to ethylene**
- **ethylene purification**
- **oxidation of purified ethylene to form ethylene oxide with byproduct carbon dioxide and water vapor.**
- **Purification of ethylene oxide.**
- **glycols production and separation**

c. the nature of the materials mentioned above in 4.1(a) as to whether or not the materials require special means of storage or handling;

Ethanol – 2 - 50,000 gal. vertical tanks inert padding with chilled vent condenser under slight positive pressure
Oxygen – 2 - 20,000 gal. vertical cryogenic tanks
Ethylene Oxide – 2 - 40,000 gal. horizontal, refrigerated and inert padded pressure vessels

Monoethylene Glycol - 1 - 10,000 gal. heated, vertical storage tank
Methane – 1 – approximately 10,000 gal cryogenic vertical pressure vessel
Carbon Dioxide –1 or 2 - 10,000 gal cryogenic pressure vessels

d. list the machinery (new and/or existing) to be utilized by this project;

- **Reactors (vessels where chemical reactions take place)**
- **Distillation & stripping columns**
- **Storage tanks (ambient, pressure and cryogenic)**
- **Emission control devices**
- **Multiple pumps, compressors, adsorbers, heat exchangers, and instrumentation**
- **Boilers (existing)**

e. list any new buildings or other facilities to be utilized;
Small control rooms, process laboratory, motor control centers and storage buildings

f. list the size and contents of any anticipated aboveground or underground storage tank systems that may be constructed or utilized in support of facility operations;
No underground tanks will be used. For other significant vessels see Section 5.1 c. above.

g. if this project represents an increase or decrease in production at an already existing facility, what will be the new rate of maximum production?

No change in production capacity is being requested at this time. This project will provide for on-site production of Ethylene Oxide (EO) that will replace the current purchases of EO from off-site sources. EO will continue to be supplied to existing process units at their permitted production capacity.

h. if this project represents a totally new facility at a new or existing site, what will be the maximum production rate?

The project involves new facilities within the historic Coastal Zone "footprint" of the site. Use of the EO will be in existing units at their permitted production rates. [redacted]

5.2 Describe daily hours of plant operations and the number of operating shifts.

5.3 Provide a site plan of this project with: **See Attachment D**

a. a north arrow;

b. a scale of not less than one inch to 200 feet;

c. identity of the person responsible for the plan, including any licenses and their numbers;

d. the acreage of the applicant's entire property and acreage of the proposed project;

e. property lines of entire property;

f. lines designating the proposed project area for which application is being made, clearly distinguished from present facilities and operating areas (if any);

g. existing and proposed roads, railroads, parking and loading areas, piers, wharfs, and other transportation facilities;

h. existing water bodies and wetlands and proposed dredge and fill areas, and;

i. existing and proposed drainage ways, gas, electric, sewer, water, roads, and other rights-of-way.

5.4 How many acres of land in total are required for this proposed project?

Existing/ currently utilized/ developed land: _____**approximately 10** acres.

New land: _____**0**_____acres.

5.5 Has the property been involved with a state or federal site cleanup program such as Superfund, Brownfields, HSCA Voluntary Cleanup Program, RCRA Corrective Action, Aboveground or Underground Storage Tank Cleanup Programs? If so please specify which program.

Yes - HSCA Voluntary Cleanup Program

5.6 With regards to environmental cleanup actions, has a Uniform Environmental Covenant, Final Plan of Remedial Action, or no further action letter been issued by the Department? If so are the planned construction activities consistent with the requirements or conditions stated in these documents?

No Further Action letters have been issued by DNREC

PART 6A

ENVIRONMENTAL IMPACTS

Air Quality

6.1 Describe project emissions (new, as well as any increase or decrease over current emissions) by type and amount under maximum operating conditions: **see Attachment E**

Pollutant	Existing Emissions		Net Increase/Decrease		New Total Emissions		Percent Change (compare tons/year)
	Lbs/day	*Tons/year*	*Lbs/day*	*Tons/year*	*Lbs/day*	*Tons/year*	
NOx					18.72	3.6	
SO2					0.19	0.035	
VOC					20.64	3.9	
TSP					2.4	0.44	
CO					25.68	4.8	
HAPs					6.04	1.1	
CO2					103,560	18,900	

6.2 Describe how the above emissions change in the event of a mechanical malfunction or human error.

The malfunction of one of the emission control devices due to loss of electric power is the most credible pollution potential scenario. The scenario is that the loss of power would shut down the ethanol dehydration furnace. The impact would be the brief, i.e. less than 30 minute, steadily declining un-controlled release to the atmosphere of VOCs, primarily ethylene and ethanol, until the process is stabilized and shutdown. The most significant release is estimated to be approximately 70 pounds of VOC. However, it must be noted that the loss of electric power is extremely unlikely since Croda installed 2.2 megawatts of on-site electric generation capability in 2012, and 775 kilowatts of solar power generating capability in 2014. While the site is still connected to the regional power grid, the on-site power generation capability supplies over 70% of the electric power to the site and provides a very high level of reliability of continuous electric power. In addition, Croda will develop, as it has for all its processes, detailed procedures to shutdown its processes in a safe, controlled manner

6.3 Describe any pollution control measures to be utilized to control emissions to the levels cited above in 5.1. **The ethanol dehydration furnace will provide 99% Destruction Removal Efficiency (DRE), and the catalytic combustion Unit will provide 95% DRE of volatile organic compounds (VOCs). The ethanol storage tanks VOC emissions will be controlled by chilled vent condensers that are expected to provide between 95 – 97% DRE.**

6.4 Show evidence that applicant has, or will have, the ability to maintain and utilize this equipment listed in 5.3 in a consistently proper and efficient manner. (For example, provide college transcripts and/or records of training courses and summary of experience with this pollution control equipment of person(s) responsible for pollution control equipment, and/or provide copies of contracts with pollution control firms to be responsible for maintaining and utilizing this equipment.) **The processes will be highly automated and operated by trained and skilled process operators. Croda employs a full time Maintenance Department of mechanics and instrument technicians that are experienced in maintaining industrial processes.**

Water Quality

6.5 Describe wastewater discharge (new, as well as any increase or decrease over current discharge levels) due to project operations: **There are no expected changes in the quality of wastewater. Process wastewater is discharged to the New Castle County sewer system under an existing pre-treatment permit. No changes to the New Castle County permit are expected.**

Pollutant	Current Discharge Concentration (ppm)	New or Changed Discharge Concentration (ppm)	Current Discharge		Net Increase/Decrease		New Total Emissions	
			Lbs/day	*Tons/year*	*Lbs/day*	*Tons/year*	*Lbs/day*	*Tons/year*

6.6 Describe the current method of employee sanitary wastewater disposal and any proposed changes to that system due to this proposed project. **Sanitary wastewater is discharged to the New Castle County sewer system and there are no proposed changes associated with this project.**

6.7 Identify the number, location, and name of receiving water outfall(s) of any and all process wastewater discharge (new or current) affected by this proposed project. Provide NPDES Permit Numbers for each discharge affected. **Process wastewater will not be discharged through a receiving water outfall.**

6.8 If any effluent is discharged into a public sewer system, is there any pretreatment program? If so, describe the program. **Flow equalization and pH adjustment**

6.9 Stormwater:

a. Identify the number, location, and name of receiving waters of stormwater discharges. Provide permit number for each discharge. **See Attachment F Storm Water Plan Map. The project will be located as shown in the cross-hatched area on the Map. Storm water will discharge to un-named tributaries of Magazine Ditch and the Delaware River via existing overland and discrete outfalls 14, 15, 16, 17, 18, 19, 20, 21, 002 and 003 as shown in the attachment.**

b. Describe the sources of stormwater run-off (roofs, storage piles, parking lots, etc). **Paved and un-paved areas, and roof drains.**

c. Describe the amount of stormwater run-off increase over current levels that will result from the proposed project. **Since a portion of this area will be covered with containment pads connected to the process sewer, there will be little or no net increase in storm water flow from the site.**

d. Describe any pollutants likely to be in the stormwater. **No new pollutants are expected.**

e. Describe any pollution control device(s) or management technique(s) to be used to reduce the amount of stormwater generated, and devices to improve the quality of the stormwater run-off prior to discharge. **A sediment and erosion control plan for construction and on-going operations will be prepared as part of the detailed design in accordance with the Delaware Sediment & Storm Water Program Best Practices to supplement the existing site Storm Water Management Plan.**

f. Describe any new or improved stormwater drainage system required to safely carry off stormwater without flooding project site or neighboring areas down gradient. No new conveyances are anticipated at this stage of the project. **See Section 6.9 a. thru e. above.**

6.10 Will this project use a new water intake device, or increase the use (flow) from an existing intake device?
YES
NO

If yes, state:

a. the volume of water to be withdrawn, and;

b. describe what will be done to prevent entrainment and/or entrapment of aquatic life by the intake device.

6.11 Will this proposed project result in a thermal discharge of water, or an increase in the flow or temperature of a current thermal discharge?
YES
NO

If yes, state:

a. the volume of the new flow or increase from the existing thermal discharge, both in flow and amount of heat;

b. how warm will the water be when it is discharged into a receiving waterway, discharge canal, or ditch, and what will be the difference in

discharge temperature and ambient temperature (delta T) at various seasons of the year after all cooling water mechanisms have been applied to the hot water?

c. the equipment and/or management techniques that will be used to reduce the thermal load of the discharge water.

6.12 Will any proposed new discharge or change in existing discharge cause, or have potential to cause, or contribute to, the exceedence of applicable criteria appearing in the "State of Delaware Surface Water Quality Standards"?
YES
NO

If yes, explain:

6.13 Describe any oils discharged to surface waters due to this proposed project. **None are expected.**

6.14 Describe any settleable or floating solid wastes discharged to surface waters due to this project. **No settleable or floating solid wastes are expected to be discharged to surface waters.**

6.15 Show evidence that the applicant has, or will have, the ability to maintain and utilize any water pollution control equipment listed in questions 5.5 through 5.14 in a consistently proper and efficient manner. (For example, provide operator license numbers, college transcripts and/or training courses and summary of prior experience with this pollution control equipment of person(s) responsible for pollution control equipment, and/or provide copies of contracts with pollution control firms.) **Croda's process wastewater undergoes basic pretreatment consisting of flow equalization and pH adjustment prior to discharge to the New Castle County sewer system. Croda employs three shift wastewater operators and a fourth operator who is in Direct Responsible Charge and oversees the operation of the pretreatment facilities. Croda has a full time Maintenance Department to do repairs and preventive maintenance of the pretreatment facilities.**

6.16 Estimate the amount of water to be used for each specified purpose including cooling water. State daily and maximum water use in the unit of gallons per day for each purpose and source of water. State if water use will vary with the seasons, time of day, or other factors. **Preliminary estimates are that boiler feed water for steam production will increase by approximately 30,000 gpd and make-up cooling water use will increase by approximately 50,000 gpd on average.**

6.17 Identify the source of water needed for the proposed project, including potable water supplies. **Potable water supplied to the site is divided 50/50 between purchased from United Water Delaware, and on site well water.**

6.18 Are wells going to be used?
YES
NO

If yes:

a. Identify the aquifer to be pumped and the depth, size and pumping capacity of the wells. **No new wells are proposed. Croda's existing well in is the Potomac Aquifer and the Water Allocation Permit (88-0013CM2) authorizes withdrawals of up to 720,000 gpd.**

b. Has a permit been applied for to do this? **No new permit required. See 6.18 a. above.**

c. How close is the proposed well(s) to any well(s) on adjacent lands? **No new wells are being proposed.**

Solid Waste

6.19 Will this project result in the generation of any solid waste?
YES
NO

If yes, describe each type and volume of any solid waste (including biowastes) generated by this project, and the means used to transport, store, and dispose of the waste(s). **Additional solid waste from construction debris, and regular operations including packaging materials and process filters are expected but cannot be estimated at this time. Any solid waste that can be recycled will recycled to the maximum extent possible.**

6.20 Will there be any on-site recycling, re-use, or reclamation of solid wastes generated by this project?
YES
NO

If yes, describe:

6.21 Will any waste material generated by this project be destroyed on-site?
YES
NO

If yes, how will that be done?

Hazardous Waste

6.22 Will this proposed project result in the generation of any hazardous waste as defined by the "Delaware Regulations Governing Hazardous Waste"?
YES
NO

If yes, identify each hazardous waste, its amount, and how it is generated:
It is expected that some additional flammable hazardous waste from process filters, samples and quality control laboratory operation will be generated. The quantity cannot be accurately estimated at this time, but is not expected to exceed 400 pounds per month.

6.23 Describe the transport of any hazardous waste and list the permitted hazardous waste haulers that will be utilized. **Croda will employ licensed hazardous waste haulers for any disposal needs. The waste will be disposed of at permitted hazardous waste disposal facilities outside the Delaware Coastal Zone.**

6.24 Will the proposed project cause the applicant to store, treat, and/or dispose of hazardous waste?
YES
NO

If yes, describe:

6.25 Does the applicant currently generate any hazardous waste at this site?
YES
NO

If yes, describe: **Croda currently generates flammable, reactive and corrosive solid and liquid hazardous wastes.**

Habitat Protection

6.26 What is the current use of the land that is to be used for the proposed project?
The land for this project has been vacant since 2010 when the chemical manufacturing assets that occupied the land were demolished.

6.27 Will the proposed project result in the loss of any wetland habitat?
YES
NO

If yes, describe:

6.28 Will any wastewater and/or stormwater be discharged into a wetland?
YES
NO

If yes, will the discharge water be of the same salinity as the receiving wetlands?
No change in stormwater salinity from current is expected, and will be of lower salinity than nearby receiving wetlands.

6.29 Will the proposed project result in the loss of any undisturbed natural habitat or public use of tidal waters?
YES
NO

If yes, how many acres?

6.30 Do threatened or endangered species (as defined by the DNREC and/or the Federal Endangered Species Act) exist at the site of the proposed project, or immediately adjacent to it?
YES
NO

If yes, list each species:

6.31 Will this proposed project have any effect on these threatened or endangered species (as defined by the DNREC and/or the Federal Endangered Species Act).
YES
NO

If yes, explain:

6.32 What assurances can be made that no threatened or endangered species exist on the proposed project site? **The site has been an industrial site since 1937.**

6.33 Describe any filling, dredging, or draining that may affect nearby wetlands or waterways. **None.**

6.34 If dredging is proposed, how much will occur and where will the dredged materials go for disposal? **N/A**

Other Environmental Effects

6.35 Describe any noticeable effects of the proposed project site including: heat, glare, noise, vibration, radiation, electromagnetic interference, odors, and other effects.

The proposed facility will be constructed within the historic Coastal Zone "footprint" of the Atlas Point site. The facilities will occupy an area of the site that had various chemical production and storage tank facilities as recently as 2010. These old, dilapidated facilities have been demolished. While the new facilities will have lighting and heated vessels, it is not expected that they will create new significant noticeable off-site effects.

6.36 Describe what will be done to minimize and monitor such effects.
Process vessels will be insulated, and equipment will be designed to minimize the generation of noise for the protection of site workers. Lighting will be provided at levels sufficient to provide for worker safety. All aspects of the operation of these facilities will be closely monitored around the clock.

6.37 Describe any effect this proposed project will have on public access to tidal waters. **None**

6.38 Provide a thorough scenario of the proposed project's potential to pollute should a major equipment malfunction or human error occur, including a description of backup controls, backup power, and safety provisions planned for this project to minimize any such accidents.

The malfunction of one of the emission control devices is the most credible pollution potential scenario due to loss of electric power. The scenario is that the loss of power would shut down the ethanol dehydration furnace. The impact would be the brief, i.e. less than 30 minute, steadily declining un-controlled release to the atmosphere of VOCs, primarily ethylene and ethanol, until the process is stabilized and shutdown. The most significant release is estimated to be approximately 70 pounds of VOC. However, it must be noted that the loss of electric power is extremely unlikely since Croda installed 2.2 megawatts of on-site electric generation capability in 2012, and 775 kilowatts of solar power generating capability in 2014. While the site is still connected to the regional power grid, the on-site power generation capability supplies over 70% of the electric power to the site and provides a very high level of reliability of continuous electric power. In addition, Croda will develop, as it has for all its processes, detailed procedures to shutdown its processes in a safe, controlled manner

6.39 Describe how the air, water, solid and hazardous waste streams, emissions, or discharge change in the event of a major mechanical malfunction or human error.

The only expected significant change due to mechanical malfunction or human error would be to air emissions as described on section 6.38 above.

PART 6B

ENVIRONMENTAL OFFSET PROPOSAL REDUCTION CLAIM

Is applicant claiming the right to have a reduced offset proposal due to past voluntary improvements as defined in the "Regulations Governing Delaware's Coastal Zone"?

YES
NO

If yes, provide an attachment to the application presenting sufficient tangible documentation to support your claim. **See Attachment G.**

PART 6C

ENVIRONMENTAL OFFSET PROPOSAL

If the applicant or the Department finds that an Environmental Offset Proposal is required, the proposed offset project shall include all the information needed to clearly establish:

A. A qualitative and quantitative description of how the offset project will "*clearly and demonstrably"* more than offset the negative impacts from the proposed project.

B. How and in what period of time the offset project will be carried out.

C. What the environmental benefits will be and when they will be achieved.

D. What scientific evidence there is concerning the efficacy of the offset project in producing its intended results.

E. How the success or failure of the offset project will be measured in both the short and long term.

F. What, if any, negative impacts are associated with the offset project.

G. How the offset will impact the attainment of the Department's environmental goals for the Coastal Zone and the environmental indicators used to assess long-term environmental quality within the Coastal Zone.

Additional Offset Proposal Information for the Applicant

1. The offset proposals must "*clearly and demonstrably*"[1] more than offset any new pollution from the applicant's proposed project. The applicant can claim (with documentation) evidence of past voluntary environmental investments (as defined in the Regulations) implemented prior to the time of application. Where the Department concurs with the applicant that such has occurred, the positive environmental improvement of the offset proposal against the new negative impact can be somewhat reduced.

2. The applicant must complete the Coastal Zone Environmental Impact Offset Matrix. This matrix can be found on the CZA web page (http://www.dnrec.delaware.gov/Admin/CZA/CZAHome.htm, or by clicking on this link. On page one, the applicant must list all environmental impacts in the column labeled "Describe Environmental Impacts." In the column to the immediate right, the applicant should reference the page number of the application or attachment which documents each impact listed. In the "Describe Environmental Offset Proposal" column, applicant must state what action is offsetting the impact. The offset action shall be referenced by page number in the column to the right to show how the offset will work. The applicant shall not utilize the far right column. *Please ensure the matrix is complete, detailed, and as specific as possible, given the allotted space. Also, thoroughly proof-read to ensure there are no spelling or grammatical errors.* The applicant must submit a completed matrix both in hardcopy and electronic form.

3. Please note: the entire offset proposal, including the matrix, shall be available to the public, as well as the evidence of past voluntary environmental enhancements.

[1] For purposes of this requirement, the DNREC will interpret the phrase "clearly and demonstrably" to mean an offset proposal that is obviously so beneficial without detailed technical argument or debate. The positive environmental benefits must be obviously more beneficial to the environment than the new pollution that minimal technical review is required by the Department and the public to confirm such. The total project must have a positive environmental impact. The burden of proof is on the applicant.

PART 7

ECONOMIC EFFECTS

Construction

7.1 Estimate the total number of workers for project construction and the number to be hired in Delaware.
Approximately 200 - 250 workers and it is expected that more than half will be hired in Delaware.

7.2 Estimate the weekly construction payroll.
Approximately $350,000 - $500,000 per week.

7.3 Estimate the value of construction supplies and services to be purchased in Delaware.
Approximately $5 million.

7.4 State the expected dates of construction initiation and completion.
Construction is expected to begin by May 1, 2015 and continue thru June 2017.

7.5 Estimate the economic impact from the loss of natural habitat, or any adverse economic effects from degraded water or air quality from the project on individuals who are directly or indirectly dependent on that habitat or air or water quality (e.g. commercial fishermen, waterfowl guides, trappers, fishing guides, charter or head boat operators, and bait and tackle dealers). **No such impacts are expected.**

Operations

7.6 State the number of new employees to be hired as a direct result of this proposed project and how many of them will be existing Delaware residents and how many will be transferred in from other states.
28 employees – potentially all from Delaware.

7.7 If employment attributable to the proposed project will vary on a seasonal or periodic basis, explain the variation and estimate the number of employees involved. **None they are full time positions.**

7.8 Estimate the percent distribution of annual wages and salaries (based on regular working hours) for employees attributable to this project:

Wage/salary	Percent of employees
<$10,000	
$10,000-14,999	
$15,000-24,999	
$25,000-34,999	
$35,000-49,999	
$50,000-64,999	
$65,000-74,999	**57%**
$75,000-99,999	**36%**
>$100,000	**7%**

7.9 Estimate the annual taxes to be paid in Delaware attributable to this proposed project:

State personal income taxes:	**$106,000**
State corporate income taxes	**estimate not available**
County and school district taxes:	**$250,000**
Municipal taxes:	**$0**

PART 8

SUPPORTING FACILITIES REQUIREMENTS

Describe the number and type of new supporting facilities and services that will be required as a result of the proposed project, including, but not limited to: **None – all supporting infrastructure will be provided by Croda Inc. within the existing site Coastal Zone "footprint".**

a. Roads

b. Bridges

c. Piers and/or docks

d. Railroads

e. Microwave towers

f. Special fire protection services not now available

g. Traffic signals

h. Sewer expansion

i. Energy related facilities expansion

j. Pipelines

PART 9

AESTHETIC EFFECTS

9.1 Describe whether the proposed project will be located on a site readily visible from a public road, residential area, public park, or other public meeting place (such as schools or cultural centers). **Yes – the project will be visible from I-295.**

9.2 Is the project site location within a half mile of a place of historic or scenic value? **No known historic site within one-half mile. Lukens Marsh is within one-half mile but the project will have no impact on Lukens Marsh.**

9.3 Describe any planned attempt to make the proposed facility aesthetically compatible with its neighboring land uses. Include schematic plans and/or drawings of the proposed project after it is complete, including any landscaping and screening.

The project will be constructed on an existing industrial site zoned Heavy Industrial and will be compatible with neighboring land uses.

PART 10

EFFECTS ON NEIGHBORING LAND USES

10.1 How close is the nearest year-round residence to the site of this proposed project? **Approximately one-half mile.**

10.2 Will this proposed project interfere with the public's use of existing public or private recreational facilities or resources? **No**

10.3 Will the proposed project utilize or interfere with agricultural areas? **No**

10.4 Is there any possibility that the proposed project could interfere with a nearby existing business, commercial or manufacturing use? **No**

END OF APPLICATION

ATTACHMENTS TO FOLLOW