



APPLICATION FOR A COASTAL ZONE ACT PERMIT

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

August 2016
DCRC Ethanol Marketing Project
Delaware City Refining Company LLC

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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.

José Dominguez

Print Name of Applicant


Signature of Applicant

Refinery Manager

Title

8/15/16
Date

PART 2

APPLICANT INFORMATION AND SITE IDENTIFICATION

2.1 Identification of the applicant:

Company Name: **Delaware City Refining Company LLC.**
Address: **4550 Wrangle Hill Road, Delaware City, Delaware 19706**
Telephone: **302-834-6000**
Fax: **302-836-6505**

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.

Thomas Godlewski
302-834-6053
Thomas.Godlewski@pbfenergy.com

2.3 Authorized agent (if any): **None**

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):

The proposed Project will be located within the property boundaries of Delaware City Refinery Company LLC. (DCRC), which is located at 4550 Wrangle Hill Road, Delaware City, Delaware 19706.

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

See Figures 1 and 2

2.6 Is the applicant claiming confidentiality in any section of their application?

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.

The Delaware City Refinery Company (DCRC) Ethanol Marketing Project (Project) involves the utilization of existing tanks and existing marine loading equipment to enable denatured ethanol to be loaded from storage tanks to marine vessels and shipped to offsite facilities. No new major pieces of equipment are required for this project, but rather minor modifications to existing units. For this application, whenever the term “ethanol” is used it is referring to “denatured ethanol” which is ethanol that has additives such as gasoline making it unfit for consumption.

The EPA created the Renewable Fuel Standard program under the Energy Policy Act of 2005 which requires the use of renewable fuels in gasoline and other petroleum based fuels. The purpose of the Renewable Fuel Standard program is to achieve a reduction in greenhouse gas emissions. DCRC has received and continues to receive ethanol via marine vessels at the piers or by rail and uses the ethanol to blend with gasoline at the Marketing Terminal’s truck loading rack to meet the Renewable Fuel Standard program’s requirements. The Department has previously confirmed that the receipt of ethanol by barge, storage of ethanol, movement of ethanol within the refinery, blending of ethanol as a fuel constituent, and off-site transfer of ethanol by truck is authorized at the Refinery without further approval under the Coastal Zone Act. This Project also involves the loading of ethanol on to marine vessels at the existing piers to ship to off-site locations, to the extent consistent with market conditions. Ethanol throughput at the piers will be up to 10,000 BPD on an annual average basis. The Department has also separately confirmed that the off-site transfer, by rail, truck or barge, of constituents associated with refining operations, including raw materials, intermediates and final products not processed at the refinery, is consistent with historic petroleum refining practices at the facility and therefore authorized without further approval under the Coastal Zone Act. For these reasons, and based on the demonstration included in this application that the Project will cause no adverse environmental consequences, DCRC concludes that the proposed Project is authorized, and does not require a permit, under the Coastal Zone Act. Nonetheless, at the request of the Department, DCRC submits this application for issuance of a permit for the Project under the Coastal Zone Act.

DCRC’s loading piers, Piers 2 and 3, are currently equipped with a Marine Vapor Recovery System (MVRS) for the control of air emissions. As with other volatile organic compound (VOC) emissions displaced during marine vessel loading

operations at the piers, VOC emissions displaced during ethanol loading onto marine vessels will be controlled by the existing MVRS. Air emissions associated with this Project are primarily combustion-type emissions generated at the MVRS, as well as some minor volatile organic compounds (VOC) emissions from the tanks used to store ethanol.

Projected emission rates associated with the control by the MVRS of vapors associated with loading marine vessels are minimal and fit within existing limits established by permit for the MVRS. A small increase to tank-specific permit authorizations will be necessary to accommodate the increased ethanol throughput at our ethanol storage tank, TK- 206 and to repurpose another tank for ethanol service. In consideration of all aspects of the Project, the Project will result in a projected allowable increase of less than one ton of VOC emissions per year. This potential emission increase will be more than offset through installation and operation of a new vapor capture system at the facility's truck loading rack; the new vapor control system will eliminate fugitive emissions associated with loading gasoline and gasoline blending components to tank trucks.

The operation of the equipment to be installed in this Project will not require the construction of any new water intakes on the Delaware River, nor any increase in flow at the existing water intake on the river. Additionally, construction and operation of the Project will not interfere with the Refinery's continued efforts to reduce water withdrawals from the Delaware River. Wastewater discharges from the Refinery to the Delaware River are not expected to increase.

As demonstrated through this application, there will be no adverse environmental impacts associated with this Project. In addition, construction of the Project will benefit the local economy within Delaware's Coastal Zone, as the Project will generate jobs during construction. The completion of the Project will afford necessary operational and market flexibility to the Refinery, which is critical in the context of the increasingly challenging economic conditions faced particularly by refineries in the northeastern United States.

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:

Project Property Owner:

Delaware City Refining Company LLC.
1 Sylvan Way – Corporate Office
Parsippany, NJ 07054

Project Property:

Delaware City Refining Company LLC.
765 School House Road & 4448 Wrangle Hill Road
New Castle, DE 19720

Project Property Tax Parcel Number:

Marine Loading Docks: Parcel 3A – 22-003.00-001
Storage Tanks: Parcel 3B-2 – 12-008.00-015

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

The Project Property is owned by the Delaware City Refining Company LLC.

4.3 Name and address of lessee(s):

The Project Property is not leased.

4.4 Is the project premises under option by permit applicant?

No. The Project site is owned by the applicant.

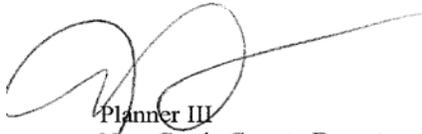
4.5 What is the present zoning of the land for this entire project site?

Heavy Industrial (HI). A copy of the New Castle County – Verification of Zoning and Use Letters are included as Attachment A.

EVIDENCE OF LOCAL ZONING AND PLANNING APPROVAL

I, **Joseph M. Abele, Jr.**, for **New Castle County** do hereby affirm that the project proposed by Delaware City Refining Company, LLC, **which is located at 765 School House Road and 4448 Wrangle Hill Road in New Castle, DE 19720 (TP #12-008.00-014)**, in the **Heavy Industrial (HI) 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.



Planner III
New Castle County Department of Land Use

December 15, 2011

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.

Note that this 2011 version of the zoning letter is provided pending receipt of an updated zoning determination from New Castle County.

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):

DCRC currently receives petroleum refining related raw materials, intermediates and other constituents, including ethanol, moves such materials throughout the Refinery, stores materials in storage tanks, processes and blends such materials, and ships materials off-site, in some cases following processing and blending and in some cases without prior processing or blending. The activities associated with this Project are entirely consistent with these established practices; therefore, the Project consists only of some minor operational and process changes to tanks and unloading units associated with the handling, storage and loading of ethanol onto marine vessels.

Ethanol is currently stored and handled at the Refinery as a blendstock for gasoline. The Project will involve an increase in throughput at Tank 206, repurposing of Tank 225 (or alternate) to store up to 10,000 BPD of ethanol, on an annual average basis, and any minor changes that may be necessary at the Refinery MVRs for marine vessel loading operations.

A process flow diagram for the Project is provided in Attachment B.

- 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 only raw material expected for this Project is denatured ethanol, which is stored at the facility currently and used for gasoline blending. The use of denatured ethanol is required because of legal and tax reasons relative to ethanol designed for human consumption. A material safety data sheet (MSDS) for denatured ethanol can be found in Attachment C.

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

A process flow diagram for the Project has been provided in Attachment B.

- 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;

Not applicable.

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

No new major pieces of equipment will be installed for this project, but rather modifications to existing equipment will be made to support the storage and loading of ethanol on to marine vessels. Existing Tank 206 is currently in ethanol service. The Project will also include utilizing an existing general service tank, Tank 225 (or alternate), to store up to 10,000 BPD, on an annual average basis, of ethanol. The Marine Vapor Recovery System (MVRS) will be utilized for control of ethanol vapors associated with the loading of ethanol on to marine vessels.

- e. list any new buildings or other facilities to be utilized;

Not applicable.

- 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;

The refinery will utilize two existing tanks for the storage of ethanol. Tank 206 is currently in ethanol service and has a 112,000 barrel (bbl) capacity. Post-project, an existing general service tank, Tank 225 (or equivalent) will also be utilized to store ethanol and has a capacity of 153,000 bbl.

- 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?

The Project will not result in a change in production at the Refinery. When issuing Coastal Zone Permit No. 355 for the Refinery in 2004, the Department formally concluded that a proposed activity would not be considered a “new activity” for purposes of the Coastal Zone Act (relative to any potential increase in production activity), if the proposed activity will not cause the Crude Unit throughput rate to exceed the

benchmark throughput of 191,100 barrels per day of crude oil, determined on a twelve (12) month rolling average time period.

The Project will not require or result in any increase in the Crude Unit benchmark throughput rate.

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

This Project does not represent a totally new facility.

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

The proposed Project will not alter the current typical operating schedule of the Refinery. The operating schedule will continue to be 24 hours a day, 7 days a week, 52 weeks a year.

- 5.3 Provide a site plan of this project with:

- 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.

See Figure 3

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

Existing/ currently utilized/ developed land: **10 acres (including one (1) laydown area)**

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.

Certain areas of the Refinery property are subject to RCRA Corrective Action (Permit No. HW09A13). Of the thirty-six (36) current or historic Solid Waste Management Units (SWMUs) on the site identified in the RCRA Permit, none of SWMUs are located within the Project area.

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?

As stated in response to question 5.5, EPA, none of the current or historic SWMUs are located within the Project area.

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:

Air emissions associated with the control of displaced vapors from Piers 2 and 3 (controlled via the existing MVRS) can be accommodated within the existing authorizations for the Piers. No new emission authorizations are required.

As a result of additional ethanol movements through product storage tanks, approximately 0.8 tons of additional VOC emissions will be generated.

Please see Part 6C and Attachment D for a detailed description of the environmental benefits associated with the Project.

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

The emissions are associated with existing emission units at the refinery. No new significant pieces of equipment are being installed, but rather minor modifications to existing equipment to allow for up to 10,000 BPD on an annual average basis of ethanol throughput. As such the project is not materially adding additional risk to the day-to-day safe operation of the refinery. In addition, DCRC has established and implements procedures designed to ensure that such equipment and these types of operations are conducted in a manner to protect safety, health and the environment. Relevant personnel receive appropriate training relative to such procedures and practices on a routine basis.

A malfunction, by regulatory definition, may be unforeseeable and not preventable, it is not possible to describe, in all circumstances, the potential impact to air, water, solid and hazardous waste stream, emissions or discharge resulting from a malfunction. However, consistent with its efforts to minimize any adverse effect associated with a malfunction, DCRC has identified potential impacts to environmental media that could result from unintended operating conditions.

Relative to air quality, a malfunction or an unintended operating condition could result in an increase in air emissions of any of the regulated parameters associated with operations of new equipment. By way of example, a malfunction of the MVRS would result in a temporary increase in VOC emissions. However, as stated above, DCRC has taken appropriate measures to minimize the potential for any such incident. DCRC also has developed procedures to minimize the duration and adverse consequence of any malfunction or unintended operating condition.

- 6.3 Describe any pollution control measures to be utilized to control emissions to the levels cited above in 6.1.

Existing Marine Vapor Recovery System (MVRS):

The existing MVRS is designed to collect and dispose of volatile organic compound (VOC) vapors generated and displaced from marine vessels during loading operations. Piers 2 and 3 are equipped with marine control facilities. Engineering review is on-going to determine if minor modifications to the existing MVRS may be required for control of the ethanol vapors generated during marine vessel loading. The MVRS does not operate on a continuous basis, but rather starts up as required for loading marine vessels and is shut down upon completion of loading activities.

- 6.4 Show evidence that applicant has, or will have, the ability to maintain and utilize this equipment listed in 6.3 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.)

Operations and maintenance of the existing equipment has been conducted by skilled operations and maintenance staff for several years without significant issues. The additional ethanol throughput associated with this project is consistent in nature with other streams currently processed through this equipment. Therefore, the existing staff has a strong working knowledge of the equipment and processes that will be operated as a result of this Project.

Water Quality

- 6.5 Describe wastewater discharge (new, as well as any increase or decrease over current discharge levels) due to project operations:

For this Project, there are no changes to current wastewater discharge levels.

- 6.6 Describe the current method of employee sanitary wastewater disposal and any proposed changes to that system due to this proposed project.

The employee sanitary wastewater is currently pretreated prior to discharge. No increase in treatment capacity or other system changes are required to support 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.

See the response to question 6.5 above.

Outfall 001 is permitted in State Permit No. WPCC 3256C/74-NPDES Permit No. DE 0000256.

- 6.8 If any effluent is discharged into a public sewer system, is there any pretreatment program? If so, describe the program.

No effluent will be discharged to a public sewer system.

- 6.9 Stormwater:

- a. Identify the number, location, and name of receiving waters of stormwater discharges. Provide permit number for each discharge.

Stormwater that is collected on the footprint of the construction project will be treated as industrial stormwater and directed to the existing Refinery stormwater sewer system for treatment at the Refinery's existing WWTP, and then discharged to the Delaware River via Outfall 001.

- b. Describe the sources of stormwater run-off (roofs, storage piles, parking lots, etc).

Runoff will result when precipitation falls on the roofs of buildings, equipment, and paved or gravel surfaces.

- c. Describe the amount of stormwater run-off increase over current levels that will result from the proposed project.

There are no expected changes to the amount of stormwater run-off resulting from the proposed Project.

d. Describe any pollutants likely to be in the stormwater.

Not applicable. There are no expected changes to the amount of stormwater run-off resulting from the proposed Project

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.

Not applicable. There are no expected changes to the amount of stormwater run-off resulting from the proposed project. See also response to 6.9(a).

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 drainage system is required to avoid material risks of flooding the Project site or neighboring areas down gradient.

6.10 Will this project use a new water intake device, or increase the use (flow) from an existing intake device?

The Project will not require the use of any new water intake device or increase the flow from an existing intake device. The withdrawal from the Delaware River intake will not increase.

If yes, state:

a. the volume of water to be withdrawn, and;
Not applicable.

b. describe what will be done to prevent entrainment and/or entrapment of aquatic life by the intake device.
Not applicable.

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?

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;
Not applicable.
- 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?
Not applicable.
- c. the equipment and/or management techniques that will be used to reduce the thermal load of the discharge water.
Not applicable.

6.12 Will any proposed new discharge or change in existing discharge cause, or have potential to cause, or contribute to, the exceedance of applicable criteria appearing in the “State of Delaware Surface Water Quality Standards”?

No.

If yes, explain:

Not applicable.

6.13 Describe any oils discharged to surface waters due to this proposed project.

No oils will be discharged to surface waters due to this Project.

6.14 Describe any settleable or floating solid wastes discharged to surface waters due to this project.

The Project will not increase settleable solids or floating solid wastes in any discharge to surface water.

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.)

DCRC employs trained, State-licensed personnel to operate the Refinery's WWTP. WWTP operator licenses are on file with the Department.

- 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.

The Project does not require any additional water use.

- 6.17 Identify the source of water needed for the proposed project, including potable water supplies.

Not applicable.

- 6.18 Are wells going to be used?

No.

If yes:

- a. Identify the aquifer to be pumped and the depth, size and pumping capacity of the wells.

Not applicable.

- b. Has a permit been applied for to do this?

Not applicable.

- c. How close is the proposed well(s) to any well(s) on adjacent lands?

Not applicable.

Solid Waste

- 6.19 Will this project result in the generation of any solid waste?

Yes.

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).

Solid waste generated during operation of equipment installed as part of the Project is expected to be minimal and consistent with the waste streams currently generated by the existing process. Facility staff will ensure proper characterization of wastes generated in connection with the Project and make arrangements for proper shipment and disposal of wastes at appropriate facilities.

All construction and demolition waste materials associated with the construction of the Project will be disposed of outside of the Coastal Zone.

The general description and estimated quantities of solid waste anticipated to be generated as a result of the Project are summarized in the table below:

Waste Description	Estimated Waste Amount
Construction and Demolition (C&D) waste	Total of 100 yd ³ / over the construction phase
Spent lube oil	Less than one (1) 55-gal drum/month
Plant trash (municipal waste) from "office" dumpster	No additional plant/office trash expected
Plant "industrial trash" dumpster	No additional plant industrial trash expected

¹ The sizing of the SCR selected for the project will determine catalyst changeout volumes.

Wastes will be stored in appropriate containers, such as 55-gallon drums, and transported via either truck or rail to an appropriate disposal location outside of the Coastal Zone.

6.20 Will there be any on-site recycling, re-use, or reclamation of solid wastes generated by this project?

No.

If yes, describe:

6.21 Will any waste material generated by this project be destroyed on-site?

No.

If yes, how will that be done?

Not applicable.

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"?

No hazardous waste will be generated by the Project.

If yes, identify each hazardous waste, its amount, and how it is generated:

Not applicable.

- 6.23 Describe the transport of any hazardous waste and list the permitted hazardous waste haulers that will be utilized.

No hazardous waste is expected to be generated by the Project. Therefore, DCRC is not proposing to revise its current hazardous waste transportation methods as a result of the Project.

- 6.24 Will the proposed project cause the applicant to store, treat, and/or dispose of hazardous waste?

No.

If yes, describe: **Not applicable.**

- 6.25 Does the applicant currently generate any hazardous waste at this site?

Yes.

If yes, describe:

DCRC currently generates hazardous waste related to its facility operations. These hazardous wastes are generated and managed in accordance with applicable regulatory standards, and include but are not limited to: crude tank and slurry tank bottoms, API separator sludges, spent SCR catalyst, refinery primary sludges, benzene contaminated media, laboratory wastes, contaminated personal protective equipment, and spill clean-up residues. The hazardous waste streams are containerized and shipped offsite to permitted waste treatment and disposal sites.

Habitat Protection

- 6.26 What is the current use of the land that is to be used for the proposed project?

The property comprising the Refinery encompasses 1,729 acres of land which is currently zoned and utilized for Heavy Industrial (HI) operations.

The majority of the Project work will take place on pavement and gravel.

6.27 Will the proposed project result in the loss of any wetland habitat?

No wetland impacts will occur as a result of the Project.

6.28 Will any wastewater and/or stormwater be discharged into a wetland?

No wastewater or stormwater will be discharged into a wetland.

If yes, will the discharge water be of the same salinity as the receiving wetlands?

6.29 Will the proposed project result in the loss of any undisturbed natural habitat or public use of tidal waters?

Neither undisturbed natural habitat nor public use of tidal waters will be lost as a result of this Project.

The Refinery property is currently zoned and utilized for Heavy Industrial (HI) operations. The land proposed for use by the Project is within the property boundaries and is entirely within the active Refinery.

For security purposes, the facility is fenced and guarded and public access to the Delaware River is not available on Site; therefore, public use of tidal waters adjacent to the Refinery will be unchanged as a result of the proposed Project.

If yes, how many acres?

Not Applicable.

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?

DCRC submitted a general information request to DNREC and NOAA to assess the potential presence of threatened and endangered species. Copies of these responses are provided in Attachment E.

NOAA has identified the Delaware River, including within the vicinity of the Refinery, as a spring migration pathway to summer foraging areas for non-spawning shortnose sturgeon (*Acipenser brevirostrum*). The National Marine Fisheries Service (NMFS) indicate that juvenile Atlantic sturgeon (*Acipenser oxyrinchus*) may be present in the River in spring and early summer. Both the shortnose sturgeon and the Atlantic sturgeon are listed as endangered species under federal law

(see NOAA's National Marine Fisheries response provided in Attachment E). The Project does not require any in-water work; therefore, Project activities cannot have any impact on any of the listed species. Additionally the Project does not add any new pollutants or volumetric flow rate to the waste water stream discharged to the Delaware River relative to current conditions.

- 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)?

The Project work will occur entirely on land and will not affect the Delaware River, which is the habitat for the threatened or endangered species identified in response to Question 6.30.

- 6.32 What assurances can be made that no threatened or endangered species exist on the proposed project site?

Copies of the Agency responses referenced in response to Question 6.30 have been included in Attachment E. See also the response to Question 6.31.

- 6.33 Describe any filling, dredging, or draining that may affect nearby wetlands or waterways.

No filling, dredging, or draining will occur as a result of the Project.

- 6.34 If dredging is proposed, how much will occur and where will the dredged materials go for disposal?

Not Applicable.

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 minor modifications to existing equipment associated with the Project will be consistent in kind, character and scope with the existing Refinery operations. The Project is not anticipated to cause any noticeable change in heat, glare, noise, vibration, radiation, electromagnetic interference, and odors outside the fence-line during normal operation.

- 6.36 Describe what will be done to minimize and monitor such effects.

DCRC has established and implements procedures designed to ensure that such equipment and these types of operations are conducted in a manner to protect safety, health and the environment. Relevant personnel receive appropriate training relative to such procedures and practices on a routine basis. To the extent necessary and appropriate, DCRC will develop additional procedures and train appropriate operating personnel, to ensure that the movement of ethanol in existing equipment associated with the Project is completed in accordance with good and intended work practices, and thereby minimize the potential for malfunctions that may give rise to aberrational odors, noise or other perceived impacts.

- 6.37 Describe any effect this proposed project will have on public access to tidal waters.

The Project will not affect public access to tidal waters.

- 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.

A malfunction may arise due to aberrational conditions that could not reasonably have been foreseen nor prevented, notwithstanding effective maintenance and operational practices. Further, even in the best run operations by the most highly trained personnel, human error may nonetheless occur on an isolated basis. In recognition of these circumstances, DCRC has developed extensive procedures to ensure the identification of and prompt response to any unintended operating condition that may give rise to adverse impacts to the environment or the surrounding community.

DCRC includes appropriate monitors and even alarm systems on relevant equipment to provide early warning to facility personnel of aberrational operating conditions associated with a malfunction or other situations. DCRC has invested in substantial resources at the facility to enable prompt response to any such aberrational operating condition to minimize its duration and impact. The MVRS is designed to stop loading operations at the piers in the event the MVRS operating conditions deviate from normal operations. Further, DCRC works cooperatively with surrounding government response organizations and personnel and maintains routine communication with such personnel to ensure that additional resources can be immediately brought to bear to support DCRC's

own activities in the event of an unintended aberrational operating event.

- 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.

Please see response to Question 6.38 regarding the nature and response to malfunctions or other aberrational operating conditions potentially associated with the Project.

Relative to air quality, a malfunction or an unintended operating condition could result in an increase in air emissions of any of the regulated parameters associated with operations of new equipment. By way of example, a malfunction of the Marine Vapor Recovery System would result in a temporary increase in VOC emissions.

Although a malfunction event is not likely to materially change the character or nature of waste generation associated with the Project, such malfunction may temporarily increase the generation rate of certain waste streams.

If, notwithstanding effective design, construction and maintenance of all storage vessels associated with the Project, a release or other unintended discharge from such storage vessels should occur, the release would likely be contained within secondary containment specific to the vessel, or other systems designed to prevent migration of the discharge. In the unlikely event that such containment systems suffered a simultaneous malfunction, streams would likely be captured and directed to the wastewater treatment plant, but an unintended discharge to surface water or groundwater would remain possible.

As stated above, however, DCRC has undertaken to consider such potential scenarios in the design, construction, maintenance and operation of new equipment. In addition, applicable regulatory standards establish multiple redundancies to minimize adverse effects associated with malfunctions or other aberrational conditions. Finally in this context, by preparing for such potential circumstances, DCRC has identified and made available resources to minimize any potential adverse effects.

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”?

NO

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

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 more than offset the negative impacts from the proposed project.

Additional detail regarding environmental offsets is provided in the Offset Matrix in Attachment D.

The Project will not result in any significant net adverse environmental impacts. Any minor impact will be substantially more than offset by environmental benefits associated with the Project.

Air emissions associated with loading ethanol on to marine vessels at Piers 2 and 3 will not require increases to the authorizations contained in the existing MVRs (Piers 2 and 3) permit. The only additional emissions authorizations required for the project are minor increased in VOCs (0.8 tons per year) for the storage tanks to accommodate for the increased throughput of ethanol.

A parallel effort being undertaken by DCRC (not requiring Coastal Zone permitting) is the addition of the ability to load ethanol onto trucks at the Marketing Terminal. The installation of a vapor capture system at the truck loading rack at the Marketing Terminal will significantly reduce fugitive VOC emissions.

Further, air emissions will be subject to specific limitations and standards imposed through air quality permitting separately addressed for the project. As reflected in the air permit application, the project does not trigger Prevention of Significant Deterioration or non-attainment New Source Review, meaning the project does not significantly impact air quality in the region.

With respect to water use and wastewater discharge, as detailed in the application, the Project will not result in the construction of any new water intake or the increase in flow from any existing water intake on the Delaware River. No new groundwater wells will be required to support the project and any groundwater

withdrawn from existing wells will not require any increase in permitted capacity.

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

Land Impacts (Wetland/habitat/flora)

No Project impacts are anticipated.

Air

The company will purchase and install a new vapor capture system to eliminate fugitive volatile organic compound (VOC) emissions from the truck loading operations at the Marketing Terminal. The timing for the new vapor control system will run in parallel with the timing for the ethanol project as described in this application. Both projects require air permit approvals from DNREC to construct and subsequently operate. Overall, there will be net reduction in emissions associated with this project.

The reduction in VOC emissions due to the installation of the vapor capture system will occur following commencement of operation. Full production is anticipated to be achieved by Q1 2017.

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

See Responses to Paragraphs A and B above.

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

The specific environmental offsetting projects identified by DCRC through this application rely upon assessments by regulatory agencies of available benefits from specific offsetting activities. In particular, the air quality benefits from air emission reductions of the type addressed by this offset plan have been demonstrated through scientific evaluation, and generally recognized by government authorities as environmentally beneficial.

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

Please see response to Paragraph D.

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

There are no negative impacts associated with the environmental mitigation and offset projects identified in this permit application.

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.

The specific environmental benefits associated with offsetting and mitigation projects discussed in this application are entirely consistent with the Department's environmental objectives for the Coastal Zone and accepted environmental indicators for long-term environmental quality. Implementation of the Project essentially without a corresponding increase in wastewater discharge or flow at the existing intake on the Delaware River reflects the ability to achieve significant environmental improvements through the Project without any adverse water impacts. Adherence to all regulatory standards regarding air quality offsets not only ensures satisfaction of and compatibility with environmental regulatory standards, but the realization of the objectives of such standards in terms of maintaining environmental protection (particularly in the Coastal Zone) in the context of project development activities.

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

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.

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.

PART 7
ECONOMIC EFFECTS

Construction

- 7.1 Estimate the total number of workers for project construction and the number to be hired in Delaware.

It is currently anticipated that approximately 20 to 25 workers will be engaged in direct Project construction activities. It is anticipated that 70% of the workers will be hired from Delaware.

- 7.2 Estimate the weekly construction payroll.

The weekly payroll is estimated to be \$110,000 for approximately 18 to 20 weeks.

- 7.3 Estimate the value of construction supplies and services to be purchased in Delaware.

An estimate of construction services and supplies to be purchased in Delaware is \$7,000,000.

- 7.4 State the expected dates of construction initiation and completion.

The Project will be initiated as soon as appropriate permitting is complete. Initiation is targeted for 4Q 2016 with completion by Q1 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).

For these reasons described in detail in this application, there is no projected adverse economic impact associated with the Project due to loss of natural habitat or degraded water or air quality.

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.

Construction of the Project will substantially benefit the local economy within Delaware's Coastal Zone, as the Project will generate jobs during construction. There are no new full time employees expected.

- 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.

Not Applicable

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

Not Applicable

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

State personal income taxes:	\$ 113,000 (during construction) and Not Applicable (during operation)
State corporate income taxes:	Not Applicable
County and school district taxes:	Not Applicable
Municipal taxes:	Not Applicable
Manufacturing and Gross Receipt Taxes:	Not Applicable
Total estimated annual tax to be paid to Delaware as a result of the Project (after completion of construction phase):	Not Applicable.

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:

a. Roads

It is not anticipated that any new or expanded public roads will be required to support the Project. No new roads or road improvements are required within the facility boundary.

b. Bridges

It is anticipated that no new public bridges, or improvements to existing public bridges, will be required to support the Project.

c. Piers and/or docks

No new piers or docks are required to support this Project.

d. Railroads

No new railroads are required to support this Project.

e. Microwave towers

No microwave towers are required as part of this Project.

f. Special fire protection services not now available.

It is not anticipated that any new special fire protection services will be required for the Project.

g. Traffic signals

There are no traffic signals required for this Project.

h. Sewer expansion

No required sewer expansion associated with this Project.

i. Energy related facilities expansion

No required energy related expansion associated with this Project.

j. Pipelines

No new regional pipelines will be required for this Project.

k. Bulk Hydrogen Loading

Not Applicable.

l. Laydown Areas

The construction phase of the Project will include a materials staging area. This will be on a paved/asphalt surface.

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).

The proposed Project will not change the current aesthetic quality of the facility. Minor modifications to existing equipment as described within this application are not expected to cause the equipment to be readily distinguishable from existing facility structures from the vantage point of any residential area, public-park, or other public meeting place, although new equipment may be visible from a public road.

- 9.2 Is the project site location within a half mile of a place of historic or scenic value?

According to the National Historic Registry database 2014 there are six (6) locations within a half mile radius the Project Site, (Chelsea; Delaware City Historic District; Eastern Lock of the Chesapeake and Delaware Canal; Fairview; Fort Delaware on Pea Patch Island, and Fort Dupont Historic District), none of which will be affected by Project activities.

- 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.

Minor modifications to existing equipment will maintain the equipment as of a similar kind, character, scope and appearance as existing equipment at the facility, and therefore will be aesthetically compatible with the existing facility and the surrounding land use. Due to the compatibility of the Project to the existing land use, landscaping and screening are not proposed. Plot plans and other layout information for the Project are included in the attachments to this application.

PART 10

EFFECTS ON NEIGHBORING LAND USES

- 10.1 How close is the nearest year-round residence to the site of this proposed project?

The nearest year-round residence is located approximately 1910 feet from the outer edge of the Project area. All Project activities will occur within the existing facility boundary; therefore, the distance to the nearest year-round residence will be unchanged.

- 10.2 Will this proposed project interfere with the public's use of existing public or private recreational facilities or resources?

The Project will be located completely within the facility property boundaries and will not affect use of existing public or private recreational facilities or resources. Federal regulations imposing strict security measures prevent public access to the site.

- 10.3 Will the proposed project utilize or interfere with agricultural areas?

The Project will occur within the facility property boundaries and will not use or interfere with agricultural areas.

- 10.4 Is there any possibility that the proposed project could interfere with a nearby existing business, commercial or manufacturing use?

The Project will occur within the facility property boundaries and will not interfere with nearby existing businesses, commercial or manufacturing uses. Certain local commercial establishments will likely benefit as a result of the temporary influx of workers required to support the Project.

END OF APPLICATION

ATTACHMENTS TO FOLLOW

Attachment A
Zoning Letters

Thomas P. Gordon
County Executive



DEPARTMENT OF LAND USE

August 4, 2016

**In reply, refer to:
2016-0556
1851 River Road, 1771 River Road, 1901 River Road**

Attn: Dustin Learned, P.E.
VanDemark & Lynch, Inc.
4305 Miller Road
Wilmington, Delaware 19802

Dear Mr. Learned:

The New Castle County Department of Land Use is in receipt of your request for a verification of zoning and use for tax parcel numbers 12-008.00-015, 12-009.00-001, and 12-014.00-002, which are located at 1851, 1771, and 1901 River Road in New Castle, Delaware.

A review of the Official Zoning Map of New Castle County indicates the subject parcels are zoned **HI (Heavy Industrial), which permits heavy industrial uses such as petroleum refining and related industries**, pursuant to Table 40.03.110 and Section 40.33.270 C of the New Castle County Code. **These parcels are located in the Delaware Coastal Zone, and state law contains additional restrictions on uses allowable therein. This certification does not certify that the proposed use is in compliance with the Delaware Coastal Zone Act ("Act"), 7 Del. C. 7001 et seq or the regulations and administrative codes adopted pursuant to the Act. Furthermore this zoning certification does not supersede any applicable state or federal law.**

The Board of Adjustment granted several Area Variances on parcel number 12-008.00-015 (application number 2013-0372-A) on July 25, 2013, a copy of which is enclosed for your information. No other relevant variances or zoning or building violations were found for the subject properties in a search of the tax parcel information system.

A Record Resubdivision Plan for Parcel 3B-2, 3B-3 & 3B-4 Delaware City Refinery (microfilm number 201504280019378) was recorded in the Office of the Recorder of the Deeds for New Castle County on April 28, 2015. The approval and recordation of this plan indicate compliance with the subdivision and zoning code regulations in effect at that time. A copy of the recorded plan is enclosed for your information. Any new construction or changes in use to that shown on the record plan will require compliance with current UDC regulations.

Please be advised that this letter only verifies whether the type of use that exists or is proposed on the site – to the extent you described it in your zoning verification application – is permitted, not permitted, or permitted under limited circumstances in the zoning district. This letter is not a permit and does not offer any guarantee that any other required plans, applications, certifications, or variances for your project will be approved.

If your project involves an expansion of the existing use, a change in use, alterations to the building or site, demolition, or new construction, one or more permits may be needed before you can initiate

the use. The following is a summary of Department of Land Use permits, certificates, and plans that may be required for your project.

Any new use of change of use in an existing building may require:

1. **Limited Use Permit.** If the existing or proposed use is identified as a "limited use" on the first page of this letter you will need to apply for a Limited Use Permit. This application must be accompanied by a site plan, or other supporting documentation, demonstrating that the special standards for that use are met. Refer to Articles 3 and 31 of the Unified Development Code for additional information.
2. **Certificate of Use.** To either institute a new use, or expand an existing use, in an existing building you must obtain a Certificate of Use. The Department will determine whether the building meets the BOCA Code (building code) and parking requirements for such use. Refer to Chapter 6, Article 2 of the New Castle County Code (Building and Property Regulations) for additional information.

Any new construction, or altering or expansion of existing buildings and features on the site may require:

1. **Major or Minor Land Development Plan.** If your project will subdivide land or add more than 1,000 square feet of gross floor area, you must submit a major or minor land development plan. The plan will be reviewed for compliance with the land development criteria outlined in the Unified Development Code. During review of the plan, the Department may hold public hearings and may identify other applications, plans, studies, or permits that need to be submitted before development can commence. Refer to Article 31 of the Unified Development Code for general requirements
2. **Parking Plan.** If your project requires installation, expansion or reconfiguration of a parking lot, you will need to submit a parking plan. Refer to Articles 3 and 31 of the Unified Development Code for general requirements.
3. **Building Permit / Demolition Permit / Sign Permit.** If your project will involve altering or enlarging a building (including mechanical systems), demolishing all or part of a building, or installing new signs, you must obtain permits for those activities. During the review of these applications, the Department may identify other applications, plans, studies, or permits that need to be submitted before development can commence. Before the new or improved building can be inhabited, a **Certificate of Occupancy** must be secured from the Department. Refer to Chapter 6, Article 2 of the New Castle County Code (Building and Property Regulations) for additional information.

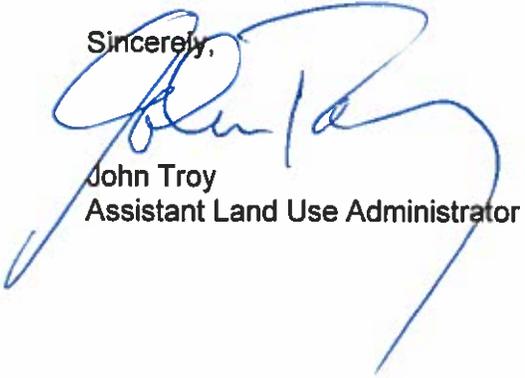
This summary of Department of Land Use permit applications is intended only for general informational purposes and is not intended to be inclusive of the comprehensive requirements contained in the New Castle County Code. Please be advised that some of the review processes described above may also require recommendations or decisions from County boards (Planning Board, Historic Review Board, Board of Adjustment, and Resource Protection Area Technical Advisory Committee) or outside agencies. New Castle County must abide by regulations imposed on it by a variety of State and Federal agencies. Accordingly, any of the County permits described above may be subject to additional review processes that address environmental concerns; resource protection; public health, safety, and welfare; and a variety of other issues. In some cases, landowners may need to address the requirements of those agencies independently.

Landowners contemplating a change of use, future development, or alterations to buildings and land are encouraged to engage the services of an engineer, land surveyor, and/or attorney for

advice on any physical constraints that may limit development of the property, and guidance on what permits may be needed to commence a new use or development.

General questions regarding the plan review process; building, demolition, and sign permits; and Certificates of Use/Occupancy, can be answered by the Department at (302) 395-5400. Copies of documents such as certificates of occupancy or code violations may be obtained, where applicable and available, by submitting an Information Request Form (FOIA). The form is available on-line at <http://www.nccde.org/375/Freedom-of-Information-Act>. Thank you for your attention to this matter.

Sincerely,

A handwritten signature in blue ink, appearing to read "John Troy", is written over the typed name and title. The signature is fluid and cursive, with a long, sweeping underline that extends to the right.

John Troy
Assistant Land Use Administrator

"A Historic Past"



"A Bright Future"

CITY OF DELAWARE CITY

407 Clinton Street - P.O. Box 4159
Delaware City, Delaware 19706
302-834-4573

August 4, 2016

VanDemark & Lynch, Inc.
4305 Miller Road
Wilmington, DE 19802

Attention: Dustin Learned, P.E.

RE: 22-003.00-001 Delaware City Refinery Zoning Verification

Dear Mr. Learned:

The City of Delaware City certifies that the zoning (M-1 and OS-BA) is compliant for the referenced project and with your plans to construct a pipeline for conveyance of ethanol from the docks located in Delaware City.

If you require any further information, please contact me at 302-834-4573.

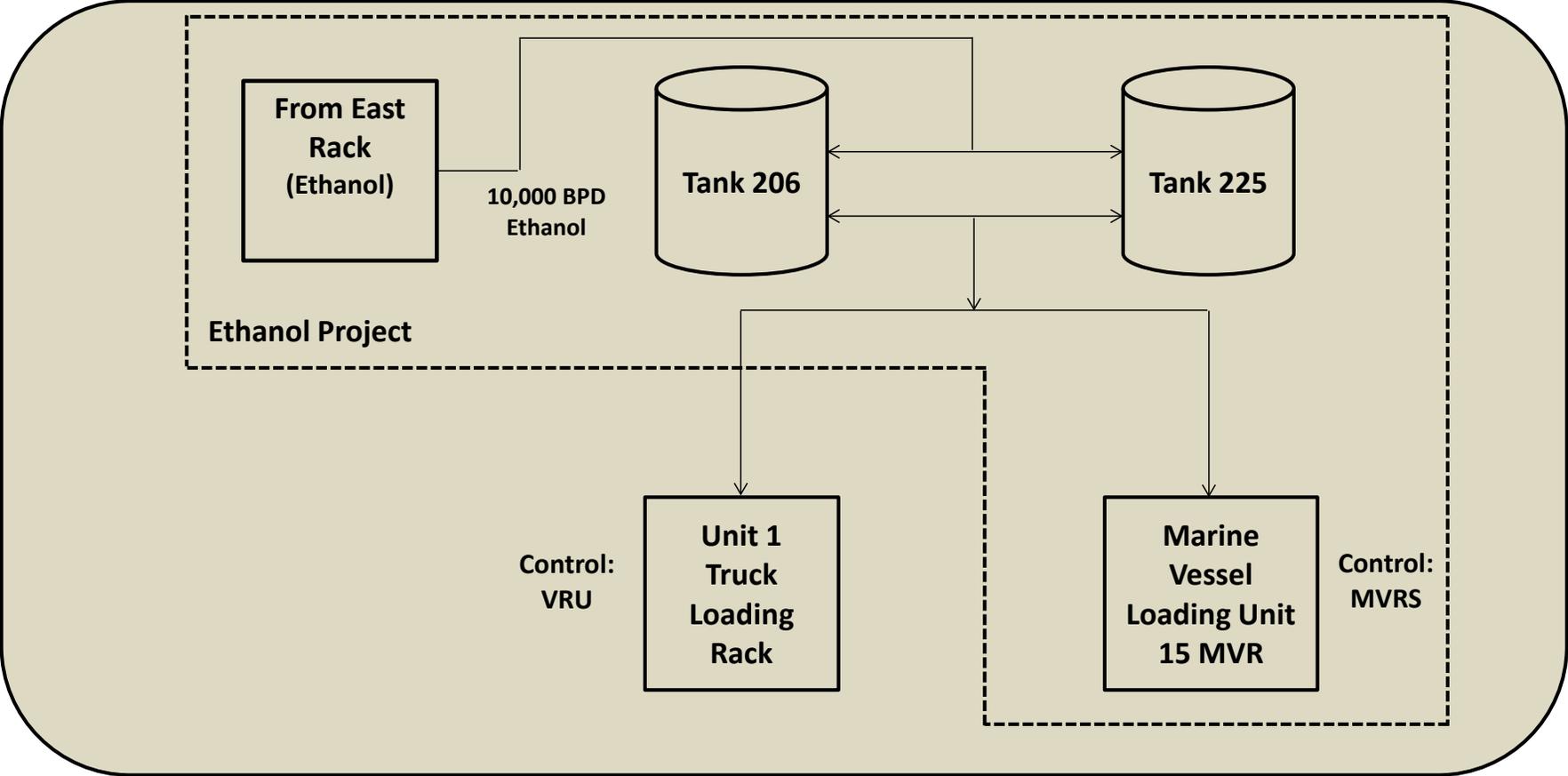
Sincerely,

A handwritten signature in blue ink, appearing to read "R. C. Cathcart", is written over the typed name.

Richard C. Cathcart
City Manager

Attachment B
Process Flow Diagram

Attachment B - Simplified Process Flow Diagram



Attachment C
Safety Data Sheets



Ethanol

MATERIAL SAFETY DATA SHEET (Complies with 29 CFR 1910.1200)

PRODUCT NAME: FUEL ETHANOL

ADM PRODUCT CODE: 017609

SYNONYMS: Denatured Ethanol, Ethyl Alcohol - Denatured

CHEMICAL FORMULA: C₂H₅OH

SECTION I

MANUFACTURER: Archer Daniels Midland
4666 Faries Parkway
Decatur, IL 62526

EMERGENCY NUMBER: (800) 424-9300 Chemtree (USA)
(217) 424-5200 ADM Corporate

INFORMATION: (888) 371-4408 or (563) 244-5208

DATE: May 1, 2008

SECTION II Hazardous Ingredients/Identity Information

COMPONENTS:

	<u>CAS Number</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>Volume</u>
Ethanol (Ethyl Alcohol) 200 proof	0064-17-5			95-98%
Natural Gasoline	8006-61-9			2-5%
*Benzene	0071-43-2	1 ppm	10 ppm	<0.1%

*A chemical known to the State of California to cause cancer

SECTION III – Physical/Chemical Characteristics

Boiling Point, °F	165-175
Reid Vapor Pressure, psi, 100°F	3.5
Vapor Density (Air = 1) at 172°F	1.6
Specific Gravity (H ₂ O=1) at 60°F	0.79
Evaporation Rate (Butyl Acetate=1)	3.2
Solubility in Water	Completely miscible
Appearance and Odor	Clear, colorless liquid; characteristic odor

SECTION IV – Fire and Explosion Hazard Data

Flash Point (Method Used):	Minus 5°F, Tag Open Cup
Auto ignition temperature:	>689°F
Flammable Limits (LEL):	3.3
Flammable Limits (UEL):	19.0
Extinguishing Media:	CO ₂ , dry chemical or water for small fires; polar solvent foam for large fires.
Special Fire Fighting Procedures:	Water is not effective until the alcohol contains approx. 80% water.
Unusual Fire and Explosion Hazards:	Flammable liquid.

SECTION V – Reactivity Data

Stability: Stable

Conditions to Avoid: Avoid heat, sparks and open flames, excessive storage temperatures and/or open containers

Incompatibility (Materials to Avoid): Strong oxidizers

Hazardous Decomposition of By-products: Aldehydes, carbon monoxide.

Hazardous Polymerization: Will not occur

SECTION VI – Health Hazard Data

Routes of Entry: Inhalation, skin, ingestion

Health Hazards (Acute and Chronic): Unconsciousness; coma; respiratory failure and death. removes natural oils and fats from skin. Moderately toxic (LD50 >5 gm/kg).

Carcinogenicity:

NTP: Not determined

IARC Monographs: Not determined

OSHA Regulated: Yes

Signs and Symptoms of Exposure: May cause dizziness, loss of balance and coordination

Medical Conditions Generally Aggravated by Exposure: Not determined

Emergency and First Aid Procedures: If swallowed, do not induce vomiting. If inhaled, remove person to fresh air. Give artificial respiration if breathing has stopped. Get immediate medical attention. If splashed in eyes or on skin, flush immediately with copious amount of water.

SECTION VII – Precautions for Safe Handling and Use

Steps to be taken in Case Material is Released or Spilled: Eliminate all sources of ignition. Spills should be collected for disposal.

Waste Disposal Method: Do not allow to enter sewers where vapors may become ignited. Incinerate in a furnace where permitted under appropriate federal, state and local regulations.

Precautions to be taken in Handling and Storing: Keep away from heat, sparks and open flame. Keep container closed. Use with adequate ventilation.

Other Precautions: Use explosion proof electrical equipment and non-sparking tools. Ground electrical equipment.

SECTION VIII – Control Measures

Respiratory Protection: Self-contained breathing air mask for high concentrations.

Ventilation: Local exhaust ventilation should be used; mechanical exhaust acceptable

Protective Gloves: Rubber

Eye Protection: Chemical splash goggles

Other Protective Clothing or Equipment: Eye bath, safety shower

Work/Hygienic Practices: Practice good housekeeping.

HMIS Hazard Rating Index

1	HEALTH (chronic effects)
3	FLAMMABILITY
0	REACTIVITY
H	PROTECTIVE EQUIPMENT

NFPA D.O.T. Disposal

1	HEALTH
3	FLAMMABILITY
0	REACTIVITY
N/A	OTHER

SECTION IX – Transportation Information

U.S. Dept. of Transportation

Proper Shipping Name	Denatured Alcohol
Hazard Class	3
ID Number	NA 1987
Packing Group	II
Label Statement	Flammable Liquid

Water Transportation

Proper Shipping Name	Denatured Alcohol
Hazard Class	3
ID Number	NA 1987
Packing Group	II

This MSDS is based upon a limited review of ADM files and standard toxicological handbooks.

The information herein is furnished without warranty of any kind. This information should only be used as a supplement to information already in your possession concerning the product. The determination of whether and under what conditions the product should be used by your employees is yours to make.

Attachment D
Offset Matrix

COASTAL ZONE ENVIRONMENTAL IMPACT OFFSET MATRIX

Applicant: Delaware City Refinery Company LLC.
 Project: DCRC Ethanol Marketing Project
 CZA Offset Review Reference: (DNREC Only)

Page 1 of 3
 Application Date: August 2016
 Amendments:
 Offset Review Date: (DNREC Use Only)
 Matrix Amended:

ENVIRONMENTAL IMPACTS	(Applicant's Use) DESCRIBE ENVIRONMENTAL IMPACTS	PAGE NO. (In Section 1)	(Applicant's Use) DESCRIBE ENVIRONMENTAL OFFSET PROPOSAL ¹	PAGE NO. (In Section 1)	(DNREC Use Only) OFFSET SUFFICIENCY Yes, No or N/A																												
Air Quality (Applicant to List Below by Parameter)	<p>The following table summarizes the estimated emissions from 10,000 BPD, on an average annual basis, of ethanol throughput at the two storage tanks, Tank 206 & Tank 225, and the Refinery Unit 15 MVR system.</p> <table border="1"> <thead> <tr> <th>Source</th> <th>VOC</th> </tr> </thead> <tbody> <tr> <td>Tank 206 Current Permit Limit</td> <td>0.59</td> </tr> <tr> <td>- New Permit Limit</td> <td>0.9</td> </tr> <tr> <td>Tank 206 Net Increase Allowable Emissions</td> <td>0.3</td> </tr> <tr> <td>Tank 225 Current Permit Limit</td> <td>none</td> </tr> <tr> <td>- New Permit Limit</td> <td>0.5</td> </tr> <tr> <td>Tank 225 Net Increase Allowable Emissions</td> <td>0.5</td> </tr> </tbody> </table> <p>Air emissions will be subject to specific limitations and standards imposed through air quality permitting separately addressed for the project. As reflected in the air permit application, the project does not trigger Prevention of Significant Deterioration or non-attainment New Source Review, meaning the project does not significantly impact air quality in the region.</p> <p>No new permit authorizations for the MVR system are needed for the small impact on air emissions associated with ethanol loading of marine vessels. Current permit limits in the MVR System – Piers 2 and 3 permit are not expected to change.</p>	Source	VOC	Tank 206 Current Permit Limit	0.59	- New Permit Limit	0.9	Tank 206 Net Increase Allowable Emissions	0.3	Tank 225 Current Permit Limit	none	- New Permit Limit	0.5	Tank 225 Net Increase Allowable Emissions	0.5	Part 6.1, page 13	<p>To offset these emissions, the company will purchase and install a new vapor capture system to eliminate fugitive volatile organic compound (VOC) emissions from the truck loading operations at the marketing Terminal. Overall, there will be net reduction in emissions associated with this project.</p> <table border="1"> <thead> <tr> <th>Source</th> <th>VOC (TPY)</th> </tr> </thead> <tbody> <tr> <td>Tank 206 Allowable Emissions Increase</td> <td>0.3</td> </tr> <tr> <td>Tank 225 Allowable Emissions Increase</td> <td>0.5</td> </tr> <tr> <td>MVR System – Marine Vessel Loading Allowable Emissions Increase</td> <td>0.0</td> </tr> <tr> <td>Total Project Allowable Emissions Increase</td> <td>0.8</td> </tr> <tr> <td colspan="2">OFFSETS</td> </tr> <tr> <td>Marketing Terminal New Vapor Capture System – Fugitive VOC Reductions</td> <td>1.1¹</td> </tr> </tbody> </table> <p>¹Considering the fugitive VOC emission reductions associated with the installation of the new vapor capture system at the Marketing Terminal truck loading rack, DCRC believes this project will “clearly and demonstrably” more than offset any negative impacts associated with this project’s implementation. While the reductions are expected to be significantly greater than 1.1 ton, for offset purposes DCRC is identifying 1.1 tpy of the VOC emissions associated with the new vapor capture system to offset the small projected increase in authorized emissions associated with the Project.</p>	Source	VOC (TPY)	Tank 206 Allowable Emissions Increase	0.3	Tank 225 Allowable Emissions Increase	0.5	MVR System – Marine Vessel Loading Allowable Emissions Increase	0.0	Total Project Allowable Emissions Increase	0.8	OFFSETS		Marketing Terminal New Vapor Capture System – Fugitive VOC Reductions	1.1 ¹		
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COASTAL ZONE ENVIRONMENTAL IMPACT OFFSET MATRIX

Applicant: Delaware City Refinery Company LLC.
 Project: DCRC Ethanol Marketing Project
 CZA Offset Review Reference: (DNREC Only)

Application Date: August 2016
 Amendments:
 Offset Review Date: (DNREC Use Only)
 Matrix Amended:

ENVIRONMENTAL IMPACTS	(Applicant's Use) DESCRIBE ENVIRONMENTAL IMPACTS	PAGE NO. (In Section 1)	(Applicant's Use) DESCRIBE ENVIRONMENTAL OFFSET PROPOSAL ¹	PAGE NO. (In Section 1)	(DNREC Use Only) OFFSET SUFFICIENCY Yes, No or N/A
Water Quality					
Surface	<p>Pollutant loading to the WWTP is expected to remain consistent with current levels and will be of similar quality and character to the water presently discharging to the WWTP. The facility will continue to comply with their existing discharge permit limits.</p> <p>Because the Project will not change the quality and character of the water discharged to the Delaware River and the discharge will continue to meet permitted discharge limits, there are no negative impacts to the Coastal Zone and no offsets are proposed.</p>	Part 6.5, beginning on page 16	<p>Compliance with all conditions of issued New Castle County, State of Delaware, United States Army Corps of Engineer Permits.</p> <p>As a result of the VOC emission reductions resulting from this Project, DCRC believes this project will "clearly and demonstrably" more than offset any negative impacts associated with its implementation without any further offsets proposed.</p>		
Groundwater	The Project will not require additional water withdrawal. Therefore, there are no potential impacts to the Coastal Zone associated with water withdrawal and no offsets are proposed.	Parts 6.17, beginning on page 19, and 6.18 beginning on page 19	Not Applicable		
Water Quantity					
Surface	The Project does not result in any increase in direct surface water discharge to the Delaware River. Additional water demands resulting from the Project will be met either using water from existing permitted wells or from water sourced from outside Delaware's Coastal Zone, the Project does not negatively impact the Coastal Zone and no offsets are proposed.	Part 6.5, beginning on page 16	As a result of the VOC emission reductions resulting from this Project, DCRC believes this project will "clearly and demonstrably" more than offset any negative impacts associated with its implementation without any further offsets proposed.		
Groundwater	Project groundwater usage will be achieved within the permitted groundwater withdrawal limits. Because the wells are existing and the demand is within the current permit limits, there are no potential negative impacts to the Coastal Zone associated with this additional water withdrawal; therefore, no offsets are proposed.	Parts 6.17, beginning on page 19, and 6.18 beginning on page 19			
Water Use For:					
Processing	Any water use to support the Project will come from existing permitted groundwater wells. The increase in groundwater usage will be achieved within the permitted groundwater withdrawal limits. Because the wells are existing and the demand is within the current permit limits, there are no potential negative impacts to the Coastal Zone associated with this additional water withdrawal; therefore, no offsets are proposed.	Parts 6.10, page 17	Not Applicable		
Cooling	There are no proposed changes to the facility's cooling system.	Part 6.5, beginning on page 16	Not Applicable		
Effluent Removal	There are no proposed changes to the effluent removal system. No additional pollutant loading is expected as a result of this Project (see Surface water quality section of the offset matrix).	Part 6.9, beginning on page 16	Not Applicable		
Solid Waste	Solid wastes will be generated as a result of construction of the Project. Solid waste will include but not be limited to: construction debris and spent lubricant oil. All of the generated solid waste will be transported outside of the Coastal Zone for either recycling or disposal. Because the waste will be disposed of outside the Coastal Zone, no offsets are proposed.	Part 6.19, beginning on page 20	Not Applicable		

COASTAL ZONE ENVIRONMENTAL IMPACT OFFSET MATRIX

Applicant: Delaware City Refinery Company LLC.
 Project: DCRC Ethanol Marketing Project
 CZA Offset Review Reference: (DNREC Only)

Page 3 of 3
 Application Date: August 2016
 Amendments:
 Offset Review Date: (DNREC Use Only)
 Matrix Amended:

ENVIRONMENTAL IMPACTS	(Applicant's Use) DESCRIBE ENVIRONMENTAL IMPACTS	PAGE NO. (In Section 1)	(Applicant's Use) DESCRIBE ENVIRONMENTAL OFFSET PROPOSAL ¹	PAGE NO. (In Section 1)	(DNREC Use Only) OFFSET SUFFICIENCY Yes, No or N/A
Hazardous Waste	No hazardous waste is expected to be generated by this construction project.	Part 6.22, page 21	Not Applicable		
Habitat	The refinery property is currently zoned and utilized for Heavy Industrial (HI) operations. The land proposed for use by the Project is within the property boundaries and is entirely within the active facility. Construction and operation of the Project will not result in loss of habitat. No undisturbed natural habitat will be lost as a result of this Project; therefore, no offset is proposed.	Part 6.26 and 6.29, page 22	Not Applicable		
Wetlands	None	Part 6.27, page 22	Not Applicable		
Flora Fauna	None	Part 6.26, 6.27, and 6.29, page 22	Not Applicable		
Drainage/Flood Control	The stormwater flow will be tied in to the existing stormwater management system and will not create changes in drainage or flooding patterns; therefore, there will be no impact to the Coastal Zone and no offset is required.	Part 6.9, beginning on page 20	Not Applicable		
Erosion ²	There is no land disturbance associated with the Project; therefore no resulting erosion is expected.	Part 6.9, beginning on page 16	Not applicable.		
Land Use Effects	The Project will not impact the coastal zone outside of the DCRC property boundary.	Part 6.35, page 24			
Glare	None.	Part 6.35, page 24			
Heat	None.	Part 6.35, page 24			
Noise	None.	Part 6.35, page 24			
Odors	None.	Part 6.35, page 24			
Vibration	None.	Part 6.35, page 24			
Radiation	None.	Part 6.35, page 24			
Electro-Magnetic Interference	None.	Part 6.35, page 24			
Other Effects	None.	Part 6.35, page 24			
Threatened & Endangered Species	No threatened or endangered species or their habitats are anticipated to be negatively effected as a result of the proposed Project. Atlantic and shortnose sturgeon, both Federally Endangered species, may be present in the Delaware River within the vicinity of the refinery (see NOAA's National Marine Fisheries Service and DNREC's Natural Heritage and Endangered Species Program letters provided in Attachment E); however no work is proposed to occur within or immediately adjacent to a water body. Because the habitat required by these species will not be impacted as part of this Project, no offset is proposed.	Part 6.30, 6.31 and 6.32, page 23	Not Applicable		
Impacts From:	No new environmental impacts/risks from raw materials, intermediate products, by-products, or final products are anticipated as a result of this Project. All materials will continue to be stored and handled in accordance with the appropriate applicable regulations.	Part 5.1, beginning on page 9	Not Applicable		
Raw Material	None.	Part 5.1, beginning on page 9			
Intermediate Products	None.	Part 5.1, beginning on page 9			
By-Products	None.	Part 5.1, beginning on page 9			
Final Products	None.	Part 5.1, beginning on page 9			

¹ See paragraph I.1.b in "Secretary Assessment"
² Construction and normal operation

Attachment E
Threatened and Endangered
Species Responses



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
& ENVIRONMENTAL CONTROL
DIVISION OF FISH & WILDLIFE
89 Kings Highway
Dover, Delaware 19901

OFFICE OF THE
DIRECTOR

Phone: (302) 739-9910
Fax: (302) 739-6157

July 7, 2016

Colin McGroarty
Environmental Resources Management
75 Valley Stream Parkway
Suite 200
Malvern, PA 19355

Re: ERM 2016 DCRC General Review
Tax Parcel ID's: 1200800014, 1200800015, 2200300001

Dear Mr. McGroarty,

Thank you for contacting the Wildlife Species Conservation and Research Program (WSCR) about information on rare, threatened and endangered species, unique natural communities, and other significant natural resources as they relate to the above referenced project.

Note, based on the general nature of your request, our review provides general information and does not include specific recommendations for time of year restrictions or other measures to reduce impacts to important species and habitats. As details of your project become available, please contact us again with the full description of the scope of work and supporting maps.

Bald Eagle

There is an active Bald Eagle (*Haliaeetus leucocephalus*) nest within the vicinity of the project area. Bald eagles and their nests are protected under the federal Bald and Golden Eagle Protection Act (BGEPA). The U.S. Fish and Wildlife Service (USFWS) developed *National Bald Eagle Management Guidelines*, to help landowners and others minimize impacts to eagles, including disturbance, which is prohibited by the BGEPA. The guidelines focus on minimizing disturbance through the use of suggested buffer zones (330 ft. to 660 ft. from a nest) and time-of-year restrictions for certain activities in several categories. Determinations of allowable activities within protection distances are evaluated on a case-by-case basis by USFWS biologists.

No scope of work was provided with this review; therefore, we are unable to provide specific comments or recommendations for this project area for this species. Depending on the scope of work of a specific project, further action may be required to avoid impacts to these species and to ensure compliance with the Bald and Golden Eagle Protection Act.

*We Bring You Delaware's Great Outdoors
through Science and Service*

Find us on Facebook <http://www.facebook.com/DelawareFishWildlife>

Bog Turtle

A review of our database indicates that there may be suitable habitat for the federally listed bog turtle (*Glyptemys muhlenbergii*) within the vicinity of the study area. Bog turtles typically occur in freshwater wetlands with open canopies, mucky soils, and tussock vegetation, but they can occur in more marginal habitats as well. The bog turtle and its habitat are federally protected under the U.S. Endangered Species Act. Its presence can affect the scope of work of projects proposed within the study area.

No scope of work was provided with this review; therefore, we are unable to provide specific comments or recommendations for this project area for this species. Depending on the scope of work of a specific project, further action may be required to avoid impacts to these species and to ensure compliance with the U.S. Endangered Species Act.

Hérons and Egrets

Pea Patch Island, two and a half miles northeast of the study area, hosts the largest wading bird colony on the Atlantic Coast. Due to site's proximity to the colony, there is a strong possibility that nesting wading birds forage within the study area. No scope of work was provided with this review; therefore, we are unable to provide specific comments or recommendations for this project area for this species. Depending on the scope of work of a specific project, further action may be required to avoid impacts to these species.

Northern Long-eared Bat

Due to population declines largely caused by white nose syndrome, a fungal disease known only to affect bats, Northern Long-eared Bat (NLEB – *Myotis septentrionalis*) have been listed as federally threatened under the U.S. Endangered Species Act. Northern long-eared bat hibernacula have been documented within the vicinity of the study area.

No scope of work was provided with this review; therefore, we are unable to provide specific comments or recommendations for this project area for this species. Depending on the scope of work of a specific project, further action may be required to avoid impacts to these species and to ensure compliance with the U.S. Endangered Species Act.

Sturgeons and other Diadromous Species

There is evidence that the portion of Delaware River included in the boundary area is utilized by Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*) of the New York Bight distinct population segment which is listed as endangered under the U.S. Endangered Species Act. Spawning is believed to occur upriver of the boundary area. However, the area serves as both a migratory pathway to the spawning grounds, as well as foraging area for adult Atlantic Sturgeon of multiple population segments. Telemetry data and other sampling methods suggest that juveniles occur in the area of the river in the spring/early summer. Further, the area described lies within a recently proposed critical habitat in the Delaware River for Atlantic Sturgeon. In addition to the habitat concerns associated with Atlantic Sturgeon, the federally endangered Shortnose Sturgeon (*Acipenser brevirostrum*) has been found to occur in the boundary area during late spring and summer.

The Delaware River also provides important migratory, spawning and forage habitat for a number of other diadromous and resident species, including but not limited to Atlantic Striped Bass (*Morone saxatilis*), American Shad (*Alosa sapidissima*), American Eel (*Anguilla rostrata*) and White Perch (*Morone americana*). Although these species are not listed as endangered or threatened, they are an important resource to the recreational and commercial fishing industries in Delaware.

No scope of work was provided with this review; therefore, we are unable to provide specific comments or recommendations for this project area for this species. Depending on the scope of work of a specific project, further action may be required to avoid impacts to these species and to ensure compliance with the U.S Endangered Species Act.

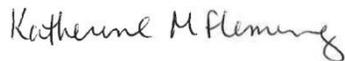
Key Wildlife Habitat

Finally, our GIS database indicates that intertidal mudflats occur within the project area. It would be best to avoid impacts to this wetland type as it can provide habitat for fish, plants and other aquatic species.

We are continually updating our records on Delaware's rare, threatened and endangered species, unique natural communities and other significant natural resources. If a specific project is proposed, contact us again for the latest information and information regarding specific actions necessary to avoid impacts to species and habitats.

Feel free to get in touch with me if you have any questions or require additional information.

Sincerely,



Kate Fleming
Wildlife Biologist/Environmental Review Coordinator
(302) 735-8658
(302) 653-3431 fax
Kate.Fleming@state.de.us

(See invoice on next page)

INVOICE - PAYMENT DUE

It is our policy to charge a fee for this environmental review service. This letter constitutes an invoice for \$70.00 (\$35.00/hour for a minimum of one hour). Please make your check payable to “Delaware Division of Fish and Wildlife” and submit to:

DE Division of Fish and Wildlife
89 Kings Hwy.
Dover, DE 19901
ATTN: Pamela Severson

**In order for us to properly process your payment, you must reference
“ERM 2016 DCRC General Review” on your check.**

cc: Pamela Severson, Fish and Wildlife Coordination/Accounting; Code to 72900

Colin McGroarty

From: Zachary Jylkka - NOAA Federal <zachary.jylkka@noaa.gov>
Sent: Tuesday, June 14, 2016 1:44 PM
To: Colin McGroarty
Cc: Christine Vaccaro - NOAA Federal
Subject: DCRC - technical assistance

Follow Up Flag: Follow up
Flag Status: Flagged

Mr. McGroarty,

We received your request for technical assistance pertaining to the presence of ESA-listed species and critical habitat under our (NMFS) jurisdiction in the vicinity of the Delaware City Refining Company (DCRC).

I've included some listed species information and details on the section 7 process under the ESA. Let me know if you have any questions. I am happy to provide further explanation via email or on the phone.

The following ESA-listed species and critical habitat under our jurisdiction may occur in the Delaware River in the vicinity of DCRC.

Common name	Scientific name	ESA Status	Federal Register/Recovery Plan
Shortnose sturgeon	<i>Acipenser brevirostrum</i>	Endangered	32 FR 4001; Recovery plan: NMFS 1998
Atlantic sturgeon	<i>Acipenser oxyrinchus oxyrinchus</i>		77 FR 5880 and 77 FR 5914
Gulf of Maine DPS		Threatened	
New York Bight DPS		Endangered	
Chesapeake Bay DPS		Endangered	
Carolina DPS		Endangered	
South Atlantic DPS		Endangered	
Atlantic sturgeon critical habitat		Proposed	81 FR 35701

Occurrence maps and species tables for the above species in the Greater Atlantic Region can be found on our website at: <http://www.greateratlantic.fisheries.noaa.gov/protected/section7/guidance/maps/index.html>

Species maps and tables are intended to aid Federal action agencies during their section 7 consultation responsibilities under the ESA and with their determination whether activities authorized, funded, or carried out by a Federal agency may affect species we listed under the ESA.

You can find more information on shortnose sturgeon at: <http://www.fisheries.noaa.gov/pr/species/fish/shortnose-sturgeon.html>

You can find more information on Atlantic sturgeon and proposed critical habitat at <http://www.greateratlantic.fisheries.noaa.gov/protected/atlsturgeon/>

Proposed Critical Habitat

On June 3, 2016, we issued two proposed rules to designate critical habitat for the five listed distinct population segments (DPSs) of Atlantic sturgeon found in U.S. waters (Gulf of Maine, New York Bight, and Chesapeake Bay DPSs: 81 FR 35701; Carolina and South Atlantic DPSs: 81 FR 36078). Federal agencies are required to confer with us on any action that is likely to jeopardize the continued existence of any species proposed for listing or result in destruction or adverse modification of proposed critical habitat (50 CFR §402.10). "Destruction or adverse modification" is defined as a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species (50 CFR § 402.02). The action you have inquired about will occur in an area proposed to be designated as critical habitat Gulf of Maine, New York Bight, and Chesapeake Bay DPSs.

The proposed rules identified the following four essential physical and biological features necessary for the conservation of the species. The term "physical or biological features" is defined as the features that support the life-history needs of the species, including, but not limited to, water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species or other features.

1. Hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0.0 to 0.5 parts per thousand range) for settlement of fertilized eggs, refuge, growth, and development of early life stages;
2. Aquatic habitat with a gradual downstream salinity gradient of 0.5 to 30 parts per thousand and soft substrate (e.g., sand, mud) downstream of spawning sites for juvenile foraging and physiological development;
3. Water of appropriate depth and absent physical barriers to passage (e.g., locks, dams, reservoirs, gear, etc.) between the river mouth and spawning sites necessary to support: (1) Unimpeded movement of adults to and from spawning sites; (2) seasonal and physiologically dependent movement of juvenile Atlantic sturgeon to appropriate salinity zones within the river estuary; and (3) staging, resting, or holding of subadults or spawning condition adults. Water depths in main river channels must also be deep enough (e.g., ≥ 1.2 m) to ensure continuous flow in the main channel at all times when any sturgeon life stage would be in the river; and
4. Water, especially in the bottom meter of the water column, with the temperature, salinity, and oxygen values that, combined, support: (1) spawning; (2) annual and interannual adult, subadult, larval, and juvenile survival; and (3) larval, juvenile, and subadult growth, development, and recruitment (e.g., 13°C to 26°C for spawning habitat and no more than 30°C for juvenile rearing habitat, and 6 mg/L dissolved oxygen for juvenile rearing habitat).

Effects Consideration

From the materials you've provided, it's not clear to me what in-water work will be required to complete the action. As listed species of sturgeon occur within the vicinity of your proposed project, any proposed in-water work has the potential to impact these species. As project plans develop, we recommend you consider the following mitigation/minimization measures for all of the proposed project's activities that might affect sturgeon.

- For activities that increase levels of suspended sediment, consider the use of silt management and/or soil erosion best practices (i.e., silt curtains and/or cofferdams).
- For activities that may cause the suspension of contaminated sediment, consider the use of appropriate containment measures.
- For work that will increase vessel traffic within the project area, consider restricting the number of trips taken by each vessel and restricting the speed at which the vessel can travel.
- For any impacts to habitat or conditions that temporarily render affected water bodies unsuitable for the above-mentioned species, consider the use of timing restrictions for in-water work.
- For pile driving or other activities that may affect underwater noise levels, consider the use of a soft start, vibratory hammer, cushion blocks, and other noise attenuating tools and strategies to avoid reaching noise levels that

will cause injury or behavioral disturbance to sturgeon (see the table below for more information regarding noise criteria for injury/behavioral disturbance in sturgeon).

Species Classification	Size	Injury Threshold	Behavioral Modification Threshold
Sturgeon	> 2g	206 dBpeak/187 cSEL	150 dB re 1 µPa RMS
	< 2g	206 dBpeak/183 cSEL	150 dB re 1 µPa RMS

As project details become finalized, a consultation, pursuant to section 7 of the ESA, may be necessary. If the final project plans have the potential to affect listed species, and it is being approved, permitted, or funded by a Federal agency, the lead Federal agency, or their designated non-Federal representative, is responsible for determining whether the proposed action is likely to affect the listed species. The Federal agency would submit their determination along with justification for their determination and a request for concurrence to NMFS.GAR.ESA.Section7@Noaa.gov

For additional technical guidance on the ESA section 7 process, please visit our website, here:

<http://www.greateratlantic.fisheries.noaa.gov/protected/section7/guidance/consultation/index.html>

Kind regards,

Zach

--

Zach Jylkka
Fisheries Biologist
Protected Resources Division
Greater Atlantic Regional Fisheries Office
NOAA Fisheries
Gloucester, MA 01930

zachary.jylkka@noaa.gov

office: (978) 282-8467

<http://www.greateratlantic.fisheries.noaa.gov/protected/>

Figure 1
Regional Site Location

Figure 1
Regional Location Map
Delaware City Refining Company, LLC
Delaware City, Delaware

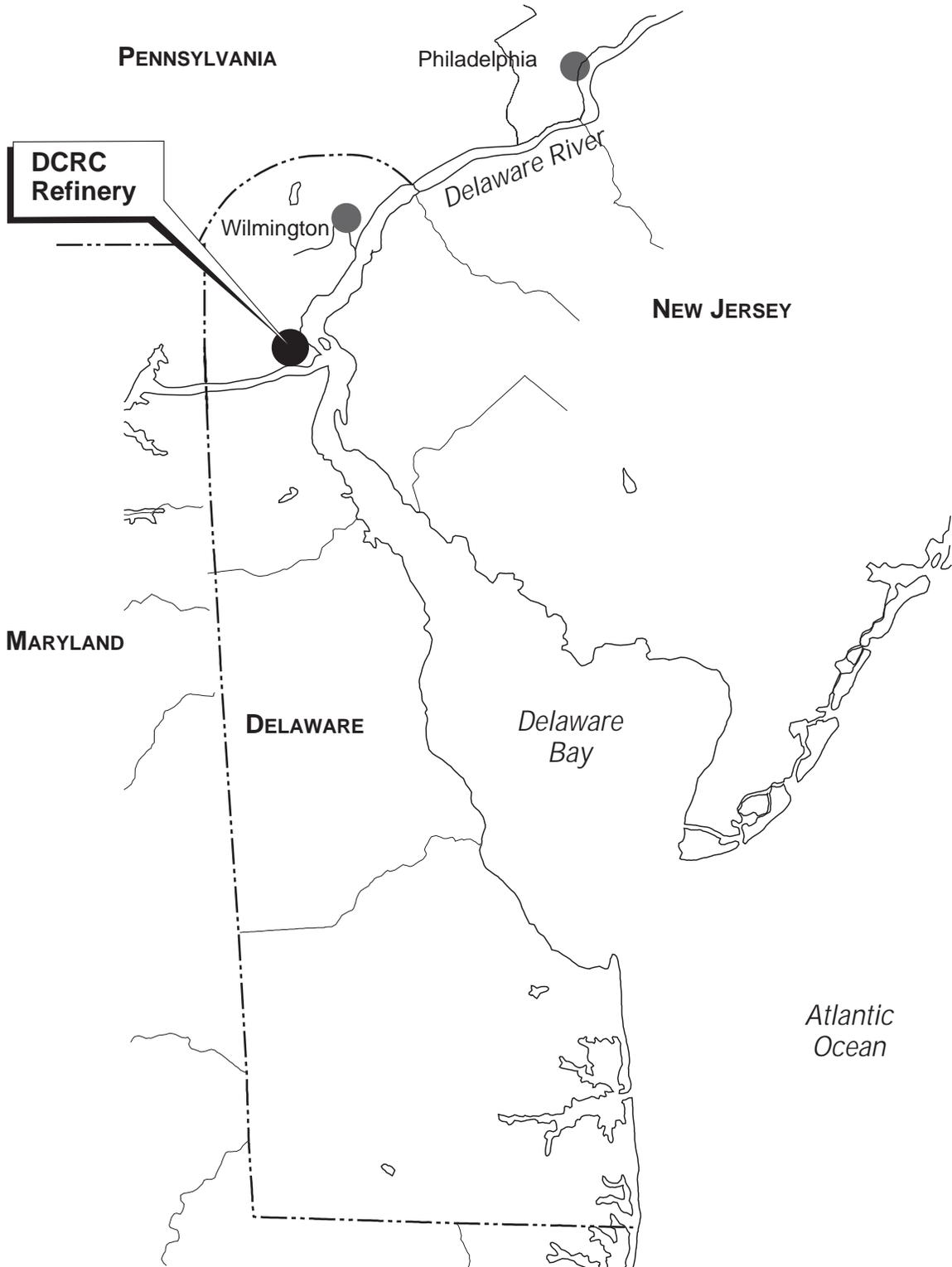
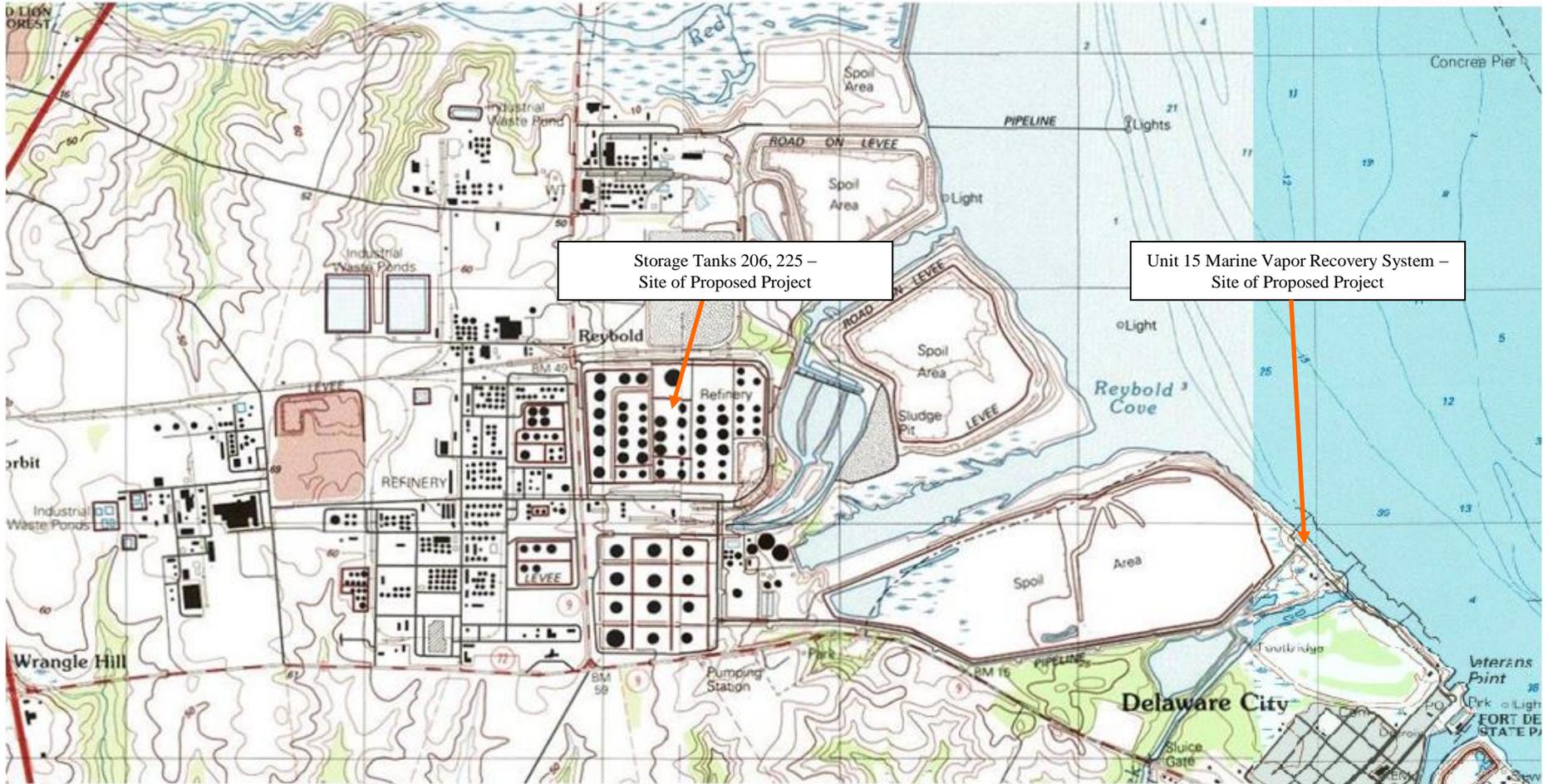


Figure 2
Project Components

Figure 2
DCRC Ethanol Marketing Project
Location of Proposed Project Work



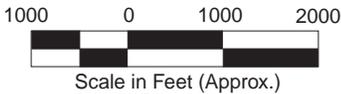
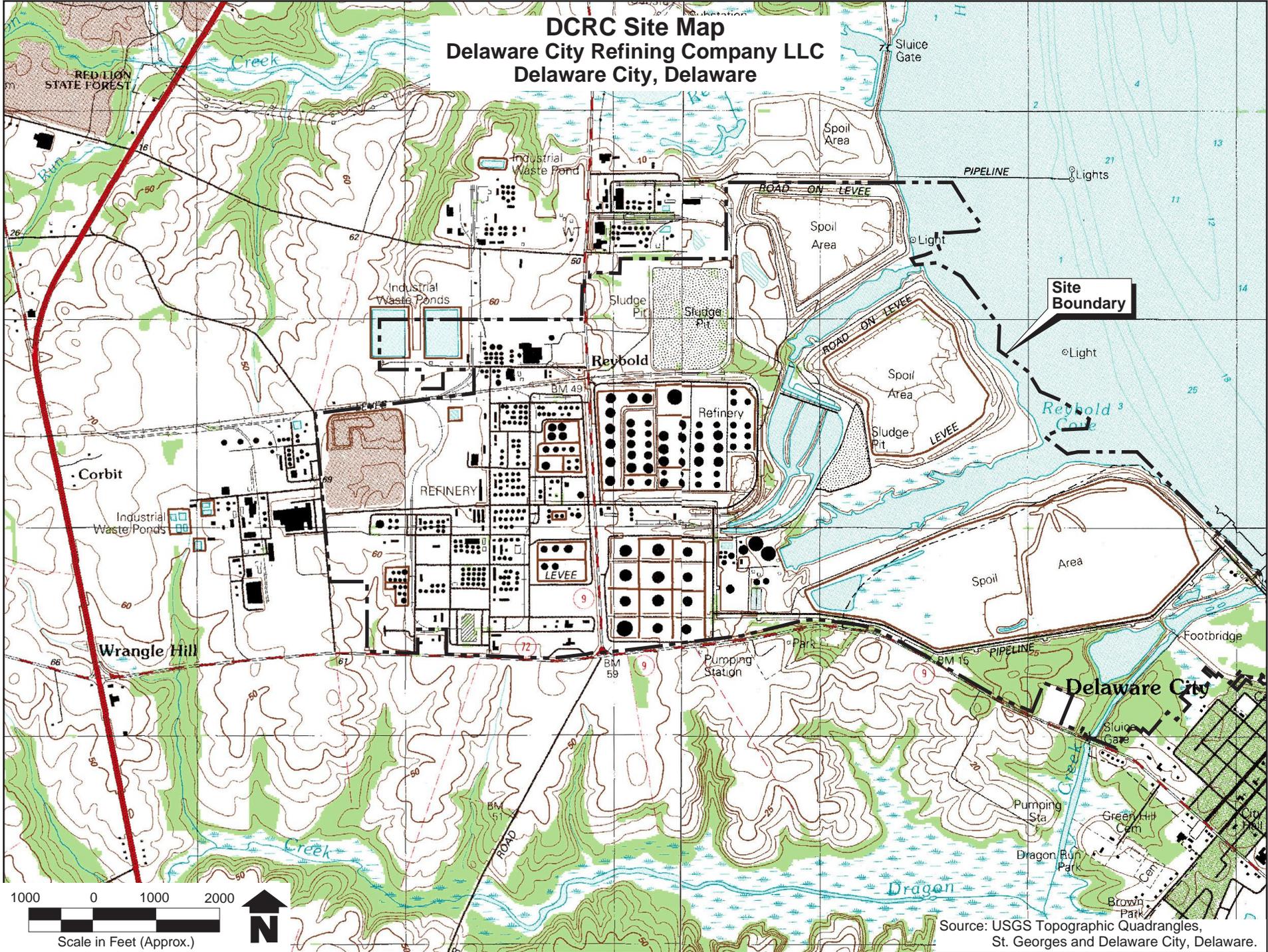
USGS TOPOGRAPHIC MAP (7.5 MIN SERIES)
SHOWING THE LOCATION OF
DELAWARE CITY REFINERY

Figure 3
Site Plan

DCRC Site Map

Delaware City Refining Company LLC

Delaware City, Delaware



Source: USGS Topographic Quadrangles, St. Georges and Delaware City, Delaware.