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June 1, 2015

**SENT VIA MFT ELECTRONIC TRANSMITTAL**

Andrea Hughes
Environmental Scientist, Water Use Permit Bureau
Southwest Florida Water Management District
Water Use Permit Bureau, Tampa Service Office
7601 US Highway 301
Tampa, Florida 33637

Subject: **WUP 20011400.026**
**Integrated Water Use Permit (IWUP)**
**Annual Water Conservation Progress Report (AWCPR)**

Dear Mrs. Hughes:

Mosaic Fertilizer LLC ("Mosaic") is pleased to provide the IWUP Annual Water Conservation Progress Report (AWCPR) as required by Permit No 20011400, revision 026, special condition 19.0 Section A. This submittal addresses all required components of the report as described in the IWUP. Each of the required report components are addressed below:

## Water Conservation Plan Progress Report

During 2014, Mosaic facilities operated below the facilities' permitted annual average (moving twelve month) withdrawal limits. In addition, Mosaic's combined water usage was below the overall annual average withdrawal limit of 69.6 MGD and the 20 year mean withdrawal of approximately 55.2 MGD. These continued reductions have been made possible by increased use of recycled water in mining operations, energy and freshwater conservation in the chemical processing facilities, and closure of older, less efficient facilities. Mosaic has provided an updated water usage graph for each facility as Attachment A.

## Updates to the Water Conservation Plan

The following updates to the Water Conservation Plan are provided below:

### Ongoing and Past Conservation Projects

Flatford Swamp:
Flatford Swamp is a large wetland system located in eastern Manatee County. The Myakka River enters the swamp at its north end and exits at the southeast corner. The habitat within the property is mostly bottomland swamp and

freshwater marsh with scattered pine flatwood and hardwood forest along the periphery.

Hydrologic alterations and extended hydroperiods are causing environmental damage (i.e., tree mortality) within Flatford Swamp. Long-term average streamflow in the Upper Myakka River Watershed has increased over the past several decades due to a combination of factors including agricultural irrigation and related practices, residential development, and drainage improvements.

The Southwest Florida Water Management District (District) purchased a majority of Flatford Swamp (2,357 acres) in 1991 under the Preservation 2000 program. The restoration of Flatford Swamp is the primary focus of the Myakka River Watershed Initiative.

In 2011, Mosaic and the District jointly funded the Flatford Swamp Hydrologic Restoration Feasibility Study to identify projects that could facilitate the restoration of Flatford Swamp. The project proposes to transfer excess water from Flatford Swamp to Mosaic without adversely affecting Mosaic's ability to efficiently operate its existing and proposed mining operations.

The feasibility study was completed in 2013, but has not yet been presented to the District Board. Mosaic continues to work with the District to determine a beneficial use for the Flatford water.

N-5 Reservoir:
This project was not realized due to several factors,and the dam has begun the abandonment process. N-5 will not be as an alternative water source. Mosaic recently received approval of a minor modification to lower the crest of this dam. Mosaic plans to proceed with the final abandonment in 2016.

CS-11:
Reclamation was completed on this settling area, the dam was breached and is officially abandoned. Reclamation is complete and is awaiting release from FDEP.

Hookers Prairie Mine/Bowling Green Waste Water Treatment Plant Synergy:
The Mosaic former Fort Meade Mine, now Hookers Prairie Mine footprint received approximately 112,000 gallons per day of treated wastewater from the City of Bowling Green Wastewater Treatment Plant Facility in 2014. This water is received at the reservoir south of clay settling area (CSA) Area H to assist with irrigation for adjacent Mosaic agricultural properties. Please see Attachment B depicting a map of this location.

South Fort Meade Mine/Fort Meade Waste Water Treatment Plant Synergy:
The Mosaic South Fort Meade facility received approximately 457,000 gallons per day of treated wastewater from the City of Fort Meade wastewater treatment plant in 2014. This water is received at the CSA SFM-3 and recycled into the South Fort Meade mine water recirculation system. Please see Attachment B depicting a map of this location.

Green Bay & Hookers Prairie/Duke Energy Hines Complex Project:
Mosaic has partnered with Duke Energy to eliminate up to 4.6 million gallons per day of groundwater withdrawal in Polk County, Florida. In May 2012, Mosaic and Duke Energy commenced construction on pipelines that link Mosaic's Green Bay and Hookers Prairie facilities to Duke's Hines Energy Complex, allowing Mosaic to transfer treated water and storm water to the Hines Complex. The transfer reduces the groundwater pumpae at the Hines Station. In 2013 and 2014, Mosaic transferred treated water and storm water to the Hines Complex. Please see Attachment B depicting a map of this location.

## Current and Future Water Conservation Practices

Mosaic is continually updating our long-term water strategy for our Florida operations, with the goal of conserving water resources and reducing the amount of water impound for operational use. By 2020, Mosaic is targeting to reduce freshwater withdrawals by 10 percent per tonne of product.

The water management program actively engages facility-specific and business unit-wide initiatives to reduce the company's water footprint. Facilities continuously monitor and evaluate water use to ensure it is minimized and water recycling and reuse are maximized. Additionally, cross-training of water conservation projects is ongoing between facilities.

## Concentrates Facilities

Bartow:
The Bartow facility has an existing reverse osmosis (RO) system in place for process water treatment. In October 2013, a pipeline was installed from the RO system effluent (permeate) to the sulfuric acid plant to provide boiler feed water makeup. This project accounted for a 250 gpm ground water savings in 2013 and an additional 10 gpm in 2014.

New Wales:
Attachment C describes the updated New Wales fresh water savings projects that are currently proposed for the facility. These projects are monitored by the onsite Mosaic utility engineer. The New Wales facility plans to implement a water "re-injection" approach similar to the Riverview facility, which is scheduled for implementation in November 2015.

Riverview (Not included in the IWUP):
The Riverview facility recently converted a cooling tower in dry products to utilize recycled chiller condensate water and a gyp booster pump seal to utilize process water instead of freshwater. These projects accounted for approximately 25 gpm fresh water savings.

## Economic, Technical, and Environmental Feasibility Analysis

Mosaic has provided an update to the economic, technical and environmental feasibility analysis of alternative water use and conservation in Attachment D "Alternative Water Use and Conservation Analyses for Mines and Concentrates".

## Analysis of Gypsum Stack Closure Water Use

The use of mine recirculation water from the Hookers Prairie mine has reduced the need for groundwater at the South Pierce facility for the phosphogypsum stack closure. Since August 2014, Mosaic is has transferred an average of 1.2 MGD of Hookers Prairie mine recirculation water and mine site drainage associated with reclamation of mined areas and clay settling areas to the South Pierce NPDES land area for blending with treated wastewaters prior to discharge at outfall D-001 or D-001T.

## Analysis of Reclaimed Water Sources for the Area

Mosaic currently has existing connections with five reclaimed water sources. Mosaic has a connection with the Hillsborough County Falkenburg and South County Wastewater treatment Plants with an available interruptible supply of up to 1.2 MGD. The Mosaic Fort Meade Mine received approximately 112,000 gallons per day of treated wastewater from the City of Bowling Green Wastewater Treatment Plant Facility and the Mosaic South Fort Meade facility receives approximately 457,000 gallons per day of treated wastewater from the City of Fort Meade Wastewater Plant and the Bowling Green Wastewater Treatment Plant. At the Riverview facility (which is not included in the IWUP), reclaimed water is tied into the sulfuric acid plant cooling tower supply; however usage is limited due the high TDS, conductivity and chloride levels in the reclaimed water.

Additionally, Mosaic purchased CF Industries' phosphate assets during 2014, although these facilities are not in the IWUP. The Plant City concentrate plant accepts reclaimed water from the City of Plant City WWTP, and the South Pasture Mine accepts reclaimed water from the City of Wauchula WWTP. Including these facilities, total reclaimed water use for Mosaic operations in Florida averaged just over 2 MGD in 2014.

Previous studies conducted by Mosaic reveal that the majority of available reclaimed water supplies within a reasonable proximity of Mosaic's operations are already utilized by other projects. Some limited quantities of additional reclaimed water are available in

the general region, but the distance from Mosaic facilities and the lack of existing infrastructure makes utilization of these reclaimed water sources cost prohibitive and unlikely to be a realistic water conservation strategy.

Mosaic will continue to pursue economically, technically, and environmentally feasible options for utilizing additional reclaimed water. We will consider the specific reclaimed streams which appear most cost-effective (such as Winter Haven-Conine and Highlands Avon Park), determine the actual Mosaic facility (and processes within that facility) where the stream could be utilized, and finally determine the degree of pretreatment which would be required to utilize the reclaimed water

In general, Mosaic has found that the primary limitations to integrating substantially more reclaimed water into our water management systems is the cost to deliver the water to Mosaic, the cost to treat the water to reduce nutrients (phosphorus and nitrogen), and the variability of the quality and quantity of reclaimed water available from any source. Mosaic will continue to work with SWFWMD and the wastewater treatment authorities to maximize our use of reclaimed water.

If you have any questions regarding the reported information please contact me at 813-500-6656

Sincerely,

Kacie Blue
Sr. Environmental Specialist

cc: Subrata Bandyopadhyay, Mosaic
Adam Platt, Mosaic

**Report Copies Provided for Informational Purposes**

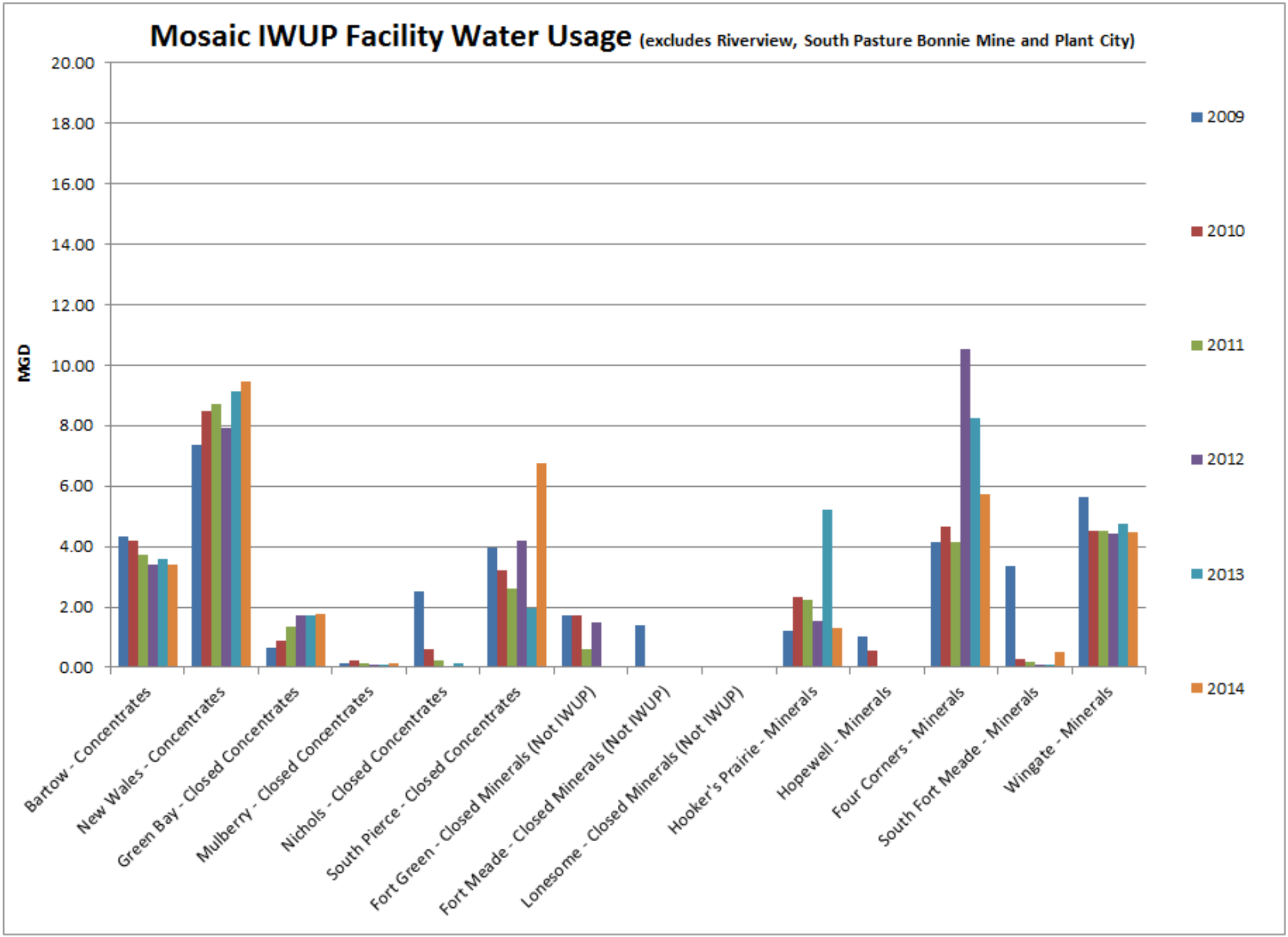
Copies of the attached Report are being provided to the Department of Environmental Protection and County officials identified below as required by certain permits and approvals issued by those governmental authorities. The Report is being provided for informational purposes only.

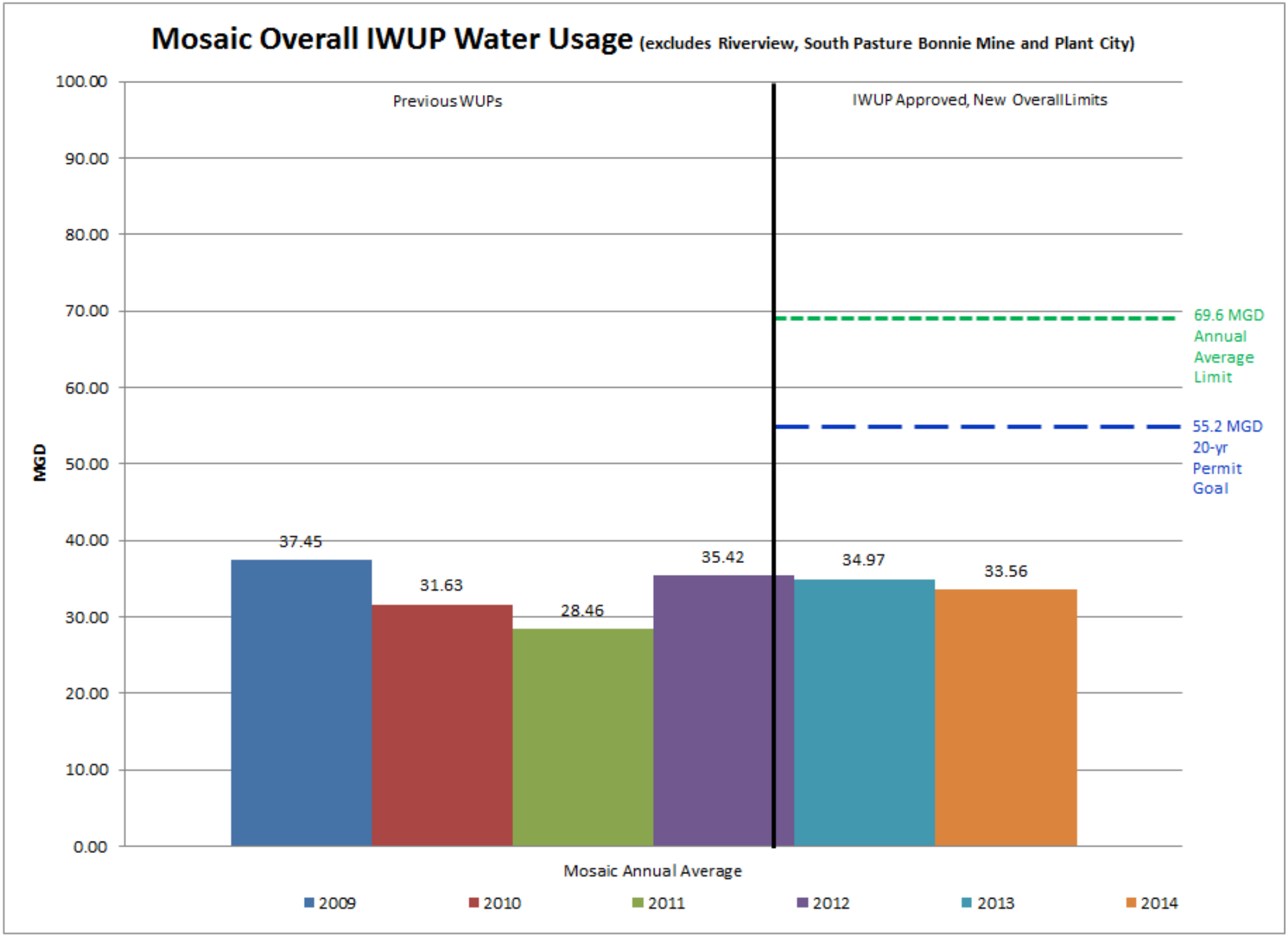
cc w/ courtesy copies:

Kathleen Barrett, Manatee County - w/ Attachments
Brigitte D'Orval, Polk County - w/ Attachments
Jessica Duke, FDEP - w/ Attachments
West Palmer, Hardee County - w/ Attachments
Alissa Powers, Manatee County - w/ Attachments

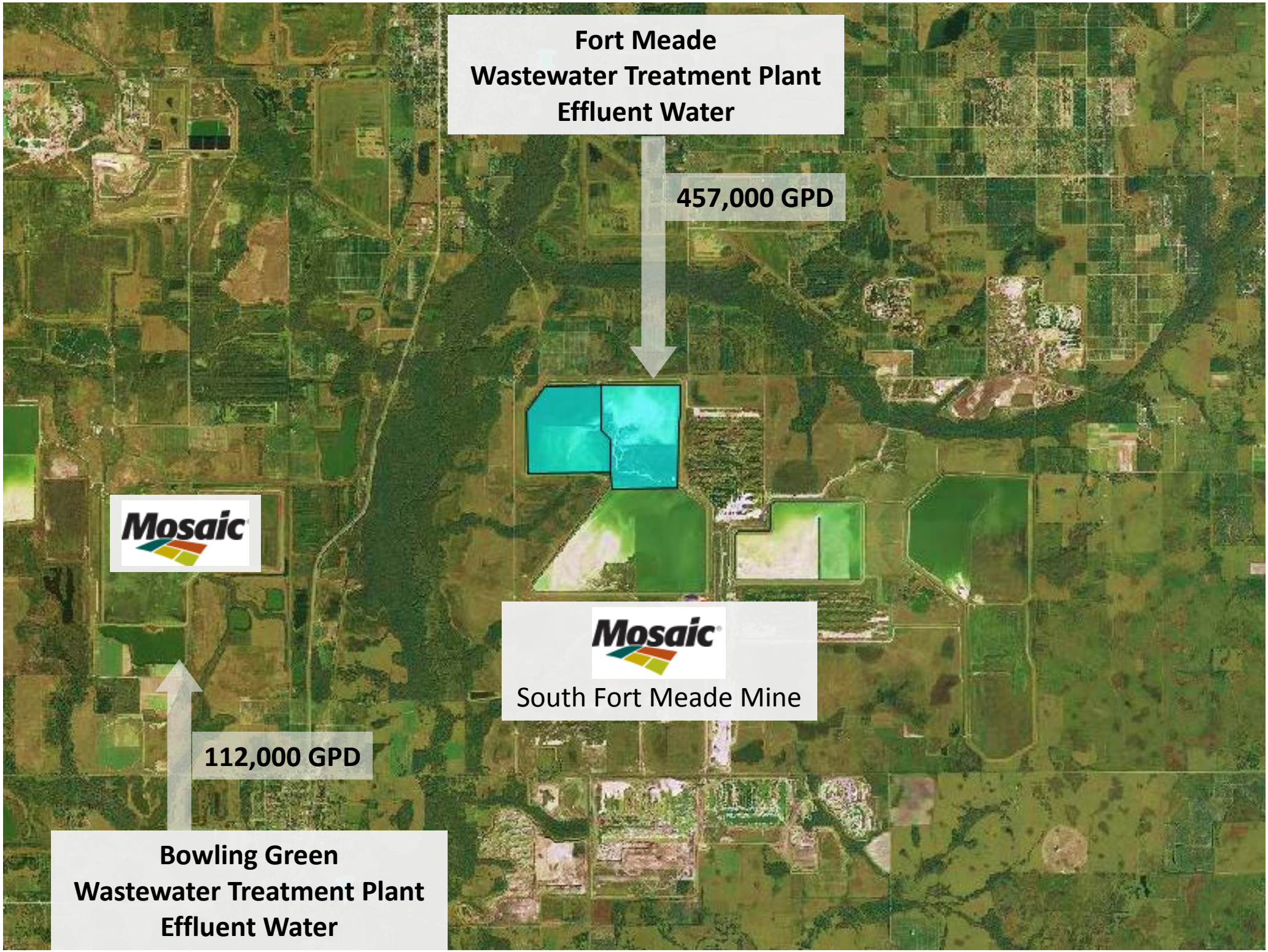
Michael Stevenson, Hillsborough County - w/ Attachments
Orlando Rivera, FDEP - w/ Attachments

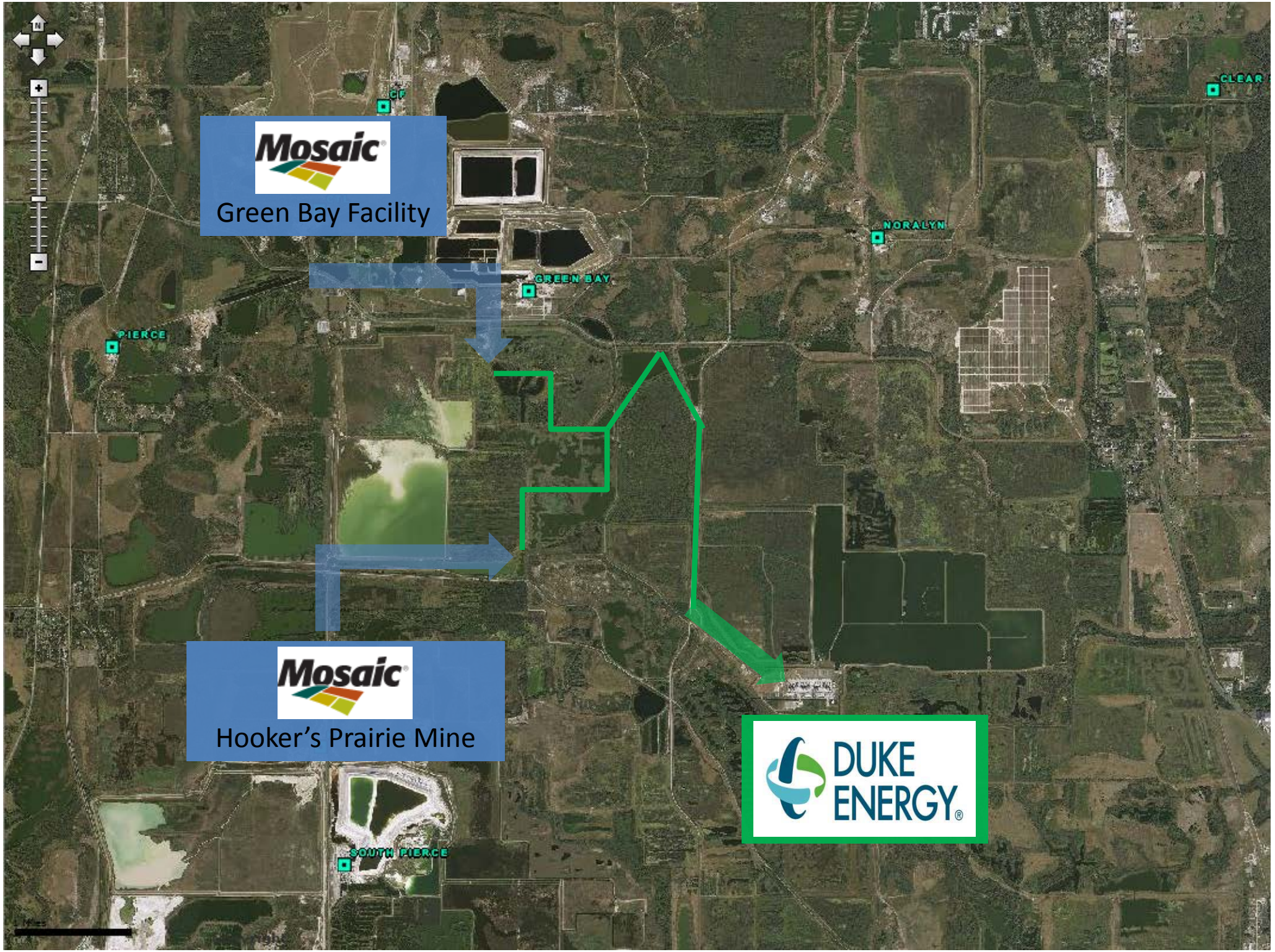
ATTACHMENT A
2009-2014 WATER USAGE GRAPHS


Mosaic IWUP Facility Water Usage (excludes Riverview, South Pasture Bonnie Mine and Plant City)
MGD
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
2009
2010
2011
2012
2013
2014
Bartow - Concentrates
New Wales - Concentrates
Green Bay - Closed Concentrates
Mulberry - Closed Concentrates
Nichols - Closed Concentrates
South Pierce - Closed Concentrates
Fort Green - Closed Minerals (Not IWUP)
Fort Meade - Closed Minerals (Not IWUP)
Lonesome - Closed Minerals (Not IWUP)
Hooker's Prairie - Minerals
Hopewell - Minerals
Four Corners - Minerals
South Fort Meade - Minerals
Wingate - Minerals


Mosaic Overall IWUP Water Usage (excludes Riverview, South Pasture Bonnie Mine and Plant City)
Previous WUPs
IWUP Approved, New Overall Limits
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
MGD
69.6 MGD Annual Average Limit
55.2 MGD 20-yr Permit Goal
37.45
31.63
28.46
35.42
34.97
33.56
Mosaic Annual Average
2009
2010
2011
2012
2013
2014

ATTACHMENT B
WATER CONSERVATION SYNERGIES


Fort Meade
Wastewater Treatment Plant
Effluent Water
457,000 GPD
Mosaic
Mosaic
South Fort Meade Mine
112,000 GPD
Bowling Green
Wastewater Treatment Plant
Effluent Water


Mosaic
Green Bay Facility
Mosaic
Hooker's Prairie Mine
DUKE ENERGY
CF
GREEN BAY
PIERCE
NORALYN
CLEAR
SOUTH PIERCE