

National Pollutant Discharge Elimination System (NPDES) Permit Program

F A C T S H E E T

Regarding a Modification to an NPDES Permit To Discharge to Waters of the State of Ohio  
for the Lima Refining Company

Public Notice No.: 14-11-040  
Public Notice Date: November 14, 2014  
Comment Period Ends: December 14, 2014

OEPA Permit No.: 2IG00001\*RD  
Application No.: OH0002623

Name and Address of Applicant:

Lima Refining Company  
1150 South Metcalf Street  
Lima, Ohio 45804

Name and Address of Facility Where  
Discharge Occurs:

Lima Refining Company  
1150 South Metcalf Street  
Lima, Ohio 45804  
Allen County

Receiving Water: Ottawa River

Subsequent  
Stream Network: Auglaize River to  
Maumee River to Lake Erie

Introduction

Development of a Fact Sheet for NPDES permits is mandated by Title 40 of the Code of Federal Regulations, Section 124.8 and 124.56. This document fulfills the requirements established in those regulations by providing the information necessary to inform the public of actions proposed by the Ohio Environmental Protection Agency, as well as the methods by which the public can participate in the process of finalizing those actions.

This Fact Sheet is prepared in order to document the technical basis and risk management decisions that are considered in the determination of water quality based NPDES Permit effluent limitations. The technical basis for the Fact Sheet may consist of evaluations of promulgated effluent guidelines, existing effluent quality, instream biological, chemical and physical conditions, and the relative risk of alternative effluent limitations. This Fact Sheet details the discretionary decision-making process empowered to the Director by the Clean Water Act and Ohio Water Pollution Control Law (ORC 6111). Decisions to award variances to Water Quality Standards (WQS) or promulgated effluent guidelines for economic or technological reasons will also be justified in the Fact Sheet where necessary.

Procedures for Participation in the Formulation of Final Determinations

The proposed modification is tentative but shall become final on the effective date unless (1) an adjudication hearing is requested, (2) the Director withdraws and revises the proposed modification after consideration of the record of a public meeting or written comments, or (3) upon disapproval by the Administrator of the U.S. Environmental Protection Agency.

Within thirty (30) days of publication of this notice, any person may submit written comments, a statement as to why the proposed modification should be changed, a request for a public meeting on the proposed modification and/or a request for notice of further actions concerning the modification. All

communications timely received will be considered in the final formulation of the modification. If significant public interest is shown a public meeting will be held prior to finalization of the modification.

Within thirty (30) days of the issuance of the proposed modification any officer of an agency of the state or of a political subdivision, acting in his representative capacity or any person aggrieved or adversely affected by issuance of it may request an adjudication hearing by submitting a written objection in accordance with Ohio Revised Code Section 3745.07. Since all other conditions of the permit remain in effect, a hearing may not be requested on any issues other than the proposed modification. If an adjudication hearing is requested, the existing NPDES permit will remain in effect until the hearing is resolved. Following the finalization of the modification by the Director, any person who was a party to an adjudication hearing may appeal to the Environmental Review Appeals Commission.

Requests for public meetings shall be in writing and shall state the action of the Director objected to, the questions to be considered, and the reasons the action is contested. Such requests should be addressed to:

**Legal Records Section  
Ohio Environmental Protection Agency  
P.O. Box 1049  
Columbus, Ohio 43216-1049**

Interested persons are invited to submit written comments upon the proposed modification. Comments should be submitted in person or by mail no later than 30 days after the date of this Public Notice. Deliver or mail all comments to:

**Ohio Environmental Protection Agency  
Attention: Division of Surface Water  
Permits and Compliance Section  
P.O. Box 1049  
Columbus, Ohio 43216-1049**

The OEPA permit number and Public Notice numbers should appear on each page of any submitted comments. All comments received no later than 30 days after the date of the Public Notice will be considered.

Citizens may conduct file reviews regarding specific companies or sites. Appointments are necessary to conduct file reviews, because requests to review files have increased dramatically in recent years. The first 250 pages copied are free. For requests to copy more than 250 pages, there is a five-cent charge for each page copied. Payment is required by check or money order, made payable to Treasurer State of Ohio.

For additional information about this fact sheet or the proposed modification, contact Peggy Christie at (419)373-3006, [margaret.christie@epa.ohio.gov](mailto:margaret.christie@epa.ohio.gov); or Andy Bachman at (614)644-3075, [andrew.bachman@epa.ohio.gov](mailto:andrew.bachman@epa.ohio.gov).

### Location of Discharge/Receiving Water Use Classification

Lima Refining discharges to Ottawa River at River Mile (RM) 37.1. The approximate location of the facility is shown in Figure 1. This can be viewed on the second last page of the fact sheet.

This segment of the Ottawa River is described by Ohio EPA River Code: 04-200, U.S. EPA River Reach #: 04100007-018, County: Allen, Ecoregion: Eastern Corn Belt Plains. The Ottawa River is designated for the following uses under Ohio's WQS (OAC 3745-1-11): Warmwater Habitat (WWH), Agricultural Water Supply (AWS), Industrial Water Supply (IWS), and Primary Contact Recreation (PCR – Class A).

### Facility Description

The Lima Refinery produces a variety of products from crude oil including gasoline, diesel fuel, jet fuel, liquid propane gas, coke, benzene and toluene. Process operations include crude distillation, crude desalting, fluid catalytic cracking, hydrocracking, delayed coking and catalytic reforming.

The process operations performed at this facility are classified by the Standard Industrial Classification (SIC) code 2911, "Petroleum Refining". Discharges resulting from process operations are therefore subject to Federal Effluent Guideline Limitations for the Petroleum Refining Point Source Category, contained in Chapter 40 of the Code of Federal Regulations, Part 419, Subpart B – Cracking Subcategory. The Lima Refinery treatment plant also receives wastewater from an adjacent organic chemical plant. This plant manufactures acrylonitrile, acrylonitrile catalysts, Barex resin, and recovers and purifies acetonitrile and hydrogen cyanide as co-products.

The Lima Refinery obtains its potable water from water from the City of Lima water system. The facility's process and cooling water is taken from wells or the Bressler Reservoir, which is untreated municipal water.

### Basis of the Modification

A new water reuse project will take place at Lima Refinery. Construction is estimated to take place beginning at the end of 2014 and lasting through all of 2015. The project includes installation of additional water equipment in the refinery allowing reuse of wastewater. Equipment includes new reverse osmosis treatment units to remove total dissolved solids (TDS). The reverse osmosis systems will create a backwash stream of water with significant TDS concentrations that cannot be used at the facility. This backwash water will be disposed of via deep well injection at a rate of 120 gallons per minute. Figure 2 shows the general flow arrangement of the water reuse project. This can be viewed on the last page of the fact sheet.

As the facility upgrade will dispose of water through deep well injection rather than discharge to the Ottawa River, effluent flow events and pollutant loadings to the Ottawa River are projected to greatly decrease. As can be seen in Figure 2, there are several basins at the facility containing water that will be influent for the reverse osmosis process at Lima Refinery. The process has a net loss of water as influent from the basins is treated and then either reused or deep well injected. However, during periods of precipitation, the basins will take on stormwater. In severe instances, stormwater could overflow the basins at the facility. Under these circumstances, a discharge to the Ottawa River would take place. Due to the change in process and water makeup, the permittee has submitted a request for modification to

allow different concentrations based on an intermittent discharge and a request for inclusion of a new outfall where the facility will continuously discharge non-contact cooling water, separate from the process water that may discharge intermittently at the final effluent outfall.

As the facility’s process will change with the addition of the water reclamation project in the next permit, limits need to be included for both the timeframes before the water reclamation project and after the water reclamation project is complete. Table 1 below shows a list of the outfalls affected by the project and the timeframe in which the permittee should report under each outfall.

Table 1. Outfalls at Lima Refinery

Outfall Number	Description	Timeframe
2IG00001001	Final Effluent	Flows Under 8.0 MGD and Previous to Water Reclamation Project
2IG00001003	Non-Contact Cooling Water	Cooling Water Flows After the Water Reclamation Project is Completed (to Zurmehly Creek)
2IG00001011	Final Effluent	Final Effluent Flows After the Water Reclamation Project is Completed
2IG00001091	Final Effluent	Flows Over 8.0 MGD and Previous to Water Reclamation Project

New wasteload allocations (WLAs) were developed based on several agreed parameters between the facility and the OEPA. The facility has agreed that discharges of final effluent will only occur at high flows to provide adequate dilution. USGS station #4187100 is upstream of the final facility’s outfall on the Ottawa River. Discharges from Lima Refinery would only occur if this stream gage reads at least 6.0 million gallons per day (MGD). Also, Lima Refinery has agreed that the facility discharge will be no more than 3.0MGD. These factors were evaluated and OEPA modeling produced WLAs (summarized in Table 2) for the Lima Refinery based on the information below:

Table 2 contains revised WLAs for the Husky Energy Lima Refinery final effluent discharge to the Ottawa River. In this analysis, the following assumptions were made:

- 1). WLAs for the other dischargers in this segment (Lima WWTP, PCS Nitrogen, and Allen Co. Shawnee #2 WWTP), were calculated using the established stream design flows as required in OAC 3745-2-05, and were fixed at those concentrations.
- 2). The Lima Refinery WLAs for all criteria were calculated using an Ottawa River flow of 6.0 MGD and a discharge flow of 3.0 MGD. These WLAs would only apply at the minimum 6.0 MGD Ottawa River stream flow.
- 3). For selenium the proposed USEPA 7-day intermittent criteria of 20.6 µg/L was used to calculate the Maximum Aquatic Life WLA. A background value of 0.24 µg/L for the Ottawa River upstream of Lima was used.

4). The parameters shown in Table 2 received WLAs based on reasonable potential procedures during the 2010 modeling. For the next permit renewal, additional parameters may require WLAs based on our reasonable potential procedures for effluent data collected during the period 2009-14. These WLAs will be calculated using the same method that was used for the WLAs in Table 2.

Table 2. Lima Refinery Effluent Limits to Maintain Applicable Water Quality Criteria at Minimum 6 MGD Ottawa River Flow.

Parameter	Units	Average			Maximum Aquatic Life	Inside Mixing Zone Maximum
		Human Health	Agri Supply	Aquatic Life		
Bis(2-ethylhexyl)phthalate	µg/L	73.	--	24.	2856. <sup>A</sup>	2100.
Chlorine, tot. res.	µg/L	--	--	31.	49. <sup>A</sup>	38.
Chromium <sup>+6</sup> , dissolved <sup>B</sup>	µg/L	31700. <sup>A</sup>	--	32. <sup>A</sup>	42. <sup>A</sup>	31.
Chromium, tot. <sup>B</sup>	µg/L	31700. <sup>A</sup>	226.	1151. <sup>D</sup>	8048. <sup>A,D</sup>	6100. <sup>D</sup>
Copper	µg/L	145000. <sup>A</sup>	1131. <sup>A</sup>	76. <sup>D</sup>	113. <sup>A,D</sup>	90. <sup>D</sup>
Cyanide, free	µg/L	108800. <sup>A</sup>	--	15.	57. <sup>A</sup>	44.
Selenium	µg/L	7024.	114.	14.	156. <sup>E</sup>	--
Total Dissolved Solids	mg/L	--	--	3376.	--	--

<sup>A</sup> Allocation must not exceed the Inside Mixing Zone Maximum.

<sup>D</sup> WLA based on applicable dissolved metal translator.

<sup>E</sup> Proposed USEPA Selenium Criteria – 7-day intermittent discharge.

### Changes at outfall 2IG00001003

Outfall 2IG00001003 is a new outfall located at the point where the cooling water outlet line enters Zurmehly Creek. The exact location is Latitude 40°N 42' 40" and Longitude 84°W 07' 33". The creek at this outfall point is a covered concrete sewer which already runs through the Lima Refinery property. This new outfall will discharge non-contact cooling water to Zurmehly Creek from Lima Refinery. Zurmehly Creek drains to the Ottawa River about 1.8 miles downstream of Outfall 2IG00001003.

#### Temperature

Limits proposed for temperature are based on WQS (OAC 3745-1-07 Table 7-14(G)). This table designates the monthly average and daily maximum temperature limits for surface waters within the Lake

Erie drainage basin. Since outfall 2IG00001003 discharges to the Zurmehly Creek, where low flows have been zero, no dilution is made available from the receiving water and temperature limits must be met at the discharge point to the receiving stream. Limits are based on allowable monthly and daily allowances based on each month in the Table under (OAC 3745-1-07 Table 7-14(G)). Where there are multiple limits for one month, the maximum daily maximum was used as the daily maximum limit in the permit and the average of all the allowable average limits was used as the monthly average limit.

### *pH*

Limits proposed for pH are based on WQS (OAC 3745-1-07).

### *Phosphorus*

Monitoring is proposed for phosphorus at this outfall because the facility has TMDL based phosphorus limits. The monitoring should allow for a data set to show whether or not phosphorus is present in the discharge at 2IG00001003.

### *Total Filterable Residue (Total Dissolved Solids (TDS))*

Monitoring is proposed for total filterable residue at outfall 2IG00001003. Well water is proposed to be used for cooling water at the facility and sampling of the well water was conducted and submitted as Attachment #5 of the permit modification. There were two samples of TDS reported of 957 mg/L and 754 mg/L. While Table 2 below shows that TDS has an allowable concentration of 3376 mg/L, it should be noted that Table 2 only applies to the intermittent discharge at outfall 2IG00001011 and the constant TDS concentration at outfall 2IG00001003 should be much lower. The monitoring requirement proposed at this outfall is to maintain a data set for TDS at the cooling water outfall.

### *Oil and Grease and Total Suspended Solids (TSS)*

Monitoring is proposed for oil and grease and TSS at outfall 2IG00001003. TSS and oil and grease are typical parameters associated with stormwater. Neither TSS nor oil and grease were detected in the sampling of the well water that was conducted and submitted as Attachment #5 of the permit modification. Large concentrations in either parameter show that there could be possible stormwater flows associated with this outfall. This monitoring is proposed to maintain a data set showing whether stormwater is an issue at this outfall and to determine if possible best management practices are needed in the future.

### *Cooling Water Additives*

It is typical that cooling water additives are necessary to prevent corrosion, bacteria and algae growth, etc. Although Lima Refinery does not currently plan to use additives at outfall 2IG00001003, the facility may feel to adapt the use of cooling water additives in the future. If future additives are needed, follow the procedures in Part II, Item C of the permit before using any additives that may discharge to Zurmehly Creek.

## Changes at outfall 2IG00001011

Outfall 2IG00001011 is a new outfall located at the same location as outfalls 2IG00001001 and 2IG00001091 in the current permit. The exact location is Latitude 40°N 43' 04" and Longitude 84°W 06' 59". The facility shall continue to report under outfalls 2IG00001001 and 2IG00001091 as was written in the previous permit until the water reclamation project is finished and the new water treatment process is online. After the end of construction, the permittee shall report under Outfall 2IG00001011 as noted in Part I, C - Reporting Procedures during Construction of Water Reclamation Project. Discharges from Outfall 2IG00001011 are only permitted in overflow situations where the Ottawa River has a flow of at least 6.0MGD (or 9.282 cfs), overflows at Outfall 2IG00001011 are limited to 3.0MGD, and the facility does not have reasonable storage in the basins onsite for the overflow volumes.

Monthly loading and concentration limits are typically included to protect waters from chronic toxic effects based on water quality standards. Also, federal effluent guidelines used to calculate allowable loadings are included when applicable. The more stringent loading is included in the permit.

However, many water quality based monthly loadings and monthly concentration limits have been removed from the permit. The removal of these permit limits is justified because the facility will no longer have a chronic toxic effect because discharges will be intermittent. Discharges may not last longer than 48 hours during a seven day period as described in Part II, Item U of the permit. Monthly concentration and loading limits still included in the permit are based upon federal effluent guidelines. Loadings were carried over from the previous permit, based on production numbers and calculations associated with Federal Effluent Guidelines Part 419.23-24. Concentrations were back calculated by taking the federal effluent guideline-based loading limit, and then applying a 3.0MGD discharge and appropriate conversion factors to develop a concentration limit. If the facility is unable to maintain a discharge that is not chronically toxic and exceeds 48 hours in a seven day period, monthly concentration and loading limits and chronic whole effluent toxicity requirements will be added to the permit.

Ohio EPA understands that during emergency events with large quantities of stormwater, the facility may need to discharge for a longer duration than the 48 hours allotted. Additional calculations were performed to determine the necessary upstream flows that would be required to appropriately dilute the permittee's discharge to concentrations that would not be chronically toxic.

The following mass balance equation was performed:

$$\begin{aligned} \text{Husky Refinery} + \text{Background Upstream} &= \text{WQS concentration of } 5 \text{ } \mu\text{g/L (chronic WLA)} \\ [61.3(\mu\text{g/L}) * 4.641(\text{cfs})] + [0.24(\mu\text{g/L}) * x(\text{cfs})] &= [5 (\mu\text{g/L}) * (4.641 + x (\text{cfs}))] \\ 284.49 + 0.24x &= 23.205 + 5x \\ x &= 54.9 \text{ cfs} \end{aligned}$$

However, in the Lake Erie Basin, only 25% of the river flow may be used for dilution [OAC 3745-2-02(A)(2)(i)], and hence flows at the gage station would need to be 219.6 cfs (25% of this = 54.9). Thus, the permittee may discharge for more than 48 hours in a 7 day period when the upstream flow, via USGS station #4187100, is equal to or larger than 219.6 cfs.

Part II, Item V established criteria that the permittee shall meet to discharge at outfall 2IG00001011 for a duration of more than 48 hours in a 7 day period.

*High Water Temperature, Total Precipitation, Dissolved Oxygen, Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), pH, Oil and Grease, Sulfide, Barium, Strontium, Zinc, Lead, Copper, Phenolics, Bromomethane, and Flow Rate*

These parameters are proposed to be a continuation from the existing permit. Monitoring and limits previously proposed at outfall 2IG0001001 are proposed to continue at outfall 2IG0001011.

Limits for BOD, COD, TSS, oil & grease, phenol, and sulfide are based on BCT/BAT calculations. Limits proposed for pH and dissolved oxygen are based on WQS (OAC 3745-1-07).

Continued monitoring for water temperature, total precipitation, and flow rate are proposed because Monitoring of these parameters is specified to assist in the evaluation of effluent quality and treatment plant performance. Barium, zinc, lead, copper, and bromomethane are also proposed to be monitored at this outfall based on previous WLAs from the last permit renewal. These pollutants are frequently present in waters located in urban, industrial areas. It is important to maintain a minimal data base for these pollutants so that accurate PEQ values can be determined, and the stream segment accurately assessed.

*Phosphorus, Nitrate+Nitrite, and Total Kjeldahl Nitrogen (TKN)*

Lima Refinery has proposed eliminating monitoring for phosphorus, nitrate + nitrite, and TKN. These parameters are indicators of nutrient pollution. The Ottawa River (Lima Area) Watershed Total Maximum Daily Load (TMDL) report was approved by U.S. EPA on April 15, 2014 and identifies possible reasons for non-attainment in the Ottawa River watershed. The TMDLs for the Ottawa River (Lima Area) Watershed Report ([http://www.epa.state.oh.us/Portals/35/tmdl/OttawaLima\\_Report\\_Final.pdf](http://www.epa.state.oh.us/Portals/35/tmdl/OttawaLima_Report_Final.pdf)) shows that the area is impaired for nutrients.

Although Lima Refinery will not likely be a significant discharger of nutrients to the Ottawa River, Table 6.5 of the TMDL allocates an allowable total phosphorus concentration of 0.7mg/L for Lima Refinery. In order to show that Lima Refinery is meeting the phosphorus concentration limit in the new wastewater process, monitoring is proposed to continue for phosphorus and the recommended concentration limit and associated daily loading (7.95kg/day) have been added to the permit. Monitoring requirements for nitrate + nitrite and TKN are proposed to be removed.

*Total Dissolved Residue, Free Cyanide, and Chlorine*

These parameters have an increased maximum allowable concentration and new daily loading limit calculated as the new maximum allowable concentration multiplied by 3.0MGD flow. New increased maximum allowable concentrations are based on the requested changes from the permittee and the newly developed WLAs in Table 2. The more stringent of the two was used. Since these parameters were not based upon federal effluent guidelines and the new process is an intermittent discharge adhering to a discharge of less than 48 hours over a seven day period, monthly concentration and loading limits were removed from the permit for these parameters.

*Ammonia- Nitrogen*

The facility has not requested additional daily loadings for either summer or winter ammonia permit limits. Thus the daily ammonia limits are a continuation of the previous permit. However, the facility has requested removal of the monthly loading limits. The monthly loading limits in the current permit are based on water quality standards which had been more stringent than federal effluent guideline-based loadings. However, new modeling of water quality standards recommends relaxed ammonia limits. Both water quality based effluent limits and limits based on federal effluent guidelines are less stringent than those in the current permit, thus the daily loadings were adopted as monthly loadings for summer and winter ammonia-nitrogen. As there are federal effluent guidelines associated with nitrogen-ammonia, monthly loadings must be present in the permit.

#### *Selenium, Chromium, and Dissolved Hexavalent Chromium*

These parameters have an increased maximum allowable concentration but have maintained the monthly loading from the previous permit. Loadings associated with selenium are based on best professional judgment (BPJ). This section of the Ottawa River has historically had elevated selenium loadings. Increased selenium concentrations could increase fish anomalies and have a negative effect on fish community indices. Therefore, the selenium loading from the previous permit is proposed to remain unchanged. Selenium concentrations were developed based on the proposed USEPA 7-day intermittent criteria of 20.6 µg/L and the allowable discharged concentrations to the river are summarized in Table 2.

Loadings developed for chromium and hexavalent chromium were calculated using best available treatment (BAT) methods in the previous permit. While concentrations associated with Table 2 are protective of water quality, loadings must take on the more stringent number between loadings calculated from the concentrations associated with Table 2 and the BAT calculations from the previous permit. As the BAT calculations are smaller, those loadings were included in the modification. These loadings were used to back-calculate allowable concentrations based on a 3.0 MGD discharge from the permittee. New concentration limits for chromium were raised from 410µg/L in the previous permit to 752µg/L and new concentration limits for dissolved hexavalent chromium were raised from 16µg/L in the previous permit to 29µg/L. As BAT calculations are based upon plant production, increases in production may result in increased loadings and concentration limits in the future permit renewal.

#### *Bis (2-ethylhexyl) phthalate*

In the previous permit, bis (2-ethylhexyl) phthalate had concentration and loading limits due to reasonable potential for this parameter to exceed water quality standards. Reasonable potential was established by evaluating the previous five years of bis (2-ethylhexyl) phthalate data and projecting the estimated future concentration as a Projected Effluent Quality (PEQ). This PEQ number was compared to the allowable concentration based on stream modeling. In the previous permit, the PEQ was determined to be larger than the allowable concentration, and thus reasonable potential was established and limits were proposed in the previous permit.

However, with new processes at the facility allowing for an intermittent discharge only at higher flows allowing for increased dilution, the previous PEQ compared to the new allowable concentration based on stream modeling (from Table 2) shows that the PEQ does not exceed allowable concentrations. Therefore, limits have been removed and monitoring is proposed to allow for a data set to show whether or not bis (2-ethylhexyl) phthalate is present in the discharge at 2IG00001011.

### Whole Effluent Toxicity

Whole effluent toxicity (WET) will no longer include chronic toxicity testing at Lima Refinery after the water reclamation process is complete. Chronic toxicity testing is no longer being required because the permittee will only discharge intermittently. Projected discharges are to be less than 48 hours per week and only occur during periods of severe precipitation. Acute toxicity requirements for both the species *Ceriodaphnia dubia* and *Pimephales promelas* will remain in the permit after the reclamation project is complete. Limits of 1.0 TU<sub>a</sub> for both species are proposed to continue.

Because the new discharge is intermittent, the monitoring frequency for acute toxicity has changed. Please Review Part 1.C(3)(d) for clarification of when toxicity sampling shall occur. Also, see Part II, Item R(2) for guidance on biomonitoring for acute toxicity. Previously, Lima Refinery submitted chronic testing with acute endpoints but after the water reclamation project, only acute tests will be required and Part II, Item R(2) shall be used for these tests.

### Mercury

Currently Lima Refinery has a mercury variance allowing the facility a 1700ng/L maximum and 22ng/L monthly average. Mercury data from October 2009 through September 2014 was compiled and analyzed. Over that timeframe there were 49 observations made with a maximum mercury concentration of 13.9ng/L and average of 4.29ng/L. This data suggests that Lima Refinery can currently meet the limits allowed in the variance and under normal process; the allowable mercury limits would be reduced. Below is a table summarizing mercury data at Lima Refinery:

	<u>Concentration</u>	<u>Flow</u>	<u>Loading</u>
<b>Units:</b>	ng/L	MGD	kg/day
Observations:	49	1796	49
Minimum Value:	0.04	0	0
Maximum Value:	13.9	7.982	0.000324771
50th percentile:	3.55	4.832	0.00006243
Average:	4.293	4.808	0.00008021

The facility has proposed that the variance allowed for mercury in the previous permit be omitted and replaced with monitoring only. As this is a new discharge, the facility may request a new variance and shall submit mercury discharge information for discharges that take place after the water reclamation project when such data is available. However, the limits associated with the mercury variance are proposed to continue. Mercury limits are proposed to continue to ensure the facility maintains best management practices and maintains mercury concentrations in the effluent. As the facility's maximum concentration over the past five years was only 13.9ng/L, the facility should be able to continue meeting a concentration limit of 22ng/L.



Figure 1. Location of Lima Refinery

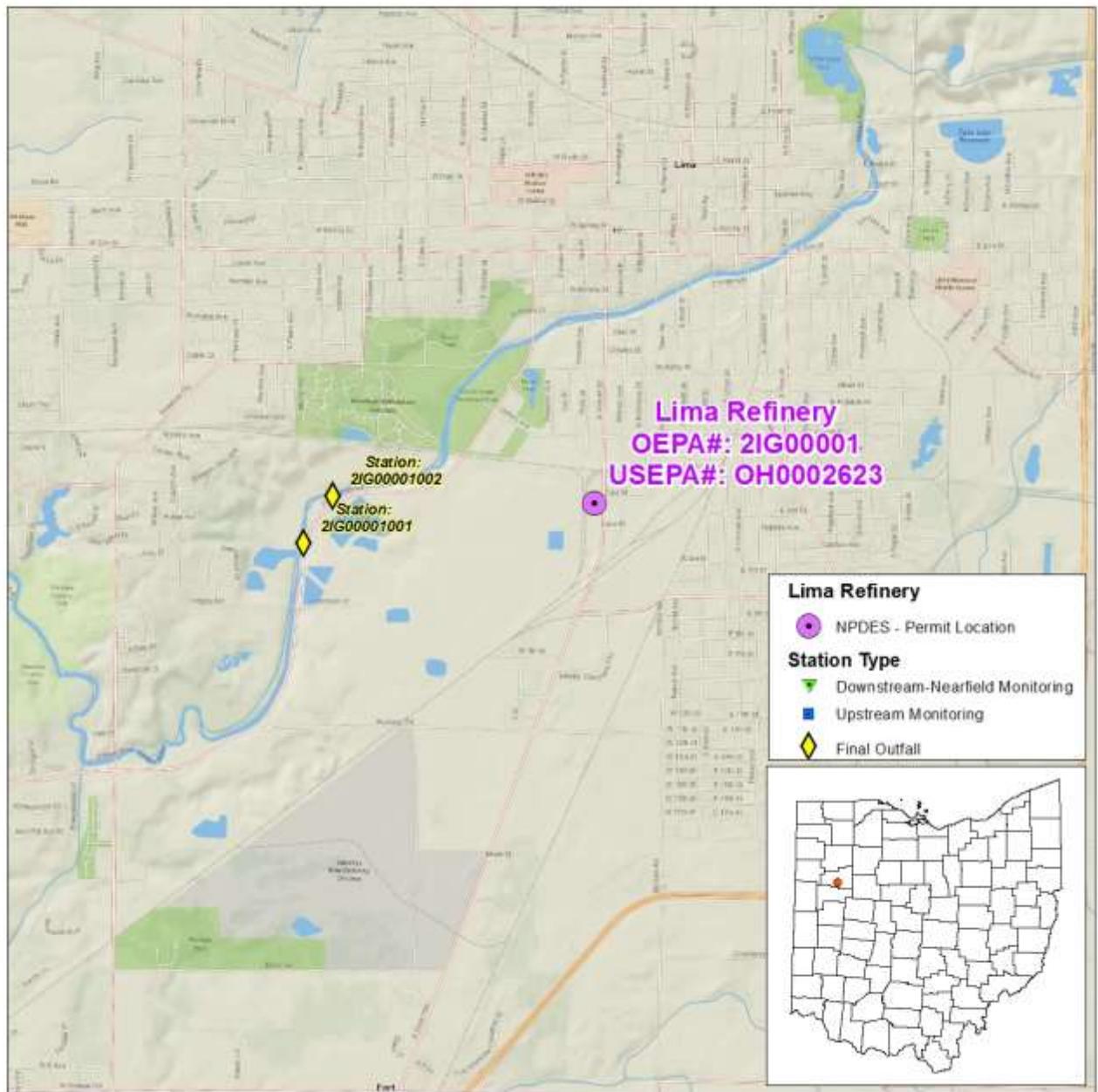
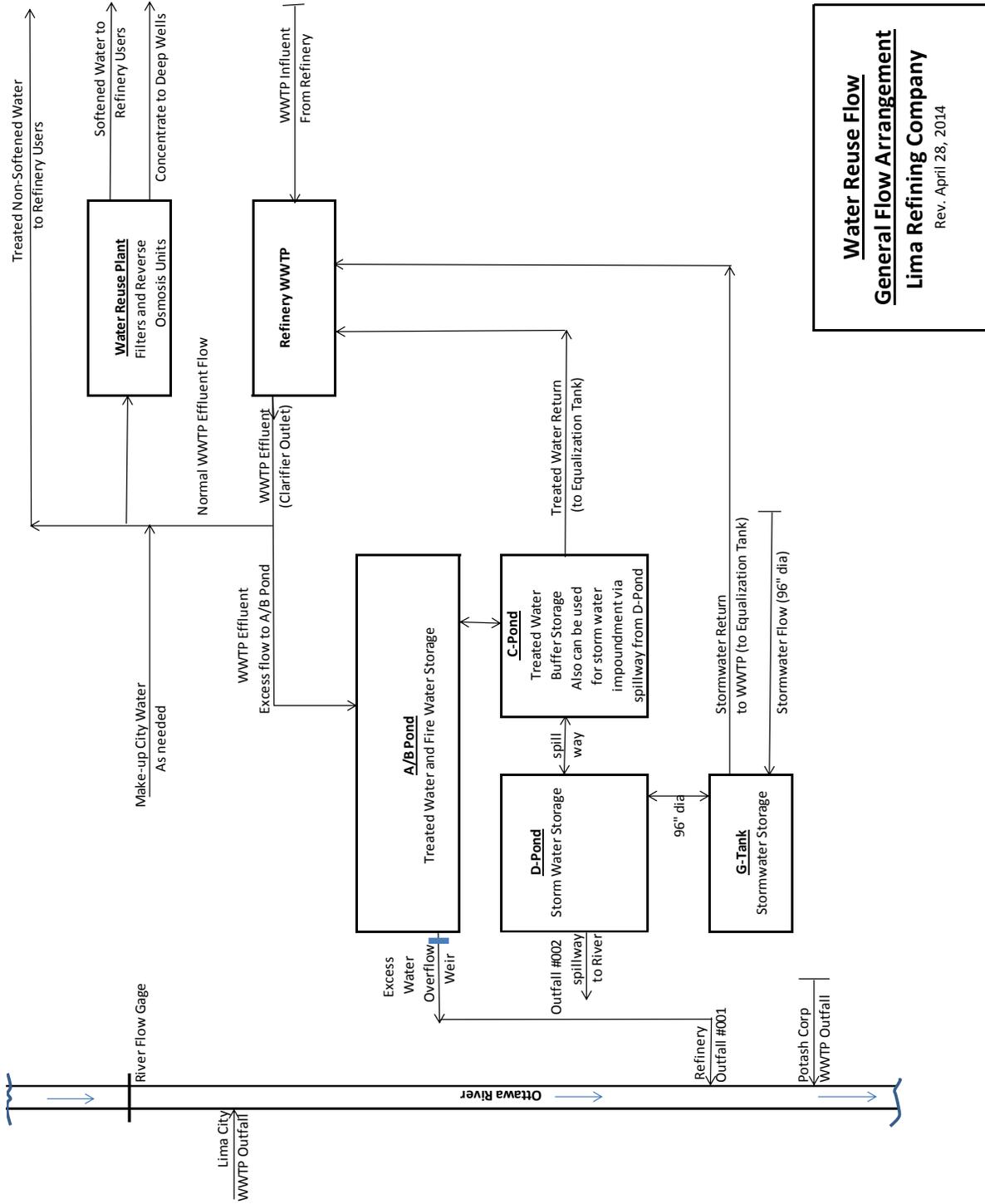


Figure 2. Water Reuse Project General Flow Arrangement



**Water Reuse Flow**  
**General Flow Arrangement**  
**Lima Refining Company**  
 Rev. April 28, 2014