CESAJ-RD-W
SAJ-2009-03221(SP-MEP)

Supplemental Environmental Assessment, Draft Clean Water Act Section 404(b)(1) Guidelines Analysis, and Draft Public Interest Review for Department of the Army (DA) Permit Application SAJ-2009-03221

1) Background:

On May 3, 2013, the U.S. Army Corps of Engineers (Corps), U.S. Environmental Protection Agency (EPA), and Florida Department of Environmental Protection (FDEP) published a notice of availability for the Final Areawide Environmental Impact Statement on Phosphate Mining in the Central Florida Phosphate District (Final EIS). The scope of action for the Final EIS includes Department of the Army (DA) Permit Application SAJ-2009-03221. See Final EIS page 1-21 to 1-31. On July 12, 2013, the Corps, EPA, and FDEP published an Addendum to the Final EIS. The Final EIS and the Addendum are available at: http://www.saj.usace.army.mil/Missions/Regulatory/Items-of-Interest/

The Final EIS states, "A draft of the Section 404(b)(1) and public interest review analyses for each project will be made available for public review and comment." See e.g., Final EIS page 5-2. Therefore, the Corps is exercising its discretion pursuant to the Clean Water Act (CWA) (33 U.S.C. § 1344(a)), the National Environmental Policy Act (NEPA) (40 C.F.R. § 1506.6), and its public interest review (33 C.F.R. § 320.4), to provide additional opportunity for public review and comment on the draft CWA Section 404(b)(1) Guidelines analysis and public interest review for DA Permit Application SAJ-2009-03221. Furthermore, pursuant to 40 C.F.R. §§ 1501.3(b) and 1502.9(c)(2), the Corps is also exercising its discretion to prepare an environmental assessment (EA) on DA Permit Application SAJ-2009-03221 in order to assist with the permit decision and further the purposes of NEPA. Because there have been no substantial changes to the proposed action that are relevant to environmental concerns and no significant new circumstances or information since the project was analyzed in the Final EIS, supplemental NEPA was not required under 40 C.F.R. § 1502.9(c)(1). However, this EA discloses changes to the proposed action that have occurred since the Final EIS, and considers any potential impacts associated with such changes.

This draft analysis does not include any of the final determinations required by the CWA Section 404(b)(1) Guidelines or the public interest review as the Corps cannot make such determinations until the conclusion of the permit application review process. Comments made in response to this notice will be considered in making those final determinations. The conclusions of the CWA Section 404(b)(1) analysis and public interest review will be published in the record of decision and statement of findings (RODSOF) for DA Permit Application SAJ-2009-03221. The Corps plans to adopt the Final EIS and this EA in the RODSOF.

2) Application:

a) Applicant: Mosaic Fertilizer, LLC
13830 Circa Crossing Drive
Lithia, FL 33547

b) Location: The project, known as "Wingate East Mine", is located in wetlands associated with the Wingate Creek Headwaters of the Myakka River Watershed, and the West Fork Horse Creek Headwaters of the Peace River Watershed. Specifically, the project is located north of the intersection of State Road 64 and Duette Road in Sections 13, 22 through 27, and 34, Township 34 South, Range 22 East in eastern Manatee County, Florida. Figure 1-4 on page 1-22 of the Final EIS show the location of the project on a regional map.

c) Proposed Work: The Applicant requests a 20 year construction window to mine phosphate ore from approximately 3,137 acres within a 3,635-acre Wingate East property in Manatee County, Florida. The 3,137 acre impact area consists of 2,658 acres of mining, and an additional 479 acres of support infrastructure. The applicant proposes mining operations on the proposed Wingate East Mine for approximately 17 years. This project would provide phosphate ore to extend the life of the currently operating Wingate Creek Mine beneficiation plant for approximately 17 years. Upon completion of mining operations at Wingate East, the Applicant proposes to reclaim all land disturbed by mining operations at Wingate East and establish some areas as wetlands mitigation as described below in Section 8 of this EA.

Following cessation of mining at Wingate East, mining of 577 acres at the Wingate Creek Mine (SAJ-1990-00518) will recommence. The 577 acres include the Wingate Creek Mine's CSA (ISA), sand/phosphate rock stockpiles, and infrastructure connections needed to mine outlying areas like Wingate East.

d) Changes to the proposed work since the 2011 DA application and Final EIS:

i. Timeframe: The proposed timeframe for construction has decreased since the project was originally proposed. Active mining (phosphate rock production) at Wingate East is now proposed for approximately 17 years, with reclamation and wetland mitigation activities taking up to five years. In the Final EIS, this project was proposed as 27-28 years of active mining and up to eight years of reclamation and mitigation construction. The decreased timeframe is a result of multiple factors that include: 1) improved mining efficiency (see production rate); 2) reduced impacts to WOUS, and; 3) increased upland buffers around avoided wetlands and streams, thereby decreasing the mine area. The Applicant's mine plan

now calls for the recovery of 28 million tons[1] (MMT) of phosphate rock from 2,658 acres vs. 36 MMT of phosphate rock recovered from 3,070 acres, as proposed in the 2011 DA application and described in the Final EIS.

ii. Production Rate: The Final EIS projected a production rate of 1.3 million tons per year (MMTPY)[2] of phosphate rock. The proposed production rate has increased to 1.7 MMTPY. Improvements to the beneficiation plant since 2013 have improved the efficiency of the recovery process, which allows the machines to operate with less down time, and more area to be mined within a year. The 2011 application proposed mining 110 acres/year. The current plan is to mine 160 acres/year.

iii. Impacts to WOUS: The Applicant now proposes approximately 553.1 acres of impacts to Waters of the United States (WOUS), including 542.8 acres of wetland impacts, and 10.3 acres of impacts to other surface waters such as cattle ponds and upland-cut ditches. The Final EIS and the June 1, 2012, public notice for this project described a total of 784 acres of impacts to WOUS (761 acres of wetland impacts and 23 acres of other surface water impacts). As a result of the Applicant's proposed avoidance of higher quality wetlands, impacts to WOUS have been reduced by 230.9 acres, which includes 218.2 acres of wetlands and 12.7 acres of surface waters.

The Applicant also proposes to impact 10,023 linear feet of ditched and non-ditched intermittent or ephemeral streams, which is also a reduction in proposed impacts since the project was originally proposed. The Final EIS and the June 1, 2012, public notice for this project described a total of 27,287 linear feet of jurisdictional stream impacts.

A comparison of Figure 7 (Applicant's Preferred Alternative) and Figure 8 (Applicant's June, 2011 application) illustrates the wetlands and streams avoided since the June 1, 2012 public notice and Final EIS.

iv. Clay Settling Areas (CSAs): The number of new CSAs has been reduced from two to one. In the June, 2011 DA application, beneficiation of the 36 MMT of phosphate rock proposed to be extracted from the Wingate East Tract was expected to separate approximately 29 MMT of clays. The Applicant had proposed utilizing extra capacity of the existing FM-1 and FM-2 CSAs on the adjacent Southeast Tract to handle clays until two new CSAs on the Wingate East Tract (WE-1 and WE-2) could be built (about 7 years). The current plan calls for the recovery of 28 MMT of

[1] The term "tons" refers to "short tons", which equals 2,000 pounds.
[2] Calculated based on mining at 85% of capacity.

phosphate rock producing approximately 20 MMT of clays. As a result, less clay storage capacity is needed so only one new CSA (WE-1) will be constructed. Figure 8 depicts the WE-1 and WE-2 configuration proposed in the June, 2011 DA application. Figure 9 depicts the currently proposed WE-1 configuration along with FM-1 & FM-2 on the adjacent Four Corners Mine Southeast Tract. The existing FM-1 & FM-2 CSAs on Southeast Tract will still be utilized while WE-1 is under construction.

3) Authority: Section 404 of the Clean Water Act of 1972 (33 U.S.C. § 1344)

a) Jurisdictional Determination Information: The Corps issued an approved jurisdictional determination for the project on February 16, 2012.

4) Draft Clean Water Act Section 404(b)(1) Alternatives Analysis:

a) Basic and Overall Project Purpose and Need:

Basic: To mine phosphate ore.

This is the Corps-defined basic project purpose described in Section 1.2.3.1 of the Final EIS.

Overall: To extract phosphate ore from the mineral reserves located in the Central Florida Phosphate District (CFPD) and to construct the associated infrastructure required to extract and process the phosphate ore at separation/beneficiation facilities recognizing that the ore extracted must be within a practicable distance to a new or existing beneficiation plant.

This is the Corps-defined overall project purpose described in Section 1.2.3.2 of the Final EIS.

Public Need: Section 1.2.1 of the Final EIS describes the public's general need.

Applicant's Need: Section 1.2.2 of the Final EIS describes the Applicant's general need.

On April 12, 2017, the Applicant provided the following statements (*italicized text*) about the specific need at an overall operational level and at a project specific level:

Overall Need: *Applicant currently operates the Four Corners, South Fort Meade, South Pasture, and Wingate Creek Mines in the CFPD to meet its phosphate rock needs (AEIS page 2-6). The Final EIS estimates that the Applicant produces 17.1 million short tons of phosphate rock per year (MMTPY) at its four CFPD mines as*

follows: Four Corners- 6.1 MMTPY; Hookers Prairie - 1.9 MMTPY; South Fort Meade- 4.3 MMTPY; South Pasture- 3.5 MMTPY; and Wingate Creek-1.3 MMTPY (AEIS Table 1-3). The Final EIS acknowledges that these estimated production rates are calculated based on mining at 85% of capacity, and that actual production rates may fluctuate from year to year. As discussed below, process improvements and ore considerations, which have helped optimize the existing plant's production rates, have caused the Applicant to revise its project-specific need for the Wingate beneficiation plant as well as the expected timeframe for mining.

All of the Applicant's existing CFPD mines will complete extraction of currently permitted ore reserves between 2020 and 2025. In order to continue to obtain an uninterrupted phosphate rock supply to meet projected demands, the Applicant plans to extend mining onto the Wingate East property from the Wingate Creek Mine, develop the Ona property to replace the Four Corners Mine, and develop the DeSoto Mine to replace the Hookers Prairie and South Fort Meade Mines. This mining development sequence is based upon business factors such as logistics, production needs, and projected rock supply. The Corps' Final EIS evaluated all four of the Applicant's proposed mines and mine extensions as well as the reasonably foreseeable Pioneer and West Pioneer Tract and Pine Level-Keys Tract projects.

Project Specific Need: *The Wingate East Mine, which is located adjacent to the existing Wingate Creek Mine, will extend the life of the Wingate Creek Mine beneficiation plant, thereby maintaining uninterrupted a long- term supply of phosphate rock to meet the fertilizer demand of the Applicant's customers. This is a mine extension project; the Applicant is seeking to extend the life of the Wingate Plant through at least 2037 rather than construct a new beneficiation plant.*

If Wingate East is not developed, the phosphate rock production currently provided by the Wingate beneficiation plant that supports a portion of Applicant's fertilizer production capacity would be at risk of termination within the next 10 years. The Corps recognizes that providing a supply of phosphate rock not only requires an ore reserve large enough to sustain production for an extended time horizon (FAEIS pg. B-15)(1-48) but also the associated infrastructure required to support extraction and ore separation/beneficiation. Other operators who have previously been unable to achieve phosphate rock supply self-sufficiency have failed. In addition, inability to absorb increased mining cost and/or low sales prices have caused numerous U.S. mining operations to fail. The Applicant would face similar risks, including becoming an economically-marginal producer. Therefore, phosphate mining operations must develop mining plans that allow for long-term mining in an economical and efficient manner.

Applicant needs to maximize its ore recovery and related plant production from the high quality Wingate East reserves to recover its substantial investment in these reserves.

Because of the high quality of the Wingate East reserves, and improvements made to the recovery process at the plant, the Applicant expects to operate the Wingate beneficiation plant at a higher production rate than in previous years. Higher quality phosphate ore/matrix present at the Wingate East property means there are fewer impurities that need to be removed in the beneficiation process and ultimately, results in more recoverable phosphate ore from the same amount of extracted matrix. Additionally, the Applicant has undertaken a number of capital improvements at Wingate to improve overall operations, which in turn has increased or will increase the ability to operate at capacity. Finally, the Applicant is instituting additional capital improvements at Wingate that will increase the production capacity at the plant. The capital improvement projects completed or planned at Wingate (discussed below) provide increased production capacity from 1.5 MMTPY to 1.7 MMTPY[3] [4].

The Wingate improvements will allow Applicant to maintain overall production levels at CFPD to meet projected demand. Applicant upgraded the Wingate beneficiation plant to optimize the flow of ore through the plant at a cost of $20.4 million. Ore separation efficiency is being improved through an ongoing $13 million capital improvement project. The over 30-year-old dredges on Wingate were recently replaced at a cost of $21.0 million. The capital cost to replace the Wingate beneficiation plant is estimated to be approximately $100 to $150 million. To recover these capital expenditures, Applicant plans to process approximately 1.7 MMTPY of ore reserves at the Wingate Plant over an approximately 20 year planning horizon. In other words, in light of the higher rock quality and these expenditures, Applicant plans to operate Wingate at its operational capacity, rather than at 85% of capacity.

As noted, the FAEIS originally estimated a lower production rate of 1.3 MMTPY over a much longer mining horizon and a larger mine footprint than the Applicant's Preferred Alternative. Tables 4-140 and 4-141 of the FAEIS estimated that, with a rock production of 1.3 MMTPY (operating at only 85% of the plant's capacity at that time), rock production would extend for a total timeframe of 31 years, with ore recovery of approximately 36 MMT from 3,070 acres. The estimates contained in these tables of the FAEIS were obtained from the Applicant's 2011 Application;

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[3] Table 1-3 of the Final EIS projected an annual production rate of 1.3 MMTPY at Wingate Creek beneficiation plant, which represented 85% of the plant's capacity of that time of 1.5 MMTPY. Note that Table 1-3 reflect approximate reserve recovery estimates in short tons for Wingate East, while other portions of the Final EIS reflect reserve estimates in metric tons.

[4] The Final EIS projected greater total impacts on Wingate East than the current Preferred Alternative, but at a lower production rate and over a longer horizon (1.3 MMTPY for Wingate through 2046). Based on a production rate increase to 1.7 MMTPY and more avoidance of priority resources, the mining timeframe now runs through 2034.

Table 10 of the 2011 Application estimated 28 years of actual mine life, with a recovery of 36 MMT from 3,070 mined acres. The 2014 Revised Application, the Applicant's Preferred Alternative, reduced the mine footprint considerably, to 2,658 acres. Given delays in mine starts, reserve exhaustion at existing mines, and the above-mentioned plant improvements and rock quality, the Applicant now plans to operate Wingate Mine at its new operational capacity of 1.7 MMT, but over a significantly shorter timeframe, approximately 20 years (estimate 17 years of actual mine life), for a total recovery of 28 MMT.

Applicant's predecessor purchased Wingate Creek Mine in 2004. The purchase and subsequent merger into what is now Mosaic allowed Applicant to consolidate and integrate mining operations and infrastructure on Wingate Creek with Applicant's nearby Southeast Tract. One principal environmental benefit of the consolidation was the availability of previously mined land on the Southeast Tract large enough to site clay settling areas (CSAs) (the FM-1 and FM-2 CSAs) to manage clay separated from ore extracted and beneficiated at Wingate Plant. Construction and use of the FM-1 and FM-2 CSAs on the Southeast Tract minimized the clay footprint on Wingate by using impact minimization techniques such as common wall dams, below grade storage, sequential use of mined land, and stage filling of CSAs. Use of these CSA footprint minimization practices had not been employed by the prior operator of Wingate.

Development of Wingate East on a timely basis would provide Applicant with a continuous supply of phosphate ore to allow for production of approximately 1.7 MMTPY from the Wingate beneficiation plant in order to meet CFPD production needs. The initial mining would extract ore beneath the proposed clay storage space to allow for CSA construction to be completed before the FM-1 and FM-2 CSAs are filled to capacity. Operations at Wingate East would continue for approximately 20 years. Upland reclamation and wetland mitigation outside the CSAs would follow the ore extraction sequence in phases and would be completed by about year 25.

The Wingate East parcel is adjacent to and, on average, less than 4 miles from the Wingate Creek Mine beneficiation plant, which allows continued use of the existing Wingate Plant, the FM-1 and FM-2 CSAs on the Southeast Tract, and other infrastructure while mining at Wingate East, thereby offering not only cost and logistics benefits but also environmental benefits (e.g., avoiding unnecessary or lengthy movements of large equipment across the landscape, minimizing the overall CSA footprint by utilizing existing storage capacity, and more efficiently using water). The Applicant's overall mining and operations plans will integrate all approved mining operations associated with the Wingate Creek Mine, including integrated disposal, storage, and use of generated clay and sand tailings for reclamation. The very close proximity of the Wingate East property to Wingate Creek Mine and beneficiation facilities allows for the planned optimization of mine

activities and facilitates uninterrupted production at the Wingate Plant.

As stated in 33 C.F.R. Part 325, Appendix B, when defining the purpose and need for a project "while generally focusing on the Applicant's statement, the USACE will in all cases, exercise independent judgment in defining the purpose and need for the project from both from the Applicant's and the public's perspective." Therefore, the Corps independently reviewed and verified the information in the Applicant's statements of overall and project-specific need.

The Corps first reviewed the overall production information. The Applicant produces publicly available 10-K reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. These reports include production data for the Applicant's mines. A review of the 2016 10-K report showed overall production rates of 14 MMTPY in 2014, 14.5 MMTPY in 2015, and 14.2 MMTPY in 2016, and an overall annual operational capacity of 17.2 MMTPY for the Applicant's four currently operating mines (Four Corners, South Fort Meade, South Pasture, and Wingate Creek) in the CFPD. Section 1.2.1 of the Final EIS includes similar information about the overall production rates, along with information supporting the Applicant's plan of having new mines replace previous production. The Corps has determined that this information regarding overall need is valid, and will use it in the alternatives analysis for Wingate East.

To independently review and verify the Applicant's statement about the project-specific production needed for the Wingate East project, the Corps evaluated data from the publicly available 2016 10-K report, which shows that Wingate had a production rate of 1.1 MMTPY in 2014, 1.2 MMTPY in 2015, 1.3 MMTPY in 2016, and an overall annual operation capacity of 1.5 MMTPY.

For the Corps' alternatives analysis, the total production amount projected for each alternative (not production capacity), is the most critical information for evaluating whether each alternative could meet the project-specific need. It is this total amount of 'needed' phosphate rock that determines what acreage the Applicant has proposed to mine, and by extension the amount of potential impacts to aquatic resources.

As described in the Applicant's project-specific need statement, and verified by the 2016 10-K report, Wingate East has an estimated total production of 28 MMT of reserves, based on the Applicant's current mine plan as described in Section 2.c of this EA, and as evaluated as the Applicant's Preferred Alternative in Sections 4.d.ii and 4.e.vii of this EA. Regardless of whether the Applicant mines these reserves at a rate of 1.7 MMTPY over 17 years, or a less-productive rate for a longer period within the construction window, the project is expected to yield 28 MMT of phosphate.

Therefore, in its evaluation of the least environmentally damaging practicable alternative for this project, the Corps will consider the Applicant's need for an alternative, whether offsite or onsite, to yield a total of 28 MMT of phosphate ore. For the evaluation of required infrastructure, the Corps will consider the maximum production level of 1.7 MMTPY.

b) Water Dependency Determination: Because the project's basic purpose, mining phosphate ore, does not require siting within a water of the U.S., the proposed discharge is not water dependent.

c) Offsite/Avoidance Alternatives Screening Process and Criteria: Section 2.2.4.1 and Appendix 8 of the Final EIS describe the screening process for offsite, or avoidance, alternatives used for the Final EIS. The Corps' project-specific evaluation of offsite alternatives under Clean Water Act Section 404(b)(1) began with the list of parcels identified in the Final EIS: Pioneer Tract, Desoto, Pine Level/Keys Tract, Site A-2, Site W-2, and Ona.[5]

40 C.F.R. § 230.10(b)(2) states "An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." Section 3.1.4 of the Final EIS describes why the Corps considers ten miles to be the practicable pumping distance to move material to and from a phosphate beneficiation plant. Exceptions to this distance are highly dependent on having access to access corridors and facilities to process material at an intermediate stage, before final beneficiation, and are typically logistically not feasible. Therefore, the first step in the Corps' project-specific screening process considered whether an alternative (or any part of an alternative) lay within a ten-mile radius of the Applicant's Wingate Mine beneficiation plant. Three alternatives met this criterion - Ona (10,364 acres), Pioneer (5,794 acres) and Site W-2 (8,662 acres). The acreage figures are the area of each parcel located within a 10-mile radius of the Wingate Plant. Because the other three parcels identified in the Final EIS (Desoto, Pine Level/Keys Tract, and Site A-2) are outside of the ten-mile radius and therefore are not practicable alternatives, the Corps eliminated them from further consideration.

The alternatives carried forward for further analysis included a No Action Alternative, Wingate East (the Applicant's Preferred Site Alternative), and the three offsite alternatives (Ona, Pioneer Tract, and Site W-2).

Figure 2-8 in Chapter 2 of the Final EIS shows the locations of all of the alternatives considered in the Final EIS, including the avoidance alternatives

[5] After the issuance of the DA permit to mine South Pasture Extension on November 15, 2016, the Corps no longer considers that parcel to be an alternative mine site for Wingate East or any other project.

identified above and evaluated in this EA. Appendix C of the Final EIS has aerial photographs of the alternatives.

As stated in 40 C.F.R. 230.1(a), “No discharge will be permitted if there is a practicable alternative which would have less adverse impact on the aquatic ecosystem provided the alternative does not have other significant adverse environmental consequences.” Therefore, for the next step in the alternatives analysis the Corps independently reviewed and verified the criteria for considering both the practicability (based on 40 C.F.R. 230.10(b)(2), as described above) and the environmental impacts of each of the offsite/avoidance alternatives.

The specific practicability criteria applied by the Corps included the following:

a) The logistics associated with construction of the pipelines needed to carry material between an alternative and the Wingate Creek beneficiation plant, including the total combined length of the pipelines and the availability of access corridors;
b) the number of stream crossings needed for pipelines (stream crossings);
c) the ability of an alternative to support other necessary mine infrastructure such as clay settling areas (considering factors such as available area);
d) compliance with state (FDEP) or local (Manatee or Hardee County) permitting requirements,
e) the ability of an alternative to produce a total of 28 MMT, and meet the project-specific need as described in Section 4.a of this document, and;
f) the ability of an alternative to fulfill the mining development sequence described in the overall need statement in Section 4.a of this document.

For practicability criterion a), the pipeline information is based on the distance between each offsite alternative and the beneficiation plant, and on the number of draglines needed to maintain a maximum of 1.7 MMTPY production. Overburden removal and ore extraction would be accomplished on Wingate East using a combination of dredges and potentially draglines. Dredges would be used west of Duette Road where this mining method has been proven at Wingate and the ore is deeper and thicker. Draglines may be used east of Duette Road where dragline mining was utilized successfully on the adjacent Southeast Tract and the ore is shallower and thinner. For purposes of the alternatives analysis, however, off-site alternative analysis assumed the use of draglines due to the technical limitations of dredge-based phosphate mining identified in Section 2.2.6.1 of the Final EIS. Each dragline requires one matrix pipeline to the beneficiation plant and one sand tailings line back to the current reclamation site.

Also, for the Applicant's Preferred Site Alternative and Ona, the Applicant used specific information about the mine plan to provide this data. Because there is no

mine plan for the Site W-2 or Pioneer Tract, the Applicant provided estimates for the pipeline information.

The access corridor part of criterion a) relied on available information about property ownership or control.

The stream crossing information for criterion b) relies on the mine plans for the Applicant's Preferred Site Alternative and Ona, and on an estimated plan for Site W-2 and Pioneer.

For criterion c), the CSA data uses the acreage of an alternative and an estimated volume of phosphate and associated clay that an alternative would produce. The production data considers each site's total mineable reserves, to eliminate any discrepancies in the comparison of the two alternatives with mine plans (and their associated onsite avoidance and minimization of wetland impacts), and the two alternatives without a mine plan.

Criterion d) considers either finalized state or local permitting actions, or available information about state or local permitting requirements.

For criterion e), the estimated production values for Ona and Wingate East rely on those alternative's mine plans. 'For Site W-2 and Pioneer, the estimated production values assume 14% preservation[6]. For all alternatives, the Corps used prospecting data provided by the Applicant.

For criterion f), the Corps considered the Applicant's overall mining sequence as described in section 4.a of this document.

In addition to the practicability criteria, the Corps evaluates the environmental impacts of project alternatives. For the environmental criteria, the Corps used wetland acreage based on National Wetland Inventory data (NWI wetlands) and Southwest Florida Water Management District data (SWFWMD wetlands). The alternatives analysis also uses the SWFWMD wetland data to compare the area of wetland coverage for each parcel as a percentage of the overall acreage. The Corps chose these criteria to ensure a consistent approach and because the data is publicly available.

d) Avoidance Alternatives

i. No Action Alternative: Section 4.1.9 of the Final EIS describes the two No Action Alternatives - No Mining and Upland Only Mining. This section of the EA will address the No Action- No Mining alternative. Section 4.e.i below

[6] Based on typical percentages of preserved lands at phosphate mines in the CFPD.

describes the Corps' evaluation of the No Action- Upland Only Mining alternative as a minimization alternative.

Under the No Action - No Mining alternative, existing permitted mining on the Wingate Creek Mine would continue to completion, however, the Applicant would not mine the Wingate East parcel at all. There is no construction of any mine infrastructure, including pipelines, crossings, or clay settling areas, within the Wingate East parcel. This alternative does not produce any phosphate rock. If the Applicant did not mine Wingate East, there would be no need for local or state authorizations for mining, there would be no phosphate produced, and there would be no replacement of an existing mine.

The Wingate East parcel contains 893 acres of NWI wetlands and 758 acres of SWFWMD wetlands. SWFWMD wetlands comprise 20.8% of the site. Because there is no new mining, there are no mining-related impacts to these wetlands.

This alternative does not satisfy the overall project purpose and it is not a practicable alternative. The No Action Alternative also does not meet the overall need or the project-specific need. The No Action Alternative - No Mining alternative is the least environmentally damaging alternative of all the avoidance alternatives, including the Applicant's Preferred Alternative.

ii. Applicant's Preferred Alternative: This is the 3,635-acre Wingate East parcel described in Section 2 of this EA. The entire 3,635 acres is within ten miles of the Wingate beneficiation plant. This alternative considers impacting 3,137 acres of the 3,635 acre site. This alternative requires approximately 11 miles of pipelines and no new stream crossings (2 miles from the plant to the project boundary, 9 miles within the project boundary). Available information indicates that the Applicant owns or controls all of the property needed to construct the necessary access corridors. The Applicant states that this alternative has sufficient space for the necessary CSA. Mining the Wingate East parcel utilizing the Applicant’s Preferred Alternative would produce 28 MMT of phosphate. This is based on 2,658 acres of mining, and an estimated yield of 10,500 tons of phosphate rock per acre. This alternative has received approval from both FDEP and from Manatee County.

The Wingate East parcel contains 893 acres of NWI wetlands and 758 acres of SWFWMD wetlands. SWFWMD wetlands comprise 20.8% of the site.

This alternative meets the overall project purpose and the Applicant's need on both the overall and the project-specific levels.

iii. Ona: This alternative considers mining 7,938 acres of the 10,364 acres of the overall Ona parcel that lie within ten-miles of the Wingate beneficiation plant. This alternative requires approximately 28 miles of pipelines and two new stream crossings (6 miles from the plant to the project boundary, 22 miles within the project boundary). Available information indicates that the Applicant owns or controls all of the property needed to construct the necessary access corridors and that this alternative has sufficient space for the necessary CSAs. This alternative is adjacent to the Wingate East Preferred Alternative. Based on 7,938 acres of mining, and an estimated yield of 9,925 tons of phosphate rock per acre, Ona would produce 78 MMT of phosphate. This alternative has received approval from FDEP. As described in the overall need statement, the Applicant plans to replace the Four Corners Mine with the Ona Mine. The Ona alternative contains 1,719 acres of NWI wetlands and 2,268 acres of SWFWMD wetlands. SWFWMD wetlands comprise 21.9% of the site within the 10-mile radius.

The Ona alternative meets the overall project purpose and the project-specific need. However, as explained in Section 4.a of this EA, the Applicant's overall mine plan has the phosphate production from the Ona reserves replacing the production from the Four Corners Mine after that mine's reserves run out. Therefore, this alternative does not meet the Applicant's overall need. Also, this alternative would require 17 more miles of pipeline and 2 more crossings than the Applicant's Preferred Alternative. Although the percentage of wetlands on the Ona alternative and Wingate East site are comparable, the additional pipeline construction and crossings make this alternative more environmentally damaging than the Applicant’s Preferred Alternative.

iv. Site W-2: Consideration of this alternative assumes mining 7,449 of the 8,662 acres of Site W-2 that are within ten-miles of the Wingate beneficiation plant. There is no current application to mine this parcel, and no mine plan. Therefore, as stated in Section 4.c of this EA, the analysis of this alternative relies on an estimated mine plan with an assumed 14% preservation. This alternative requires approximately 18 miles of pipelines and 5 stream crossings (7 miles from the plant to the project boundary, 11 miles within the project boundary). The Corps has assumed that this alternative has sufficient space for the necessary CSAs. Site-specific geologic information is not available for this site. Available drilling data indicate yields below 6,000 tons of phosphate rock per acre would be likely. Mining 7,449 acres would therefore yield a total of 44.7 MMT. It is unknown if either FDEP or Manatee County would approve mining on this site. The Corps will conservatively assume that the Applicant could obtain the necessary approvals. Site W-2 would not disrupt the Applicant’s planned overall mining sequence.

The Applicant does not own or control all of the land necessary to construct the access corridors between this site and the Wingate Creek beneficiation plant. The Applicant would need to acquire more than seven miles of access corridor, and construct pipelines and dragline crossings within that corridors, including stream crossings over the Taylor and Ogelby Creek tributaries to the Myakka River and un-named headwater tributary streams. Manatee County Property Appraiser ownership records indicate that the Applicant would need to complete numerous real estate transactions to secure an access corridor route, regardless of the corridor's location.

In addition to securing an access corridor, the Applicant would need to complete prospecting, acquire the W-2 property, develop mining studies, get State and County approvals, complete site design, and complete construction of a CSA. This would need to be accomplished before mining the ore needed to replace the existing Wingate production.

The Site W-2 alternative contains 2,188 acres of NWI wetlands and 2,229 acres of SWFWMD wetlands. SWFWMD wetlands comprise 25.7% of the site within the 10-mile radius.

This alternative may have mineable phosphate ore, is within a practicable pumping distance of the Wingate Creek beneficiation plant, and may be permittable at the local and state level. However, the Applicant would need to acquire sufficient control over the properties between the beneficiation plant and this site to construct the access corridors, and would need to complete the required studies, mine plans, get the required permits, and construct a CSA in time to replace current production. Based on these logistical constraints, the Applicant believes the W-2 alternative is not a practicable alternative.

Because Site W-2 is predicted to produce 44.7 MMT of phosphate, and thus would not disrupt the Applicant's mining development sequence, and because it is located within a 10-mile practicable pumping distance of the beneficiation plant, the Corps has determined that the W-2 alternative does meet the Applicant's overall and project-specific need.

Considering the potential wetland impact acreage, as well as the need for a new access corridor across several areas with aquatic resources including five stream crossings, the Site W-2 alternative is more environmentally damaging than the Applicant's Preferred Alternative.

v. Pioneer: Consideration of this alternative assumes mining 4,983 of the 5,794 acres of the Pioneer site that are within 10 miles of the Wingate beneficiation plant. There is no current application to mine this parcel, and no

mine plan. Therefore, as stated in Section 4.c of this EA, the analysis of this alternative relies on an estimated mine plan with an assumed 14% preservation. This alternative requires approximately 30 miles of pipelines and 7 additional stream crossings (14 miles from the plant to the project boundary, 16 miles within the project boundary). Mining 4,983 acres at an assumed yield of 8,000 tons of phosphate rock per acre, mining this alternative would produce approximately 40 MMT of phosphate. It is unknown if either FDEP or Hardee County would approve mining on this site. The Corps will conservatively assume that the Applicant could obtain the necessary approvals. This alternative would not disrupt the Applicant's planned overall mining sequence.

The Applicant provided the following statement about potential access corridors between this alternative and the Wingate Creek beneficiation plant:

Given the distance between the Wingate beneficiation plant and the Pioneer/West Pioneer site, the access corridor route needs to be as straight as possible to approach the practicability limit. Review of Manatee and Hardee County Property Appraiser ownership records documents over 15 separate real estate transactions would need to be successfully consummated to acquire a direct access route. Pipeline lengths of over 11 miles would be required, which would reduce operating factors to approximately 57 percent. At a minimum pumping distance of 10.8 miles from the Wingate beneficiation plant, the Pioneer/West Pioneer site marginally exceeds USACE's practicable pumping distance criterion (FAEIS page 3-11). At a more probable distance of 13 to 15 miles, this alternative clearly would not meet the pumping distance practicability criterion. Therefore, this site is also not practicable.

As stated in Section 4.c of this document, there are exceptions to the ten-mile distance. Although the Applicant states that they would need to complete "15 separate real estate transactions", other submittals indicate that the Applicant owns or controls sufficient property within the boundaries of the Pioneer, Ona, Wingate East and Wingate Creek parcels. Therefore, the Corps has determined that the Applicant could construct a pipeline between this alternative and the Wingate Creek beneficiation plant.

The Pioneer alternative contains 1,708 acres of NWI wetlands and 1,994 acres of SWFWMD wetlands. SWFWMD wetlands comprise 34.4% of the site within the 10-mile radius.

This alternative does have mineable phosphate ore. An access corridor from Pioneer across the Ona site to the Wingate plant would result in a circuitous route over 14 miles long, however it is the Corps' determination that the

Applicant could construct such a pipeline. Therefore, the Corps has determined that the Pioneer alternative would meet the overall project purpose. Based on the estimate that the Pioneer alternative could produce 40 MMT of phosphate and does not disrupt the Applicant's mining development sequence, this alternative also meets the Applicant's overall and project-specific need.

According to SWFWMD data, wetlands account for approximately 34.4% percent of the vegetative cover on Pioneer within 10-miles of the Wingate beneficiation plant. Considering the additional potential wetland impact acreage, as well as the need for an access corridor over 14 miles long with 7 more crossings than the Applicant's Preferred Alternative, the Pioneer alternative is more environmentally damaging than the Applicant's Preferred Alternative.

e) Minimization Alternatives: The Corps evaluated seven minimization alternatives for Wingate East:

a) Alternative 1A: the No Action – Uplands Only alternative;
b) Alternative 1B: Upland Mining with Crossings of WOUS;
c) Alternative 2A: Priority Avoidance;
d) Alternative 3A**:** Initial Landscape Systems Avoidance;
e) Alternative 3B: Avoidance of Key Landscape Systems;
f) Alternative 3C: The Applicant's Preferred Alternative, and;
g) Alternative 4: The Original Mine Plan - Maximum Recovery/Minimal Avoidance.

Each of these onsite alternatives represents a different mine plan for the project. Figures 2 through 8, which are attached to this decision document, provide maps of each of these plans.

As with the consideration of offsite/avoidance alternatives described in Section 4.c of this EA, the Corps considered both practicability and environmental criteria in its evaluation of the onsite/minimization alternatives.

The practicability evaluation criteria for these alternatives included the following:

a) The estimated total length of pipelines needed to carry material to the Wingate beneficiation plant and the estimated total length of the ditch and berm system around areas not to be mined;
b) the number of crossings needed for pipelines and draglines;
c) the ability of an alternative to support other necessary mine infrastructure such as clay settling areas (considering factors such as available area);

d) compliance with state (FDEP) or local (Manatee County) permitting requirements, and;
e) the ability of an alternative to meet the overall project purpose, and to produce a total of 28 MMT and meet the independently reviewed and verified project-specific need as described in Section 5.a of this document.

The environmental criteria included each alternative's expected level of impact to WOUS (based on the February 16, 2012, approved jurisdictional determination) and agreement with the mitigation framework described in Section 5.4 of the Final EIS. As stated in Section 5.4.1 of the Final EIS, the mitigation framework applies after consideration of the applicable presumptions for proposed discharges of fill into special aquatic sites under the Section 404(b)(1) Guidelines, and does not modify any law or regulation or the jurisdictional authority of USACE or any other agency.

As further described in Section 5.4.3 of the Final EIS, there are four steps in the mitigation framework. Step 1 is the identification of priority-based avoidance areas (see Final EIS Section 5.4.3.1). Such resources include perennial and intermittent streams, forested wetlands, and high quality herbaceous wetlands (defined as having an overall UMAM score of 0.7 or higher).

Section 5.4.3.1 of the Final EIS also describes how the Corps can apply other factors in Step 1 of the mitigation framework, such as giving greater priority to areas where multiple criteria apply, higher-quality forested wetlands and streams, and other environmental criteria such as wetland's or stream's location, surrounding land use, prior disturbance, connectivity, hydrology, plant species composition, and usage by wildlife or listed species.

The final part of Step 1 describes how the Corps can consider other criteria to support its evaluations, such as Critical Lands and Waters Identification Project (CLIP) priority, the Integrated Habitat Network, and 100-year floodplains.

Step 2 of the mitigation framework, as described in Section 5.4.3.2 of the Final EIS, is to determine the extent of onsite avoidance that is practicable under the Section 404(b)(1) Guidelines. Sections 4.e.i-vii below provide the Corps' evaluation of the seven alternatives for mine plans for the Wingate East.

Step 3 of the mitigation framework, as described in Section 5.4.3.3 of the Final EIS, evaluates opportunities to minimize impacts through best management practices and mine plan design. Section 4.f of this EA describes how the Corps considered Step 3 in its evaluation. Sections 5 ("Evaluation of the CWA Section 404(b)(1) Guidelines") and 6 ("Public Interest Review") of this EA also describe many of these minimization measures.

Section 8.c of this EA, “Compensatory Mitigation for Unavoidable Impacts to Aquatic Resources" addresses Step 4 of the mitigation framework (reference Final EIS Section 5.4.3.4).

The Corps' evaluations of the seven onsite/minimization alternatives for the Wingate East are as follows:

i. Alternative 1A: No Action – Uplands-Only:

This alternative involves mining only non-Corps jurisdictional areas, including uplands and aquatic resources not considered to be WOUS, with no impacts to any WOUS, including from dragline/dredge and infrastructure crossings.

Under this plan, the Applicant could recover 34% of the total commercially mineable phosphate reserves[7], or 12.2 MMT, from 1,160 acres of mined area. The total length of perimeter ditch and berm systems around avoided jurisdictional areas would be approximately 10.3 miles. Approximately 23 miles of pipelines would be needed to transport ore matrix to the Wingate plant and stormwater to the CSA, and to return process water and tailing sand back to the mine areas. The Applicant would not need to construct any wetland or stream crossings with this plan, and a reduced sized (468.3-acre) CSA, mostly located on areas already approved for mining, could handle this alternative's output. Figure 2 (Map 5-3-A) shows the location of this reduced CSA.

Without approval to cross WOUS, the only areas mineable using dredges would be uplands that abut the Wingate Extension dredge pool. The Applicant would have to use draglines to mine the remainder of Wingate East, however the current Manatee County permit requires the use of dredges west of Duette Road.

This mine plan avoids 100% of the onsite WOUS overall, and 100% of the wetlands and 100% of the streams prioritized by the mitigation framework. Because there are no impacts to resources prioritized by the mitigation framework, this alternative agrees with Steps 1 and 2 of the mitigation framework.

Alternative 1A meets the overall project purpose, however it does not meet either the overall or the project-specific need, and it would conflict with the current County permit.

[7] Based on the Applicants “Maximum Recovery/Minimal Avoidance” (Alternative 4) total of 36 MMT.

With no wetland or stream impacts, and agreement with Steps 1 and 2 of the mitigation framework, this is the least environmentally damaging alternative compared to the other onsite alternatives, including the Applicant's Preferred Alternative. However, with the ability to produce a total of 12.2 MMT of phosphate, this is not a practicable alternative.

Figure 3 (Map 5-3-B) shows this alternative.

ii. Alternative 1B: Upland Mining with Crossings of WOUS:

In this plan, the Applicant would only mine upland/non-Corps-jurisdictional areas, however the Applicant would impact wetlands and streams for dragline or dredge and infrastructure crossings. Figure 3 (Map 5-3-C) illustrates an upland area located in Section 34 in the southern portion of Wingate East, measuring about 42 acres, could be added to the 1,160 acres of upland mineable areas described in Alternative 1A (Figure 2).

This plan allows the Applicant to recover 35% of the total commercially mineable phosphate reserves, or 12.5 MMT, with approximately 1200 acres of mining. This mine plan requires two temporary dredge crossings of WOUS, 23 miles of pipeline would be needed, and a total of 10.4 miles of perimeter ditch and berm system would need to be constructed. A reduced sized (468.3-acre) CSA, mostly located on areas already approved for mining, could handle this alternative's output. Figure 1 (Map 5-3-A) shows the location of this reduced CSA.

Approval of crossings of WOUS at the approximate locations shown on Figure 3 would provide access to two mine blocks by the existing dredges mining at the adjacent Wingate Extension, which would eliminate the need to mine these blocks using draglines. The infrastructure corridor supporting Alternative 1A would be relied upon to connect the added mine area to the Wingate plant. The Corps will conservatively assume that the Applicant could obtain the necessary state and local approvals for this mine plan.

This mine plan impacts 2.1 acres of the onsite WOUS overall (avoiding approximately 99.8%), 1.8 acres of mitigation framework priority wetlands (avoiding approximately 99.8%) and no streams prioritized by the mitigation framework (100% avoidance).

Alternative 1B meets the overall project purpose, however it does not meet either the overall or the project-specific need. The Corps assumes that this alternative is available, because there are no conflicts with other agencies' requirements.

Because there are impacts to only 0.2% of the resources prioritized by the mitigation framework, this alternative agrees with Steps 1 and 2 of the mitigation framework. With less impact to WOUS overall and to framework wetlands and streams, and agreement with the mitigation framework, this alternative is less environmentally damaging than the Applicant's Preferred Alternative. However, with the ability to produce a total of 12.5 MMT of phosphate, this is not a practicable alternative.

Figure 3 (Map 5-3-C) shows this alternative.

iii. Alternative 2A: Priority Avoidance:

For this alternative, the Applicant would avoid mitigation framework priority wetlands and streams.

Under this plan, the Applicant could recover 59% of the total commercially mineable phosphate reserves, or 21.3 MMT, from 1,556 acres of mined area. The total length of perimeter berm systems around the avoided areas would be approximately 8.4 miles, and 10.3 miles of pipelines would be needed. The Applicant would not need to construct any WOUS crossings with this plan, and a reduced sized (468.3-acre) CSA could handle this alternative's output. Figure 1 (Map 5-3-A) shows the location of this reduced CSA. Dredge mining could be accomplished west of Duette Road because the Wingate Extension dredge pool abuts all mineable areas there. The Corps will conservatively assume that the Applicant could obtain the necessary state and local approvals.

This mine plan impacts 327.6 acres of onsite WOUS overall (avoiding approximately 65%). No impacts will occur to mitigation framework priority wetlands (avoiding 100%) or streams (100% avoidance).

Alternative 2A meets the overall project purpose, however it does not meet either the overall or the project-specific need. The Corps assumes that this alternative is available, because there are no conflicts with other agencies' requirements.

Because this alternative would avoid 100% of the resources prioritized by the mitigation framework, this alternative agrees with Steps 1 and 2 of the mitigation framework. With less impact to WOUS overall, no impacts to framework wetlands and streams, and agreement with the mitigation framework, this alternative is less environmentally damaging than the Applicant's Preferred Alternative. However, with the ability to produce a total of 21.3 MMT of phosphate, this is not a practicable alternative.

Figure 4 (Map 5-3-D) shows this alternative.

v. Alternative 3A**:** Initial Landscape Systems Avoidance plan:

Under this alternative, two landscape-scale areas would be avoided: one centered along the West Fork Horse Creek riparian corridor and the other encompassing highly functional upland and wetland habitat adjacent to the onsite segment of the Myakka River and associated tributaries.

Under this plan, the Applicant could recover 78% of the total commercially mineable phosphate reserves, or 28 MMT, from 3,216 acres of mined area. The total length of perimeter berm systems around avoided jurisdictional areas would be approximately 4 miles. The reduced sized CSA (468.3-acre) shown on Figure 1 (Map 5-3-A) would not be sufficient under this Alternative. Two larger CSAs (WE-1 & WE-2) shown on Figure 5 would be constructed to handle the clay output from this Alternative. The state rejected this mine plan during its review of the proposed project.

This mine plan impacts 626 acres of the onsite WOUS overall (avoiding approximately 33%), 272 acres of mitigation framework priority wetlands (avoiding approximately 54%) and 2,389 linear feet of priority streams (72% avoidance).

Alternative 3A meets the overall project purpose and the overall and project-specific need. Based on the state's rejection of this mine plan, the Corps does not consider this alternative to be available.

This alternative has the ability to produce a total of 28 MMT of phosphate. However, this alternative does not agree with Steps 1 and 2 of the mitigation framework. Because this alternative would impact more WOUS overall and more mitigation framework wetlands and streams, this alternative is more environmentally damaging than the Applicant's Preferred Alternative.

Figure 5 (Map 5-3-F) shows this alternative.

vi. Alternative 3B: Avoidance of Key Landscape Systems

Alternative 3B was developed during the discussions and field reviews among the Applicant and USACE, EPA, and FDEP staff conducted during 2013. This alternative avoids three landscape-scale areas.

Under this plan, the Applicant could recover 78% of the total commercially mineable phosphate reserves, or 28 MMT, from 3,148 acres of mined area. This plan involves no crossings of WOUS. The total length of perimeter berm

systems around avoided jurisdictional areas would be approximately 5.3 miles, and approximately 4 miles of pipelines would be needed. The reduced sized CSA (468.3-acre) shown on Map 5-3-A would not be sufficient under this Alternative. Two larger CSAs (WE-1 & WE-2) shown on Figure 6 would be constructed to handle the clay output from this Alternative. The state rejected this mine plan during its review of the proposed project.

This mine plan impacts 563 acres on the onsite WOUS overall (avoiding approximately 40%), 235 acres of mitigation framework priority wetlands (avoiding approximately 59%) and 2,389 linear feet of priority streams (72% avoidance).

Alternative 3B meets the overall project purpose and the overall and project-specific need. Based on the state's rejection of this mine plan, the Corps does not consider this alternative to be available.

This alternative does not agree with Steps 1 and 2 of the mitigation framework. Because this alternative would impact more WOUS overall and more mitigation framework wetlands and streams, this alternative is more environmentally damaging than the Applicant's Preferred Alternative.

Figure 6 (Map 5-3-G) shows this alternative.

vii. Alternative 3C: The Applicant's Preferred Alternative:

Alternative 3C is the project as described in Section 2(c) of this EA and avoids three landscape-scale areas.

This alternative allows the Applicant to recover 78% of the total commercially mineable phosphate reserves, or approximately 28 MMT, with 2,658 acres of mining. This plan involves no crossings of WOUS, 11 miles of pipelines, and 6.3 miles for the ditch and berm system around avoided areas. The reduced sized CSA (468.3-acre) shown on Map 5-3-A would not be sufficient under this Alternative. One larger CSA (WE-1) shown on Figure 7 would need to be constructed to handle the clay output from this Alternative. The state has approved this mine plan.

This plan impacts 553 acres of the onsite WOUS overall (avoiding approximately 41%), 226 acres of mitigation framework priority wetlands (avoiding approximately 61% in total, including 61% of forested wetlands and 38% of high quality herbaceous wetlands). No streams prioritized by the mitigation framework will be impacted (100% avoidance). The avoided area includes the riparian corridors of all natural intact intermittent streams onsite (there are no perennial streams proposed for impact).

The Applicant's Preferred Alternative meets the overall project purpose and the overall and project-specific need, and is practicable. Both FDEP and Manatee County have approved this mine plan, so the Corps considers it to be available.

Due to the contiguous avoided area, which contains natural streams, floodplains, high-quality forested and herbaceous wetlands, and upland buffers, this mine plan agrees with Steps 1 and 2 of the mitigation framework.

Figure 7 (Map 5-3-H) shows the Applicant's Preferred Alternative.

viii. Alternative 4: The Original Mine Plan - Maximum Recovery/Minimal Avoidance

In their June 2011 application submittal, the Applicant presented a mine plan that would have recovered 36 MMT of phosphate rock product by extracting ore from 3,362 acres. This plan involves no crossings of WOUS, 4 miles of pipelines, and 2.6 miles for the ditch and berm system around avoided areas. The reduced sized CSA (468.3-acre) shown on Map 5-3-A would not be sufficient under this Alternative. Two larger CSAs (WE-1 & WE-2) shown on Figure 8 would need to be constructed to handle the clay output from this Alternative. The state rejected this mine plan during its review of the proposed project.

Environmentally, this mine plan impacts 778 acres of the onsite WOUS overall (17% avoidance), 425 acres of mitigation framework priority wetlands (avoiding approximately 27%) and 5,196 linear feet of streams prioritized by the mitigation framework (40% avoidance).

This plan meets the overall project purpose and the overall and project-specific need. Based on the state's rejection of this mine plan, the Corps does not consider this alternative to be available.

This mine plan does not agree with Steps 1 and 2 of the mitigation framework, and has more overall impacts to WOUS, impacts to framework wetlands, and impacts to framework streams, than the Applicant's Preferred Alternative. This alternative is more environmentally damaging than the Applicant's Preferred Alternative.

Figure 8 (Map 5-3-I) shows this alternative.

f) Additional Minimization Measures - As stated in Section 5.4.3.3 of the Final EIS, "Impact minimization considerations may address both physical and

temporal impacts as well as direct, indirect, and cumulative impacts. Potential minimization measures include, but are not limited to, reducing the widths of infrastructure corridors; using existing CSAs and constructing contiguous CSAs so that they have a common wall; minimizing CSA footprints through design and operation methods; using existing stream crossings created for agricultural operations; sequentially reusing disturbed areas; using upland buffers; using recharge ditch systems; and maintaining habitat interconnectivity and existing wildlife corridors."

The measures described below are part of the mine plan for the Applicant's Preferred Alternative for Wingate East, as described in Sections 4.d.ii and 4.e.iii of this EA. As stated in Section 5.4.2 of the Final EIS, the Corps will detail the specific avoidance and minimization measures and approaches determined to be appropriate in the final Record of Decision/Statement of Findings for each project.

i. Wetland Corridors. There are no wetland crossing corridors required for the Applicant’s Preferred Alternative.

ii. CSAs: Implementation of the Applicant's Preferred Alternative allows the Applicant to minimize CSA impacts through several means including utilization of existing CSA capacity within the Applicant’s Southeast Tract, stage filling, proper design of the overall mine backfill plan to advantageously site the CSA in an area with greater overall mining depths, thereby maximizing unit storage capacity in terms of disposal capacity per acre of land, and proper consideration of site hydrology effects in developing the mine backfill plan such that changes in runoff or recharge are not disproportionally assigned to any one subwatershed associated with the project.

iii. Buffers: The proposed non-uniform buffers would preserve total upland and native upland habitat adjacent to the avoided wetlands within the range resulting from application of 100 foot and 300 foot uniform buffers, while preserving less non-native habitat areas than either. The width of this buffer is greatest where the native habitat is most prevalent and the wetlands are of a higher quality. All intermittent streams to be avoided would be buffered by over 100 feet from the closest stream bank, thereby meeting the water quality buffer criterion. In addition, all of the avoided corridors measure at least 200 feet wide and nearly all measure over 600 feet wide. Because the minimum overall width of each corridor exceeds 600 feet, the ecological objectives of the Final EIS have been met. A mine's ditch and berm system also buffers the adjacent area from the mining activity, providing approximately 300 feet of separation from the excavation.

v. Recharge ditches: For areas proposed to be mined with a dragline, the ditch and berm systems protect the adjacent WOUS and the surficial aquifer by maintaining water table elevations at sufficient levels to hydrate nearby wetlands or streams while the adjacent mine cuts are temporarily dewatered. The recharge ditch delivers water to the nearby wetland via the surficial aquifer. This delivery mechanism mimics an important natural pathway and provides high quality water. The ditch and berm system also constitutes an effective and recognized BMP to protect downstream waters from water quality impacts and is a requirement of FDEP's Environmental Resource permit (ERP) for the project.

vi. Maintaining connectivity: The Applicant has identified several key landscape features consisting of higher quality wetlands, streams, and upland corridors in large continuous blocks for preservation and enhancement. Preserving these areas will maintain connectivity both onsite and offsite.

5) Draft Evaluation of the CWA Section 404(b)(1) Guidelines

a) Factual determinations (40 C.F.R. § 230.11).

a. Physical Substrate (40 C.F.R. § 230.11(a)): As described in Section 4.10 of the Final EIS, phosphate mining leads to a moderate to major degree of effect on surficial geology and soils, including soils and substrate present in wetlands and waterbodies. However, the reclamation required by the state, and the mitigation required by the state and the Corps, will offset the adverse direct impacts of mining. In addition, the best management practices described throughout the Final EIS, including the perimeter ditch and berm system that separates the active mine from adjacent wetlands and surface waters, should protect those aquatic resources from indirect effects to substrate. Changes to the Wingate East project identified in Section 2.d do not alter the surficial geology and soils determinations made in the Final EIS.

b. Water circulation, fluctuation, and salinity (40 C.F.R. § 230.11(b)): Section 4.2.4 of the Final EIS describes the predicted effects of the Wingate East project on surface water flows within the Upper Myakka River and Horse Creek of the Peace River watershed. The Final EIS states that the project will have no measurable effect on Horse Creek and an insubstantial effect on the Upper Myakka River. The Final EIS also states that there is in effect no reduction to the stream flow resulting from the mining of Wingate East either on the Upper Myakka River subwatershed, the Myakka River watershed, or Charlotte Harbor, and no significant impact on the Horse Creek subwatershed. The Corps has determined that the reductions in mine life, mined area, and impacts to aquatic resources will result in reductions in potential impacts to surface water hydrology, and therefore there will be a

reduction in the degree and significance of potential impacts identified in the Final EIS. Therefore, changes to the Wingate East project identified in Section 2.d do not alter surface water flow determinations made in the Final EIS

Section 4.4.5 of the Final EIS describes the predicted effects of Wingate East on surface water quality. As stated there, Wingate East will have a minor to moderate degree of effect. Discharges from the mine will need to comply with both a Section 401 water quality certification (FDEP ERP) and a Section 402 NPDES permit (also issued by FDEP). Changes to the Wingate East project identified in Section 2.d do not alter surface water quality determinations made in the Final EIS.

c. Suspended particulate/turbidity (40 C.F.R. § 230.11(c)): Section 4.4.5 of the Final EIS describes the predicted effects of Wingate East on surface water quality. As stated there, Wingate East will have a minor to moderate degree of effect. Discharges from the mine will need to comply with both a Section 401 water quality certification (FDEP ERP) and a Section 402 NPDES permit (also issued by FDEP). Changes to the Wingate East project identified in Section 2.d do not alter surface water quality determinations made in the Final EIS.

d. Contaminant Availability (40 C.F.R. § 230.11(d)): Section 4.4.5 of the Final EIS describes the predicted effects of Wingate East on surface water quality. As stated there, Wingate East will have a minor to moderate degree of effect. Discharges from the mine will need to comply with both a Section 401 water quality certification (FDEP ERP) and a Section 402 NPDES permit (also issued by FDEP). Changes to the Wingate East project identified in Section 2.d do not alter the surface water quality determinations made in the Final EIS.

e. Aquatic Ecosystem Effects (40 C.F.R. § 230.11(e)): Section 4.5.1.4 of the Final EIS describes the predicted effects of Wingate East on aquatic biological communities. As stated in that section, the Applicant must provide compensation for lost function, which reduces the predicted level of impact to moderate, at the greatest. Similarly, Section 4.5.2.4 described the predicted effects on wetlands, and states that with mitigation, Wingate East would have no impact to a minor impact on wetlands. Changes to the Wingate East project identified in Section 2.d do not alter the aquatic biological communities determination made in the Final EIS.

Chapter 5 of the Final EIS further describes mitigation, including the Corps' requirements, the sequence of avoidance, minimization, and compensation, and the mitigation framework developed for the evaluation of the four main

phosphate mining projects. Section 8 of this document further describes the specific proposed compensatory mitigation for the Wingate East project.

f. Proposed Disposal Site (40 C.F.R. § 230.11(f)): The best management practices described throughout the Final EIS, including the perimeter ditch and berm system that separates the active mine from adjacent wetlands and surface waters, will confine the discharged materials within the mine boundaries. Changes to the Wingate East project identified in Section 2.d do not alter the determination made in the Final EIS.

g. Cumulative Effects (40 C.F.R. § 230.11(g)): Section 4.12 of the Final EIS describes the predicted cumulative effects of the four proposed phosphate mines, including Wingate East, plus two reasonably foreseeable future mines, plus other past, present, and reasonably foreseeable future actions, both mining-related and non-mining related, on five resource categories: surface water resources, groundwater resources, surface water quality, ecological resources (including aquatic resources and upland habitat), and economic resources. Since the publication of the Final EIS, the Applicant has identified multiple additional parcels that will be or are proposed to be part of existing phosphate mines within the cumulative effects study area. Neither this information nor the changes to the Wingate East project identified in Section 2.d alter the cumulative effects determinations made in the Final EIS. For further discussion of the Corps' consideration of the changes' potential impacts on groundwater resources and economic resources, see Section 6(l) and Section 6(p) of this EA, respectively.

h. Secondary Effects (40 C.F.R. § 230.11(h)): As stated in Section 4.1 of the Final EIS, the evaluations of impacts described in the Final EIS included both direct and indirect, or secondary, impacts. Therefore, Chapter 4 of the Final EIS describes the secondary effects of the Wingate East project. Changes to the Wingate East project identified in Section 2.d do not alter the secondary effects determinations made in the Final EIS.

b) Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem (40 C.F.R. Part 230, Subpart C): Chapter 4 of the Final EIS describes the Wingate East's potential impacts on substrate, suspended particulates/turbidity, water, current patterns and water circulation, normal water fluctuations, and salinity gradients. Changes to the Wingate East project identified in Section 2.d do not alter the potential impacts on substrate, suspended particulates/turbidity, water, current patterns and water circulation, normal water fluctuations, and salinity gradients determinations made in the Final EIS.

c) Potential Impacts on Biological Characteristics of the Aquatic Ecosystem (40 C.F.R. Part 230, Subpart D): Chapter 4 of the Final EIS describes the Wingate East's potential impacts on threatened or endangered species, fish, crustaceans, mollusks, and other aquatic organisms, and other wildlife. Changes to the Wingate East project identified in Section 2.d do not alter the potential impacts on threatened or endangered species, fish, crustaceans, mollusks, and other aquatic organisms, and other wildlife determinations made in the Final EIS.

As described in Section 7.f of this EA, the USFWS issued a Habitat Conservation Plan (HCP) and Incidental Take Permit (ITP) for the Florida scrub-jay on May 18, 2012, a revised ITP to address the eastern indigo snake on May 24, 2012, and provided a statement to the Corps addressing other federally-listed species on June 14, 2012.

As also described in Section 7.f of this EA, as a result of a November 6, 2013 discussion of the project with the National Marines Fisheries Service Protected Resource Division (NMFS-PRD), the Corps determined that the proposed mines would have no effect on the smalltooth sawfish. On December 16, 2015, the NMFS Habitat Conservation Division (NMFS-HCD) stated that they anticipated any adverse effects associated with the proposed project that might occur on marine and anadromous fishery resources would be minimal and, therefore, they did not object to issuance of a permit.

d) Potential Impacts on Special Aquatic Sites (40 C.F.R. Part 230, Subpart E): Chapter 4 of the Final EIS describes the Wingate East project's potential impacts on sanctuaries and refuges, wetlands, mud flats, vegetated shallows, and riffle and pool complexes. Chapter 5 of the Final EIS further describes mitigation, including the Corps' requirements, the sequence of avoidance, minimization, and compensation, and the mitigation framework developed for the evaluation of the four main phosphate mining projects. Section 8 of this document further describes the specific proposed compensatory mitigation for the Wingate East project. There are no coral reefs potentially impacted by the proposed Wingate East project. Changes to the Wingate East project identified in Section 2.d do not alter the potential impacts on sanctuaries and refuges, wetlands, mud flats, vegetated shallows, and riffle and pool complexes determinations made in the Final EIS.

e) Potential Impacts on Human Use Characteristics (40 C.F.R. Part 230, Subpart F): Chapter 4 of the Final EIS describes the Wingate East project's potential impacts on municipal and private water supplies, recreational and commercial fisheries, water-related recreation, and aesthetics. Changes to the Wingate East project identified in Section 2.d do not alter the potential impacts on municipal and private water supplies, recreational and commercial fisheries, water-related recreation, and aesthetics determinations made in the Final EIS.

f) Contaminant Evaluation and Testing (40 C.F.R. Part 230, Subpart G): Section 4.4 and Appendix D of the Final EIS describe the surface water quality monitoring, including aquatic biological monitoring, associated with existing phosphate mines, and reasonably expected to be required for proposed mines, including the Wingate East. Changes to the Wingate East project identified in Section 2.d do not alter the secondary effects determinations made in the Final EIS.

6) Draft Public Interest Review (33 C.F.R. § 320.4): The Corps considers both cumulative and secondary impacts on these public interest factors within the geographic scope as defined in Chapter 4 of the Final EIS. The Corps has used information as provided in the Final EIS to the maximum extent, as appropriate. The Corps considered the changes to the Wingate East project identified in Section 2.d, and their effect on the determinations made in the Final EIS. Additional information evaluated by the Corps for any of the specific public interest review factors is described below in the section for the specific factor.

a) Wetlands (33 C.F.R. § 320.4(b); Corps' Wetland Policy): Section 4.5.2 of the Final EIS describes how the Corps considered direct and secondary impacts to wetlands in the Final EIS. Section 4.5.2.4 of the Final EIS describes the specific evaluation of wetland impacts associated with the Wingate East project conducted for the Final EIS. Section 4.12.5 of the Final EIS describes the cumulative effects on ecological resources, including wetlands. The Corps has determined that the reduced wetlands impacts identified in Section 2.d (reductions in mine life, mined area, and impacts to aquatic resources) will result in reductions in potential impacts to ecological resources and surface water hydrology, and therefore there will be a reduction in the degree and significance of potential impacts identified in the Final EIS. Section 2(c) of this EA describes the currently proposed project, including the level of impacts to Corps-jurisdictional wetlands and surface waters (including streams). Section 8 of this EA describes the compensatory mitigation plan proposed to offset the project's wetland and surface water impacts.

b) Fish and wildlife (33 C.F.R. § 320.4(c)): Section 4.5.1 of the Final EIS describes how the Corps considered direct and secondary impacts to aquatic biological communities in the Final EIS. Section 4.5.1.4 of the Final EIS describes the specific evaluation of aquatic biological community impacts associated with the Wingate East project conducted for the Final EIS. Section 4.5.3 of the Final EIS describes how the Corps considered direct and secondary impacts to wildlife habitat in the Final EIS. Section 4.5.3.4 of the Final EIS describes the specific evaluation of wildlife habitat impacts associated with the Wingate East project conducted for the Final EIS. Section 4.12.5 of the Final EIS describes the cumulative effects on ecological resources. The Corps considered

changes to the project identified in Section 2.d, and their effect on the determinations made in the Final EIS.

As described in Section 7.f of this EA, the USFWS issued an HCP and ITP for the Florida scrub-jay on May 18, 2012, a revised ITP to address the eastern indigo snake on May 24, 2012, and provided a statement to the Corps addressing other federally-listed species on June 14, 2012.

As also described in Section 7.f of this EA, the result of a November 6, 2013 discussion of the project with the NMFS-PRD was a determination by the Corps that the proposed mines would have no effect on the smalltooth sawfish. On December 16, 2015, the NMFS-HCD stated that they anticipated any adverse effects associated with the proposed project that might occur on marine and anadromous fishery resources would be minimal and, therefore, they did not object to issuance of a permit.

c) Water quality (33 C.F.R. § 320.4(d)): Section 4.4 of the Final EIS describes how the Corps considered direct and secondary impacts to water quality in the Final EIS. Section 4.4.2 of the Final EIS describes the specific evaluation of water quality impacts associated with all of the action alternatives conducted for the Final EIS. Section 4.4.5 of the Final EIS describes the specific evaluation of water quality impacts associated with the Wingate East project conducted for the Final EIS. Section 4.12.4 of the Final EIS describes the cumulative effects on surface water quality. The Corps considered changes to the project identified in Section 2.d, and their effect on water quality determinations made in the Final EIS. The FDEP issued a water quality certification on November 16, 2015, as part of their ERP. If the Corps issues a permit for this project, it will include a general condition requiring compliance with the conditions specified in the certification as special conditions to that permit.

d) Historic, cultural, scenic, and recreational values (33 C.F.R. § 320.4(e)): Section 4.9 of the Final EIS describes how the Corps considered direct and secondary impacts to cultural resources and historic properties in the Final EIS. Section 4.9.4 of the Final EIS describes the specific evaluation of cultural resource and historic property impacts associated with the Wingate East project conducted for the Final EIS. Section 4.1.8.5 of the Final EIS describes how the Corps considered aesthetic impacts associated with phosphate mining, and Section 4.1.8.7 describes how the Corps considered effects on recreation. The Corps considered changes to the project identified in Section 2.d, and their effect on historic, cultural, scenic, and recreational values determinations made in the Final EIS. Section 7.f of this EA describes how the project complies with the National Historic Preservation Act of 1966.

e) Effects on limits of the territorial sea (33 C.F.R. § 320.4(f): The Wingate East project will not affect coastal waters, either by erosion or accretion.

f) Consideration of property ownership (33 C.F.R. § 320.4(g): The Applicant owns the property that is the subject of this permit application. The project will not affect navigation or riparian rights to navigable waters.

g) Activities affecting coastal zones (33 C.F.R. § 320.4(h): The Wingate East project will not affect coastal zones.

h) Activities in marine sanctuaries (33 C.F.R. § 320.4(i)): The Wingate East project is not within a marine sanctuary.

i) Other Federal, state, or local requirements (33 C.F.R. § 320.4(j)): Section 7 of this EA describes the project's compliance with other federal, state, and local requirements.

j) Safety of impoundment structures (33 C.F.R. § 320.4(k)): The construction and operation of the clay settling areas will comply with federal, state and local requirements. Specifically, the FDEP's NPDES permit requires compliance with Rule 62-672, F.A.C., and “Minimum Requirements for Earthen Dams Used in Phosphate Mining and Beneficiation Operations and for Dikes Used in Phosphogypsum Stack System Impoundments." Also, the Manatee County Development Order and Master Mine Plan will require additional inspection, reporting, and emergency management elements that apply to the dams proposed for the Wingate East.

k) Floodplain management (33 C.F.R. § 320.4(1)): Section 4.1.8.4 of the Final EIS describes how the Corps considered floodplain impacts associated with phosphate mining. As stated in that section, FDEP regulations state that no net encroachment into the floodplain, up to that encompassed by the 100-year event, can be allowed unless equivalent compensating storage is provided between the seasonal high water level and the 100-year flood level. FDEP issued an ERP for the project on November 16, 2015. Additionally, the Corps' evaluation of wetland impacts described in Section 6(a) of this EA includes consideration of floodplains

l) Water supply and conservation (33 C.F.R. § 320.4(m)): Section 4.2.4 of the Final EIS describes the predicted effects of the Wingate East project on surface water flows within the Upper Myakka River subwatershed and the portion within the Horse Creek subwatershed of the Peace River watershed. The Final EIS states that the project will have no measurable effect on Horse Creek and an insubstantial effect on the Upper Myakka River subwatershed. Changes to the Wingate East project identified in Section 2.d do not alter the water supply and conservation determination made in the Final EIS.

Section 4.12.2.5 of the Final EIS describes the cumulative effects of phosphate mining on water supply withdrawals in the lower Peace and Myakka Rivers, and Section 4.12.2.6 describes the magnitude and significance. As stated in those two sections, the cumulative effect of mining on water supply withdrawals has at most a minor level of effect. Changes to the Wingate East project identified in Section 2.d do not alter the cumulative effects of phosphate mining on water supply determinations made in the Final EIS.

Section 4.4.5 of the Final EIS describes the predicted effects of Wingate East on surface water quality. As stated there, Wingate East will have a minor to moderate degree of effect. Changes to the Wingate East project identified in Section 2.d do not alter the surface water quality determinations made in the Final EIS. Discharges from the mine will need to comply with both a Section 401 water quality certification (FDEP ERP) and a Section 402 NPDES permit (also issued by FDEP).

Section 4.3.4 of the Final EIS describes the predicted effects of Wingate East on groundwater resources. As stated there, Wingate East will have a minor degree of effect on any aquifers.

Changes to the Wingate East project identified in Section 2.d do not alter the groundwater resources determinations made in the Final EIS. The Corps considered whether the proposed increase in production (as compared to the rate considered in the Final EIS) would lead to an increased rate of groundwater usage, albeit for a shorter timeframe. As stated in Section 4.3 of the Final EIS, the Corps used the permitted drought year annual average allocation rate in its groundwater modeling, to simulate a 'maximum rate' for groundwater usage. For the Wingate Creek project, including the Wingate East extension, this rate is 5.8 million gallons per day (mgd). As described in Section 4.3.4 of the Final EIS, at this pumping rate, the Corps determined that the Wingate East project would have a minor impact on the surficial aquifer system, the intermediate aquifer system zones 1 and 2, and a minor impact on the upper Floridan aquifer system, with none of these impacts being significant.

In response to a request for information on groundwater usage, the Applicant stated that the estimated groundwater usage is 3.15 mgd for the increased production rate, which is below the permitted drought year average pumping rate of 5.8 mgd as used in the Final EIS groundwater modeling. The Applicant further stated that it does not propose to request a modification of its Integrated Water Use Permit (IWUP) to increase the allocation for Wingate East. Therefore, based on the lack of changes to the conditions considered in the Final EIS groundwater hydrology analysis for the Wingate East project, the Corps has determined that the

increased production rate does not change the determinations for the degree of effect or significance in the Final EIS for groundwater hydrology for Wingate East.

Section 4.12.3.12 of the Final EIS describes the cumulative effect of phosphate mining on groundwater resources, and Section 4.12.3.13 describes mitigation, monitoring, and adaptive management measures to protect groundwater resources. As stated in those two sections, the cumulative effect of phosphate mining on groundwater resources would at most be minor. Changes to the Wingate East project identified in Section 2.d do not alter the cumulative effect on effect groundwater resources determinations made in the Final EIS.

m) Energy conservation and development (33 C.F.R. § 320.4(n)): The Corps does not consider the proposed action, a phosphate mine, to be an energy project. In addition, the project will not significantly increase demands on energy production over and above the current levels at the Wingate Mine.

n) Navigation (33 C.F.R. § 320.4(o)): The proposed project will not have any effects on navigation.

o) Environmental benefits (33 C.F.R. § 320.4(p)): The proposed project will cause the short-term disruption of the existing altered ecosystem; however, successful implementation of the proposed reclamation plan and compensatory mitigation plans will result in long term benefits through the reclamation of native habitat and mitigation of aquatic resources. The proposed compensatory mitigation plan provides for the reestablishment, management, and preservation of wetland habitats.

p) Economics (33 C.F.R. § 320.4(q)): Section 4.6.4 of the Final EIS describes the predicted effects of the Wingate East project on the economy of Manatee County. Changes to the Wingate East project identified in Section 2.d do not alter the economic resources determinations made in the Final EIS.

The Corps considered whether the project changes would lead to a change in the output, value added, jobs, and employee compensation in Manatee County from what the Final EIS analysis predicted, as shown in Table 4-100 (Table 16 of Appendix H). For example, as defined in Appendix H of the Final EIS, output is “Total sales or value of goods and services produced. For the phosphate industry this would represent the value of the phosphate rock ready for shipment from the beneficiation plant.” Because the reduction in mining area leads to a decrease in overall production, the Corps considered how this affected the “output”, and considered whether that change affected the Corps’ economic effects determinations in the Final EIS.

The updated analysis considered the 17 years of mining and up to five years of reclamation activities and total production of 28 million tons as described above for the Wingate East alternative. The analysis maintains the original production rate of 1.3 million tons per year. There are no changes to the No Action Alternative.

The changes resulted in the following updates to Table 4-100:

Net Impacts with Wingate East Alternative as
Compared to No Action Alternative on Manatee County

	No Action	With Mine	Difference
Average Annual Employment	233	407	174
Present Value Labor Income	$809,100,000	$1,336,700,000	$527,600,000
Present Value – Value Added	$1,605,600,000	$2,650,300,000	$1,044,700,000
Present Value Output	$2,741,500,000	$4,526,300,000	$1,784,800,000

Updated Table 4-100 – Wingate East Project with Changes

The Corps has determined that the changes to the proposed Wingate East project result in reductions to the increases in the economic factors described. However, these reductions do not change the determinations for the degree of effect or significance in the Final EIS for economic resources for Wingate East.

q) Mitigation (33 C.F.R. § 320.4(r)): Chapter 5 of the Final EIS further describes mitigation, including the Corps' requirements, the sequence of avoidance, minimization, and compensation, and the mitigation framework developed for the evaluation of the four pending phosphate mine applications. Section 8 of this document further describes the specific proposed compensatory mitigation for the Wingate East project.

r) Conservation: Decades of agricultural conversions have resulted in a degraded condition for many of the onsite wetlands. As described in Section 4 of this EA, and in accordance with the mitigation framework described in Section 5.4 of the Final EIS, the Applicant has preferentially avoided forested wetlands, higher- quality herbaceous wetlands, and stream systems in its mine plan. As described in Section 8 of this EA, the Applicant also proposes to preserve and manage these avoided areas as part of the compensatory mitigation plan.

s) Shore erosion and accretion: The proposed action will not affect shore erosion or accretion.

t) Safety: Industry OSHA requirements will be in place during all construction activities. Section 4.8 of the Final EIS addresses the potential effects of radiation associated with phosphate mining. Changes to the Wingate East project identified in Section 2.d do not alter the determinations made in Section 4.8 of the Final EIS.

u) Food and fiber production: The recovered phosphate ore will likely be processed into fertilizer and animal feed supplements. This is a direct benefit to food and fiber production.

7) Other Federal, State, and Local Requirements

a) Section 401 of the Clean Water Act: The FDEP issued a water quality certification on November 16, 2015, as part of their ERP (Permit Number 0095520-025).

b) Section 307(c) of the Coastal Zone Management Act: The FDEP issued a coastal zone management consistency determination on November 16, 2015, as part of their ERP.

c) Section 302 of the Marine Protection, Research and Sanctuaries Act: This proposed project is not located in a marine sanctuary as established by the Secretary of Commerce under authority of Section 302 of the Marine Protection, Research and Sanctuaries Act of 1972.

d) Fish and Wildlife Act of 1956, Migratory Marine Game-Fish Act, Fish and Wildlife Coordination Act, and other acts protecting fish and wildlife resources: Chapter 4 of the Final EIS describes the Wingate East's potential impacts on threatened or endangered species, fish, crustaceans, mollusks, and other aquatic organisms, and other wildlife.

As described in Section 7.f of this EA, the USFWS issued an HCP and ITP for the Florida scrub-jay on May 18. 2012, a revised ITP to address the eastern indigo snake on May 24, 2012, and provided a statement to the Corps addressing other federally-listed species on June 14, 2012.

As also described in Section 7.f of this EA, as a result of a November 6, 2013 discussion of the project with the National Marines Fisheries Service Protected Resource Division (NMFS-PRD), the Corps determined that the proposed mines would have no effect on the smalltooth sawfish. On December 16, 2015, the NMFS Habitat Conservation Division (NMFS-HCD) stated that they anticipated any adverse effects associated with the proposed project that might occur on marine and anadromous fishery resources would be minimal and, therefore, they did not object to issuance of a permit.

As described in Section 7.j of this document, on December 16, 2015, the NMFS Habitat Conservation Division (NMFS-HCD) stated that they anticipated any adverse effects associated with the proposed project that might occur on marine

and anadromous fishery resources would be minimal and, therefore, they did not object to issuance of a permit.

e) National Historic Preservation Act of 1966: Section 6.3 of the Final EIS describes how the actions considered in that document, including this proposed action, will comply with the National Historic Preservation Act of 1966. The SHPO, by letter dated January 23, 2008, stated that the proposed project is unlikely to affect cultural resources. If the Corps issues a permit for this project, it will include a special condition requiring protection of previously unidentified archaeological/cultural materials and notification of appropriate authorities including the SHPO and THPO.

f) Endangered Species Act:

On May 18, 2012, the USFWS issued an HCP and ITP for the Florida scrub-jay. A revised ITP to address the eastern indigo snake was issued on May 24, 2012, and provided a statement to the Corps addressing other federally-listed species on June 14, 2012, including a determination that the project is not likely to adversely affect the wood stork or crested caracara, and will have no effect on any other listed species.

On November 6, 2013, the Corps and NMFS-PRD held a meeting to discuss the effects of phosphate mining, including this project, on the smalltooth sawfish and the sawfish critical habitat unit in Charlotte Harbor. In regards to surface water quality effects, as described in Sections 4.4.5 and 4.12.4 of the Final EIS, and Sections 5 and 6 of this EA, individually and cumulatively the expected level of potential impact is low enough that there will be no effect downstream on the sawfish or its critical habitat. In regards to surface water quantity effects, as described in Sections 4.2.4 and 4.12.2 of the Final EIS, and Sections 5 and 6 of this EA, individually and cumulatively the expected level of potential impact is low enough that there will also be no effect downstream on the sawfish or its critical habitat. Therefore, the Corps determined that the proposed project would have no effect on the smalltooth sawfish.

g) Marine Mammal Protection Act of 1972: The proposed project does not affect any marine mammals.

h) Section 7(a) of the Wild and Scenic Rivers Act: Section 6.10 of the Final EIS describes how the actions considered in that document, including this proposed action, will comply with Section 7(a) of the Wild and Scenic Rivers Act.

In addition, Section 4.2.4 of the Final EIS describes the predicted effects of the Wingate East project on surface water flows within the Peace and Myakka Rivers. The Final EIS states that the project will have minor to no effect on the

Peace and Myakka Rivers. Section 4.12.2 of the Final EIS describes the predicted cumulative effects on the Peace River and the Myakka River, and Section 4.12.2.6 describes the magnitude and significance of those cumulative effects. As stated in the Final EIS, the cumulative effects are minor to no effect, and not significant.

i) Section 402 of the Clean Water Act: The State of Florida issued NPDES permit No. FL0032522-007-IWIS/NR on November 21, 2012. This permit authorized an increase in the footprint of the existing 3,033-acre Wingate Creek Mine property boundary to approximately 16,055 acres. The expanded permit footprint includes the existing 660-acre Wingate Extension property, the proposed 3,635-acre Wingate East property, and approximately 8,677 acres transferred from the Fort Green Mine Complex. The transferred areas include CSAs FM-1 and FM-2 (both to be utilized by the proposed Wingate East Mine), Fort Green Mine Complex Outfall D-004 (renamed WC-004), pipeline corridors, and other parcels of preserved land or land in various stages of reclamation.

Three surface water discharges (outfalls) are authorized. Outfall WC-001 discharges excess mine recirculation water and stormwater into Wingate Creek, a tributary of the Myakka River. Outfall WC-002 discharges excess mine recirculation water and stormwater into Johnson Creek which flows into Wingate Creek, a tributary of the Myakka River. Outfall WC-004 (transferred from the Fort Green Mine) discharges excess mine recirculation water and stormwater into Horse Creek, a tributary of the Peace River. Discharges from these three outfalls are monitored to ensure that the water quality standards are not violated at the points of discharge. Also authorized are ground water discharges from waste clay settling areas and sand tailing disposal areas that impound wastewaters and discharge to ground waters. Groundwater is monitored to ensure compliance with water quality standards.

j) Magnuson-Stevens Fishery Conservation and Management Act: On December 16, 2015, the NMFS Habitat Conservation Division (NMFS-HCD) stated that they anticipated any adverse effects associated with the proposed project that might occur on marine and anadromous fishery resources would be minimal and, therefore, they did not object to issuance of a permit.

k) Migratory Bird Treaty Act: Section 6.12 of the Final EIS describes how the actions considered in that document, including this proposed action, will comply with the Migratory Bird Treaty Act.

8) Compensation and other mitigation actions;

a) Description of impacts: The Applicant proposes approximately 553 acres of impacts to Corps-jurisdictional wetlands and surface waters within the Myakka

River watershed. This includes 543 acres of wetland impacts, and 10 acres of impact to other surface waters such as cattle ponds and upland-cut ditches. Proposed impacts to streams as a linear measurement total 10,023 linear feet within the Myakka River watershed. No impacts to Corps-jurisdictional wetlands, other surface waters, or streams are proposed within the Peace River watershed.

The Applicant provided a wetland functional analysis using UMAM. Within the Myakka River watershed, there will be 83.6 units of function loss due to forested wetland impacts, and 121.4 units of functional loss due to herbaceous wetland impacts. Within the Peace River watershed, there will be 0 units of function loss to forested wetlands, and 0 units of functional loss to herbaceous wetlands.

The Applicant provided a stream functional analysis using FDEP's Stream and River Habitat Assessment Procedure. Within the Myakka River Watershed, there will be 4,911 units of functional loss due to the stream impacts. Within the Peace River watershed, there will be 0 units of function loss due to the stream impacts.

The Corps has not finalized its review of these functional assessments.

b) Mitigative Actions (33 C.F.R. § 320.4(r) and 40 C.F.R. Part 230, Subpart F): Chapter 4 of the Final EIS describes actions proposed by the Applicant to avoid, minimize, and offset adverse impacts to the human and natural environment associated with phosphate mining in addition to the avoidance, minimization, and compensation of impacts to aquatic resources. For example, Section 4.1.8.1 describes the best management practice of watering down roads within the mine to reduce fugitive dust and protect air quality. Section 4.1.8.5 describes how the berms around the mine function as a visual barrier to protect aesthetics, in addition to being part of the overall water management system. Chapter 5 of the Final EIS provides information about compensatory mitigation for impacts to aquatic resources and mitigation alternatives for phosphate mining within the Central Florida Phosphate District, with consideration of the mitigation proposed at that time for the four pending phosphate mine applications (Wingate East, Ona, South Pasture Extension, and Desoto).

Sections 4.e and 4.f of this EA describe the Applicant's proposed alternatives for avoidance and minimization of impacts to aquatic resources associated with the Wingate East project. Section 8.c of this EA describes the Applicant's proposed plan for compensatory mitigation of impacts to aquatic resources for Wingate East.

c) Compensatory Mitigation for Unavoidable Impacts to Aquatic Resources (33 C.F.R. § 332): As stated in Section 5.1.2 of the Final EIS, on March 31, 2008, the Environmental Protection Agency and the Corps issued revised regulations governing compensatory mitigation for authorized impacts to wetlands, streams,

and other waters of the U.S. to advance the federal objective of "no net loss" of wetlands. These regulations, 33 C.F.R. Parts 325 and 332 and 40 C.F.R. Part 230 (the 2008 Compensatory Mitigation Rule), are designed to improve the effectiveness of compensatory mitigation to offset the loss of aquatic resource area and function, and to increase the efficiency and predictability of the mitigation project review process.

Section 5.5 of the Final EIS provides additional information on compensatory mitigation options as described in the 2008 Compensatory Mitigation Rule. As of March 30, 2017, there is one federally-approved mitigation bank whose service area covers the proposed project – Myakka. The Myakka River Bank has 8.71 freshwater forested credits and 57.66 freshwater herbaceous credits available. This bank has no specific stream credits available. Based on the current functional assessment of the project's impacts as described in Section 8.a of this EA, the available mitigation banks do not have sufficient numbers of credits available to compensate for all of the proposed wetland impacts, and have no credits available to compensate for the proposed stream impacts. There are no in-lieu fee projects whose service areas cover the proposed project.

Therefore, the Applicant proposes to implement a program of both offsite and onsite, in-kind, permittee-responsible mitigation to offset unavoidable impacts to aquatic resources associated with the construction and operation of the Wingate East phosphate mine. The Applicant states that this permittee-responsible mitigation is the most appropriate and practicable mitigation alternative based on consideration of project-specific circumstances, such as the availability of mitigation banks or in-lieu fee programs, and the watershed approach.

In regard to the watershed approach, the Applicant states that the proposed mitigation plan addresses watershed needs for the Myakka River identified in the Charlotte Harbor National Estuary Program Comprehensive Conservation and Management Plan (CCMP). The CCMP constitutes a watershed plan pursuant to 33 C.F.R. § 332.3(c). The Charlotte Harbor National Estuary Program stated in a letter to the Applicant dated September 9, 2016, that overall, “on-site and off-site mitigation plans have been designed to support implementation of the CHNEP’s Comprehensive Conservation and Management Plan.” The Applicant also states that the proposed mitigation plan addresses watershed needs for the Myakka River identified in the Southwest Florida Water Management District’s Myakka River Comprehensive Watershed Management Plan.

In accordance with 33 C.F.R. § 332.4(c), the Applicant has provided a compensatory mitigation plan which includes the following 12 components:

i. Objectives: The Applicant's proposed mitigation plan includes the following:

a. Preservation of 292 acres of on-site wetlands (258 acres forested and 33 acres herbaceous) and 11,474 linear feet of streams before commencement of mining;

b. enhancement and preservation of 27 acres of on-site wetlands (7 acres forested and 20 acres herbaceous) before commencement of mining;

c. reestablishment of 598 acres of on-site wetlands (206 acres forested and 392 acres herbaceous), 8,045 linear feet of on-site streams on a rolling basis across the site, as reclamation follows behind mining, and preservation of the reestablished wetlands and streams after they have achieved the required success criteria;

e. establishment of 45 acres of off-site herbaceous wetlands at the adjacent Wingate Extension Mine, and preservation of the reestablished wetlands after they have achieved the required success criteria;

f. preservation of 37 acres of off-site forested wetlands and 2,350 linear feet of streams within the Myakka River Headwaters Offsite Mitigation Area;

g. enhancement and preservation of 8 acres of off-site wetlands (5 acres forested and 7 acres herbaceous) and 2,424 linear feet of off-site streams within the Myakka River Headwaters Offsite Mitigation Area;

h. establishment of 4 acres of off-site wetlands (1 acre forested and 3 acres herbaceous) within the Myakka River Headwaters Offsite Mitigation Area, and preservation of the established wetlands after they have achieved the required success criteria.

ii. Site Selection: As stated above, the available mitigation banks do not have sufficient credits available to compensate for the proposed wetland impacts or any stream credits at all; therefore the Applicant-proposed mitigation is the most appropriate and practicable mitigation alternative.

The proposed preservation areas include the area avoided as described in Section 4.e.iii of this EA. The proposed enhancement areas are also within the avoided area. The Applicant based the locations of the reestablished wetlands and streams on extensive monitoring, data collection, analyses and modeling. Results of the modeling indicate that the proposed mitigation takes into account watershed needs and will result in ecologically self-sustaining mitigation.

iii. Site Protection Instrument: Perpetual conservation easements granted to the FDEP will provide require long-term protection of the mitigation areas. The conservation easements will grant third party rights of notice and enforcement to the Corps. The site protection instruments provided to the FDEP have not yet been verified to be in compliance with 33 C.F.R. Section 332.7(a).

iv. Baseline Information: As described in the June 1, 2012, public notice for the Wingate East project, the 3,635-acre project site is comprised of 939.8 acres of WOUS. Over 30 percent of the property has been converted from native vegetative cover into pastures, roads, livestock watering ponds, or utility corridors. Native upland cover (i.e. rangeland and forest) is present on approximately 42 percent of the site and wetland vegetative cover is present on approximately 26 percent of the site. The historic and physical land use is primarily agricultural, with most of the property used for cattle grazing.

The Applicant has collected ecological baseline data for the site since 2006 including wetland delineations, wetland quality assessments using UMAM, detailed vegetation and land use mapping, and wildlife and listed species surveys. A hydrologic assessment was also completed. Data collected for this analysis included stream and drainage area characteristics, topography, precipitation rates, measurements of evapotranspiration, and hydrogeology. The Corps considered this baseline information both in its evaluation of the proposed impacts associated with the Wingate East project and its evaluation of the compensatory mitigation.

v. Determination of Credits: The Applicant provided a functional assessment using UMAM indicating that the proposed mitigation provides 6.1 units of net functional gain for forested wetlands and 2.6 units of net functional gain for herbaceous wetlands, and a functional assessment using the FDEP stream habitat assessment methodology showing 8 units of net functional gain for streams.

vi. Mitigation Work Plan: The enhancement described in the application is based on the objective of returning portions of the Preservation Areas to native habitat more similar to pre-development conditions. This enhancement will improve the functional value of the Preservation Areas through the enhancement of uplands and wetlands.

For the wetland reestablishment mitigation, after mining and reclamation, the Applicant proposes to create forested and herbaceous wetlands on sand tailings, and then grade and cap the wetlands with suitable wetland

topsoil/muck, if available, or other suitable organic matter with specific depths and structure to be determined by habitat type. To create microhabitat and habitat heterogeneity within the wetlands, the Applicant will grade the created systems to provide a range of habitat types and distinct zonations, from seasonal to permanent inundation. In addition, the Applicant will install habitat enhancements including snags to encourage wildlife usage, and stumps, logs, and shrubs to provide hummocks in the created wetlands where appropriate. The Applicant will directly transfer small shrubs and trees from the future mining areas into the reestablished wetlands to the extent practicable. Where direct transfer or natural recruitment of vegetation is not sufficient, the Applicant will plant vegetation that is consistent with the species diversity and density of the targeted wetland community type.

The stream reestablishment incorporates in-stream channel design, as well as a comprehensive overview of all lotic site conditions, which include headwater wetlands and in-line wetlands and the surrounding habitat zones of flanking wetlands and terrestrial communities within and along the riparian valley. To accomplish these goals, forested corridors and native upland riparian zones will typically replace those that were historically cleared for agriculture on the Wingate East. The reclaimed valleys will form an unditched drainage network with a flow regime that is not artificially flashy like the existing ditched systems. The stream restoration plan pays significant attention to landscape scale associations important to overall stream function by matching drainage area to valley geomorphology, width of the meander belt, and functional process zone (FPZ) types and sequences. The design covers a full hierarchy of scales, restoring a series of habitat patches and zones progressing from in-stream meso-habitats, such as individual logs and pools a few feet long, to the geomorphic and hydraulic linkages of entire lentic, paralotic, and lotic waterbodies and their associated ecotones encompassing many acres. These landscape linkages are based largely on the historic conditions of the property, prior to land clearing and ditching, which will provide a better overall lotic system versus that existing immediately prior to mining. The successful implementation of the stream restoration plan will result in the restoration of historic native, pre-agricultural conditions, wherever practical.

vii. Maintenance Plan: The Applicant will implement a mitigation maintenance plan to ensure the constructed mitigation sites progress towards success as defined by the permit performance standards and in accordance with the mitigation work plan. Plan elements include inspections, nuisance/exotic species control/removal, and supplemental tree and herbaceous plantings.

viii. Performance Standards: If issued, the Corps permit for Wingate East will include required performance standards, or success criteria, for hydrology,

water quality, vegetative cover, and other criteria. Appendix I of the Final EIS and the issued DA permit for South Pasture Extension (SAJ-1993-01395) provide examples of ecological performance standards applicable to phosphate mining. The South Pasture Extension permit is available at: http://www.saj.usace.army.mil/Missions/Regulatory/Items-of-Interest/

ix. Monitoring Requirements: The Applicant will implement a monitoring program to gather the data necessary for the Corps to evaluate the status of the mitigation. Data collected will include but not be limited to coverage of desirable plant species and of nuisance/exotic plant species, dominance of plant species, hydrology, and tree health/viability and density.

The Applicant will summarize the mitigation wetland monitoring data into a report that will include the above information as well as observed wildlife usage, an overall ecological evaluation, and any actions that may be required to improve the system. To the extent practicable, reports will be tabular in form for ease of review and year-to-year comparisons. The Applicant will submit reports prior to the end of the second month following the month in which the monitoring event took place (e.g., monitoring event in September, report submitted no later than 30 November).

Subsequent to completion of the compensatory mitigation objectives, the Applicant will monitor herbaceous and shrub wetland mitigation areas semi-annually for the first three years and annually thereafter for a total of no less than five years of monitoring, and monitor forested wetland mitigation areas semi-annually for the first 5 years and annually thereafter for a total of no less than 10 years of monitoring.

x. Long-Term Management Plan: After the Corps' determination that a mitigation area has achieved the necessary performance standards, the Applicant will maintain the mitigation areas in perpetuity in accordance with mitigation objectives and an approved Long-term Management Plan. The long-term management plan will include a description of long-term management needs and the annual cost estimates for these active long-term management needs, an identified funding mechanism for the long-term management, a requirement for an Ecological Baseline Report, provisions for management of proposed secondary uses of the mitigation areas such as cattle grazing, hunting, and passive recreation, and annual reporting to document the ecological conditions within the post-release mitigation areas, the status of secondary activities conducted within the mitigation areas, and maintenance activities expenses. A surety bond and standby trust, reviewed and approved by the Corps, will provide the long term funding mechanism for the long term management needs of the mitigation areas.

xi. Adaptive Management Plan: If monitoring identifies habitat deficiencies such as low plant survivorship or exotic/nuisance vegetation, or if the Corps determines that any mitigation area is not meeting its goals, the Applicant will develop and implement a site-specific adaptive management/corrective action plan that addresses specific construction, maintenance, and/or enhancement measures to be implemented to achieve the design objectives. Items to be considered in the corrective actions may include adjusting wetland hydrology, supplemental plantings, or changes to the maintenance plan to address nuisance species negatively affecting the mitigation. Any such adaptive management plan will be submitted to the Corps for approval prior to implementation.

xii. Financial Assurances: Financial assurances for permittee-responsible mitigation are a mechanism that ensures that a sufficient amount of money will be available for use to complete or replace a mitigation provider's obligations to implement a required mitigation project and meet specified ecological performance standards in the event that the mitigation provider proves unable or unwilling to meet those obligations.

For the Wingate East project, the Applicant proposes to provide a financial responsibility mechanism equal to 110 percent (%) of the estimated mitigation costs for WOUS affected in the first three years of operation, including monitoring and maintenance. Further, the Applicant will update the financial responsibility yearly to cover, on a rolling basis, the cost of mitigation activities proposed to be undertaken over the next three year period, with a 10% contingency factor for any adaptive management that might be required. The Applicant will update the mechanism with revised costs until release. The Corps permit, if issued, will include a special condition requiring the financial assurances to be in place prior to commencement of the authorized activities.

The Corps has not yet completed its review of the Applicant’s compensatory mitigation plan. Prior to permit issuance, the Corps will ensure that the Applicant’s compensatory mitigation plan for Wingate East fully complies with the requirements of the 2008 Compensatory Mitigation Rule.

FIGURE 1

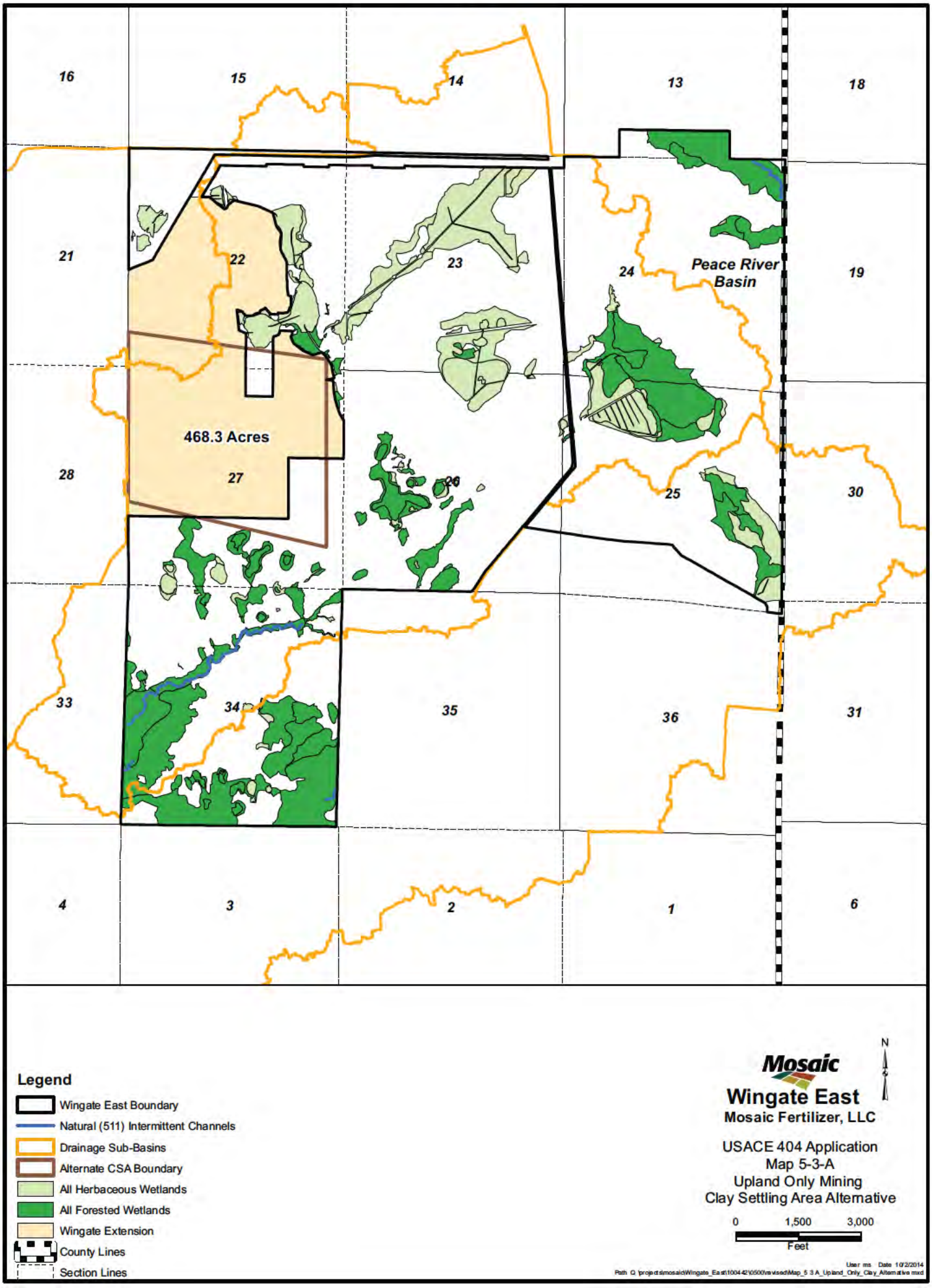

16
15
14
13
18
21
22
23
24
Peace River Basin
19
468.3 Acres
28
27
26
25
30
33
34
35
36
31
4
3
2
1
6
Legend
Wingate East Boundary
Natural (511) Intermittent Channels
Drainage Sub-Basins
Alternate CSA Boundary
All Herbaceous Wetlands
All Forested Wetlands
Wingate Extension
County Lines
Section Lines
Mosaic
Wingate East
Mosaic Fertilizer, LLC
USACE 404 Application
Map 5-3-A
Upland Only Mining
Clay Settling Area Alternative
N
0
1,500
3,000
Feet

FIGURE 2

Legend

- Access Crossings (200')
- Wingate East Boundary
- Infrastructure Corridor
- Natural (511) Intermittent Channels
- Unmineable: <700' Wide (321.7 Acres)
- Road/Property Line Ditch & Berm
- Other Waters
- Upland Only Mineable Areas (1,158.9 Acres)
- Inaccessible Stranded Uplands (788.3 Acres)
- 200' Ditch & Berm / Wetland Setback (102.7 Acres & 22,462 Ft.)
- 300' Ditch & Berm / Wetland Setback (248.0 Acres & 31,920 Ft.)
- All Forested Wetlands (570.4 Acres)
- All Herbaceous Wetlands (341.5 Acres)
- County Lines
- Section Lines

Mineable Areas

I - 134.3 Acres
II - 126.6 Acres
III - 534.8 Acres
IV - 161.6 Acres
V - 173.5 Acres
VI - 28.1 Acres

Mosaic

Wingate East
Mosaic Fertilizer, LLC

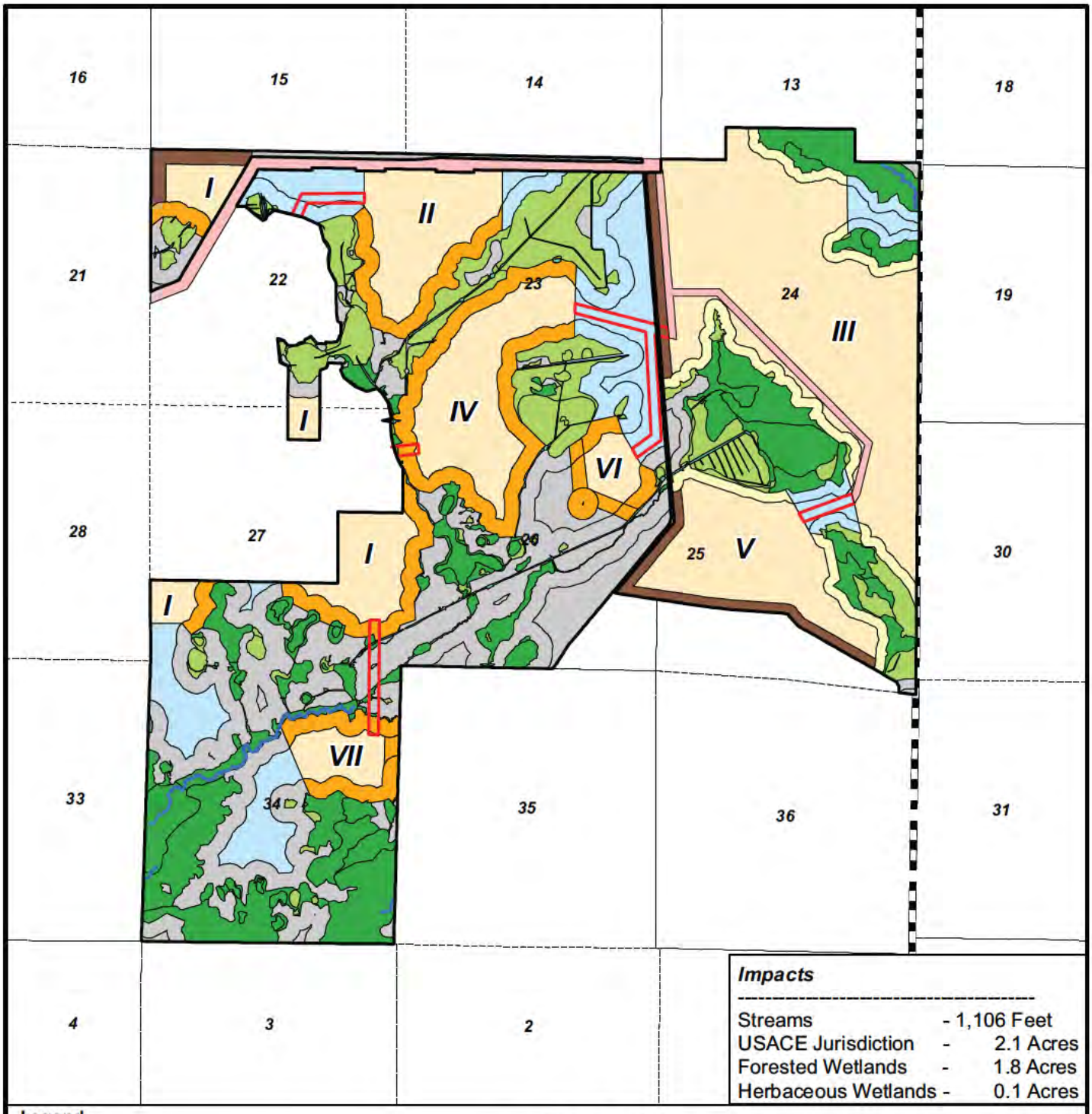
USACE 404 Application
Map 5-3-B
Alternative No. 1A -
Upland Only Mining

N

0 1,500 3,000
Feet

User: ms Date: 10/2/2014
Path: Q:\projects\mosaic\Wingate_East\100442\0500\revised\Map_5_3 B_Upland_Only_Alternative.mxd

FIGURE 3



Impacts

Streams	-	1,106 Feet
USACE Jurisdiction	-	2.1 Acres
Forested Wetlands	-	1.8 Acres
Herbaceous Wetlands	-	0.1 Acres

Legend

- Wingate East Boundary
- Natural (511) Intermittent Channels
- Infrastructure Corridor
- Access Crossings (200')
- Unmineable: <700' Wide (367.4 Acres)
- Road/Property Line Ditch & Berm
- Other Waters
- Upland Only Mineable Areas (1,200.7 Acres)
- Inaccessible Stranded Uplands (659.5 Acres)
- 200' Ditch & Berm / Wetland Setback (102.7 Acres & 22,462 Ft.)
- 300' Ditch & Berm / Wetland Setback (289.4 Acres & 37,013 Ft.)
- All Forested Wetlands (570.4 Acres)
- All Herbaceous Wetlands (341.5 Acres)
- County Lines
- Section Lines

Mineable Areas

I	-	134.3 Acres
II	-	126.6 Acres
III	-	534.8 Acres
IV	-	161.6 Acres
V	-	173.5 Acres
VI	-	28.1 Acres
VII	-	41.8 Acres

Mosaic

Wingate East

Mosaic Fertilizer, LLC

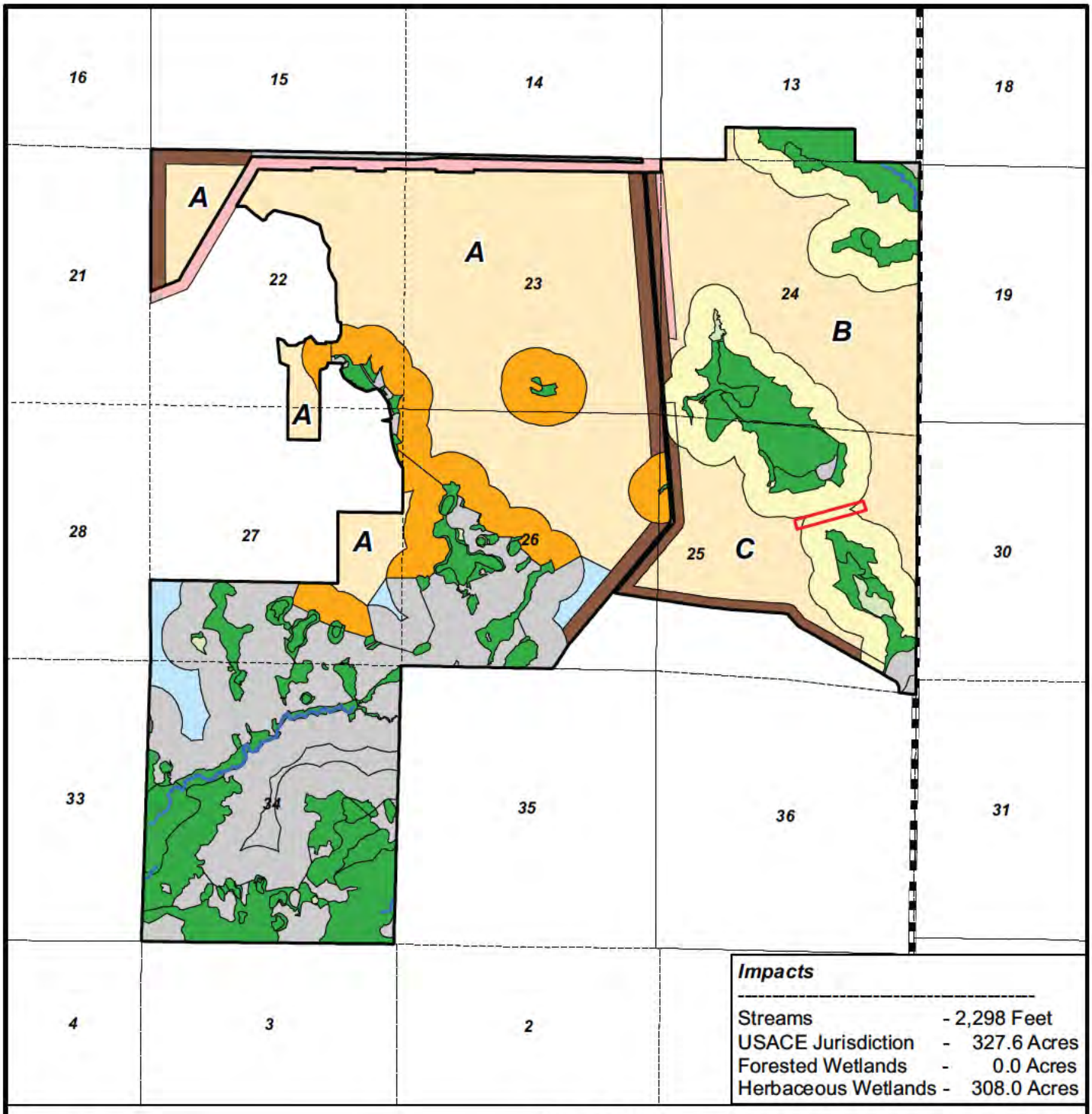
N

USACE 404 Application
Map 5-3-C
Alternative No. 1B -
Upland Only Mining With Crossings

0 1,500 3,000
Feet

User: ms Date: 10/2/2014
Path: Q:\projects\mosaic\Wingate_East\104442\0500\revised\Map_5-3-C_Upland_Only_Alternative_Crossings.mxd

FIGURE 4



Impacts

Streams	-	2,298 Feet
USACE Jurisdiction	-	327.6 Acres
Forested Wetlands	-	0.0 Acres
Herbaceous Wetlands	-	308.0 Acres

Legend

- Wingate East Boundary
- Section Lines
- Natural (511) Intermittent Channels
- Access Crossings (200 Ft.)
- Infrastructure Corridors
- Mineable Areas (1,555.8 Acres)
- Road/Property Line Ditch & Berm
- Unmineable: <700' Wide (56.9 Acres)
- Inaccessible Stranded Uplands (679.2 Acres)
- 500' Buffer Ditch & Berm / Wetland Setback (352.2 Acres & 24,793 Ft.)
- 600' Buffer Ditch & Berm / Wetland Setback (256.1 Acres & 19,748 Ft.)
- All Forested Wetlands (570.4 Acres)
- Herbaceous Wetlands >= 0.70 UMAM Values (11.5 Acres)
- County Lines

Mineable Areas

A	-	964.1 Acres
B	-	431.2 Acres
C	-	160.5 Acres

N

Mosaic

Wingate East

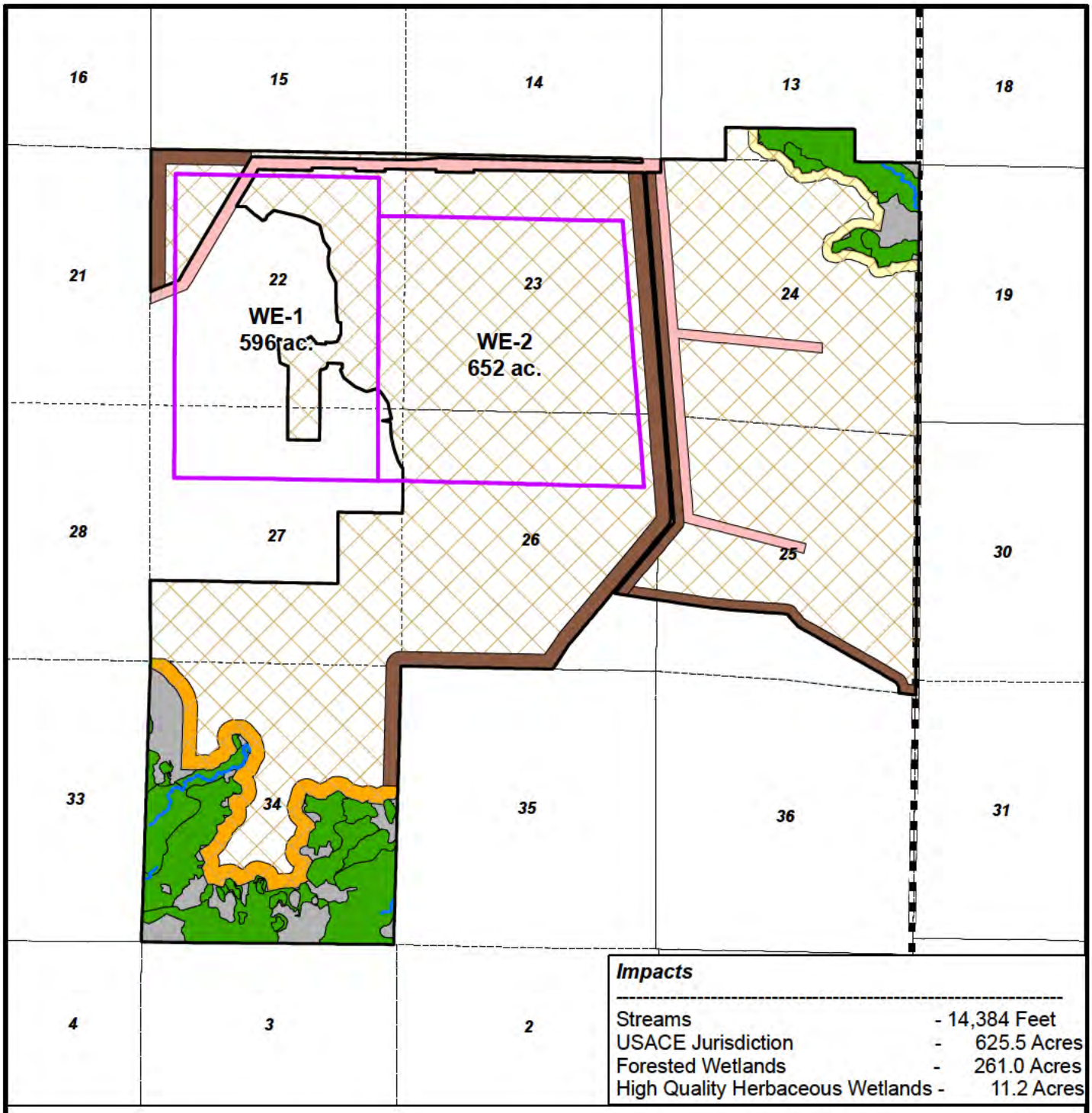
Mosaic Fertilizer, LLC

USACE 404 Application
Map 5-3-D
Alternative No. 2A - FAEIS
Mitigation Framework Avoidance

0 1,500 3,000
Feet

User: ms Date: 10/2/2014
Path: G:\projects\mosaic\Wingate_East\100442\0500\revised\Map_5-3-D_Spatial_Illustration_of_Mitigation_Framework.mxd

FIGURE 5



Impacts

Streams	-	14,384 Feet
USACE Jurisdiction	-	625.5 Acres
Forested Wetlands	-	261.0 Acres
High Quality Herbaceous Wetlands	-	11.2 Acres

Legend

- CSAs
- Wingate East Boundary
- Infrastructure Corridors
- Avoided Natural (511) Intermittent Channels
- Forested Wetlands Avoided (309 3)
- Road/Property Line Ditch & Berm
- Uplands & Herbaceous Wetlands Avoided (109.5 Acres)
- Plan A Alternative (3,216.0 Acres)
- 300' Ditch & Berm / Wetland Setback (13,637 Ft. / 99 3 Acres)
- 200' Ditch & Berm / Wetland Setback (7,503 Ft. / 34.3 Acres)
- Section Lines
- County Lines

Mosaic

Wingate East

Mosaic Fertilizer, LLC

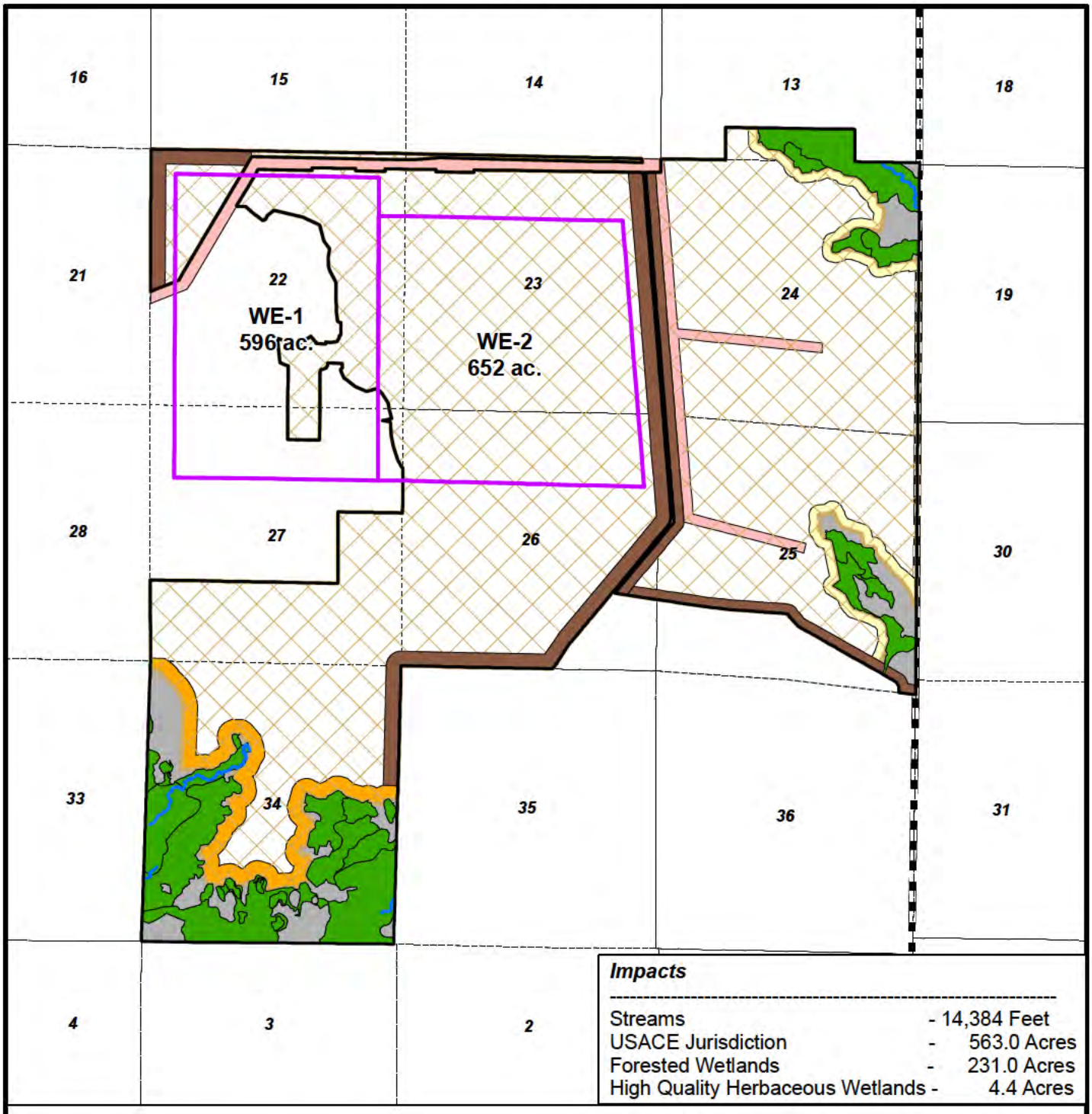
USACE 404 Application
Map 5-3-F
Alternative No. 3A - KLS - Plan A

N

0 1,500 3,000
Feet

User: ms Date: 10/2/2014
Path: Q:\projects\mosaic\Wingate_East\100442\0500\revised\Map_5-3-F_Plan_A_Alternative.mxd

FIGURE 6



Impacts

Streams	-	14,384 Feet
USACE Jurisdiction	-	563.0 Acres
Forested Wetlands	-	231.0 Acres
High Quality Herbaceous Wetlands	-	4.4 Acres

Legend

- CSAs
- Wingate East Boundary
- Avoided Natural (511) Intermittent Channels
- Forested Wetlands Avoided (339 5 Acres)
- Road/Property Line Ditch & Berm
- Plan B Alternative - 3,147.6 Acres
- Upland & Herbaceous Wetlands Avoided (147.7 Acres)
- 200' Ditch & Berm / Wetland Setback (14,608 Ft./ 67.6 Acres)
- 300' Ditch & Berm / Wetland Setback (13,637 Ft. / 99 3 Acres)
- Infrastructure Corridors
- Section Lines
- County Lines

Mosaic

Wingate East
Mosaic Fertilizer, LLC

USACE 404 Application
Map 5-3-G
Alternative No. 3B - KLS - Plan B

N

0 1,500 3,000
Feet

User ms Date 10/2/2014
Path G:\projects\mosaic\Wingate_East\100442\0500\revised\Map_5-3-G_Plan_B_Alternative.mxd

FIGURE 7

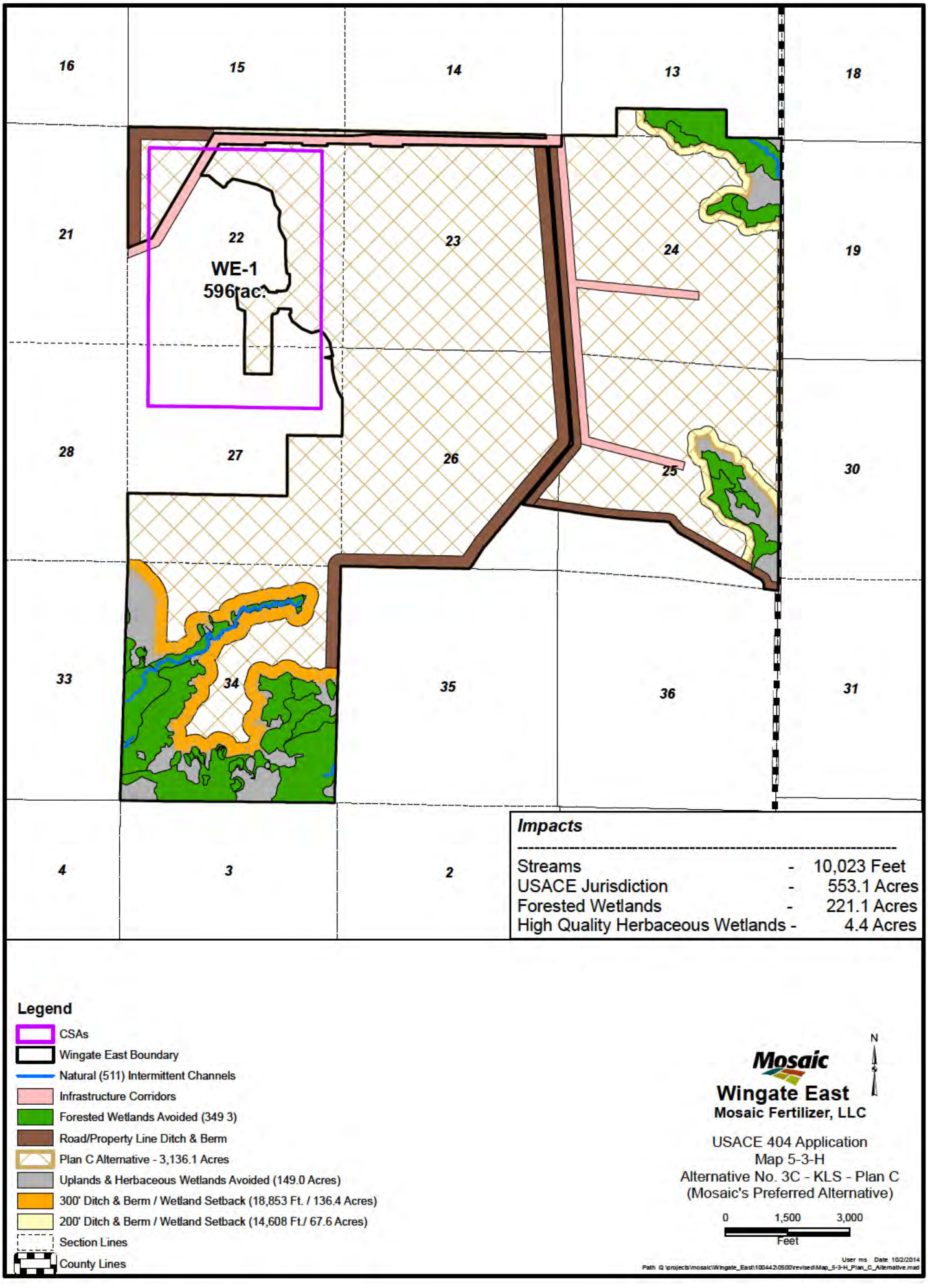

16
15
14
13
18
21
22
WE-1
596 ac.
23
24
19
28
27
26
25
30
33
34
35
36
31
4
3
2
Impacts
Streams - 10,023 Feet
USACE Jurisdiction - 553.1 Acres
Forested Wetlands - 221.1 Acres
High Quality Herbaceous Wetlands - 4.4 Acres
Legend
CSAs
Wingate East Boundary
Natural (511) Intermittent Channels
Infrastructure Corridors
Forested Wetlands Avoided (349 3)
Road/Property Line Ditch & Berm
Plan C Alternative - 3,136.1 Acres
Uplands & Herbaceous Wetlands Avoided (149.0 Acres)
300' Ditch & Berm / Wetland Setback (18,853 Ft. / 136.4 Acres)
200' Ditch & Berm / Wetland Setback (14,608 Ft./ 67.6 Acres)
Section Lines
County Lines
Mosaic
Wingate East
Mosaic Fertilizer, LLC
USACE 404 Application
Map 5-3-H
Alternative No. 3C - KLS - Plan C
(Mosaic's Preferred Alternative)
N
0
1,500
3,000
Feet
User: ms Date: 10/2/2014
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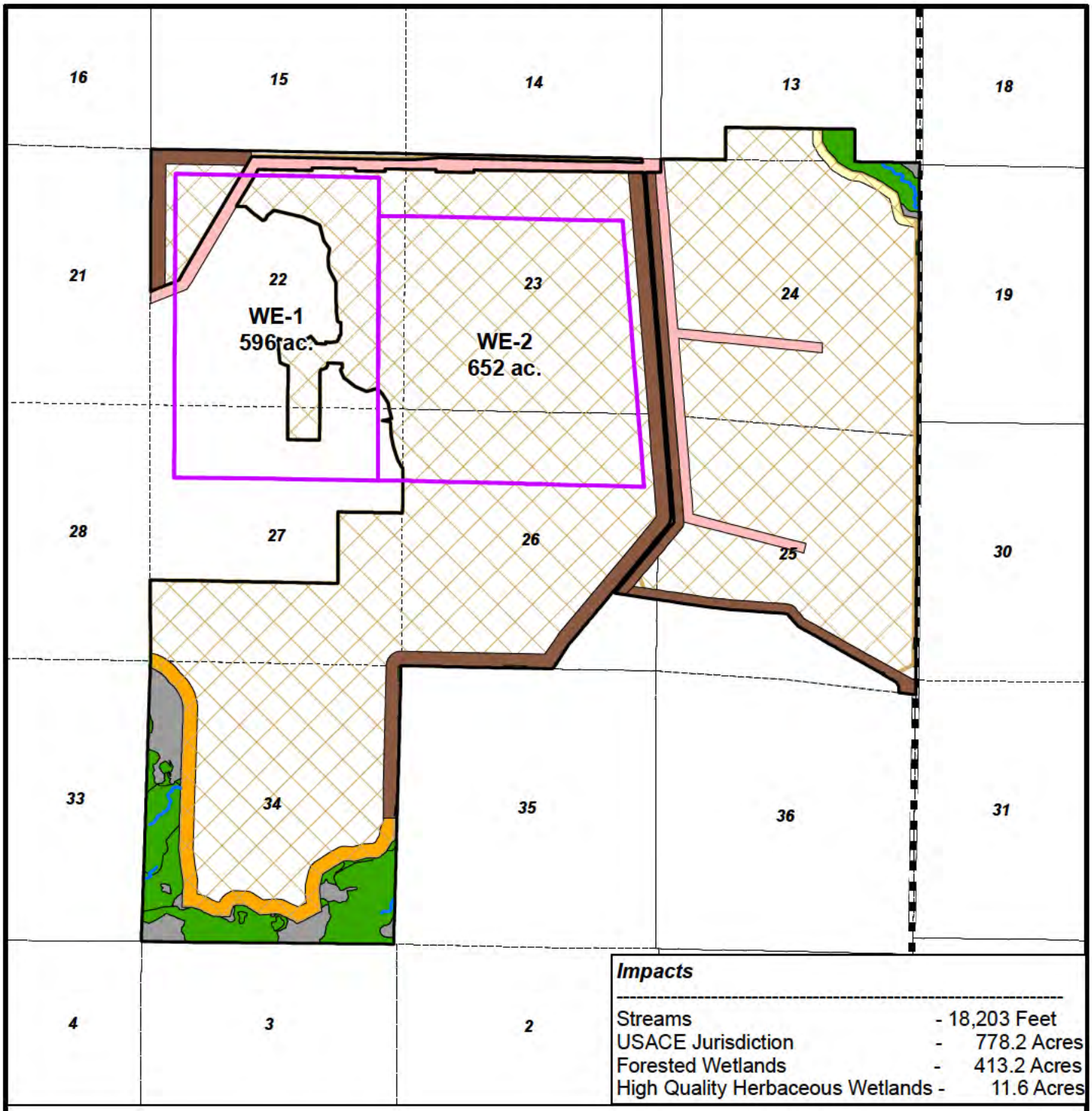
FIGURE 8



Impacts

Streams	-	18,203 Feet
USACE Jurisdiction	-	778.2 Acres
Forested Wetlands	-	413.2 Acres
High Quality Herbaceous Wetlands	-	11.6 Acres

Legend

- CSAs
- Wingate East Boundary
- Infrastructure Corridors
- Avoided Natural (511) Intermittent Channels
- Forested Wetlands Avoided (157 2 Acres)
- Road/Property Line Ditch & Berm
- Uplands & Herbaceous Wetlands Avoided (115.4 Acres)
- June 2011 Initial Plan - 3,362.1 Acres
- 300' Ditch & Berm / Wetland Setback (10,646 Ft. / 75 9 Acres)
- 200' Ditch & Berm / Wetland Setback (3,248 0 Ft. / 14.4 Acres)
- Section Lines
- County Lines

Mosaic

Wingate East

Mosaic Fertilizer, LLC

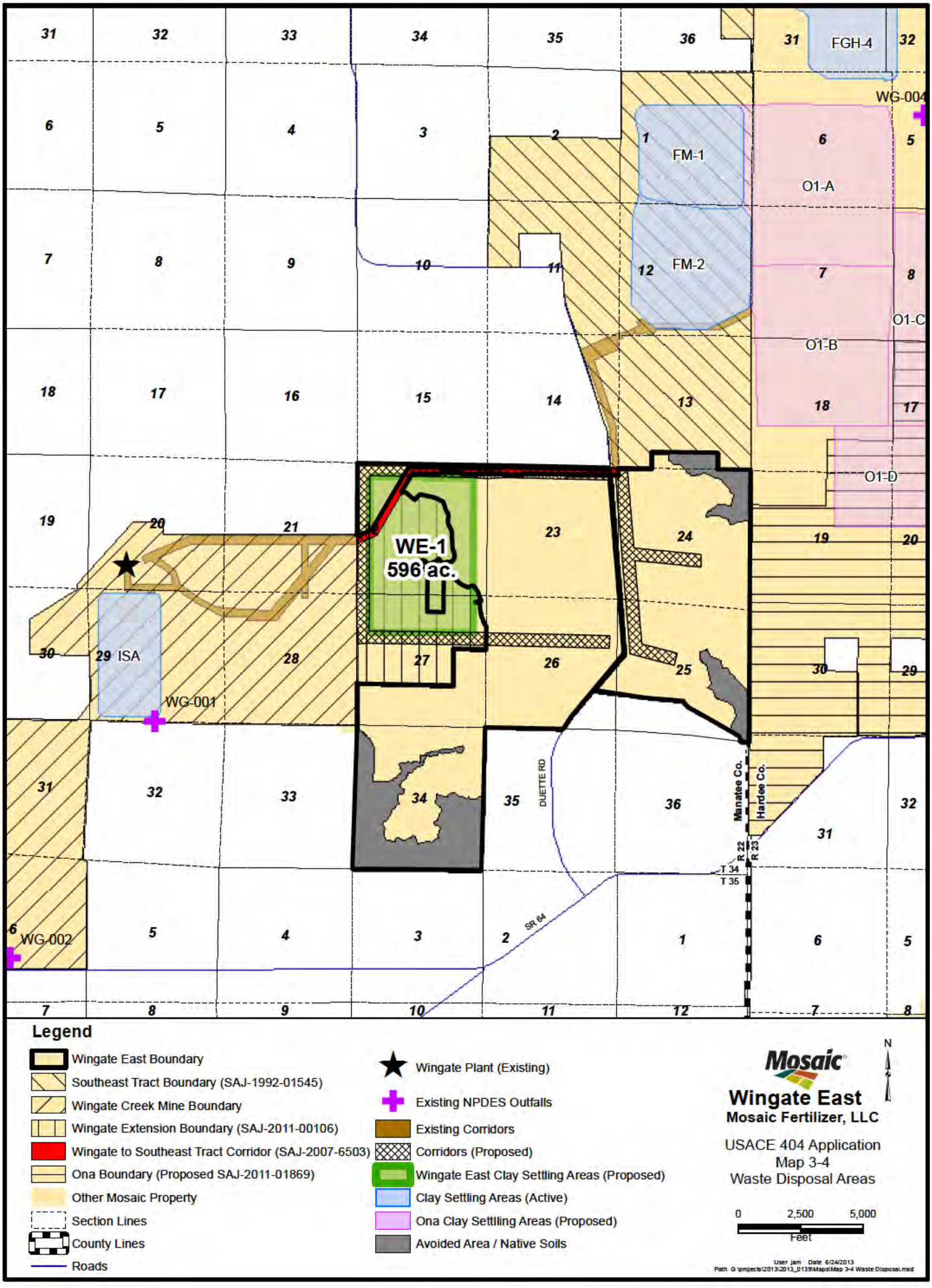
USACE 404 Application
Map 5-3-I
Alternative No. 4 - Maximum Ore Recovery (June 2011 Application)

N

0 1,500 3,000
Feet

User ms Date 10/2/2014
Path Q:\projects\mosaic\Wingate_East\100442\0500\revised\Map_5-3-I_Plan_June_2011.mxd

FIGURE 9


FGH-4
WG-004
FM-1
FM-2
O1-A
O1-B
O1-C
O1-D
WE-1
596 ac.
ISA
WG-001
WG-002
DUETTE RD
SR 64
Manatee Co.
Hardee Co.
R 22
R 23
T 34
T 35
Legend
Wingate East Boundary
Southeast Tract Boundary (SAJ-1992-01545)
Wingate Creek Mine Boundary
Wingate Extension Boundary (SAJ-2011-00106)
Wingate to Southeast Tract Corridor (SAJ-2007-6503)
Ona Boundary (Proposed SAJ-2011-01869)
Other Mosaic Property
Section Lines
County Lines
Roads
Wingate Plant (Existing)
Existing NPDES Outfalls
Existing Corridors
Corridors (Proposed)
Wingate East Clay Settling Areas (Proposed)
Clay Settling Areas (Active)
Ona Clay Settling Areas (Proposed)
Avoided Area / Native Soils
Mosaic
Wingate East
Mosaic Fertilizer, LLC
USACE 404 Application
Map 3-4
Waste Disposal Areas
N
0
2,500
5,000
Feet
User jam Date 6/24/2013
Path G:\projects\2013\2013_0139\Maps\Map 3-4 Waste Disposal.mxd