

CESAJ-RD-W

MEMORANDUM FOR RECORD

SUBJECT: Record of Decision and Statement of Findings for Department of the Army (DA) Permit Application SAJ-2011-01869

This document constitutes the Record of Decision, Clean Water Act Section 404(b)(1) Guidelines Evaluation, Public Interest Review, and Statement of Findings for DA Permit Application SAJ-2011-01869 pursuant to 40 C.F.R. §§ 1505.2 and 1506.4 and 33 C.F.R. Part 325, Appendix B, Paragraph 18.

1.0 Application:

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

1.2 Location and Affected Waterway: The Ona Mine property consists of approximately 22,483 acres located in Sections 4, 8 through 12, 19, 22 through 31, and 36, Township 34 South, Range 23 East; Sections 14 through 23, and 26 through 33, Township 34 South, Range 24 East; and Sections 4 and 5, Township 35 South, Range 24 East, in Hardee County, Florida. The majority of the project area is within the Peace River watershed (HUC 03100101), with approximately 300 acres within the Myakka River watershed (HUC 03100102). There are eight stream basins onsite: the Myakka River, the West Fork of Horse Creek, Oak Creek, Troublesome Creek, Brady Creek, Brushy Creek, Hickory Creek, and Horse Creek. The latter seven are all tributaries to the Peace River.

1.2.1 Approximate Central Coordinates:

Latitude: 27.508
Longitude: -81.9745

1.3 Existing Conditions: The 22,483-acre Ona property includes approximately 4885.3 acres of jurisdictional wetlands and open waters, 221,622.44 linear feet of jurisdictional tributaries (including streams and ditched streams), and 698.7 acres of wetlands not considered to be waters of the United States (WOUS). Existing land uses include 9258 acres of agricultural lands such as pasture, row crops, and citrus groves, and 9198 acres of native upland cover such as palmetto prairie, pine flatwoods, and live oak forest. Table 2-1-A-i in the compensatory mitigation plan (Attachment B to this decision document) provides further details on the types of existing land uses and their acreages. In general, the primary historic and current physical land use is agricultural, with most of the property used for cattle grazing.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

1.3.1 Project History: The U.S. Army, Corps of Engineers, Jacksonville District Regulatory Division (Corps) previously reviewed an application for Ona under DA file number SAJ-1998-02067, which included preparation of a Draft Environmental Impact Statement (EIS). The applicant withdrew that application.

On 3 August 2010, the Corps prepared a Memorandum for the Record (MFR) concluding that an areawide EIS¹ was the appropriate National Environmental Policy Act (NEPA) documentation for evaluating permit applications for phosphate mining projects in the Central Florida Phosphate District. On 28 January 2011, the Corps prepared a second MFR, which also confirmed that an EIS was the appropriate NEPA documentation for proposed phosphate mining projects. The Corps concluded that preparing the EIS for similar proposed mines would be more effective and efficient than preparing multiple project-specific EISs.

The Notice of Intent (NOI) for the EIS was published in the Federal Register on 18 February 2011 (76 Fed. Reg. 9560). Sections 1.8.2 and 1.8.3 of the Final EIS describe the NOI and the subsequent scoping process.

The Corps received a new application for Ona on 29 June 2011, and assigned it DA file number SAJ-2011-01869.

The Notice of Availability for the Draft EIS was published in the Federal Register on 1 June 2012 (Fed. Reg. 77(106), 32635-32636). Sections 1.8.7, 1.8.8, and 1.8.9 of the Final EIS describe the Notice of Availability, the public involvement process, and the public comments received on the Draft EIS respectively. The Corps also published a separate public notice for the Ona project on 1 June 2012.

On 3 May 2013, the Corps, U.S. Environmental Protection Agency (EPA), and Florida Department of Environmental Protection (FDEP) published a Notice of Availability for the Final EIS. As described therein, the Final EIS provided the project-specific NEPA analysis for the Ona project and three other similar proposed mining projects. See, e.g., Final EIS page 1-34. The scope of action analyzed in the Final EIS thus includes the Ona project. See Final EIS page 1-21 to 1-31. On 12 July 2013, the Corps, EPA, and FDEP published an Addendum to the Final EIS (Addendum).

¹ Hereafter in this document, unless otherwise indicated, "EIS" shall refer to the Areawide EIS for phosphate mining projects in the Central Florida Phosphate District.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

The Corps published a second public notice for Ona on 12 January 2018. The purpose of the second public notice was twofold: 1) to make a draft of the Section 404(b)(1) and public interest review analyses available to the public, as the Corps committed to do in the Final EIS, and 2) pursuant to 40 C.F.R. §§ 1501.3(b) and 1502.9(c)(2) to provide the public an opportunity to review a supplemental environmental assessment, which the Corps prepared to assist with the permit decision and further the purposes of NEPA.

The Final EIS, Addendum, and Supplemental decision document are available on the Jacksonville District, Regulatory Division's website, on the Items of Interest page under Central Florida Phosphate Mining:

<http://www.saj.usace.army.mil/Missions/Regulatory/Items-of-Interest/>

- 1.4 Work Proposed: The applicant requests a 30-year construction window to mine phosphate ore from approximately 16,842 acres² of property in Hardee County, Florida. The applicant proposes approximately 24 years of mining operations to extract the phosphate ore reserves on the proposed Ona Mine, and approximately six additional years to complete the reclamation and mitigation construction. The applicant proposes to process the mined ore at both the South Pasture beneficiation plant and the Four Corners beneficiation plant.

The applicant proposes to expand the capacity at the South Pasture beneficiation plant to handle the additional ore from Ona. Ona is within the ten-mile practicable pumping distance (described in Section 3.1.5 of the Final EIS) from the South Pasture beneficiation plant. Mosaic proposes to construct the necessary pipelines and other infrastructure across areas previously permitted for phosphate mining (South Pasture and South Pasture Extension Mines), as shown on Attachment C – Figure 1.

To transport material to and from the Four Corners beneficiation plant, Mosaic proposes to utilize an existing "operations corridor" (as shown on Attachment C – Figure 1) that crosses areas previously permitted for mining, and construct a new 'pre-washer' facility between Ona and Four Corners.

This plan extends the operational life of the South Pasture plant by 21 years, and of the Four Corners plant by 14 years. Upon completion of mining operations, the applicant proposes to reclaim all land disturbed by mining operations and establish

² The applicant proposes to disturb a total of 18,776 acres, including the 16,842 acres of mining.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

some areas as wetland mitigation as described below in Section 9.0 of this decision document.

The applicant proposes impacts to 3,426.1 acres of jurisdictional wetlands and open water areas such as ditches and cattle ponds, including 1357.9 acres of forested wetland impacts, 2060.3 acres of herbaceous wetland impacts, and 7.9 acres of impacts to open waters. By watershed, 38.54 acres of the total wetland impacts (10.27 acres forested, 28.27 acres herbaceous) are within the Myakka River watershed, and the remainder are within the Peace River watershed. The applicant also proposes approximately 100,766.8 linear feet of impact to Corps-jurisdictional streams, all of which are within the Peace River watershed.

The jurisdictional impacts include up to 14 acres of temporary impacts to WOUS for necessary consolidated dragline and infrastructure corridor crossings of an unnamed tributary to Brushy Creek, Horse Creek, and West Fork Horse Creek. Construction of these crossings would result in a total up to 12 acres of temporary impacts to forested wetlands, up to 2 acres of temporary impacts to herbaceous wetlands, and 1,794 linear feet of temporary impacts to streams.

Section 9.0 of this decision document describes the applicant's plan for compensatory mitigation of these impacts to waters to the United States. Attachment B provides the final, approved compensatory mitigation plan.

1.4.1 Project Changes Since the 1 June 2012, Public Notice and the Final EIS:

i. The applicant avoided an additional 2250 acres of area overall; a total of 3707 acres of avoidance currently versus 1457 acres of avoidance in 2012.

ii. The applicant reduced the impacts to Corps-jurisdictional wetlands and open waters from 4615.2 acres to 3426.1 acres, which includes a reduction in forested wetland impacts from 1823.8 acres to 1357.9 acres and a reduction in herbaceous wetland impacts from 2769.6 acres to 2060.3 acres.

iii. The applicant reduced the impacts to Corps-jurisdictional streams from 136,731 linear feet to 100,766.8.

iv. The applicant reduced the number of crossings of West Fork Horse Creek from two to one.

v. The applicant eliminated the on-site beneficiation plant, and now proposes to transport mined ore from the western portion of Ona to the Four Corners

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

beneficiation plant, via an existing “operations corridor” and a proposed ‘pre-washer’ facility, and transport ore from the eastern portion of Ona to an expanded-capacity South Pasture beneficiation plant.

vi. The applicant added approximately 160 acres of proposed mining in an area adjacent to the West Fork of Horse Creek, as shown on the attached Attachment C – Figure 2 (identified as the Parks-Beckley Parcel), which allowed for the reconfiguration of the clay settling areas (CSAs) in the adjacent area and additional avoidance of impacts to aquatic resources.

vii. The applicant has updated the compensatory mitigation plan as described in Section 9.0 of this document and as provided as Attachment B to address the Corps’ technical review of its proposed UMAM functional analysis, provisions for long-term management of the mitigation areas, and financial assurances for mitigation implementation and long-term management.

1.4.2 Updated Analyses: In order to address the project changes described in Section 1.4.1 above, at the Corps’ request, the applicant provided updated analyses of the direct, indirect, and cumulative effects of Ona on surface water resources, groundwater resources, water quality, aquatic biological communities, wetlands, wildlife habitat, and economic resources, and updated cumulative effect analyses for surface water resources, groundwater resources, ecological resources (wetlands and upland habitat), and economic resources, as described in Section 6.0 of this document. The Corps independently evaluated these updated analyses as it conducted its review of the proposed work in accordance with NEPA, the 404(b)(1) Guidelines, and the public interest review factors.

As also described in Section 6.0, the Corps determined that the project changes, such as the reductions in mining area and impacts to aquatic resources, would lead to either no changes or reductions in the direct and indirect effects of Ona for listed species, environmental justice, radiation, cultural and historic resources, and surficial geology and soils, and cumulative effects of Ona for surface water quality, as evaluated in the Final EIS. Therefore, the Corps based its review of the project’s potential impacts for these resource categories on the administrative record for the project, including the Final EIS analyses, Addendum, and Supplemental EA.

The Corps also updated its cumulative effects analysis to address changes in the study area since the Final EIS and to ensure that potential impacts associated with all past, present, and reasonably foreseeable actions have been considered. See Section 6.2 of this decision document.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

- 1.5 Avoidance and minimization statement from applicant: The 1 June 2012 public notice states: "The applicant is avoiding 1,456.6 acres of upland and aquatic resources associated with Horse Creek, the West Fork of Horse Creek, upper and lower Brushy Creek and a large high quality wetland area in the in upper east portion of the Ona Mine site. Mosaic is also proposing to minimize impacts through several minimization measures including the aforementioned ditch and berm recharge systems around the mined areas, water control measures, water conservation and recycling and other measures."

Section 5 of this decision document provides additional information about the final avoidance and minimization measures proposed by the applicant, and the Corps' determination about those measures.

- 1.6 Compensatory mitigation proposal from applicant: The 1 June 2012 public notice states: "As mitigation for impacting 4,593.4 acres of wetlands and 21.6 acres of open waters and ditches, the applicant is proposing to recreate 2,423 acres of forested wetlands and 3,103.6 acres of herbaceous wetlands onsite of function quality (using accepted functional assessment methods) equal to or greater than pre-mined wetlands. Since the original status of most shrub wetlands onsite was herbaceous wetlands, the applicant's reclamation and mitigation plan proposes to establish herbaceous wetlands rather than weedy shrub wetlands, and include buttonbush to provide a desirable shrub layer, to replace shrub-dominated areas disturbed by mining. As mitigation for impacting 136,731 linear feet of streams, the applicant is proposing to recreate 168,846 linear feet of streams onsite of functional quality equal to or greater than pre-mined streams. To accomplish this, the applicant is proposing to utilize a watershed approach in recreating wetlands type for type and streams such that there is improved aquatic resource connectivity over that which currently exists. Mitigation will be completed as soon as practicable after mining or mining activities are completed in each mine block. If the proposed onsite compensatory mitigation for aquatic resources is not sufficient, then the applicant intends to provide off-site mitigation to fully compensate for impacts to aquatic resources. The federal mitigation plan will be more completely developed as State reclamation and mitigation plans are developed."

The applicant has revised the mitigation plan since that 1 June 2012 public notice. Section 9 of this decision document provides additional information about the compensatory mitigation. Attachment B of this decision document provides a copy of the final, approved compensatory mitigation plan.

- 1.7 National Environmental Policy Act (NEPA) purpose and need:

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

1.7.1 Basic and Overall Project Purpose and Need:

Basic: To extract phosphate ore.

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.

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. In addition, the applicant provided the following statements (*italicized text*) about the specific need for the proposed project at an overall operational level and at a project specific level.

Overall Need: *Mosaic currently operates the Four Corners, South Fort Meade, South Pasture, and Wingate Creek Mines in the CFPD to meet its phosphate rock needs (Final EIS page 2-6). The Final EIS estimated that Mosaic produces an average of 17.1 million short tons of phosphate rock per year (MTPY) at its CFPD mines as follows: Four Corners – 6.1 MTPY; Hookers Prairie (closed in 2014) – 1.9 MTPY; South Fort Meade – 4.3 MTPY; South Pasture – 3.5 MTPY; and Wingate Creek – 1.3 MTPY (Final EIS Table 1-3). The Final EIS acknowledged that these estimated production rates were calculated based on mining at 85 percent of capacity and that actual production rates may fluctuate from year to year. (If production rates were calculated based on mining at 100% capacity, the total production rate would be 19.6 MTPY.)*

Mosaic needs to maintain its overall annual production levels in order to keep its place in the global phosphate product market and thereby remain a competitive and reliable supplier of phosphate products. The Hookers Prairie Mine completed extraction of its permitted reserves in 2014. All four of Mosaic's remaining CFPD mines are projected to complete extraction of permitted ore reserves between the end of 2020 and 2025³ (Final EIS pages 1-15 to 1-16). In order to maintain an

³ The Corps issued a permit for the South Pasture Extension project on 15 November 2016, which is expected to extend the life of the South Pasture Mine and beneficiation plant through approximately 2035. The Corps issued a permit for the Wingate East Mine on 24 January 2018, which is expected to extend the life of the Wingate Creek Mine and beneficiation plant through approximately 2037.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

uninterrupted annual average production rate of approximately 17.1 MTPY of phosphate rock and thereby ensure a continuous supply of phosphate rock beyond 2020, Mosaic has developed a comprehensive ore reserves development plan, which consists of: (1) extending mining operations onto the South Pasture Extension beginning in 2017 – approximately 3.5 MTPY⁴; (2) developing the western portion of the Ona Mine reserves beginning in 2017 – approximately 5.9 MTPY and the eastern portion of the Ona Mine reserves beginning in 2020 – approximately 3.8 MTPY; (3) extending the mining operations onto the Wingate East reserves beginning in 2017 – approximately 1.3 MTPY⁵; and (4) developing the DeSoto Mine reserves after 2020 – initially at approximately 2.6 MTPY. The plan includes continued use of the Four Corners plant, expansion of the capacity of the South Pasture plant, recent upgrades to increase capacity of the Wingate plant, and construction of a new plant at DeSoto. The final, future stage of the CFPD development plan will be to develop the Pioneer and Pine Level/Keys reserves, beginning in approximately 2040.

The mine development sequence is based upon those factors that determine which mines can produce phosphate rock when and where needed, and involve consideration of logistics, production needs, and projected phosphate rock demand. Implementation of the ore reserves development plan will provide Mosaic with the phosphate rock needed to supply its existing concentrates/fertilizer plants beyond 2020 at current production levels.

Project Specific Need: The Ona Mine has been planned to replace the Four Corners and South Fort Meade mines as those mines complete extraction of reserves, thereby maintaining an uninterrupted phosphate rock supply to meet projected demand. In 2014, Mosaic purchased the phosphate business assets of CF, including the South Pasture and South Pasture Extension ore reserves, as well as the South Pasture beneficiation plant, all of which adjoin the Ona Mine. The proposed Ona Mine's location adjacent to the existing Four Corners and South Pasture mines allows Mosaic to maximize efficiencies by using the existing beneficiation plants at those mines for the Ona Mine project.

Rather than construct a new beneficiation plant at the Ona Mine site as previously proposed, Mosaic proposes to process ore reserves from the western portion of the Ona Mine (West Ona) at the Four Corners plant, and to process

⁴ The Corps' 10 November 2016 Record of Decision-Statement of Findings for SPE considered an annual need of 3.37 MTPY.

⁵ The Corps' 22 January 2018 Record of Decision-Statement of Findings for Wingate East considered an annual need of 1.7 MTPY.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

reserves from the eastern portion of the Ona Mine (East Ona) at the South Pasture plant. Mosaic proposes to begin mining activities on the Ona site in 2017 and continue for approximately 24 years⁶. Mosaic would begin mining West Ona in 2017 to replace decreasing Four Corners reserves, and would begin mining East Ona in 2020 to replace decreasing South Fort Meade reserves. Mosaic proposes to expand the capacity of the South Pasture beneficiation plant, which will process reserves from both East Ona as well as Mosaic's now operational South Pasture and South Pasture Extension Mines (simultaneously, at times). Timely development of the Ona Mine is necessary for Mosaic to continue supplying its customers in the United States and over 40 countries with phosphate fertilizer and feed supplements beyond 2017.

CSA requirements are ore reserve-specific. At the Ona Mine, the extent of recoverable phosphate rock reserves would be limited by CSA siting constraints described in subsection 1.5.5.3 below. Each ton of phosphate rock produced from the Ona Mine would generate 1.51 dry tons of clay-sized minerals. Given that each acre of land mined at Ona would yield approximately 9,925 tons of phosphate rock product, recovery and separation of the phosphate rock from one acre would require about 33 acre-feet of CSA capacity.

The applicant has also stated that the total expected production from the Ona Mine, based on their currently proposed mine plan (the Applicant's Preferred Alternative described in Section 4.e.i of this decision document), is 178 million tons of phosphate.

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 need.

The Corps first reviewed the overall production information. The Applicant produces publicly available 10-K reports⁷ pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. These reports include production data for the Applicant's mines.

⁶ To help replace production from the Four Corners and South Fort Meade mines, the Applicant states that it needs to produce a minimum average of 6 MTPY from the Ona Mine for approximately 24 years.

⁷ Available from the applicant's website: <http://investors.mosaicco.com/Docs>

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

The reports provide production data for Four Corners of 7.37 million tons⁸ in 2011, 8.14 million tons in 2012, 7.04 million tons in 2013, 5.94 million tons in 2014, 6.27 million tons in 2015, 5.83 million tons in 2016, and 7.04 million tons in 2017, which averages out to 6.8 mtpy over that seven-year period.

For South Fort Meade, the reports show production data for South Fort Meade of 6.05 million tons in 2013, 4.51 million tons in 2014, 4.73 million tons in 2015, 4.62 million tons in 2016, and 4.84 million tons in 2017⁹, for a five-year average of 4.95 mtpy.

The combined average annual production for the Four Corners and South Fort Meade Mines is approximately 11.75 mtpy. The applicant has stated that they will rely on multiple mines to replace this production level, including a proposed minimum average of 6 mtpy from the Ona Mine.

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. However, the Corps does also consider production level when evaluating infrastructure requirements for a mine.

Based on the verified production data and the applicant's statement of need, the Corps will consider a need for 6 mtpy for 24 years, or a total of 144 million tons of phosphate recovered, in its alternatives analysis for this project.

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

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

⁸ The production values in the 10K reports are in metric tons, or "tonnes"; one metric ton is equal to approximately 1.1 short, or US tons. The production values provided in this section are in short tons, to be consistent with the rest of the document.

⁹ The South Fort Meade Mine operated only part of year in 2011 and 2012 due to litigation, therefore the Corps did not consider these years' production values to be representative and did not include them in the analysis.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

2.1 Jurisdictional Determination Information: The Corps issued an approved jurisdictional determination for the project, as then proposed, on 23 July 2013. The Corps issued an approved jurisdictional determination for the 160-acre addition on 3 August 2017.

3.0 Scope of Analysis

3.1 National Historic Preservation Act (NHPA) "Permit Area" – *The NHPA scope is defined as "permit area". The permit area for an undertaking is defined in 33 C.F.R. Part 325, Appendix C. The following three (3) tests must all be satisfied for an activity undertaken outside of waters of the United States to be included within the "permit area".*

3.1.1 Tests (*check all that apply*):

a. The activity outside of waters of the United States would not occur but for the authorization of the work or structures within waters of the United States.

b. The activity outside waters of the United States is integrally related to the proposed work or structures within waters of the United States (or, conversely, the proposed work or structures within waters of the United States must be essential to the completeness of the overall project or program).

c. The activity outside waters of the United States is directly associated (first order impact) with the proposed work or structures within waters of the United States.

3.1.2 Scope Determination: Activities outside waters of the United States are included because all of the above tests apply to this project.

3.1.3 NHPA Scope Summary and Description: The NHPA scope includes the entire Ona parcel, including upland areas and non-jurisdictional aquatic resources.

3.2 Endangered Species Act (ESA) "Action Area" – *The ESA scope is defined as "action area". The action area means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action; and, is defined in for an undertaking is defined in 50 C.F.R. § 402.02, Definitions.*

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

3.2.1 Determined Scope: The ESA scope includes the entire Ona parcel, including upland areas and non-jurisdictional aquatic resources, plus downstream aquatic resources potentially affected by the proposed activities.

4.0 Public Involvement (*Public Notice required by 33 C.F.R. § 325.3*):

4.1 i. EIS: Section 1.8 of the Final EIS describes the public involvement process for the EIS review, including the public meetings held ahead of the NEPA process, the EIS scoping, the project website, the interagency coordination including newsletter updates, the public meetings for the Draft EIS, and the Draft EIS comment review. Appendix A of the Final EIS and the Addendum to the Final EIS provide the comments received on the Draft EIS and the Corps' responses to those comments.

ii. Project-specific: The Corps received the application for the Ona project on 29 June 2011, and considered it complete on 11 May 2012. The Corps published a public notice for the project on 1 June 2012, with an initial 30-day comment period, which the Corps later extended to 60 days. The Corps published a second public notice for the project on 12 January 2018, to provide additional opportunity for public review and comment on a supplemental environmental assessment, draft CWA Section 404(b)(1) Guidelines analysis and draft public interest review. Attachment A of this decision document provides the comments that the Corps received in response to the 2012 and 2018 public notices, as described in Section 4.3 below.

4.2 Public Meeting(s): Yes

Discussion/Explanation: Section 1.8 of the Final EIS summarizes the public participation process for the EIS, including the public scoping meetings and the public meetings held during the Draft EIS comment period.

4.3 Public Notice Comments: The Corps has reviewed and considered all public comments submitted on the proposed Ona project. Attachment A provides comments received and the Corps' responses, organized into two sections. Section 1 provides a table summarizing the 2012 public notice comments and the Corps' responses, and then attaches the public comments as received. Section 2 provides the table summarizing the 2018 public notice comments and the Corps' responses, and then attaches the public comments as received.

4.4 Comments/Issues Forwarded to Applicant: The Corps sent the comments received on the 2012 public notice to the applicant on 29 August 2012. The

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

applicant provided responses to comments on 25 September 2013. The Corps sent comments on the 2018 public notice to the applicant on 13 February 2018. The applicant responded on 10 April 2018. Attachment A includes the Applicant's responses to the 2012 and 2018 comments in Sections 1 and 2 respectively.

The Corps has reviewed all comments received after close of the public notice comment periods. The comments provided information and concerns previously considered by the Corps. Therefore, those comments are not discussed further in this document but are included in the administrative record.

- 4.5 Corps Purview – The following comments are not discussed further in this document as they are outside the Corps purview: As shown in the comment response tables, the Corps did not provide further discussion on topics outside of the Corps' regulatory authority, or topics that the Corps considered to be outside the scope of analysis for this review, including but not limited to fertilizer manufacturing and mandatory reclamation of mined areas.

Section 1.3.1 of the Final EIS describes the scope of action for the EIS, and for the Corps' project-specific reviews of the four actions considered in the EIS, including Ona. As stated there, the Corps determined that the four actions are single and complete actions, and have independent utility from the fertilizer plants, including from the phosphogypsum stacks created from a byproduct of the manufacturing process. The fertilizer plants could conceptually continue operations using rock from other sources than the proposed mines. Therefore, the EIS, and the Corps' project-specific reviews of Ona and the other three actions, did not consider the direct and indirect effects of the plants or the phosphogypsum stacks. The cumulative impact analysis did consider impacts associated with the fertilizer plants and phosphogypsum stacks, where appropriate, along with other past, present, and reasonably foreseeable future actions, as described further in Section 10.2 of this decision document. There is one active phosphogypsum stack within the watersheds where the Ona project is located.

The Florida Department of Environmental Protection (FDEP) and the USEPA both directly regulate the fertilizer plants and phosphogypsum stacks. FDEP maintains a Phosphogypsum Management Program that regulates the design, construction, operation, and maintenance of phosphogypsum stack systems. USEPA regulates the plants and stacks under the Resource Conservation and Recovery Act of 1976 (RCRA). Under RCRA, USEPA defines and identifies hazardous waste; establishes standards for its transportation, treatment, storage, and disposal; and requires permits for persons engaged in hazardous waste

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

activities.

- 4.6 *Public Hearing Request (33 C.F.R. § 327) Requests for a public hearing shall be granted unless the district engineer determines that the issues raised within the request(s) for a public hearing are insubstantial or there is otherwise no valid interest to be served by the hearing. The district engineer will make such a determination in writing, and communicate his reasons therefor to all requesting parties.*

Public Hearing: Public hearings were requested, but denied.

Discussion/Explanation: As described in Sections 4.1 and 4.2 of this decision document and Section 1.8 of the Final EIS, the Corps held public meetings in accordance with NEPA requirements. In accordance with 33 C.F.R. § 327.4(b), the Corps determined that the issues raised by the requests for a public hearing were either insubstantial or there was otherwise no valid interest to be served by a hearing because the issues raised by the requestor were addressed in the EIS, Addendum, supplemental environmental assessment, or this ROD. The Corps received public hearing requests as follows:

<u>Date</u>	<u>Requested By</u>
15 June 2012	Beverly Griffiths, Sierra Club Florida Phosphate Committee
16 June 2012	Dr. Helen Jelks King, Protect Our Watersheds, Inc.
18 June 2012	Dennis Mader, People for Protecting Peace River
31 July 2012	Mary Olsson
9 July 2012	Patty Toft
3 June 2013	Sarasota County
12 February 2018	Jaclyn Lopez, Center for Biological Diversity

The Corps sent a letter to all of the above parties stating that their request for a public hearing had been denied, and providing the reasons for that denial.

- 5.0 **Alternatives Analysis** *(40 C.F.R. § 230.10, HQ Regulatory SOP July 2009, RGL 93-2, RGL 84-09) If the project is sited in a special aquatic site (such as a wetland), and if the project does not need to be in or near the special aquatic site to fulfill its basic purpose (i.e., the project is not "water-dependent"), it is presumed that there are practicable alternatives that do not involve special aquatic sites. To overcome this presumption, the applicant must clearly*

demonstrate to the Corps that practicable alternatives are not available. If the presumption is not overcome, the Corps must deny the permit application. If the project is not sited in a special aquatic site and/or is water-dependent, the applicant is not required to overcome the presumption that upland alternatives are available. However, the Corps must still address whether there are any upland alternatives (or alternatives with less impact), and if any are identified, the applicant must clearly demonstrate that they are not feasible. If such a demonstration cannot be made, the Corps must deny the permit application. The Corps performed an evaluation of alternatives, as described below:

- 5.1 Functional Alternatives: Section 2.2.6 of the Final EIS describes how the Corps considered functional alternatives to the proposed activity, such as using dredges instead of draglines, replacing phosphate-based fertilizers with other types of fertilizers, and importing phosphate rock from outside of the Central Florida Phosphate District. As described in that section, the Corps did not consider any of these alternatives to be reasonable under NEPA, and therefore did not carry them forward for further consideration. Based on the analysis of these functional alternatives in Section 2.2.6 of the Final EIS, the Corps has also determined that none of them are practicable alternatives pursuant to 40 C.F.R. § 230.10(b)(2).
- 5.2 Offsite/Avoidance Alternatives Screening Process and Evaluation Criteria: Section 2.2.4.1 and Appendix B 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 a list of five of the parcels identified in the Final EIS: Pioneer Tract, Desoto, Pine Level/Keys Tract, Site A-2¹⁰, and Site W-2¹¹.

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."

¹⁰ There is a potential 4280-acre Eastern Reserves expansion of the South Fort Meade – Hardee phosphate mine, as described further in Section 6.2.1 of this decision document, which would overlap with the hypothetical boundaries of Site A-2, as described in the Final EIS. The larger size of Site A-2 makes it more likely to meet the project-specific need, and therefore the Corps evaluated Site A-2 in this analysis rather than Eastern Reserves.

¹¹ The Corps issued a permit for the South Pasture Extension Mine project on 15 November 2016, and a permit for the Wingate East project on 24 January 2018. Therefore, these alternatives from the Final EIS are no longer considered an alternative mine site for Ona and are not part of this alternatives analysis.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

Section 3.1.5 of the Final EIS discusses a ten-mile practicable pumping distance for transporting material to and from a phosphate beneficiation plant. However, in situations where the applicant can construct an intermediate, 'pre-washer' facility between the mine and the plant, has a nearby source of power, such as an electrical substation, sufficient to run the facility, and is able to construct the necessary infrastructure such as pipeline corridors, that pumping distance can be increased by an additional ten miles. Therefore, in addition to considering whether a site is more or less than ten miles from a beneficiation plant, in the first step of the project-specific screening process the Corps also considered whether the applicant could construct a 'pre-washer' and the necessary infrastructure and therefore exceed that distance.

The Desoto and Pine Level/Keys Tract sites are approximately 20 miles away from the South Pasture beneficiation plant, and 13 miles away from the Wingate Creek plant. Site A-2 is within ten miles of the SFM-HC plant. Site W-2 is within ten miles of the Wingate Creek plant. Approximately 11,750 acres of Pioneer Tract's 25,231 acres is within ten miles of either the proposed pre-washer (to facilitate transport to the Four Corners plant) or the South Pasture beneficiation plant, and the Corps has assumed that the applicant could construct the necessary infrastructure to reach either facility.

In the case of Desoto, Pine Level/Keys Tract, and Site W-2, the applicant does not own or control all of the land necessary to construct the access corridors between these sites and the two beneficiation plants. The applicant would need to acquire many miles of access corridors, and construct pipelines and dragline crossings within the corridors. County Property Appraiser¹² ownership records indicate that the applicant would need to complete numerous real estate transactions to secure access corridor routes, regardless of the corridors' locations.

In addition to securing access corridors, the applicant would need to develop mining studies for any of the three parcels, get State and County approvals, complete site designs, and complete construction of CSAs, all of which would delay the commencement of mining. For the W-2 site, the applicant would also need to acquire the property and complete prospecting.

Finally, as shown on Attachment C – Figure 11, for Desoto or Pine Level/Keys, even if the applicant could acquire the land, develop a mine plan, and get the

¹² From the Hardee County Property Appraiser public website at <https://hardeepa.com/>, and the Desoto County Property Appraiser public website at <http://desotopa.com/>

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

necessary approvals in a timely manner, there is no source of electric power, such as a substation, to power a pre-washer in between those sites and the beneficiation plants to the north.

Alternatively, the applicant could construct a new beneficiation plant on any of these three parcels, however such construction would similarly delay the commencement of mining, as well as cost approximately \$1 billion dollars, according to the applicant.

Based on this information, the Corps did not consider Desoto, Pine Level/Keys Tract, or Site W-2 to be practicable, and eliminated them from further consideration as potential alternatives to Ona. The two remaining sites, Pioneer Tract and Site A-2, are within ten miles of a beneficiation plant, with no property ownership or other logistical barriers in between, or are further away from a plant and the Corps has assumed that the applicant could construct the necessary infrastructure.

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 project-specific alternatives analysis the Corps independently reviewed and verified both the practicability and the environmental impacts for each alternative. The Corps evaluated four alternatives for this step - the Applicant's Preferred Site Alternative (Ona), the No Action Alternative, and the two offsite alternatives (Pioneer Tract and Site A-2).

5.2.1 Practicability Criteria: The specific practicability criteria applied by the Corps included the following:

- i. The logistics associated with construction of the pipelines needed to carry material between an alternative and the beneficiation plant, including the total combined length of the pipelines and the availability of access corridors;
- ii. the number of stream crossings needed for pipelines (stream crossings);
- iii. the ability of an alternative to support other necessary mine infrastructure such as clay settling areas (considering factors such as available area);
- iv. compliance with state (FDEP) or local permitting requirements,
- v. the ability of an alternative to produce a total of 144 million tons, and meet the project-specific need as described in 1.7.1 of this document, and;
- vi. the ability of an alternative to fulfill the mining development sequence described in the overall need statement in Section 1.7.1 of this document.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

The pipeline information for criterion i) 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 6 mtpy production. Each dragline requires one matrix pipeline to the beneficiation plant and one sand tailings line back to the current reclamation site.

Also, for Ona, the applicant used specific information about the mine plan to provide this data. Because there are no mine plans for Pioneer Tract or Site A-2, the applicant provided estimates for the pipeline information.

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

The stream crossing information for criterion ii) relied on the mine plan for Ona, and on estimated plans for Site A-2 and Pioneer Tract.

For criterion iii), the CSA data used 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 alternatives with mine plans (and their associated onsite avoidance and minimization of wetland impacts), and the two alternatives without a mine plan.

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

For criterion v), the estimated production values for Ona relied on that alternative's mine plans. For Site A-2 and Pioneer Tract, the estimated production values assumed 16% preservation¹³. For all alternatives, the Corps used prospecting data provided by the Applicant.

For criterion vi), the Corps considered the Applicant's overall mining sequence as described in Section 1.7.1 of this document.

In addition to the practicability criteria, the Corps evaluated the environmental impacts of project alternatives. For the environmental criteria, the Corps considered onsite wetland acreage based on National Wetland Inventory data (NWI wetlands) and Southwest Florida Water Management District data

¹³ Based on the current proposal for the Ona Mine, as described in Section 2.d.i of this decision document.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

(SWFWMD wetlands), including a comparison of the area of wetland coverage for each parcel as a percentage of the overall acreage based on the SWFWMD wetland data. The Corps chose these criteria to ensure a consistent approach and because the data is publicly available. The Corps also considered the amount/distance of pipelines needed, and the number of stream crossings as environmental factors.

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 offsite alternatives evaluated in Section 5.2.2 of this decision document. Appendix C of the Final EIS has aerial photographs of the alternatives.

5.2.2 Offsite/Avoidance Alternatives:

i. Applicant's Preferred Alternative: This is the 22,483-acre Ona parcel described in Section 2 of this decision document. The entire 22,483 acres is either within ten miles of a beneficiation plant, or the applicant could construct a pre-washer and the necessary infrastructure to reach a plant; the applicant's current proposal is to use both the South Pasture and Four Corners plants. The proposed mine plan mines or otherwise disturbs 18,776 acres within the 22,483-acre site. This alternative requires approximately 62.5 miles of pipelines (4 miles from the South Pasture plant, 12.5 miles from the Four Corners plant to the project boundary, and 46 miles within the project boundary), three new stream crossings, and 68 miles of ditch and berm system. The applicant states that this alternative has sufficient space for the necessary clay settling areas. Mining the Ona parcel would produce 178 million tons of phosphate, based on the applicant's prospecting data. FDEP has issued a permit for Ona.

The Ona parcel contains 5581 acres of NWI wetlands and 6140 acres of SWFWMD wetlands. The SWFWMD wetlands constitute 27.3% of the total area of the site.

This alternative is practicable, and meets the overall project purpose and the applicant's need on both the overall and the project-specific levels.

ii. 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 decision document will address the No Action – No Mining alternative. Section 5.4.2 below describes the Corps' evaluation of the No Action– Upland Only Mining alternative as a minimization alternative.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

Under the No Action – No Mining alternative, the applicant would not mine Ona at all. There would be no construction of any mine infrastructure, including pipelines, crossings, clay settling areas and ditch and berm system, within the Ona parcel. This alternative does not produce any phosphate rock at all.

The Ona parcel contains 5581 acres of NWI wetlands and 6140 acres of SWFWMD wetlands. The SWFWMD wetlands constitute 27.3% of the total area of the site. If there is no new mining, there are no mining-related impacts to these wetlands.

This alternative does not satisfy the overall project purpose, and therefore it is not a practicable alternative. The No Action Alternative also does not meet the overall need nor 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.

iii. Pioneer Tract: Approximately 11,750 acres of Pioneer Tract's 25,231 acres is within ten miles of either the proposed pre-washer (to facilitate transport to the Four Corners plant) or the South Pasture beneficiation plant, and the Corps has assumed that the applicant could construct the necessary infrastructure to reach either facility. There is no current application to mine this parcel, and no mine plan. Therefore, as stated in Section 4(c) of this decision document, the analysis of this alternative relies on an estimated mine plan with an assumed 16% preservation. This alternative requires approximately 67 miles of pipelines (21.75 miles from the Four Corners beneficiation plant, 7.9 miles from the South Pasture beneficiation plant, and 37.7 miles within the project boundary), eight additional stream crossings, and 38 miles of ditch and berm system. Based on the size of the mined area, the Corps assumes that this alternative has sufficient space for the necessary clay settling areas. Mining this alternative as described would produce 79 million tons of phosphate, based on an estimated yield of 8000 tons per acre. 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 state and local approvals. This alternative would not disrupt the Applicant's planned overall mining sequence, although the applicant has indicated it intends to mine this site in the future.

The Pioneer Tract contains 9,356 acres of NWI wetlands and 9,293 acres of SWFWMD wetlands. The SWFWMD wetlands constitute 36.8% of the total area of the site.

The Pioneer Tract alternative meets the overall project purpose, and because it

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

does not disrupt the applicant's mining development sequence, it meets the overall need. However, it requires additional infrastructure compared to the Applicant's Preferred Alternative, and does not meet the project-specific need, based on the estimated production. This is not a practicable alternative.

Based on the greater coverage of the site by wetlands (36.8% for Pioneer vs. 27.3% for Ona), the greater distance of pipelines needed, and the additional five stream crossings, the Pioneer alternative is more environmentally damaging than the Applicant's Preferred Alternative.

v. Site A-2: All 8,189 acres of Site A-2 is within ten miles of the South Fort Meade beneficiation plant, and the Corps has assumed that the applicant could construct the necessary infrastructure to reach that facility. There is no current application to mine this parcel¹⁴, and no mine plan. Therefore, as stated in Section 4(c) of this decision document, the analysis of this alternative relies on an estimated mine plan with an assumed 16% preservation. This alternative requires approximately 36 miles of pipelines, three new stream crossings, and 36 miles of ditch and berm system. Based on the size of the mined area, the Corps assumes that this alternative has sufficient space for the necessary clay settling areas. 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 state and local approvals. This alternative would not disrupt the Applicant's planned overall mining sequence.

As described in Section 2.2.4.1 and Appendix B of the Final EIS, the Corps considered prospecting data in screening the offsite alternatives, and determined that there are sufficient phosphate resources to include this parcel as an alternative. However there is insufficient prospecting data to provide an estimated yield of phosphate rock per acre. Therefore, the Corps applied the figure for the adjacent South Fort Meade Mine, 7325 tons of rock per acre, to this alternative to produce an estimated total production of 50.39 million tons of phosphate.

Site A-2 contains 1,232 acres of NWI wetlands and 1,362 acres of SWFWMD wetlands. SWFWMD wetlands comprise 16.6 percent of the site.

This alternative meets the overall project purpose and the overall need, and requires less infrastructure than Ona. However, it does not meet the project-

¹⁴ As stated in footnote 10 of this decision document, the potential Eastern Reserves parcel overlaps with Site A-2. As of the time this document was prepared, the Corps had not received an application to mine this parcel.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

specific need, based on the estimated production. This is not a practicable alternative.

Considering the potential wetland impact acreage and the reduced infrastructure, Site A-2 is less environmentally damaging than the Applicant's Preferred Alternative.

5.3 Onsite/Minimization Alternatives: The Corps evaluated six minimization alternatives for Ona:

- i. Applicant's Preferred Alternative (November 2016 Mine Plan)
- ii. No-Action – Uplands Only Mining
- iii. Limited Action - Upland Mining with Crossings of WOUS
- iv. Maximum Framework Avoidance Plan
- v. Framework Crossings Plan
- vi. June 2011 Plan (First PN Plan)

Each of these onsite alternatives represents a different mine plan for the project, as shown in Figures 3 through 8 in Attachment C to this decision document.

As with the consideration of offsite/avoidance alternatives described in Section 5.2 of this decision document, the Corps considered both practicability and environmental criteria in its evaluation of the onsite/minimization alternatives.

5.3.1 Practicability Criteria: The practicability evaluation criteria for these alternatives included the following:

- i. The estimated total length of pipelines needed to carry material to the beneficiation plants and the estimated total length of the ditch and berm system around areas not to be mined;
- ii. the number of crossings needed for pipelines and draglines;
- iii. the ability of an alternative to support other necessary mine infrastructure such as clay settling areas (considering factors such as available area);
- iv. compliance with state (FDEP) or local (Hardee County) permitting requirements, and;
- v. the ability of an alternative to meet the overall project purpose, and to produce a total of 144 MMT and meet the independently reviewed and verified project-specific need as described in Section 1.7.1 of this document.

The environmental criteria included each alternative's expected level of impact to WOUS (based on the approved jurisdictional determinations) and agreement with

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

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. Section 5.4.2 of the Final EIS describes the background and purpose of the mitigation framework, including the input from the public, non-governmental organizations, and local, state, and federal agencies considered in the origin of the framework, and the interagency approach between the Corps, USEPA, USFWS, and NOAA-NMFS used to develop the framework.

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 5.4.1 through 5.4.6 below provide the Corps' evaluation of the six alternatives for mine plans for Ona.

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. Sections 5.4 and 5.6 of this decision document describes how the Corps considered Step 3 in its evaluation. Sections 7 ("Evaluation of the CWA Section 404(b)(1) Guidelines") and 8 ("Public Interest Review") of this decision document also describe many of these minimization measures.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

Section 9.2 of this decision document, "Compensatory Mitigation for Unavoidable Impacts to Aquatic Resources" addresses Step 4 of the mitigation framework (reference Final EIS Section 5.4.3.4).

5.4 Evaluation of the Minimization Alternatives: The Corps' evaluations of the six onsite/minimization alternatives for the Ona Mine are as follows:

5.4.1 Applicant's Preferred Alternative (November 2016 Mine Plan): This is the mine plan described in the most recent (November 2016) revised application. Section 9.b.ii of this decision document describes the sequence of project revisions leading up to this alternative. Attachment C - Figure 3 shows this alternative.

This alternative requires approximately 62.5 miles of pipelines (4 miles from the South Pasture plant, 12.5 miles from the Four Corners plant to the project boundary, and 46 miles within the project boundary), three new stream crossings, and 68 miles of ditch and berm system. The applicant states that this alternative has sufficient space for the necessary clay settling areas. FDEP has issued a permit for Ona. Mining the Ona parcel as proposed for this alternative would produce 178 million tons of phosphate, based on the applicant's prospecting data.

This mine plan would impact 3,426 acres of WOUS overall (avoiding approximately 30%), 1,188 acres of mitigation framework priority wetlands (avoiding approximately 46%), and 12,938 linear feet of streams prioritized by the mitigation framework (avoiding approximately 84%). Three of the four key landscape systems would be avoided, with avoidance focused on those areas adjacent to or near the avoided streams.

The Applicant's Preferred Alternative meets the overall project purpose. The Applicant's Preferred Alternative also meets the overall and project-specific need. This is a practicable alternative.

The Applicant's Preferred Alternative agrees with Steps 1 and 2 of the mitigation framework.

5.4.2 No Action – Uplands Only Mining: This alternative involves impacts to only non-Corps-jurisdictional areas on the Ona site, including uplands and aquatic resources not considered to be WOUS, with no onsite impacts to any WOUS, including from dragline and infrastructure crossings. Attachment C - Figure 4 shows this alternative. For this alternative, the applicant would construct an onsite beneficiation plant, to eliminate the potential for offsite impacts to WOUS.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

For this alternative, the applicant would construct approximately 1.7 miles of pipelines to transport ore matrix to the beneficiation plants and stormwater to the CSAs, and to return process water and tailing sand back to the mine areas. The total length of perimeter ditch and berm systems around avoided jurisdictional areas would be approximately 8.8 miles. The applicant would not need to construct any wetland or stream crossings with this plan, and an alternative CSA, such as an offsite CSA, could handle this plan's clay output. Under this plan, the applicant could recover 7.9 million tons, from 824 acres of mined area.

The applicant states that both Hardee County and FDEP would not approve this mine plan, due to reduced economic benefits (for Hardee County) and reduced onsite mitigation and reclamation and offsite mitigation (for FDEP). However, the applicant did not provide a specific economic target from Hardee County for the project, and the proposed mitigation and reclamation are only at the proposed levels due to the proposed level of impact associated with the Applicant's Preferred Alternative. Therefore, the Corps will assume that Hardee County and FDEP would both approve this plan.

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.

The No Action – Uplands Only alternative meets the overall project purpose and there is less infrastructure required, however it does not meet the overall or project-specific need. This is not a practicable alternative.

Because there are no impacts to resources prioritized by the mitigation framework, this alternative agrees 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.

- 5.4.3 Upland Mining with Crossings of WOUS: In this plan, the Applicant would only mine upland/non-Corps-jurisdictional areas onsite at Ona, however the Applicant would impact onsite wetlands, streams or other surface waters for dragline or dredge and infrastructure crossings. Attachment C - Figure 5 shows this alternative.

For this alternative, the applicant would construct approximately 25.6 miles of pipelines to transport ore matrix to the existing beneficiation plants at Four Corners and South Pasture and stormwater to the CSAs, and to return process water and tailing sand back to the mine areas. The total length of perimeter ditch and berm systems around avoided jurisdictional areas would be approximately

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

67.2 miles. This alternative requires 13 wetland or stream crossings, and would not have sufficient area for a CSA and other mine infrastructure. Under this plan, the applicant could recover 47.2 million tons from 4,880 acres of mined area.

The applicant states that both Hardee County and FDEP would not approve this mine plan, due to reduced economic benefits (for Hardee County) and reduced onsite mitigation and reclamation and offsite mitigation (for FDEP). However, the applicant did not provide a specific economic target from Hardee County for the project, and the proposed mitigation and reclamation are only at the proposed levels due to the proposed level of impact associated with the Applicant's Preferred Alternative. Therefore, the Corps will assume that Hardee County and FDEP would both approve this plan.

This mine plan impacts 6.3 acres of WOUS overall (avoiding approximately 99.9%), 6.3 acres of mitigation framework priority wetlands (avoiding approximately 99.7%) and 1,794 linear feet streams prioritized by the mitigation framework (97.8% avoidance).

The Upland Mining with Crossings alternative meets the overall project purpose, however it does not meet the overall or project-specific need. This is not a practicable alternative.

Because there are impacts to only 0.3% of the wetlands prioritized by the mitigation framework and 2.2% of the streams, 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.

- 5.4.4 Maximum Framework Avoidance – For this alternative, the applicant would avoid all wetlands and streams identified as “priority” under the mitigation framework described in the Final EIS. This limits the mineable area to land located west of Horse Creek and north of West Fork Horse Creek¹⁵, as shown in Attachment C - Figure 6. All ore extracted would be processed at the Four Corners beneficiation

¹⁵ The applicant states that they could not determine if there would be adequate CSA capacity at South Pasture or South Pasture Extension to allow mining east of Horse Creek until near the end of mining at South Pasture in 2035. Therefore this analysis considers mining as described, “west of Horse Creek and north of West Fork Horse Creek”.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

plant. Clay settling areas would be located offsite on mined areas at the adjacent Fort Green Mine.

For this alternative, the applicant would construct approximately 12.5 miles of pipelines to transport ore matrix to the beneficiation plant and stormwater to the CSAs, and to return process water and tailing sand back to the mine areas. The total length of perimeter ditch and berm systems around avoided jurisdictional areas would be approximately 4.7 miles. This alternative requires 19 wetland or stream crossings, and would use offsite CSAs. Under this plan, the applicant could recover approximately 12 million tons from 1,472 acres of mined area.

The applicant states that both Hardee County and FDEP would not approve this mine plan, due to reduced economic benefits (for Hardee County) and reduced onsite mitigation and reclamation and offsite mitigation (for FDEP). However, the applicant did not provide a specific economic target from Hardee County for the project, and the proposed mitigation and reclamation are only at the proposed levels due to the proposed level of impact associated with the Applicant's Preferred Alternative. Therefore, the Corps will assume that Hardee County and FDEP would both approve this plan.

This mine plan would impact 25.2 acres of the onsite WOUS (avoiding approximately 99.5%), and no priority WOUS (100% avoidance of priority wetlands and streams).

This alternative meets the overall project purpose, however it does not meet the overall or project-specific need. This is not a practicable alternative.

Because there are no impacts to resources prioritized by the mitigation framework, this alternative agrees with Steps 1 and 2 of the mitigation framework. This alternative is less environmentally damaging than the Applicant's Preferred Alternative.

- 5.4.5 Framework Crossings Plan: A variation on the Maximum Avoidance plan, this alternative avoids impacts to wetlands and streams identified as "priority" under the mitigation framework described in the Final EIS, except for dragline and infrastructure crossings. Attachment C - Figure 7 shows this mine plan.

For this alternative, the applicant would construct approximately 20.1 miles of pipelines to transport ore matrix to the beneficiation plant and stormwater to the CSAs, and to return process water and tailing sand back to the mine areas. The total length of perimeter ditch and berm systems around avoided jurisdictional

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

areas would be approximately 23.4 miles. This alternative requires 19 wetland or stream crossings. The applicant could construct onsite CSAs, however there would only be enough capacity to handle 5,750 acres of mining. Under this plan, the applicant could recover approximately 61 million tons from 5750 acres of mined area.

The applicant states that both Hardee County and FDEP would not approve this mine plan, due to reduced economic benefits (for Hardee County) and reduced onsite mitigation and reclamation and offsite mitigation (for FDEP). However, the applicant did not provide a specific economic target from Hardee County for the project, and the proposed mitigation and reclamation are only at the proposed levels due to the proposed level of impact associated with the Applicant's Preferred Alternative. Therefore, the Corps will assume that Hardee County and FDEP would both approve this plan.

This mine plan impacts 261 acres of WOUS overall (avoiding approximately 94.7%), 6.3 acres of mitigation framework priority wetlands (avoiding approximately 99.7%) and 1,794 linear feet streams prioritized by the mitigation framework (97.8% avoidance).

This alternative meets the overall project purpose, however it does not meet the overall or project-specific need. This is not a practicable alternative.

Because there are impacts to only 0.3% of the wetlands prioritized by the mitigation framework and 2.2% of the streams, 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.

- 5.4.6 June 2011 Plan (First PN Plan): The basis for this alternative is the mine plan as described in June 2011, and as shown in the 1 June 2012, public notice, with the mining of the site of the eliminated onsite beneficiation plant and the additional 160 acres described in Section 2.d, as shown in Attachment C - Figure 8.

For this alternative, the applicant would construct approximately 41 miles of pipelines to transport ore matrix to the beneficiation plants and stormwater to the CSAs, and to return process water and tailing sand back to the mine areas. The total length of perimeter ditch and berm systems around avoided jurisdictional areas would be approximately 66.8 miles. This alternative requires five wetland or stream crossings, and would have sufficient area for a CSA and other mine

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

infrastructure. Under this plan, the applicant could recover 185 million tons from 18,929 acres of mined area.

The applicant states that both Hardee County and FDEP would not approve this mine plan. For Hardee County, this is due to reduced economic benefits. However, the applicant did not provide a specific economic target from Hardee County for the project. Therefore, the Corps will assume that Hardee County and FDEP would approve this plan. FDEP considered this mine plan, and as part of its review requested that the applicant eliminate and reduce impacts, ultimately permitting a minimized mining footprint. Based on this information, the Corps agrees that FDEP would not approve this mine plan.

This mine plan impacts 4,173 acres of the onsite WOUS overall (avoiding approximately 10.9%), 1,265 acres of mitigation framework priority wetlands (avoiding approximately 31.4%) and 56,669 linear feet of streams prioritized by the mitigation framework (31.4% avoidance).

This alternative meets the overall project purpose, the overall need and the project-specific need. This is a practicable alternative.

This alternative impacts more WOUS overall, framework wetlands, and framework streams than the Applicant's Preferred Alternative. With greater impact to framework wetlands and streams and onsite WOUS overall, and a lack of agreement with the mitigation framework (due to the greater impact to framework wetlands and streams), this alternative is more environmentally damaging than the Applicant's Preferred Alternative.

- 5.5 Least Environmentally Damaging Practicable Alternative (LEDPA): In consideration of the information noted above, the Corps has determined that the Applicant's Preferred Alternative, as described in Sections 5.2.2(i) and 5.4.1 above, is the LEDPA that would achieve the overall project purpose. This determination considers cost, existing technology, and logistics, in addition to the consideration of impacts to the environment.
- 5.6 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;

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

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 Ona, as described in Sections 5.2.2(i) and 5.4.1 of this decision document.

i. Infrastructure corridors: The Applicant’s Preferred Alternative proposes three crossings for infrastructure, one each for Horse Creek, West Fork Horse Creek, and stream number 105 (a tributary to Brushy Creek). The crossings utilize uplands and existing agricultural crossings to the greatest extent possible.

The maximum width of each crossing is 220 feet, plus side slopes, which minimizes impacts to the extent technically feasible without compromising mine safety. The 220-foot maximum width includes a 115-foot dragline walkpath, 45 feet of pipelines, 20 feet for a powerline, and 40 feet for roads and power line safety setbacks. The applicant further minimized impacts at the Horse Creek and West Fork Horse Creek crossings with the use of a trestle design, which eliminates the need to clear all vegetation and impact those waterways.

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 adjacent mines and stage filling; proper design of the overall mine backfill plan to advantageously site CSAs in areas with greater overall mining depths, thereby maximizing unit storage capacity in terms of disposal capacity per acre of land; strategic location of CSAs contiguous to each other so that common walls may be utilized and thereby reduce the overall footprint; and proper consideration of site hydrology effects in developing the mine backfill plan such that changes in runoff or recharge are not disproportionately assigned to any one subwatershed associated with the project.

iii. Buffers: The applicant proposes to preserve non-uniform upland buffers around preserved wetlands, with a minimum width of 125 feet. All avoided intermittent streams have a buffer of greater than 100 feet from the stream banks, and the avoided key landscape systems, as shown on the attached Attachment C - Figure 3, range in width from 200 feet to over 600 feet wide.

A mine's ditch and berm system also buffers the adjacent area from the mining activity, providing approximately 125 to 290 feet of separation between the excavation and the boundary of the preserved buffer.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

In addition to a physical buffer, the applicant proposes to have a “temporal buffer” for avoided streams. Temporal buffers are manipulations of mine/reclamation sequencing that will prevent concurrent disturbance along both sides of avoided streams.

iv. Recharge ditches: 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) permit for the project.

v. 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. Where possible, the applicant considered the location of preserved areas on adjacent parcels to further meet these goals.

6.0 Final EIS Analysis Updates

6.1 Direct and Indirect Effects: In Chapter 4 of the Final EIS, the Corps considered the direct and indirect effects of the four proposed actions, including the Ona Mine, and their alternatives. The Corps identified the following potential direct and indirect effects as being significant and, therefore, included detailed analysis on them in the Final EIS: surface water resources (hydrology), groundwater resources (hydrology), water quality (surface water and groundwater), ecological resources (aquatic biological communities, wetlands, wildlife habitat, and listed species), economic resources, environmental justice, radiation, cultural resources and historic properties, and surficial geology and soils.

The Corps has determined that for the Ona project, the project changes described in Section 1.4.1 of this document, including reductions in mined area and impacts to aquatic resources, should lead to reduced degrees of effect on listed species, environmental justice, radiation, cultural and historic resources, and surficial geology and soils. No updates to the analyses described in Chapter 4 of the Final EIS for these resources are necessary.

To address how the described project changes may affect the project's potential direct and indirect effects on surface water resources, groundwater resources, water quality, aquatic biological communities, wetlands, wildlife habitat, and economic resources, the Corps has reviewed updated analyses of potential impacts to those resources, as described below, including updates to tables and information presented in the Final EIS.

- 6.1.1 Surface Water Resources: Section 4.2.3 of the Final EIS¹⁶ described the predicted effects of the proposed Ona project on surface water flows within the Upper Myakka River, Horse Creek, and the Peace River. The Final EIS stated that the project will have an insubstantial effect on the Upper Myakka, minor to no effect on the Peace River, and a potentially moderate effect on Horse Creek. The Final EIS also stated that measures such as monitoring and the use of recharge ditches to maintain flow in Horse Creek would reduce that moderate level of effect.

The Corps independently reviewed and verified an updated analysis of Ona's effects on surface water hydrology in Horse Creek and the Peace River to address the changes in the project since the Final EIS, including the reduction in mined area and mining duration, both of which are critical components to the hydrology analyses¹⁷. Attachment F to this decision document includes updates to Tables 4-19 through 4-26, and Figures 45, 50-57 and 90-97. Because there are no project changes within the Upper Myakka River subwatershed portion of the project, there is no update for that analysis.

Within the Horse Creek subwatershed, the reduced capture area and duration led to overall smaller reductions in flows with faster recovery times under all conditions. Within the Peace River watershed, the updated results were substantially similar to the results for the Final EIS.

Based on the updated analysis, the Corps has determined again that the Ona Mine would have an insubstantial effect on the Upper Myakka, minor to no effect on the Peace River, and a potentially moderate effect on Horse Creek, and that measures such as monitoring and the use of recharge ditches to maintain flow in Horse Creek would reduce that moderate level of effect¹⁸. The Corps does not consider these

¹⁶ As corrected in the Addendum to the Final EIS

¹⁷ Appendix G of the Final EIS details the surface water hydrology impact analysis methodology.

¹⁸ The FDEP ERP for Ona includes permit conditions requiring Mosaic to maintain and monitor flows in Horse Creek and other potentially affected waterbodies adjacent to and downstream of the mine. If the Corps issues a DA permit for Ona, compliance with

effects significant.

- 6.1.2 Groundwater Resources: Section 4.3.3 of the Final EIS discusses the Ona Mine's direct and indirect effects on groundwater resources, and states that with mitigation, Ona would have minor impacts to the surficial, intermediate, and Floridan aquifers, none of which would be significant.

This analysis considered groundwater withdrawals at Ona to support both the mining activities and the then-proposed beneficiation plant. The applicant has stated that the elimination of the onsite plant, and the separation of Ona into a western part (associated with the Four Corners plant) and eastern part (associated with the South Pasture plant), has reduced the proposed onsite groundwater withdrawal rate by almost ten million gallons per day. Based on this reduction in groundwater pumping, the Corps determined that no update of the analysis was necessary, and that the Ona project should have a reduced direct and indirect effect on groundwater, which is still not significant.

- 6.1.3 Water Quality: Section 4.4.4 of the Final EIS discusses the Ona Mine's direct and indirect effects on water quality. As stated there, the Corps determined that the Ona Mine would have a minor to moderate degree of effect on surface water and groundwater quality, which is not considered significant.

The following three sections describe available new information and changes in regulatory requirements considered by the Corps in its updated review of the Ona Mine, as committed to in Section 4.4.4 of the Final EIS. Based on the updated analysis, the Corps has determined again that the Ona Mine would have a minor to moderate degree of effect on surface water and groundwater quality, which is not considered significant.

i. Horse Creek Stewardship Program: Section 4.4.2.2 of the Final EIS provided the results of monitoring within the study area, which the Corps used to evaluate the alternatives' effects on surface water quality. The information presented in the Final EIS included monitoring results from the Horse Creek Stewardship Program from 2003-2008. The Corps recognizes the public's interest in Horse Creek, as shown in the comments received during the Final EIS review process and at other times. Therefore, using data from the 2014 Horse Creek Stewardship Program Annual Report, the Corps updated Figure 4-16, showing the locations of the biological monitoring stations; Figure 4-17, with Stream Condition Index (SCI scores) shown through November 2014; and Figure 4-18, with fish community

those ERP conditions will become a requirement of the Corps permit as well.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

assessment results shown through November 2014; as shown in Attachment F to this decision document.

The updated results¹⁹ show that stations HCSW-1 (the most upstream station) and HCSW-4 (the most downstream) continue to have scores in the 'healthy' range (between 40 and 67, as described in Section 3.3.4.2 of the Final EIS), and station HCSW-2 continues to frequently score as 'impaired', due to natural conditions. The Corps notes that although the Final EIS describes HCSW-3 as having variable scores (impaired to healthy), the updated results show that station as scoring consistently 'healthy' or even 'exceptional'.

ii. Numeric nutrient criteria: Section 4.4.2.2 of the Final EIS also discusses numeric nutrient criteria. At that time, there were no criteria in place for flowing waters.

Numeric nutrient criteria for streams²⁰ and lakes went into effect on October 27, 2014. Therefore, state law requires any permitted discharges to applicable streams and lakes to comply with these criteria in accordance with FDEP rules, including the numeric nutrient criteria.

Additional information about numeric nutrient criteria, including the FDEP Numeric Nutrient Criteria Implementation Document, is available from FDEP's website at <https://floridadep.gov/dear/water-quality-standards/content/numeric-nutrient-criteria-development>.

iii. Groundwater quality: Section 4.4.2.3 of the Final EIS discusses groundwater quality, and provides the results of groundwater sampling below a CSA on the South Pasture Mine from 2005 through 2010. The Corps updated Figure 4-20 to include results through the first quarter of 2017, as shown in Attachment F to this decision document.

The Corps has determined that as was stated in the Final EIS, the groundwater quality at the compliance wells continued to rarely exceed the primary and secondary drinking water standards.

6.1.4 Ecological Resources - Aquatic Biological Communities: Section 4.5.1.3 of the

¹⁹ As described in the 2014 Annual Report for the Horse Creek Stewardship Program, the updated results omit some of the earlier sampling points, including some shown in the Final EIS, due to changes in FDEP's scoring methodology.

²⁰ As stated in the FDEP Numeric Nutrient Criteria Implementation Document and in Rule 62-302.200(36), F.A.C., these criteria do not apply to non-perennial streams.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

Final EIS described the then-proposed 136,731 linear feet of direct stream impacts, and predicted a minimization of impacts and the development of a compensatory mitigation plan that included offsets to remaining unavoidable impacts. Section 1.4 of this document describes the current project, which includes 100,766.8 linear feet of direct stream impacts, a reduction of 35,964.2 linear feet. Section 9.2 of this document describes the proposed compensatory mitigation, including the stream mitigation.

The Final EIS analysis of the Ona Mine's impacts also considered the potential effects of changes in surface water hydrology and surface water quality on aquatic biological communities. Sections 6.1.1 and 6.1.3 of this document describe the Corps' updated analyses of those two issues.

Section 4.5.1.3 of the Final EIS also states that the Corps would coordinate its determination that the Ona Mine would not have an adverse effect on essential fish habitat (EFH) in the estuarine reaches of the Peace or Myakka Rivers or in Charlotte Harbor with the National Marine Fisheries Service (NMFS). 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.

The Final EIS states that with mitigative measures to offset unavoidable direct impacts to streams, and to minimize impacts to surface water hydrology and quality, the Ona Mine would have at most a moderate effect on aquatic biological communities, which would not be significant. Based on the project changes, completed EFH coordination, and updated analyses described above, the Corps makes that same determination now.

- 6.1.5 Ecological Resources – Wetlands: Section 4.5.2.3 of the Final EIS described the then-proposed 4,615 acres of wetland impacts, including 1,824 acres of forested wetland impact and 2,770 acres of non-forested wetland impact. However, the applicant has worked with the Corps, USEPA and FDEP to avoid and minimize impacts, as required by federal and state law. Section 1.4 of this document describes the current project, which includes 3,426 acres of impact to jurisdictional wetlands and open water areas, including 1,357.87 acres of forested wetland impacts and 2,060.3 acres of herbaceous wetland impacts. Attachment F to this document has an updated Table 4-71 summarizing the avoidance and impact acreage for Ona. Section 9.2 of this document describes the proposed compensatory mitigation, including the wetland mitigation.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

In addition, Section 4.5.2.3 of the Final EIS stated that the applicant would apply the mitigation framework described in Chapter 5 of the Final EIS to the Ona project. Section 5.3.1 of this document describes how the Corps considered the mitigation framework in its evaluation, including determining the extent of onsite avoidance that is practicable under the Section 404(b)(1) Guidelines as described in Sections 5.4.1 through 5.4.6, evaluating opportunities to minimize impacts through best management practices and mine plan design as described in Section 5.6, and evaluating compensatory mitigation as described in Section 9.2.

Based on the project changes and the updated analysis, the Corps has determined again that with mitigation, the Ona Mine would have no impact to a minor impact on wetlands, which is not considered significant.

- 6.1.6 Ecological Resources – Wildlife Habitat: Section 4.5.3.3 of the Final EIS included Table 4-83 summarizing the upland wildlife habitat avoidance, impact and reclamation for the Ona Mine. That section also stated that the Corps would consider requiring upland buffers along avoided wetlands and streams, including higher quality aquatic resources, as described in the mitigation framework. Section 5.7 of the Final EIS describes the FDEP requirements for reclamation of lands mined for phosphate, including upland habitats.

As shown in the updated Table 4-83 included in Attachment F of this decision document, the applicant has reduced their overall mining area, including to upland and wetland wildlife habitats. In addition, as shown in Attachment C - Figure 3, as part of the Applicant's Preferred Alternative the applicant proposes to avoid large contiguous areas of wetlands and uplands as "key landscape systems", with upland buffers. Section 5.6 of this decision document describes how, in addition to those buffers, ditch and berm systems will separate the preservation areas from the active mining, and how the applicant will not mine on both sides of a preservation area at the same time, as a "temporal buffer".

Based on the project changes and the updated analysis, the Corps has determined again that with mitigative measures, the Ona Mine would have no impact to a minor impact on wildlife habitat, which is not considered significant.

- 6.1.7 Economic Resources: Section 4.6.3 of the Final EIS described the direct and indirect economic effects of the Ona Mine on Hardee County. As shown in Table 4-98 in that section, with the Ona Mine, as compared to the No-Action Alternative described in Section 4.6.1 of the Final EIS, there would be increases in average annual employment, present value labor income, present value added, and

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

present value output²¹. The Corps determined that this would be a major beneficial effect, which compared to the No-Action Alternative would be significant. However, the Corps also determined that relative to current conditions, including the continuation of existing phosphate mining in Hardee County, Ona would simply offset job losses predicted under the No Action Alternative, and therefore from that perspective, the effects were not significant.

Because some of the project updates described in Section 1.4.1 of this decision document that could affect the economic effects, including the elimination of the onsite beneficiation plant and the reduction in the area of mining, the Corps independently reviewed and verified an updated economic analysis. This analysis included updates to Table 4-98, as shown in Attachment F of this decision document.

As described in the updated table, with the project changes, the Ona Mine will have 382 less jobs in the average annual employment parameter and generate \$894,500,00 less in present value labor income, \$1,835,500,000 less in present value added, and 3,092,500,000 less in present value output, compared to the results shown in the Final EIS.

The Corps has determined that even with those reductions, the Ona Mine will still have a major beneficial economic effect on Hardee County, which when compared to the No Action Alternative is significant, and when compared to existing conditions is not significant.

- 6.2 Cumulative Effects: In Section 4.12 of the Final EIS, the Corps considered the cumulative effects of the four proposed actions, two reasonably foreseeable future actions, and other past, present and reasonably foreseeable actions, including phosphate mining and non-phosphate mining actions. The resource categories determined to have significant potential cumulative impacts were surface water resources, groundwater resources, surface water quality, ecological resources (wetlands and upland habitat), and economic resources.

In addition to the changes to the Ona project described in Section 1.4.1 of this decision document, other changes within the study area have occurred since the Final EIS, such as the addition of infill parcels (either currently under review by the Corps or otherwise reasonably foreseeable) to existing phosphate mines, and updates on the status of phosphate mine reclamation.

²¹ Appendix H of the Final EIS explains the methodology used by the Corps to evaluate economic effects, including definitions of the economic parameters considered.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

Therefore, to address how these changes to Ona and within the study area may affect the project's cumulative effects on surface water resources, groundwater resources, ecological resources (wetlands and upland habitat), and economic resources, the Corps has updated its analyses of those issues, as described below, including updates to tables and information presented in the Final EIS.

The Corps determined that the changes to the Ona project, as well as other changes such as the implementation of numeric nutrient criteria as described in Section 6.1.3 of this decision document, lead to a reduction in the magnitude and significance of potential surface water quality cumulative impacts as described in Section 4.12.4 of the Final EIS. No update to this analysis is necessary.

- 6.2.1 Updates to Past, Present and Reasonably Foreseeable Actions: Attachment F to this decision document includes a new table - Table 2-3(a) - showing information about currently proposed and reasonably foreseeable phosphate mine infill parcels, including overall acreage, mined/disturbed acreage, and overall potential acreage and linear footage of impacts to waters of the United States (for wetland and streams respectively); figures showing the locations of those infill parcels ("Table 2-3(a) figures 1 and 2"); and an updated Table 4-24 showing the status of phosphate mine reclamation. Additionally, the applicant notes that 80 acres of mined and reclaimed land became a county park and fire station, and that TECO purchased 479 acres of mined and reclaimed land for a solar power facility.

Since the publication of the second Public Notice for Ona, Mosaic informed the Corps about a potential future 4280-acre Eastern Reserves expansion of Mosaic's South Fort Meade – Hardee phosphate mine. Mosaic has not submitted a DA permit application for this potential expansion. However, Mosaic has discussed the potential project during recent pre-application meetings with the Corps and has submitted a request for a jurisdictional determination for the project area. As such, the Corps considers it to be a newly identified reasonably foreseeable action and has considered the project's potential contribution to cumulative impacts.

The sections below (6.2.2 through 6.2.5) describe the Corps' analyses of how changes to Ona, described above, plus changes to other present and reasonably foreseeable future actions, affected the results of the cumulative effects analyses for surface water quality, surface water resources, groundwater resources, ecological resources (wetlands and upland habitat), and economic resources. The changes to the present and reasonably foreseeable future actions included an estimated total of 1647 acres of new mining in infill parcels associated with the

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

South Fort Meade and South Pasture mines, as described in Table 2-3(1) in Attachment F to this decision document.

The Corps expects similar levels of magnitude and significance to the original findings in the Final EIS for the potential cumulative effects of the proposed project and other past, present and reasonably foreseeable actions, including the additional acreage of present and reasonably foreseeable mining, on surface water resources, groundwater resources ecological resources, and economic resources, especially after consideration of mitigative measures. Based on the updates to the analysis already performed, the Corps has determined that the additional reasonably foreseeable action of the Eastern Reserves expansion would also not change the magnitude and significance of the cumulative effects in these resource categories.

If the applicant submits an application for the Eastern Reserves expansion, it will receive a full review pursuant to the appropriate federal regulations, including but not limited to NEPA, the 404(b)(1) Guidelines, and the public interest review.

6.2.2 Surface Water Resources: Section 4.12.2 of the Final EIS described the predicted cumulative impacts on subwatershed and watershed water deliveries to downstream reaches of the affected rivers and to the Charlotte Harbor estuary. The proposed Ona Mine was specifically part of the analyses for Horse Creek, the Peace River, and Charlotte Harbor²². The cumulative impact analysis included consideration of the use of the Peace River as a public water supply. The Final EIS stated that there will be an insubstantial effect on the Upper Myakka, minor to no effect on the Peace River, and a potentially moderate effect on Horse Creek. The Final EIS also stated that measures such as monitoring and the use of recharge ditches to maintain flow in Horse Creek would reduce that moderate level of effect.

The Corps considered an updated cumulative impact analysis using the same spreadsheet model used for the Final EIS. Attachment F to this decision document includes updates to Tables 4-113 through 120. Similar to the results of the analysis of potential direct and indirect effects for Ona, within the Horse Creek subwatershed, the updated analysis predicts overall smaller reductions in flows with faster recovery times under all conditions. Within the Peace River watershed, the updated results were substantially similar to the results for the Final EIS. Based

²² As described in the surface water direct and indirect effects analysis, the Corps determined that the proposed Ona Mine had an insignificant overlap with the Myakka watershed.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

on these Peace River watershed results, the Corps did not update the quantitative analysis of the cumulative effects on Charlotte Harbor.

Considering these results, the Corps has again determined that for the cumulative effects on surface water resources, there will be insubstantial effect on the Upper Myakka and a minor to no effect on the Peace River, neither of which is significant. For Horse Creek, without mitigation the predicted cumulative effects would continue to have a moderate degree of magnitude, which would be significant. Mitigative measures as described in the Final EIS such as monitoring programs, recharge ditches and wells, and a potentially moderate effect on Horse Creek, should reduce the magnitude, and make the effects insignificant.

The Corps has also again determined that the cumulative effects on surface water resources at the Charlotte Harbor level, and on public water supply, would have at most a minor degree of effect and would not be significant.

6.2.3 Groundwater Resources: Section 4.12.3 of the Final EIS described the predicted cumulative impacts to groundwater resources, and found that there would mostly be minimal impacts to the surficial, intermediate, and Florida aquifers, which would not be significant. The exception to this determination was for Ona, because the Final EIS determined that “pumping Ona Mine at the permitted drought year rate for extended periods could result in a drawdown at ROMP 31”, which the Corps considered to be a moderate level of impact, and significant due to potential effects on the Southern Water Use Caution Area. Section 4.12.3.13 of the Final EIS further described expected mitigation, monitoring, and adaptive management actions for potential effects to groundwater, including actions that would reduce the level of impact and significance for the Ona water use.

The applicant proposes greatly reduced groundwater withdrawals onsite at Ona due to the elimination of onsite beneficiation. Based on the analyses completed for the Final EIS, the Corps did not expect that these changes would result in increases in degrees of effect for direct and indirect groundwater impacts, or changes in the significance determinations. However, to address other changes, such as the increased duration of groundwater withdrawals at other sites to support Ona, such as at the Four Corners and South Pasture sites, the Corps required the applicant to update the cumulative effects modeling using the same methods used for the Final EIS and provide the updated analysis for the Corps’ review.

Specific changes included extending the operation period for the Four Corners beneficiation plant by 15 years (from 2019 to 2034), changing the operation period for Ona to 2018 to 2041 (a reduction of five years overall from the previous duration

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

of 2020 to 2048), reducing the water usage for Ona from 15 million gallons per day (MGD) to 4.8 MGD, extending the operation period for the South Pasture beneficiation plant by four years (from 2037 to 2041), moving the start and end dates for the Desoto Mine up two years each (start in 2023, end in 2037), extending the operation period for South Fort Meade-Hardee by two years (from 2020 to 2022), and reducing the operation period for Wingate by 11 years (from 2046 to 2035).

As described in the attached 30 July 2018, technical memorandum (Attachment G to this decision document), although the predicted areas of localized aquifer drawdown have shifted from the Ona area to the Four Corners area, overall the regional impact has changed very little. The technical memorandum also updates tables and figures previously provided in the Final EIS.

Based on the updated information, the Corps has again determined that the Ona Mine, combined with other past, present, and reasonably foreseeable future actions, and with consideration of the mitigation, monitoring, and adaptive management actions described in Section 4.12.3.13 of the Final EIS, would result in minimal cumulative impacts to the surficial, intermediate, and Florida aquifers, which would not be significant.

6.2.4 Ecological Resources (wetlands and upland habitat): Section 4.12.5 of the Final EIS described the predicted cumulative impacts on ecological resources within the study area, and stated that with the state and federal requirements for compensatory wetland mitigation, land reclamation, and wildlife protection and management, the cumulative effects on ecological resources would have a minor level of magnitude and would not be significant.

Since that time, Ona, South Pasture Extension, and Wingate East have progressed through the mitigation sequencing process of avoidance, minimization and compensatory mitigation as required by the 404(b)(1) Guidelines, and the applicant has applied the mitigation framework developed for the Final EIS as described in Section 5.3.1 of this decision document. As a result, there is a reduction in the impact acreages shown in Table 4-130 of the Final EIS; an updated table is available in Attachment F to this decision document.

As stated above in Section 6.2.1, the Corps also considered a new table - Table 2-3(a) - showing information about currently proposed and reasonably foreseeable phosphate mine infill parcels, including overall acreage, mined/disturbed acreage, and overall potential acreage and linear footage of impacts to waters of the United States (for wetland and streams respectively); figures showing the locations of

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

those infill parcels (“Table 2-3(a) figures 1 and 2”); and an updated Figure 4-24 showing the status of phosphate mine reclamation.

Based on the updated information, the Corps has again determined that with the state and federal requirements for compensatory wetland mitigation, land reclamation, and wildlife protection and management, the cumulative effects on ecological resources will have a minor level of magnitude and will not be significant.

6.2.5 Economic Resources: Section 4.12.6 of the Final EIS described the predicted cumulative impacts of Ona, South Pasture Extension, and Pioneer Tract on Hardee County, and of the four proposed and two reasonably foreseeable mines on the eight-county study area, and compared them to a point of reference without new phosphate mining in Hardee County or the study area. The Final EIS stated that the cumulative effect on both Hardee County and the study area would be beneficial. For Hardee County, the benefit would be of a moderate to major magnitude, and significant, however at a regional level, the Corps determined that the benefit would be relatively minor and insignificant.

For the updated analysis of the cumulative effects on Hardee County, the Corps considered the results of the revised economic direct and indirect impact analysis for Ona, and prepared a revised Table 4-137, as shown in Attachment F, to reflect these changes. The Corps also updated the analysis of the cumulative effects on the eight-county study area, as shown in the revised Table 4-139 in Attachment F.

Based on the updated analyses, the Corps has again determined that the cumulative effect on both Hardee County and the study area would be beneficial, and for Hardee County the effect would be of a moderate to major magnitude, and significant, and at a regional level, that the benefit would be relatively minor and not significant.

7.0 Evaluation of the 404(b)(1) Guidelines:

(40 C.F.R. § 230) For each of the below listed evaluation criterion, this section describes the potential impact, any minimization measures that would be used to reduce the level of impact, and the resultant impact level. For the purpose of this evaluation, the fill associated with this project is the activity described in Section 1.4 of this decision document.

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

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

7.1.1 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 Ona project identified in Section 1.4.1 of this decision document do not alter the surficial geology and soils determinations made in the Final EIS. Attachment B of this decision document provides the Applicant's approved mitigation plan.

7.1.2 Water circulation, fluctuation, and salinity (40 C.F.R. § 230.11(b)): Section 6.1.1 of this document describes the Corps' review and verification of the updated analysis of the predicted direct and indirect effects of the Ona project on surface water flows within the Upper Myakka River, Horse Creek, and the Peace River. Section 6.2.2 of this document describes the Corps' review and verification of the updated analysis of the predicted cumulative effects of the Ona project on surface water flows within the Upper Myakka River, Horse Creek, and the Peace River.

Based on the updated analyses, the changes to the Ona project did not alter the Corps' determinations for the direct, indirect, and cumulative effects on surface water hydrology made in the Final EIS.

7.1.3 Suspended particulate/turbidity (40 C.F.R. § 230.11(c)): Section 6.1.3 of this decision document describes the Corps' review and verification of the updated analysis of the predicted direct and indirect effects of the Ona project on surface water quality. As described in Section 6.2, the Corps determined that no updates to the surface water quality cumulative impact analysis found in Section 4.12.4 of the Final EIS was necessary.

Based on the updated analyses, the changes to the Ona project did not alter the Corps' determinations for the direct, indirect, and cumulative effects on surface water quality made in the Final EIS. Discharges from the mine will need to comply with both a Section 401 water quality certification (FDEP Environmental Resource Permit) and a Section 402 NPDES permit or permits (also issued by FDEP).

7.1.4 Contaminant Availability (40 C.F.R. § 230.11(d)): Section 6.1.3 of this decision document describes the Corps' review and verification of the updated analysis of the predicted direct and indirect effects of the Ona project on surface water quality.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

As described in Section 6.2, the Corps determined that no updates to the surface water quality cumulative impact analysis found in Section 4.12.4 of the Final EIS was necessary.

Based on the updated analyses, the changes to the Ona project did not alter the Corps' determinations for the direct, indirect, and cumulative effects on surface water quality made in the Final EIS. Discharges from the mine will need to comply with both a Section 401 water quality certification (FDEP Environmental Resource Permit) and a Section 402 NPDES permit or permits (also issued by FDEP).

- 7.1.5 Aquatic Ecosystem Effects (40 C.F.R. § 230.11(e)): Sections 6.1.4 and 6.1.5 of this document describe the Corps' updated analyses of the direct and indirect effects of Ona on aquatic biological communities and wetlands, respectively. Section 6.2.4 describes the Corps' updated cumulative effect analysis for wetlands. Section 9 of this document provides project-specific information about mitigation, including compensatory mitigation for unavoidable impacts to aquatic resources. The approved compensatory mitigation plan for Ona is Attachment B to this decision document.

Based on the updated analyses, the changes to the Ona project did not alter the Corps' determinations for the direct, indirect, and cumulative effects on aquatic biological communities made in the Final EIS.

- 7.1.6 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.
- 7.1.7 Cumulative Effects (40 C.F.R. § 230.11(g)): Section 6.2 of this decision document provides updated cumulative effect analyses for surface water resources, groundwater resources, ecological resources (wetlands and upland habitat), and economic resources and explains why the Corps determined that an update for surface water quality was not necessary. As described in that section, the project changes and changes in existing conditions that have occurred since the publication of the Final EIS did not alter the Corps' cumulative effects determinations in the Final EIS.
- 7.1.8 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. Section 6.1 of this decision document addresses updates to those impact evaluations as the result of project changes described in

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

Section 1.4.1. As described in Section 6.1, the changes to Ona that have occurred since the publication of the Final EIS did not alter the Corps' secondary effects determinations.

7.2 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 Ona's potential impacts on substrate, suspended particulates/turbidity, water, current patterns and water circulation, normal water fluctuations, and salinity gradients. Section 6 of this decision document addresses updates to the evaluations of the Ona project's effects on substrate, suspended particulates/turbidity, water, current patterns and water circulation, normal water fluctuations, and salinity gradients as the result of project changes described in Section 1.4.1. Based on the updated analyses, the changes to the Ona project did not alter the Corps' determinations for the direct, indirect, and cumulative effects on substrate, suspended particulates/turbidity, water, current patterns and water circulation, normal water fluctuations, and salinity gradients made in the Final EIS.

7.3 Potential Impacts on Biological Characteristics of the Aquatic Ecosystem (40 C.F.R. Part 230, Subpart D): Chapter 4 of the Final EIS describes Ona's potential impacts on threatened or endangered species, fish, crustaceans, mollusks, and other aquatic organisms, and other wildlife. Section 6 of this decision document addresses updates to the effects evaluations for threatened or endangered species, fish, crustaceans, mollusks, and other aquatic organisms, and other wildlife as the result of project changes described in Section 1.4.1 of this decision document. Based on the updated analyses, the changes to the Ona project did not alter the Corps' determinations for the direct, indirect, and cumulative effects on threatened or endangered species, fish, crustaceans, mollusks, and other aquatic organisms, and other wildlife made in the Final EIS.

Section 11.1 of this decision document describes the coordination for the Ona project with the United States Fish and Wildlife Service (USFWS) pursuant to Section 7 of the Endangered Species Act (ESA), including the USFWS' issuance of an amended Incidental Take Permit (ITP)/Habitat Conservation Plan (HCP) on 22 May 2018, and a biological opinion (BO) on 6 November 2018.

As also described in Section 11.1 of this decision document, as a result of a 6 November 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 16 December 2015 the NMFS Habitat Conservation Division (NMFS-HCD) stated that they anticipated any adverse effects associated with the proposed project that might

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

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

- 7.4 Potential Impacts on Special Aquatic Sites (40 C.F.R. Part 230, Subpart E): Chapter 4 of the Final EIS describes the Ona 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 phosphate mining projects. There are no coral reefs potentially impacted by the proposed Ona project.

Section 6 of this decision document addresses updates to those impact evaluations as the result of project changes described in Section 1.4.1 of this decision document. As described in Section 6, the project changes have not led to changes in the Corps' effects determinations in the Final EIS. Section 9.0 of this decision document provides additional details about the specific proposed compensatory mitigation for the Ona project. The approved compensatory mitigation plan for Ona is Attachment B to this decision document.

- 7.5 Potential Impacts on Human Use Characteristics (40 C.F.R. Part 230, Subpart F): Chapter 4 of the Final EIS describes the Ona project's potential impacts on municipal and private water supplies, recreational and commercial fisheries, water-related recreation, and aesthetics. Section 6 of this decision document addresses updates to those impact evaluations as the result of project changes described in Section 1.4.1 of this decision document. As described in Section 6, the project changes have not led to changes in the Corps' effects determinations in the Final EIS.

- 7.6 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 Ona. Section 6.0 of this decision document addresses updates to those impact evaluations as the result of project changes described in Section 1.4.1 of this decision document. As described in Section 6.0, the project changes have not led to changes in the Corps' effects determinations in the Final EIS.

- 7.7 Actions to minimize adverse effects (40 C.F.R. Part 230, Subpart H): Section 5.6 of this decision document describes actions to be undertaken in response to 40

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

C.F.R. § 203.10(d) to minimize the adverse effects of discharges of dredged or fill material.

7.8 Restrictions on Discharges (Subpart B, section 230.10) (*an answer marked with an asterisk indicates noncompliance with the Guidelines*):

No	Based on the discussion in section 5, are there available, practicable alternatives having less adverse impact on the aquatic ecosystem and without other significant adverse environmental consequences that do not involve discharges into "waters of the US" or at other locations within these waters?
Yes	Based on the discussion in section 5, if the project is in a special aquatic site and is not water-dependent, has the applicant clearly demonstrated that there are no practicable alternative sites that do not involve SAS?
No	Will the discharge:
No	Violate state water quality standards?
No	Violate toxic effluent standards (under Section 307 of the Act)?
No	Jeopardize endangered or threatened species or their critical habitat?
No	Violate standards set by the Department of Commerce to protect marine sanctuaries?
No	Will the discharge contribute to significant degradation of "waters of the US" through adverse impacts to:
No	Human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife and special aquatic sites?
No	Life stages of aquatic life and other wildlife?
No	Diversity, productivity, and stability of the aquatic ecosystem, such as the loss of fish or wildlife habitat, or loss of the capacity of wetland to assimilate nutrients, purify water or reduce wave energy?
No	Recreational, aesthetic, and economic values?

Yes	Will all appropriate and practicable steps (40 C.F.R. §§ 230.70-230.77) be taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem?
------------	---

7.9 Compliance with the 404(b)(1) Guidelines: Reference Section 13.4 of this decision document.

8.0 General Public Interest Review (33 C.F.R. § 320.4 and RGL 84-09): All public interest factors have been reviewed and summarized below. 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. 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.

8.1 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. Section 4.5.2.3 of the Final EIS describes the specific evaluation of potential wetland impacts associated with the Ona project. Section 4.12.5 of the Final EIS describes the cumulative effects on ecological resources, including wetlands. Section 1.4 of this decision document describes the currently proposed project, including the level of impacts to Corps-jurisdictional wetlands and surface waters (including streams). Sections 6.1.5 and 6.2.4 of this decision document describe the updated analyses of the Ona project's direct, indirect, and cumulative effects on wetlands. Section 9.0 of this decision document describes the compensatory mitigation plan proposed to offset the project's wetland and surface water impacts.

8.2 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. Section 4.5.1.3 of the Final EIS describes the specific evaluation of aquatic biological community impacts associated with the proposed Ona project. Section 4.5.3 of the Final EIS describes how the Corps considered direct and secondary impacts to wildlife habitat. Section 4.5.3.3 of the Final EIS describes the specific evaluation of wildlife habitat impacts associated with the proposed Ona project. Section 4.12.5 of the Final EIS describes the potential cumulative effects on ecological resources. Sections 6.1.4 and 6.1.6 of this decision document describe the updated analyses of Ona's direct and secondary effects on aquatic biological communities and wildlife habitat. Section 6.2.4 of this decision document describes the updated cumulative effects analyses for wetlands and upland

habitat.

Section 11.1 of this decision document describes the coordination for the Ona project with the United States Fish and Wildlife Service (USFWS) pursuant to Section 7 of the Endangered Species Act (ESA), including the USFWS' issuance of an amended Incidental Take Permit (ITP)/Habitat Conservation Plan (HCP) on 22 May 2018, and a biological opinion (BO) on 6 November 2018. As also described in Section 11.1 of this decision document, as a result of a 6 November 2013, discussion of the project with the NMFS-PRD, the Corps determined that the proposed mines would have no effect on the smalltooth sawfish. On 16 December 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.

- 8.3 Water quality (33 C.F.R. § 320.4(d)): Section 4.4 of the Final EIS describes how the Corps considered potential direct and secondary impacts to water quality. Section 4.4.2 of the Final EIS describes the specific evaluation of water quality impacts associated with all of the action alternatives. Section 4.12.4 of the Final EIS describes the potential cumulative effects on surface water quality. Section 6.1.3 of this decision document describes the updated analysis of Ona's direct and secondary effects on water quality. Section 6.2 of this decision document describes why the Corps determined that an updated cumulative effects analysis for water quality was not necessary.

The FDEP issued a water quality certification on 31 August 2015, as part of its ERP. If the Corps issues a permit for this project, it will include a condition requiring compliance with the conditions specified in the water quality certification as special conditions to that Corps permit.

- 8.4 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 potential direct and secondary impacts to cultural resources and historic properties. Section 4.9.3 of the Final EIS describes the specific evaluation of potential cultural resource and historic property impacts associated with the Ona project. Section 4.1.8.5 of the Final EIS describes how the Corps considered potential aesthetic impacts associated with phosphate mining, and Section 4.1.8.7 describes how the Corps considered potential effects on recreation. Section 11.3 of this decision document describes how the proposed project complies with the National Historic Preservation Act of 1966.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

- 8.5 Effects on limits of the territorial sea (33 C.F.R. § 320.4(f)): The Ona project will not affect coastal waters, either by erosion or accretion.
- 8.6 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 nor riparian rights to navigable waters.
- 8.7 Activities affecting coastal zones (33 C.F.R. § 320.4(h)): The Ona project will not affect coastal zones.
- 8.8 Activities in marine sanctuaries (33 C.F.R. § 320.4(i)): The Ona project is not within a marine sanctuary.
- 8.9 Other Federal, state, or local requirements (33 C.F.R. § 320.4(j)): Section 11 of this decision document describes the proposed project's compliance with other federal, state, and local requirements.
- 8.10 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(s) will require compliance with Rule 62-672, F.A.C., "Minimum Requirements for Earthen Dams Used in Phosphate Mining and Beneficiation Operations and for Dikes Used in Phosphogypsum Stack System Impoundments." Also, the Hardee County Development Order and Master Mine Plan will require additional inspection, reporting, and emergency management elements that apply to the dams proposed for the Ona Mine.
- 8.11 Floodplain management (33 C.F.R. § 320.4(l)): Section 4.1.8.4 of the Final EIS describes how the Corps considered potential 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 31 August 2015. Additionally, the Corps' evaluation of wetland impacts described in Sections 7 and 8 of this decision document includes consideration of floodplains.
- 8.12 Water supply and conservation (33 C.F.R. § 320.4(m)): Section 6.1.1 of this decision document describes the Corps' review and verification of the updated analysis of the predicted direct and indirect effects of the proposed Ona project on surface water flows within the Upper Myakka River, Horse Creek, and the Peace

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

River. Section 6.2.2 of this decision document describes the updated analysis of the cumulative effects on surface water flows in the Upper Myakka River, Horse Creek, the Peace River, and Charlotte Harbor.

Based on the updated analyses, the changes to the proposed Ona project did not alter the Corps' determinations for the potential direct, indirect, and cumulative effects on surface water hydrology made in the Final EIS.

Section 4.12.2.5 of the Final EIS describes the potential cumulative effects of phosphate mining on water supply withdrawals in the lower Peace River, 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. As also stated above, the changes to the proposed Ona project did not alter the Corps' determinations for the direct, indirect, and cumulative effects on surface water hydrology made in the Final EIS, including on public water supplies.

Section 6.1.3 of this decision document describes the Corps' review and verification of the updated analysis of the predicted direct and indirect effects of the Ona project on surface water quality. As described in Section 6.2, the Corps determined that no updates to the surface water quality cumulative impact analysis found in Section 4.12.4 of the Final EIS was necessary.

Based on the updated analyses, the changes to the proposed Ona project did not alter the Corps' determinations for the potential direct, indirect, and cumulative effects on surface water quality made in the Final EIS. Discharges from the mine will need to comply with both a Section 401 water quality certification (FDEP Environmental Resource Permit) and a Section 402 NPDES permit or permits (also issued by FDEP).

Section 4.3.3 of the Final EIS describes the predicted direct and indirect effects of Ona on groundwater resources. Section 4.12.3.12 of the Final EIS describes the potential 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 potential cumulative effect of phosphate mining on groundwater resources would be at most be minor.

Section 6.1.2 of this decision document describes the Corps' review and verification of the updated analysis of the predicted direct and indirect effects of the proposed Ona project on groundwater resources. Section 6.2.3 of this decision

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

document describes the updated groundwater resources cumulative effects analysis.

- 8.13 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.
- 8.14 Navigation (33 C.F.R. § 320.4(o)): The proposed project will not have any effects on navigation.
- 8.15 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 approved compensatory mitigation plan, Attachment B to this decision document, provides for the reestablishment, management, and preservation of wetland habitats.
- 8.16 Economics (33 C.F.R. § 320.4(q)): Section 4.6.3 of the Final EIS describes the predicted direct and indirect effects of the Ona project on the economy of Hardee County. Section 4.12.6 of the Final EIS describes the cumulative effects on the economies of Hardee County and on an eight-county region. Sections 6.1.7 and 6.2.5 of this decision document described the updated analyses of the potential direct, indirect, and cumulative economic effects. As stated in those sections, the changes to the Ona project did not alter the Corps' determinations for the potential direct, indirect, and cumulative economic effects made in the Final EIS.
- 8.17 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 9 of this document further describes the specific proposed compensatory mitigation for the Ona project.
- 8.18 Conservation: Decades of agricultural activity have resulted in a degraded condition for many of the onsite wetlands. As described in Section 5.4 of this decision document, 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 their mine plan. As described in Section 9 of this decision document, the applicant also proposes to preserve and manage these avoided areas as part of the compensatory mitigation plan. As also described in Section 9 of this decision

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

document, the proposed compensatory mitigation plan also includes restoration, enhancement, and establishment of wetlands and streams on several offsite parcels, with eventual preservation and management of those mitigation areas.

- 8.19 Shore erosion and accretion: The proposed action will not affect shore erosion or accretion.
- 8.20 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.
- 8.21 Food and fiber production: During active mining, the Ona parcel will not be usable for agricultural purposes. However, as described in Section 5.7 of the Final EIS, following mining and reclamation, land uses of reclaimed uplands may include agriculture.
- 8.3 The relative extent of the public and private need for the proposed structure or work: Section 1.2.1 of the Final EIS describes the public's need. Section 1.2.2 of the Final EIS and Section 1.7.1 of this decision document describe the applicant's general need.
- 8.4 Are there unresolved conflicts as to resource use? No
- If so, are there reasonable and practicable alternative locations and/or methods to accomplish the objectives of the proposed action? N/A
- 8.5 The extent and permanence of the beneficial and/or detrimental effects, which the proposed work is likely to have on the public and private use to which the area is suited: As described in Sections 4.6 and 4.12.6 of the Final EIS, the phosphate industry is a major constituent of the regional economy, contributes to the tax base, and provides local jobs. On the private side the company benefits by being allowed to continue its mining activities which continues to generate income for their stockholders.
- 9.0 **Mitigation** [33 C.F.R. § 320.4 (r); 33 C.F.R. Part 332; 40 C.F.R. §§ 230.70-77; 40 C.F.R. §§ 230.90-99 and 40 C.F.R. § 1504.12(f)]:
- 9.1 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

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

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 (South Pasture Extension, Ona, Wingate East, and Desoto).

Section 5.2 of this decision document describes the measures to avoid impacts to aquatic resources proposed by the applicant and considered by the Corps. Sections 5.4 and 5.6 of this decision document describe the minimization measures to avoid impacts to aquatic resources proposed by the applicant and considered by the Corps.

9.2 Compensatory Mitigation for Unavoidable Impacts to Aquatic Resources (33 C.F.R. § 332)

9.2.1 Is Compensatory Mitigation required?

No

Yes

9.2.2 Are the impacts to the jurisdictional aquatic resources in the service area of an approved mitigation bank? Yes

The Regulatory In-lieu Fee and Bank Information Tracking System (RIBITS)²³ on 9 November 2018 showed two federally-approved mitigation banks with service areas that cover the Peace River watershed part of the proposed project – Boran Ranch and Peace River, and one that covers the Myakka River watershed portion – Myakka River.

9.2.3 Does the mitigation bank have the appropriate number and resource type or credits available? See below.

The two banks in the Peace River watershed do not have sufficient wetland credits. Based on the approved UMAM analysis, the 1347.6 acres of forested wetland

²³ <https://ribits.usace.army.mil>

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

impacts result in 602.5 units of functional loss, and the 2032.03 acres of herbaceous wetland impacts result in 766.57 units of functional loss. According to RIBITS on 20 December 2018, Boran Ranch Mitigation Bank had 104.79 herbaceous wetland credits available, and Peace River Mitigation Bank had 42.0 forested wetland credits available.

The bank in the Myakka River watershed does have sufficient wetland credits. Based on the approved UMAM analysis, the 10.27 acres of forested wetland impacts result in 5.12 units of functional loss, and the 28.27 acres of herbaceous wetland impacts result in 12.33 units of functional loss. According to RIBITS on 20 December 2018 Myakka River Mitigation Bank had 61.2 forested wetland credits available, and 58.36 herbaceous wetland credits.

None of the three mitigation banks have stream credits available.

The Applicant could partially offset wetland impacts by purchasing mitigation bank credits. However, Section 9.0 of this decision document, and the approved compensatory mitigation plan (Attachment B), explain why the use of permittee-responsible mitigation to offset all of the impacts is environmentally preferable, and in compliance with the 2008 Compensatory Mitigation Rule.

9.2.4 Are the impacts to the jurisdictional aquatic resources in the service area of an approved in-lieu fee program? No

9.2.5 Does the in-lieu fee program have the appropriate number and resource type or credits available? N/A

9.2.6 Selected compensatory mitigation type/location(s). See Table 10:

Mitigation bank credits	
In-lieu fee program credits	
Permittee-responsible mitigation under a watershed approach	X
Permittee-responsible mitigation, on-site and in-kind	X
Permittee-responsible mitigation, off-site and/or out of kind	X

9.2.7 As the selected compensatory mitigation option deviates from the order of the options presented in §332.3(b)(2)-(6) and/or incorporates permittee-responsible mitigation, explain why the selected compensatory mitigation option is

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

environmentally preferable. Address the criteria provided in §332.3(a)(1) and §332.4(c)(2)-(14):

i. §332.3(a)(1) states that the fundamental objective of compensatory mitigation is to offset environmental losses resulting from unavoidable impacts to waters of the United States authorized by DA permits, with consideration of environmental preferability based on likelihood of ecological success and sustainability, the location of the compensation site relative to the impact site, the significance within the watershed, and costs. §332.3(a)(1) further states that mitigation banks or in-lieu fee programs may, in many cases, be environmentally preferable because they consolidate resources, provide financial planning and scientific expertise, reduce temporal loss, and reduce risk. However, the Corps has determined that the applicant's compensatory mitigation plan (Attachment B), as independently reviewed and verified by the Corps, is the environmentally preferable option, as outlined below.

1. Likelihood of ecological success and sustainability: As described in the approved plan, the applicant has conducted extensive monitoring and data collection of the existing conditions, and modeled the pre- and post-mining hydrology and topography in support of the planning of the locations and types of onsite and offsite wetland and surface water mitigation areas. Sections 5.2 and 5.3 of the Final EIS provide additional information on the methodologies used by the applicant, such as transplanting donor muck, and using laser and GPS-guided earthmoving equipment, in reestablishing mitigation areas. In addition, as also described in the mitigation plan, the applicant proposes perpetual preservation and management of the mitigation areas, ensuring long-term success and sustainability.
2. Location of the compensation site relative to the impact site: The applicant proposes onsite preservation of 1480.3 acres of wetlands and 120,855.65 linear feet of streams before commencement of mining, and after mining and reclaiming discrete units within the project boundaries, establishment of 3205.5 acres of wetlands and 54,326.44 linear feet of stream areas onsite. The applicant also proposes offsite mitigation, including 2265.2 acres of wetland establishment, restoration, enhancement, and preservation, and 20,262 linear feet of stream establishment, at seven locations upstream of the project in the Peace River watershed.
3. Significance within the watershed: Overall, the applicant proposes 3205.5 acres of onsite wetland establishment, 1480.3 acres of onsite wetland preservation, 54,326.44 linear feet of onsite stream establishment,

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

120,855.65 linear feet of onsite stream preservation, 2265.2 acres of offsite wetland mitigation including establishment, restoration, enhancement, and preservation, and 20,262 linear feet of offsite stream establishment.

Within the Peace River watershed, the proposed permittee-responsible mitigation re-establishes, restores, enhances and preserves important regional habitat linkages, including along important tributaries such as Horse and Payne Creeks, and within the river itself. The locations of the offsite mitigation areas are adjacent or in close proximity to existing Mosaic conservation lands, as well as public conservation lands where possible.

Within the Myakka River watershed, the proposed permittee-responsible mitigation re-establishes and then preserves wetlands that will be part of the headwaters of the system.

4. The Charlotte Harbor National Estuary Program (CHNEP) Comprehensive Conservation and Management Plan (CCMP), a watershed plan pursuant to 33 C.F.R. § 332.3(c), identifies four Priority Problems for the Peace and Myakka River watersheds:
 - i) Water Quality degradation: Pollution from agricultural and urban runoff, point-source discharges, septic systems and wastewater treatment systems, atmospheric deposition, groundwater, and other sources;
 - ii) Hydrologic alterations: Adverse changes to amounts, locations, and timing of freshwater flows, the hydrologic function of floodplain systems and natural river flows;
 - iii) Fish and wildlife habitat loss: Degradation and elimination of headwater streams and other habitats, conversion of natural shorelines caused by development, cumulative impacts of docks and boats, invasion of exotic species and cumulative and future impacts; and
 - iv) Stewardship gaps: Limitations in people's knowledge of choices and management decisions that will lead to sustainability within their community. These gaps include overarching issues such as public outreach, advocacy, and data management.

The CCMP further identifies fifteen short-term Objectives and 76 Priority Actions to address the Priority Problems. The permittee-responsible mitigation addresses several of these Priority Actions by improving and protecting water quality to offset other anthropogenic impacts (CHNEP Priority Action WQ-E), establishing and maintaining a more natural seasonal variation in freshwater flows by eliminating ditches and reducing peak runoff rates (CHNEP Priority Action HA-E), restoring and protecting freshwater

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

wetlands on at least an acre-for-acre basis (CHNEP Priority Action FW-C), restoring and protecting aquatic and terrestrial native habitat (CHNEP Priority Action FW-F), and increasing the acreage of land protected under conservation easements (CHNEP Priority Action FW-H).

In a letter from the Charlotte Harbor National Estuary Program (CHNEP) dated 9 September 2016, the Director noted improvements of the current phosphate mining permit proposals over past practices:

- i) Habitat areas are now protected under a Conservation Easement (CEs) rather than deed restrictions.
- ii) CEs are enforceable where deed restrictions are not.
- iii) CSAs are no longer under consideration for compensatory wetland mitigation.
- iv) Reclamation results have improved substantially for both wetlands and uplands within the mining footprint, based on my own site investigations. Groundwater monitoring using piezometers demonstrates the accuracy of groundwater modeling. Where the models appeared incorrect, previously unknown geologic structures were found and the models corrected. Temporal losses of wetland and natural resource functions are now addressed with off-site mitigation.
- v) Off-site mitigation options presented in the current mining proposals were designed to improve hydrology and habitat diversity.
- vi) Unmined areas, areas reclaimed for habitat purposes, and off-site mitigation combine to support the long term hydrologic and habitat diversity structure at the landscape level in the Peace and Myakka River watersheds.
- vii) On-site and off-site mitigation have been designed to support implementation of the CHNEP's Comprehensive Conservation and Management Plan.

In terms of size, the applicant proposes 3205.5 acres of onsite wetland establishment, 1480.3 acres of onsite wetland preservation, 54,326.44 linear feet of onsite stream establishment, 120,855.65 linear feet of onsite stream preservation, 2265.2 acres of offsite wetland mitigation including establishment, restoration, enhancement, and preservation, and 20,262 linear feet of offsite stream establishment. By contrast, Boran Ranch Mitigation Bank totals 403.52 acres, Peace River Mitigation Bank totals 487 acres, and Myakka River Mitigation Bank totals 380 acres.

5. Section 5.7.1 of the Final EIS describes the FDEP mandatory reclamation requirements, which include acre-for-acre, type-for-type wetland and stream restoration on-site. Section 5.8 of the Final EIS describes the FDEP

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

environmental resource permit program, which includes compensatory mitigation requirements similar to the Corps' requirements. Requiring the purchase of mitigation bank credits as Corps mitigation when the FDEP would require the applicant to reclaim and mitigate wetlands onsite would be a more expensive option than the proposed option.

As described above and in Attachment B, the applicant's mitigation plan consolidates resources both onsite by preserving and enhancing key landscape systems and then locating reestablished wetlands and streams in close proximity to those areas, and offsite by re-establishing, restoring, enhancing and preserving important regional habitat linkages; provides financial planning in the form of financial assurance for implementation and long-term management of the mitigation areas; provides scientific expertise in the form of the extensive pre-construction planning and modeling and the post-construction mitigation methodologies and expertise; and addresses temporal loss and risk by applying applicable factors to the functional analysis for the mitigation. Therefore, again the Corps has determined that the applicant's compensatory mitigation plan (Attachment B) is the environmentally preferable option.

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

a) Objectives: As summarized in Tables 4-8-A-xi and 4-8-A-xiii of the compensatory mitigation plan (Attachment B to this decision document), the required compensatory mitigation includes:

1. Onsite establishment of 1323.5 acres of forested wetlands providing 227.5 units of wetland function²⁴, 1882 acres of herbaceous wetlands providing 397.5 units of wetland function, and 54,326.44 linear feet of streams providing 12,468.28 units of stream function²⁵. As explained in the mitigation plan, the applicant will do the onsite establishment on a continuous basis following mining and the initial reclamation. The proposed DA permit includes a condition requiring final grading of onsite wetland establishment areas within 18 months after completion of mining operations, and initial planting within two years. For onsite stream establishment, the proposed DA

²⁴ Using UMAM, as described in Section 1.5.2 of the approved compensatory mitigation plan.

²⁵ Using the Stream Functional Assessment methodology, as described in Section 1.5.1 of the approved compensatory mitigation plan.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

permit includes a condition requiring both final grading and initial planting within two years. The wetland and stream establishment areas include upland and riparian buffers. The applicant will preserve and begin long-term management of these areas after the Corps determines that they have met the performance standards required by the DA permit. Sections 1.2.8 and 1.6 and Appendix 2-2-B-i of the compensatory mitigation plan (Attachment B to this decision document) provide additional details about these mitigation areas.

2. Onsite preservation of 1104.7 acres of forested wetlands providing 191.5 units of wetland function, 375.6 acres of herbaceous wetlands providing 65.6 units of wetland function, and 120,855.65 linear feet of streams providing 18,293.81 units of stream function. The proposed DA permit includes a condition requiring preservation and initiation of long-term management of these areas prior to the commencement of the authorized activities. The wetland and stream preservation areas include upland and riparian buffers. Sections 1.5.1 and 1.5.2.2.3 of the compensatory mitigation plan (Attachment B to this decision document) provide additional details about these mitigation areas.
3. Offsite establishment at the Payne Creek Site of 88.6 acres of forested wetlands providing 41.6 units of wetland function, 418 acres of herbaceous wetlands providing 237.3 units of wetland function, and 14,755 linear feet of streams providing 7878.1 units of stream function. The proposed DA permit includes a condition requiring final grading and initial planting of the wetland and stream establishment areas within two years of permit issuance at this site. The wetland and stream preservation and establishment areas include upland and riparian buffers. The applicant will preserve and begin long-term management of these areas after the Corps determines that they have met the performance standards required by the DA permit. Section 1.2.1 and Appendix 4-1-C of the compensatory mitigation plan (Attachment B to this decision document) provide additional details about this mitigation site.
4. Offsite preservation at the Horse Creek/Payne Creek sites of 471.4 acres of forested wetlands providing 15.7 units of wetland function, and 102.2 acres of herbaceous wetlands providing 1.7 units of wetland function. The proposed DA permit includes a condition requiring preservation and initiation of long-term management of these areas prior to the commencement of the authorized activities. The wetland preservation areas include upland buffers. Section 1.2.3 of the compensatory mitigation plan (Attachment B to this decision document) provides additional details about this mitigation site.
5. Offsite preservation at the Peace River North and Peace River South sites of 682.52 acres of forested wetlands providing 69.07 units of wetland function, and 0.37 acre of herbaceous wetlands providing 0.05 unit of wetland

function. The proposed DA permit includes a condition requiring preservation and initiation of long-term management of these areas prior to the commencement of the authorized activities. The wetland preservation areas include upland and riparian buffers. Sections 1.2.4 and 1.2.5 of the compensatory mitigation plan (Attachment B to this decision document) provide additional details about these mitigation sites.

6. Offsite establishment, enhancement and preservation at the West Fork Horse Creek site of 86.5 acres of forested wetlands providing 15.6 units of wetland function, and 13.8 acres of herbaceous wetlands providing 2.6 units of wetland function. The proposed DA permit includes conditions requiring final grading and initial planting of the establishment areas and completion of the initial enhancement activities within two years of permit issuance, and preservation and initiation of long-term management of the preservation areas prior to the commencement of the authorized activities, at this site. The wetland mitigation areas include upland buffers. The applicant will preserve and begin long-term management of the establishment and enhancement areas after the Corps determines that they have met the performance standards required by the DA permit. Section 1.2.6 and Appendix 4-1-F of the compensatory mitigation plan (Attachment B to this decision document) provide additional details about this mitigation site.
7. Offsite establishment at the South Pasture Extension site of 166.6 acres of herbaceous wetlands providing 65.2 units of wetland function, with 141.8 acres of upland buffers. The schedule for the South Pasture Extension establishment will follow the mine's reclamation schedule. The applicant will preserve and begin long-term management of these areas after the Corps determines that they have met the performance standards required by the DA permit. Section 1.2.7 and Appendix 4-1-G of the compensatory mitigation plan (Attachment B to this decision document) provide additional details about this mitigation site.
8. Offsite establishment, enhancement and preservation at the Bowlegs Creek site of 198.5 acres of forested wetlands providing 46.8 units of wetland function, and 36.6 acres of herbaceous wetlands providing 9.0 units of wetland function, and 5507 linear feet of streams providing 2940.34 units of stream function. The proposed DA permit includes conditions requiring final grading and initial planting of the establishment areas and completion of the initial enhancement activities within two years of permit issuance, and preservation and initiation of long-term management of the preservation areas prior to the commencement of the authorized activities, at this site. The applicant will preserve and begin long-term management of the establishment and enhancement areas after the Corps determines that they have met the performance standards required by the DA permit. The

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

wetland and stream mitigation areas include upland and riparian buffers. Section 1.2.2 and Appendix 4-1-B of the compensatory mitigation plan (Attachment B to this decision document) provide additional details about this mitigation site.

In addition, the applicant will provide the specific wetland types by Florida Land Use and Cover Classification System (FLUCCS) code and acreages for individual wetland establishment areas as shown in Tables 4-8-A-v, 4-8-A-xiv, 4-8-A-xvi, 4-8-A-xvii, and 4-8-A-xxi of the compensatory mitigation plan, unless the Corps approves adaptive management measures as described in the Mitigation Adaptive Management/Alternatives Special Condition of the DA permit (as shown in Attachment D to this decision document).

After achievement of performance standards, the applicant will preserve all enhanced wetlands and established wetlands and streams with a conservation easement, as described in Section 9.2.7(ii)(c) of this decision document, the compensatory mitigation plan (Attachment B to this decision document), and the DA permit special conditions (Attachment D to this decision document).

The upland buffers associated with the wetland mitigation areas described above did not provide direct compensation for the loss of aquatic resource functions. However the Corps did consider the upland buffers' effect on and support of the wetland mitigation areas in its review and approval of the functional analysis of the wetland compensatory mitigation.

Section 9.2.7(i) of this decision document describes how the anticipated functions of the mitigation project will address watershed needs, as does Section 1.1 of the compensatory mitigation plan (Attachment B to this decision document).

b) Site Selection: The Corps has independently reviewed and verified the Applicant's site selection criteria, including both the onsite and offsite mitigation areas, as described in Section 1.2 of the compensatory mitigation plan (Attachment B to this decision document). The Corps concurs with the Applicant's discussion of why purchasing mitigation bank credits is not an environmentally preferable mitigation alternative.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

Sections 9.2.7(i) of this decision document describes how the Corps determined that the Applicant's compensatory mitigation plan (Attachment B) is the environmentally preferable option.

Sections 9.2.7(i)(3) and (4) describe how the proposed mitigation meets watershed needs within the Peace and Myakka River watersheds. Figure 3 of Attachment C to this decision document shows the Applicant's Preferred Alternative for minimization, including the areas that the Applicant has avoided on-site. The Applicant proposes to preserve all of these areas before mining. The proposed enhancement areas are also within the avoided/no-mine areas. Section 5.4 of this decision document explains how the Corps considered other onsite alternatives.

As explained in the Site Selection section of the compensatory mitigation plan, the Applicant based the locations of the reestablished onsite and offsite wetlands and the onsite streams on extensive monitoring, data collection, analyses and modeling. The attachments to the compensatory mitigation plan provide additional information on that monitoring, data collection, analyses, and modeling. The Corps has independently reviewed and verified that information as part of its overall review and approval process for the compensatory mitigation plan and for this project.

c) Site Protection Instrument: The Applicant will provide long-term protection of the mitigation areas by granting conservation easements to the FDEP over the mitigation areas. The DA permit will require the Applicant to record legally sufficient conservation easements that are consistent with the goals of the compensatory mitigation plan and long-term management plan and provide third party rights of notice and enforcement to the Corps. The Applicant will be required to submit the draft conservation easements, scale drawings of the areas to be included within the conservation easements, legal descriptions, and surveys for review and approval by the Corps pursuant to 33 C.F.R. § 332.7(a). Furthermore, the Applicant will be required to provide title evidence demonstrating sufficient legal interest to ensure long-term protection of the mitigation areas and a title insurance policy in an amount equal to the current market value of the unencumbered property. Any existing encumbrances that are not consistent with the goals of the compensatory mitigation plan or long-term management plan will be required to be subordinated to the conservation easement. Finally, the Applicant will be required to provide a certified copy of the recorded conservation easements to the Corps.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

d) Baseline Information: The 22,483-acre Ona tract is comprised of 4885.3 acres of jurisdictional wetlands and other waters, 689.7 acres of non-jurisdictional wetlands, and 221,622.44 linear feet of jurisdictional tributaries (including natural and ditched streams). The jurisdictional wetlands consist of 2456.4 acres of forested wetlands, 2390.2 acres of herbaceous wetlands, and 38.7 acres of ditched wetlands and other surface waters. Approximately 43 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 forests) is present on approximately 43 percent of the site and wetland vegetative cover is present on approximately 27 percent of the site. The historic and current 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 1996 including wetland delineations, wetland quality assessments using UMAM and other methodologies, detailed vegetation and land use mapping, and wildlife and listed species surveys. Three separate hydrologic simulations have been completed. The floodplain functions were assessed using a storm event model commonly used for such purposes (ICPR). The proposed seepage slopes were assessed using a 2-dimensional slice model, Hydrus 2D. The seasonal wetland water levels and their hydroperiods have been assessed using a physics-based integrated groundwater and surface water model, MIKE SHE. Data collected for these analyses included stream and drainage area characteristics, topography, precipitation rates, measurements of evapotranspiration, and hydrogeology.

The applicant also proposed offsite mitigation areas to provide additional herbaceous and forested wetland UMAM units and stream functional units beyond what could be provided onsite. Although offsite, they are part of the extensive modeling of pre and post-mining hydrology and topography associated with the overall compensatory mitigation plan. Section 1.2 of the compensatory mitigation plan, the Mitigation Site Selection section, provides details about the baseline information for the seven offsite mitigation areas.

The Corps considered this baseline information both in its evaluation of the proposed impacts associated with the Ona project and its evaluation of the compensatory mitigation.

e) Determination of Credits: The Corps has independently reviewed and verified the Applicant's functional assessment of proposed wetland and stream impacts and compensatory mitigation. Based on functional analyses using the Uniform

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

Mitigation Assessment Method (UMAM), the proposed unavoidable wetland impacts cause the loss of 607.6 units of forested wetland function, and 778.9 units of herbaceous wetland function. The mitigation provides 607.8 units of functional gain for forested wetlands and 779.95 units of functional gain for herbaceous wetlands. Based on functional analyses using the FDEP stream habitat assessment methodology, the proposed unavoidable stream impacts cause the loss of 41,377.21 units of stream function, and the proposed mitigation provides 41,580.53 units of functional gain for streams.

Table 4-8-A-xiii in the compensatory mitigation plan (Attachment B to this decision document) provides a summary of the acreage and functional loss or gain by wetland type (forested or herbaceous), onsite and for each offsite location. Appendix 2-4-A-i provides the UMAM data sheets for wetland impact and mitigation sites. Table 4-8-A-xi provides a summary of the length and functional loss or gain by streams, onsite and for each offsite location. Appendices 2-2-B-i, 4-1-B, and 4-1-C provide details of the stream functional analysis for impacts and mitigation.

Section 1.5 of the compensatory mitigation plan, Determination of Credits/Sufficiency, provides additional information about the wetland and stream functional analyses, including explanations of how those analyses consider risk and temporal lag. Also in the Determination of Credits/Sufficiency section, in sections 1.5.2.2.3 and 1.5.2.2.4, is an explanation of the preservation mitigation. As stated there:

Section 332.3(h) of the CMR dictates that preservation may be used to provide compensatory mitigation for activities authorized by DA permits when the five specific criteria listed below are met.

- (i) The resources to be preserved provide important physical, chemical, or biological functions for the watershed
- (ii) The resources to be preserved contribute significantly to the ecological sustainability of the watershed. In determining the contribution of those resources to the ecological sustainability of the watershed, the district engineer must use appropriate quantitative assessment tools, where available
- (iii) Preservation is determined by the district engineer to be appropriate and practicable
- (iv) The resources are under threat of destruction or adverse modifications

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

(v) The preserved site will be permanently protected through an appropriate real estate or other legal instrument (e.g., easement, title transfer to state resource agency or land trust)

The compensatory mitigation plan provides information about the resources and their contributions related to items (i), (ii), (iii), and (v). For item (iv), the Corps considered the potential for the aquatic resources proposed for preservation to be degraded by changes in land use within and adjacent to the resources to more intensive and damaging uses.

UMAM allows for a comparison between the 'without preservation' condition of a proposed preservation area and its condition 'with preservation'. As described in Tables 4-8-A-xii, 4-8-A-xix, 4-8-A-xx, 4-8-A-xxi, and 4-8-A-xxiii of the compensatory mitigation plan and in the UMAM data sheets (Appendix 2-4-A-i), 'without preservation' the preserved wetlands' would score lower than their current condition. The Corps determined that 'with preservation', however, there would be no improvement above the current condition in the wetlands' condition in the categories of water environment or community structure because preservation would only prevent degradation from occurring, not improve conditions. The Corps did allow for increases above the current condition for location and landscape support due to the inclusion of upland buffers, the inclusion of a large portion of the main streams and their floodplains in the preservation areas, and the expected connectivity between the preservation areas and offsite mitigation areas. The Corps did not approve direct wetland mitigation credit for the preservation of upland areas.

Additional information about UMAM is available from the FDEP's website: <http://www.dep.state.fl.us/Water/wetlands/mitigation/umam/index.htm>. Additional information about the Corps' implementation and use of UMAM is available here, in the "Uniform Mitigation Assessment Methodology (UMAM) – FDEP" section: <http://www.saj.usace.army.mil/Missions/Regulatory/Source-Book/>. Additional information about the stream habitat assessment methodology is available here: <http://dep.state.fl.us/water/bioassess/training.htm#Stream>.

f. Mitigation Work Plan: Section 1.6 of the compensatory mitigation plan provides information about the mitigation work plans, as independently reviewed and verified by the Corps, and details of the onsite wetland and stream work plans. Appendices 4-1-B, 4-1-C, 4-1-F and 4-1-G describe the work plans for the Bowlegs Creek, Payne Creek, West Fork Horse Creek, and South Pasture Extension offsite mitigation areas respectively.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

The following is a summary of the onsite mitigation work plan.

Wetland establishment will begin when sand tailings backfill has been placed. Work would consist of analysis of the subsurface lithology and hydrology, placement or development of suitable soils at proper elevations, including use of stockpiled wetland topsoils when available and practicable, and vegetation establishment. Planting would occur in three phases. Phase A planting would occur as soon as the grading and muck/topsoil addition has been completed; species planted would consist of those tolerant of a relatively wide range of hydroperiods depths and durations. Phase B planting would not occur until two years of hydrological monitoring confirms that the wetland design is properly functioning in terms of hydroperiod depths and durations; Phase B species would consist of those requiring more precise or specific hydroperiods (e.g., marsh fringes or wet prairies). Phase C planting applies only to forested wetlands; species consist of shade adapted shrub and groundcover strata that would be planted only after canopy closure begins, which typically occurs several years after initial planting.

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 Ona, such as the south half of the Brushy Creek system. 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, paralentic, 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.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

g. Maintenance Plan: The applicant will conduct mitigation maintenance in conjunction with monitoring to ensure the mitigation sites progress towards success as defined by the permit performance standards and in accordance with the mitigation work plan. As described in Section 1.7 of the compensatory mitigation plan, the maintenance plan includes inspections at least semi-annually, control and removal of exotic and nuisance species, and supplemental plantings as necessary.

h. Performance Standards: Section 1.8 of the compensatory mitigation plan provides the details of the performance standards for wetlands and streams. The performance standards include requirements for hydrology and plant species composition and coverage as appropriate by wetland type, coverage by exotic and nuisance species, macroinvertebrate richness and diversity in streams, and hydrology and other physical characteristics as appropriate by stream type. The performance standards also include time limits for achievement of the standards. Those time limits correspond with the temporal factors considered in the functional analyses for the wetland and stream mitigation. The performance standards in the compensatory mitigation plan for preserved wetlands, and for preserved and established streams, also have requirements based on the functional analyses.

The Mitigation Performance Standards special conditions in the DA permit (as shown in Attachment D to this decision document) for enhanced and established wetland mitigation areas also require that those areas achieve the UMAM scores described in the compensatory mitigation plan.

i. Monitoring Requirements: The DA permit special conditions (Attachment D to this decision document) include requirements for monitoring, including descriptions of the parameters monitored, a schedule for monitoring and reporting, and the format for reporting.

j. Long-Term Management Plan: After the Corps' determination that a mitigation area has achieved the necessary performance standards, the Applicant will maintain that mitigation area in perpetuity in accordance with mitigation objectives and an approved Long-term Management Plan. The long-term management plan includes 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

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

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, as independently reviewed, verified and approved by the Corps, provides the long term funding mechanism for the long term management needs of the mitigation areas.

Section 10 of the Long-Term Management Plan (Appendix 4-4-C of the mitigation plan) provides the bases for the cost estimates for the annual maintenance of the mitigation areas, including costs for maintaining fences, signage, and existing trail and road crossings of streams and wetlands, prescribed burning, herbiciding as necessary, and inspections and reports. The applicant states that the annual cost of maintenance overall is \$65 per acre; the Corps has reviewed and accepted the Applicant's cost estimates for long-term maintenance.

Based on that per acre cost, the annual cost of managing the 5627 acres of immediate onsite and offsite preservation (5207.3 acres for Phase A-1 and 418.9 acres for Phase A-2, rounded up to next whole number), including associated upland buffers and riparian areas, is \$365,755. As described in the Long-Term Management Funding special condition of the DA permit (as shown in Attachment D to this decision document), the funding mechanism will provide for an initial principal of \$18,287,750 to cover the annual cost of managing these 5627 acres. The Corps independently verified this amount using a method for calculating a principal amount of a long-term funding mechanism described in the document *Wetland and Stream Mitigation: A Handbook for Land Trusts*, written by The Environmental Law Institute and Land Trust Alliance in September 2012 (included by reference, available at: https://www.epa.gov/sites/production/files/2015-08/documents/wetlands_and_stream_mitigation_-_a_handbook_for_land_trusts_0.pdf).

The method first requires a capitalization rate, which is the expected rate of return, minus an inflation rate, and minus administrative costs, such as for fund management. The applicant proposed a capitalization rate of 2%, based on a 6% rate of return, minus an assumed 3% inflation rate, minus 1% for costs. The method then applies a formula that divides the annual maintenance costs by the capitalization rate; $\$365,755/0.02 = \$18,287,750$.

k. Adaptive Management Plan: To ensure the mitigation meets the required performance standards, Mosaic acknowledges that an adaptive management approach will be an integral part of the compensatory mitigation plan implementation. As described in the Section 1.9 of the compensatory mitigation

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

plan and as required by the DA permit, Mosaic will implement a comprehensive and extensive monitoring program designed to gather sufficient data to evaluate the progress of wetland and stream mitigation areas towards achievement of performance standards. Mosaic will also implement corresponding mitigation compliance reporting in accordance with the requirements of the DA permit.

If monitoring or compliance inspections identify performance deficiencies such as inappropriate hydrology or exotic/nuisance vegetation, or if the Corps otherwise determines that the mitigation is not progressing towards achievement of performance standards, Mosaic will promptly assess the mitigation to determine the cause(s) of the problem(s), and develop and implement a site-specific adaptive management/corrective action plan that addresses specific construction, maintenance, and/or enhancement measures to achieve the design objectives. Examples of corrective actions may include but would not be limited to adjusting wetland hydrology, supplemental plantings, or changing the exotic and nuisance species control frequency or methods. Mosaic shall submit any such adaptive management plan to the Corps for approval prior to implementation, and include a description of the implementation and results in the annual monitoring reporting.

As also required by the DA permit, Mosaic will monitor and provide annual reports on the construction compliance, including the acreage and location of mitigation areas implemented during the reporting period and cumulatively. If the site has areas that are determined to be different from the originally permitted mitigation area boundaries or community types, Mosaic shall request a permit modification to delineate the correct boundaries and/or community types and requisite functional assessment adjustments.

I. Financial Assurances:

The Corps requires sufficient financial assurances to ensure a high level of confidence that the compensatory mitigation project will be successfully completed, in accordance with applicable performance standards. 33 C.F.R. § 332.3(n)(1). Financial assurances required for compensatory mitigation projects under state law may also be used to satisfy federal requirements when the same compensatory mitigation project will be used to satisfy the requirements of the Corps Regulatory Program, as well as the state regulatory program.

The applicant proposes to provide the same financial assurance mechanism to meet the requirements of 33 C.F.R. § 332.3(n) as that required by the State permits, which is a surety bond equal to 110 percent (%) of the estimated

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

mitigation costs for WOUS affected in the first three years of construction of Ona, including monitoring and maintenance. The applicant proposes to 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 annual updates will also address revised costs of mitigation activities, and Corps-authorized releases of mitigation area from required implementation maintenance and monitoring.

On 6 September 2018, the Corps received a Compensatory Mitigation Plan (CMP) to offset the loss of wetland and stream functions associated with construction of the proposed 22,483-acre Ona phosphate mine. The overall approved compensatory mitigation includes 1323.5 acres of onsite forested wetland establishment, 1882 acres of onsite herbaceous wetland establishment, 1104.7 acres of onsite forested wetland preservation, 375.6 acres of onsite herbaceous wetland preservation, 54,326.44 linear feet of onsite stream establishment, and 120,855.65 linear feet of onsite stream preservation. Off-site mitigation consists of 88.6 acres of forested wetland establishment, 418 acres of herbaceous wetland establishment, and 14,755 linear feet of stream establishment at the Payne Creek Restoration site; 471.4 acres of forested wetland preservation and 102.2 acres of herbaceous wetland preservation at the Horse Creek/Payne Creek sites; 682.52 acres of forested wetland preservation and 0.37 acre of herbaceous wetland preservation at the Peace River North and Peace River South sites; 18 acres of forested wetland establishment, 13.4 acres of herbaceous wetland establishment, 63.1 acres of forested wetland preservation, 0.4 acre of herbaceous wetland preservation, and 5.4 acres of forested wetland enhancement at the West Fork Horse Creek site; establishment of 166.6 acres of herbaceous wetlands at the South Pasture Extension site; and 36.1 acres of forested wetland establishment, 3.6 acres of herbaceous wetland establishment, 80 acres of forested wetland preservation, 82.4 acres of forested wetland enhancement, and 33 acres of herbaceous wetland enhancement at the Bowlegs Creek site.

On 31 August 2015, the State of Florida, Department of Environmental Protection issued ERP No. 0169281-015 under part IV of chapter 373, F.S. for the construction of the Ona phosphate mine²⁶. The State permit included the

²⁶ The FDEP issued a modification of ERP No. 0169281-015 on July 12, 2018, to address changes to the Ona compensatory mitigation made as part of the Corps' review of the project. Compliance with the conditions of the modification is a requirement of the Corps permit.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

approval of a financial assurance mechanism developed to satisfy the regulatory requirements of the State for the State approved compensatory mitigation plan. Specifically, the State permit requires an initial financial responsibility demonstration equal to 110 percent of the estimated mitigation costs for wetlands and other surface waters affected in the first three years of operation under the permit. For each year thereafter, the financial responsibility demonstration shall be updated, including to provide an amount equal to the 110 percent of the estimated mitigation costs for the next year of operations under the permit for which financial responsibility has not already been demonstrated.

The Corps has reviewed the detailed financial assurance mechanism approved by the FDEP for ERP No. 0169281-015, including financial assurance instruments (surety bond, and standby trust), and the initial compensatory mitigation cost estimates for wetlands impacts incurred during the first three years of mining operations.

As stated previously, financial assurance required for compensatory mitigation projects under state law may be a satisfactory mechanism provided it ensures, with a high level of confidence, that the Corps required compensatory mitigation will be provided and maintained. In June 2011, the Institute for Water Resources (IWR) provided a reference resource titled "Implementing Financial Assurance for Mitigation Project Success" to aid in the key design and implementation issues and considerations relating to the use of financial assurances for mitigation project success. IWR updated this document in March 2016. The Corps used this document to determine if the State financial assurance plan is sufficient to ensure with a high level of confidence that the Applicant will successfully complete the compensatory mitigation project in accordance with applicable performance standards. The Corps considered the following:

Size, Type & Location: The State permits and this DA permit both require on-site and off-site permittee-responsible mitigation based on a watershed approach. The size and type of mitigation required by each plan is listed in the Table 1 below. The overall acreage (onsite and offsite) of Corps required forested wetland establishment is 1466.2 acres whereas the State requirement is 1442.3 acres. The overall acreage of Corps required herbaceous wetland establishment is 2483.7 acres whereas the State requirement is 1929.3 acres. The overall acreage of Corps required forested wetland enhancement is 87.8 acres whereas the State requirement is 135.3 acres. The overall acreage of Corps required herbaceous wetland enhancement is 33 acres and the State requirement is 42.9 acres. The overall length of Corps required stream establishment is 74,588.44 linear feet whereas the State requirement is 99,716 linear feet. The overall length

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

of Corps required stream preservation is 120,855.65 linear feet whereas the State requirement is 122,812 linear feet. The Corps did not require any stream enhancement whereas the State requirement is 10,000 linear feet.

The mitigation required for the first three years of impacts authorized by the DA permit consists of 36.2 acres of herbaceous wetland establishment and 3.2 acres of forested wetlands establishment.

Figure 10 in Attachment C to the decision document shows the location of the offsite mitigation areas.

Table 1

Mitigation Type	Corps CMP	State CMP
Forested Establishment (Onsite)	1323.5	1185.6
Bay Swamp Establishment (Onsite DEP Only)	NA	114.0
Forested Establishment (Offsite)	142.7	142.7
Herbaceous Establishment (Onsite)	1882.0	1281.9
Wet Prairie Establishment (Onsite DEP Only)	NA	45.7
Herbaceous Establishment (Offsite)	601.7	601.7
Forested Enhancement (Onsite)	0.0	47.5
Herbaceous Enhancement (Onsite)	0.0	4.5
Wet Prairie Enhancement (Onsite DEP Only)	NA	5.4
Forested Enhancement (Offsite)	87.8	87.8
Herbaceous Enhancement (Offsite)	33.0	33.0
Acres Subtotal	4070.7	3549.7
Stream Establishment (Onsite)	54326.44	78652.0
Stream Preservation (Onsite)	120856.0	122812.0
Stream Establishment (Offsite)	20262.0	21064.0

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

Stream Enhancement (Onsite)	0.0	10000.0
Linear Feet Subtotal	195444.0	232528.0

Implementation of the CMP: The State and Corps have approved the same mitigation construction timetable, as listed below in Table 2.

Wetland Preservation: Both the Corps and State CMPs include the preservation of onsite and offsite undisturbed wetlands and associated upland buffer areas. Both plans require the permittee to record these preserved areas in conservation easements prior to initiating the authorized work.

Wetland Enhancement: Both the Corps and State CMPs include the enhancement of off-site wetlands along with associated upland buffers; the State CMP also requires the enhancement of onsite wetlands and uplands. Both plans require the enhancement and protection of these areas in recorded conservation easements after the mitigation meets performance standards.

Wetland Establishment: Onsite herbaceous and forested wetland establishment shall occur sequentially across the site following completion of mining operations in each mining block (segment of mining). According to the timetable in Table 2, Phase A plantings must commence no later than 24 months after completion of mining operations, final grading, and muck placement. Phase B plantings will commence following two years of hydrological monitoring, and Phase C plantings will commence as conditions allow. Table 2 is part of the Corps approved CMP and is in the Specific Conditions of the State permits.

Stream Establishment/Creation: On-site stream establishment will occur on a rolling basis across the site, as restoration follows behind mining. Appendix 2-2-B-i of the Corps approved CMP details the stream design characteristics and timetables. The Corps approved stream restoration plan agrees with the State approved plans.

Table 2

Activity Relative Time Frame	Relative Time Frame
Commencement of Severance/Site preparation	No more than six (6) months prior to mining operations (unless approved by the USACE for the purposes of directly transferring topsoil/muck to a contoured mitigation site), except as otherwise authorized herein.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

Final grading, including muck placement	No later than 18 months after completion of mining operations, including backfilling with sand tailings.
Phase A planting (species that tolerate a wider range of water levels)	No later than six (6) months after final grading or 1 year after muck placement
Hydrological Assessment	For two (2) years after contouring in accordance with Specific Conditions and the Monitoring conditions of this permit.
Phase B planting (species that tolerate a more narrow range of water levels)	Up to 12 months after the completion of the hydrological assessment
Phase C planting (shade-adapted ground cover and shrub species, additional trees and shrubs to meet the objectives of the Compensatory Mitigation Plan)	At least two (2) years prior to release in forested wetlands

Monitoring requirements: Below is a comparison of Corps' and the State's mitigation monitoring requirements. The Corps' and the State's requirements are similar.

Corps: For established wetland mitigation areas, the Corps requires semi-annual monitoring of mitigation areas for the first two years following construction, and then annual monitoring thereafter. Semi-annual monitoring shall be combined into one annual monitoring report. Monitoring parameters include percent cover by desirable species by stratum, percent cover by exotic or nuisance species, dominant species, water depth relative to zonation, soil monitoring relative to muck depth, color, texture, litter accumulation and moisture, the health and viability of the trees by measuring DBH and height. Annual monitoring reports shall be submitted until the Corps determines that the mitigation area(s) have achieved their performance standards. For streams, the Corps requires semi-annual monitoring of each stream establishment area for the first three years and then perform annual monitoring thereafter for a minimum of seven years. Monitoring parameters include drainage area, average bankfull cross-sectional area, average bankfull width, bankfull thalweg depth, hydraulic depth, width/depth ratio, pool depth, Rosgen class, sinuosity, stream length, bed slope, flood-prone width, functional process zone type, and habitat assessment score

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

(HAS). Annual monitoring reports shall continue to be submitted until the Corps determines that the stream mitigation area have achieved their performance standards for five consecutive years.

State: Semi-annual vegetative monitoring for each mitigation area, and the submittal of the reports beginning one year after planting. Subsequent vegetation statistical reports shall be submitted in years two, three, five, and biennially thereafter until release. Vegetative monitoring will include a species list and % cover, FLUCCS level III map, % bare ground and open water, nuisance spp. cover, upland spp. cover, tree density, shrub density, tree height, tree dbh, and fruit and seedlings. All monitoring data shall be submitted no later than March 1st of the following year. In addition to annual vegetative monitoring reporting, hydrology and water quality monitoring reports must be submitted annually. For stream mitigation, annual monitoring shall occur in years one through five, then every other year until release. Stream monitoring will include bank and channel stability, map of channel, sinuosity, stream length, stream slope, bankfull indicators present, bankfull area, depth, width, maximum depth, width depth ratio, entrenchment ratio, radius of curvature large woody debris abundance, and vegetation cover in stream channel.

Performance standards: Tables 3(a)-(f) below are a comparison of Corps mitigation performance and the State permit mitigation release criteria. The Corps and the State have similar performance standards.

Tables 3(a)-(f)

3(a) Preserved Wetlands	Corps	State
Baseline hydrology maintained	Yes	Yes
UMAM Community Structure scores maintained	Yes	No
Invasive exotic plant species (maximum)	5%	10%
Performance standards met prior to mining	Yes	Yes
Conservation easement recorded prior to mining	Yes	Yes

3(b) Enhanced Wetlands	Corps	State
Corps/State Jurisdictional	Yes	Yes
Percent cover by appropriate wetland species (minimum)	80%	N/A
UMAM assessment scores achieved	Yes	No
Appropriate soil hydrology	Yes	Yes
Years to achieve the performance standards	3	N/A

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

3(c) Established Wetlands (Herbaceous)	Corps	State
Corps/State Jurisdictional	Yes	Yes
Percent cover by appropriate wetland species (minimum)	80%	80%
UMAM assessment scores achieved	Yes	No
Invasive exotic plant species (maximum)	5%	10%
Percent cover by single species (maximum)	30%	50%
Relative percent cover by single groundcover species	30%	80%
Years to achieve the performance standards (maximum)	5	7

3(d) Established Wetlands (Forested)	Corps	State
Corps/State Jurisdictional	Yes	Yes
Percent cover by appropriate wetland species (minimum)	No	80%
UMAM assessment scores achieved	Yes	No
Invasive exotic plant species (maximum)	5%	10%
Percent cover by single species (maximum)	No	No
Appropriate soil hydrology	Yes	Yes
Number live trees per acre that are at least 12' tall	400*	400*
Number of shrubs per acre (minimum)	100	100
Years to achieve the performance standards (maximum)	15	12
Riparian buffer width with native vegetation (minimum)	60'	95', 60', and 25'
Years to achieve performance standards within each established stream segment (maximum)	10	12

*Does not apply to hydric pine flatwoods, hydric pine savanna, or slash pine swamp forest.

3(e) Preserved Stream Segments	Corps	State
Required FDEP visual habitat assessment scores (HAS) maintained in perpetuity	Yes	No
Riparian buffers 60 foot wide with native wetland or upland vegetation	Yes	No

3(f) Established Stream Segments	Corps	State
Rosgen Type stream segments with the specific characteristics as described in work plan.	C5 or E5	C or E

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

Macroinvertebrate species richness and diversity within the range of or which exceeds the reference stream	Yes	Yes
FDEP visual habitat assessment score (HAS) of 105 with a minimum buffer width of 60 feet on each side and stable stream banks.	Yes	Yes
Riparian buffer width with native vegetation (minimum)	60'	95', 60', and 25'
Years to achieve performance standards within each established stream segment (maximum)	10	12

Notification to the Corps of Termination, Revocation, Modification, Amendment, Partial Release, or Disbursement: The draft surety bond provided by the Applicant stipulates that the Surety provide notice to the Corps at least 120 days in advance of any termination or revocation of the bond, and provide notice to the Corps at least 30 days in advance of modifications, amendments, partial releases, or disbursements. By providing advance noticing language directly in the State Financial Assurance legal instrument, an additional measure of confidence has been provided that the financial assurance required by the State for the construction of the compensatory mitigation project is sufficient for the purposes of achieving compliance with compensatory mitigation requirements of the DA permit, and is in compliance with 33 C.F.R. § 332.3(n)(1)-(6).

Cost: Rationale behind the cost estimate for providing replacement mitigation which considers costs for land acquisition, planning and engineering, legal fees, mobilization, construction, and monitoring. [See Institute for Water Resources (IWR) "Implementing Financial Assurance for Mitigation Project Success, June 2011" Updated March 2016]

Cost of Land Acquisition: The approved permittee-responsible on-site and offsite mitigation has been subjected to comprehensive hydrologic modeling, geologic and soils testing, and ecological analyses by the Applicant. It was designed to fit the postmining landscape which itself was designed to replicate or improve water resource features (i.e. wetlands), that were present prior to mining. In the event that the permittee abandoned the mitigation prior to release, remediation would be desirable and likely to be successful. If necessary, access to the mitigation sites by an independent, third-party contractor for remediation work and monitoring and maintenance is facilitated by the location of the properties. The properties directly abut public roads, as opposed to being surrounded by private properties whose owners may limit or deny access to the mitigation sites. For these reasons stated above, the Corps has determined that there is no need to include component costs for land purchase when setting assurance amounts.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

Cost of Planning And Engineering: As is the case with land acquisition, the approved permittee-responsible mitigation plan is the result of comprehensive hydrologic modeling, geologic and soils testing, and ecological analyses by the Applicant. Likewise, the mitigation sites are designed to fit the post-mining landscape which itself is designed to replicate or improve water resource features (i.e. wetlands), that were present prior to mining. The risk of failure of the mitigation based on design deficiencies beyond that which could be corrected through on-site remediation, by a third party contractor, is unlikely.

Legal Fees: The financial assurance instruments, (surety bond, and the standby trust agreement), will be funded and in place prior to commencement of the authorized activities. The procedure for triggering the release of those funds from the surety bond into the standby trust, and administering those funds for the mitigation work until performance standards are achieved have already been established. Legal fees associated with implementing the financial assurance should therefore be minimal.

Cost of Mobilization, Construction, and Monitoring: On 30 August 2018, the Corps received a copy of the initial wetland mitigation financial assurance demonstration provided to the State. The estimated mitigation liability for the first three years of operations under the Ona ERP is \$787,212, including the 10% contingency factor. Cost estimates for mobilization, construction, maintenance and monitoring of the mitigation sites are based on the Applicant's history of competitive bidding associated with similar wetlands mitigation projects. Cost estimates are updated annually to account for inflation based on the Construction Cost Index (CPI) as published in the Engineering News-Record. In addition to estimating costs based on other projects, the Applicant has provided copies of signed contracts for earthwork, surveying, planting, maintenance, monitoring, and project management for wetland mitigation of a similar size.

Determination: The Corps has independently reviewed and verified the mitigation construction cost estimate as approved by the State. Based on the submitted documentation, the Corps has determined that the State-approved mitigation financial assurances provides sufficient financial resources to complete or replace the permittee's obligations to implement the required mitigation project and to meet specified performance standards in DA permit number SAJ-2011-01869, in the event that the permittee proves unable or unwilling to meet those obligations. Additional financial assurances are not necessary at this time. The DA permit includes a special condition requiring the financial assurances to be in place prior to commencement of the authorized activities.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

10.0 **Cumulative and Secondary Impacts** – (40 C.F.R. § 230.11(g) and 40 C.F.R. § 1508.7, RGL 84-9) *Cumulative impacts result from the incremental environmental impact of an action when added to all other past, present, and reasonably foreseeable future actions. They can result from individually minor but collectively significant actions taking place over a period of time. A cumulative effects assessment should consider both direct and indirect, or secondary, impacts. Indirect impacts result from actions that occur later in time or are farther removed in distance from the original action, but still reasonably foreseeable.*

10.1 Final EIS Analyses and Updates: Chapter 4 of the Final EIS describes the direct and indirect effects of each of the alternatives considered in that document, including the Ona Mine. Section 4.12 of the Final EIS provides the Corps' cumulative impacts analysis of the effects of the four similar phosphate mines analyzed in the Final EIS, including Ona, in combination with the effects of other past, present, and reasonably foreseeable actions, both mining-related and non-mining-related.

Section 1.4.1 of this document describes project changes since the 1 June 2012 public notice and the Final EIS, and Section 1.4.2 identifies updates to direct, indirect, and cumulative effects analyses for Ona in the Final EIS. Section 6.1 describes and provides the results of the updates to the direct and indirect effects analyses. Section 6.2 describes and provides the results of the updates to the cumulative effects analyses.

10.2 Chemical Processing Facilities and Phosphogypsum Stacks: The Corps received public comments that raised concerns about the potential adverse environmental effects associated with phosphate chemical processing facilities, and with the byproducts of that processing including phosphogypsum. As explained in Section 4.5 of this document and Section 1.3.1 of the EIS, these facilities are independent from the proposed mining because the facilities can operate even without locally mined phosphate. In addition, both FDEP and USEPA directly regulate the processing facilities and phosphogypsum stacks located within the CFPD.

Although the potential impacts associated with the facilities and phosphogypsum stacks are not a direct or indirect effect of the proposed project, the Corps' cumulative impact analysis did consider these impacts, along with the impacts of other past, present, and reasonably foreseeable future actions.

The majority of the Ona project area is within the Peace River watershed, with

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

approximately 300 acres located within the Myakka River watershed. In the Peace River watershed, there is only one phosphogypsum stack that continues to have a small volume of treated discharge under the authority of an NPDES permit. In the Myakka River watershed, there are no processing facilities or phosphogypsum stacks.

Under 40 C.F.R. § 1508.7, "*Cumulative impact* is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." The cumulative impact analyses in the EIS considered the incremental impacts associated with the four then-proposed phosphate mines, when added to other past, present, and reasonably foreseeable future actions, including phosphate chemical processing facilities and phosphogypsum stacks.

Section 4.12.1.1 of the Final EIS describes how the Corps identified the following significant cumulative impact categories to be further analyzed: surface water resources (hydrology), groundwater resources hydrology, surface water quality, ecological resources (wetlands/surface waters and upland habitat), and economic resources.

The EIS describes the existing processing facilities and phosphogypsum stacks in sections 1.3.1 and 3.1.4. For all of the resource categories, the Corps took past activities, including the existing phosphate chemical processing facilities and phosphogypsum stacks, into account as part of the characterization of current conditions. For instance, the EIS documents the impact of historic incidents of phosphogypsum spills on water quality in Section 3.3.3.1 and in Appendix D. This established a baseline against which the Corps measured the cumulative effects of Ona and the other proposed actions.

The Corps is not aware of any specific reasonable foreseeable future proposals for new phosphate chemical processing facilities or phosphogypsum stacks, or expansions of existing facilities. There are currently no active applications for authorizations under Section 404 of the Clean Water Act for new phosphate chemical processing facilities or phosphogypsum stacks, or expansions of existing facilities, and the Corps is not aware of other agencies evaluating applications for such work.

10.2.1 Surface Water Resources: Section 4.12.2 of the EIS describes the Corps' analysis of cumulative impacts on surface water resources. The Corps focused the overall surface water resource cumulative impact analysis on the Peace

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

River and Myakka River watersheds and Charlotte Harbor.

As stated in Section 3.0 of Appendix G to the EIS, to evaluate potential cumulative impacts from the Ona Mine to surface water hydrology, the Corps considered predicted land use changes through 2060, and how those changes might affect runoff coefficients and therefore cumulative surface water deliveries in Peace River tributaries such as Payne Creek, Charlie Creek, Joshua Creek and Horse Creek, into the river itself, and ultimately into Charlotte Harbor. The file "20121109_0000_SW Peace River LU Projs w mining.pdf" (included by reference) from the EIS administrative record shows these predicted land use changes both in spreadsheets and graphs.

Based on information obtained from FDEP's publicly accessible Geospatial Open Data website²⁷, there are four closed (Bartow North Stack, Bartow One Stack, Fort Meade North Stack, and Fort Meade South Stack) and one active (Bartow South Stack) phosphogypsum stacks in the Peace River watershed, all within the Bowlegs Creek subwatershed (HUC 0310010103). As noted above, there are no present or reasonably-foreseeable facilities or stacks in the Myakka River watershed. The Corps used Southwest Florida Water Management District (SWFWMD) land use data in its cumulative effects analysis. This data includes the acreage of phosphate chemical processing facilities and phosphogypsum stacks with the acreage of the mining facilities. Therefore, the acreage shown in the referenced file for the land use type "mining", under the category "Peace River at Arcadia", includes the five phosphate chemical processing facilities and phosphogypsum stacks in the Peace River watershed. The cumulative effects analysis thus captures potential impacts associated with these facilities and stacks.

10.2.2 Groundwater Resources: Section 4.12.3 of the EIS describes the Corps' analysis of cumulative impacts on groundwater resources. The geographic scope of the groundwater resources cumulative impact analysis was on a regional level, across watershed and county boundaries. Figures 29, 30, 31, and 32 in Appendix F to the EIS provide an example of these limits.

As stated in Section 4.2 of Appendix J to the EIS, the Corps considered the applicant's current and expected future groundwater usage based on their water use permits (WUP) from SWFWMD (Mosaic WUP No. 20011400.025, expiration 2032; CF Industries WUP No. 20003669.010, expiration 2017). A review of the Mosaic's Integrated WUP (IWUP) as considered in the EIS²⁸ shows that the

²⁷ <http://geodata.dep.state.fl.us/>

²⁸ The draft IWUP No. 20011400.025 is part of a file named "20120213_0909_Email

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

IWUP included groundwater usage associated with six phosphate chemical processing facilities, all within the geographic scope of the analysis. Therefore, the cumulative effects on groundwater associated with these six facilities was considered as part of the analysis of the cumulative effects from the then-proposed phosphate mines.

10.2.3 Surface Water Quality: Section 4.12.4 of the EIS describes the Corps' analysis of cumulative impacts on surface water quality. As with the surface water hydrology cumulative impact analysis described above, the cumulative impacts on surface water quality from the Ona Mine considered impacts associated with phosphate chemical plants and phosphogypsum stacks in the Peace River Watershed. There are no present or reasonably foreseeable such plants or stacks in the Myakka River watershed.

As stated in Section 4.12.4 of the EIS, discharges from the then-proposed phosphate mine actions, along with most other current and reasonably foreseeable actions, are subject to state and USEPA regulations, including required compliance with water quality standards. These state and federal regulations apply to the existing phosphate chemical processing facilities within the watershed. Section 4.12.4.3 of the EIS further describes mandatory and voluntary measures for mitigation, monitoring, and adaptive management of potential impacts, including cumulative impacts, to surface water quality. Section 6.4 of the EIS describes the requirements of the Clean Water Act, including the National Pollutant Discharge Elimination System (NPDES) program under Section 402 of the Clean Water Act, as administered by the FDEP in Florida²⁹.

10.2.4 Ecological Resources: Section 4.12.5 of the EIS describes the Corps' analysis of cumulative impacts on surface water resources. The Corps focused the overall ecological resource cumulative impact analysis on the Peace and Myakka River watersheds and Charlotte Harbor.

In its ecological resources cumulative impact analysis, the Corps considered the then-proposed phosphate mines, two reasonably foreseeable phosphate mines, plus other non-mining actions such as predicted urban development based on

from Oros RE IWUP Noticing Package.pdf" in the EIS administrative record; included by reference. As shown in the modeling results, the then-CF Industries chemical plant in northeast Hillsborough County is outside the geographic scope of the groundwater cumulative impacts analysis.

²⁹ Additional information about the FDEP NPDES Stormwater Program is available here: <https://floridadep.gov/Water/Stormwater>

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

past trends of such activities and potential catalysts for growth such as the Florida Polytechnic University campus, and projects in the planning stages, as described in Section 4.12.1.4 of the EIS. The Corps determined that these projects were “reasonably foreseeable”.

10.2.5 Economic Resources: The Corps’ analysis of cumulative impacts on economic resources is in Section 4.12.6 of the EIS. The geographic scope for this analysis at its largest extent included the eight counties that the Corps determined could potentially be economically affected by the proposed actions – Hillsborough, Polk, Hardee, Manatee, Sarasota, Desoto, Lee and Charlotte.

Both Section 4.12.6 of the EIS and Appendix H to the EIS describe how the economic cumulative impact analysis evaluated the combined impacts of the four then-proposed phosphate mine actions and the two reasonably foreseeable mines on the eight-county region. As stated in Section 1.0 of Appendix H, the analysis focused solely on mining and beneficiation, not transport of the produced phosphate rock or subsequent rock processing or export of any manufactured phosphate products. Any economic effects associated with the phosphate chemical processing facilities, however, were considered as part of the baseline economic conditions in the study area.

11.0 Other Federal, State, and Local Requirements:

11.1 Endangered Species Act (ESA): On 22 May 2018, the USFWS Ecological Services Permit Office in Atlanta issued an amendment to ITP/HCP #TE236-128-1 that addressed impacts to the scrub jay and eastern indigo snake, including potential take, on the 900-acre Fort Green Uplands parcel³⁰. On 6 November 2018, the USFWS-Vero provided a BO for the other 21,583 acres of the Ona parcel. That BO concurred with the Corps’ MANLAA determinations for the Florida grasshopper sparrow, the Florida panther, and the Florida scrub jay, and provided formal consultation for the eastern indigo snake, the wood stork, and the caracara, including reasonable and prudent measures and conservation recommendations. The DA permit for this project includes a special condition

³⁰ As described in the 6 November 2018 biological opinion, the applicant requested an amendment to the 2012 Wingate East ITP/HCP (TE236-128-1) from the USFWS office in Jacksonville (USFWS-Jacksonville) to include the 900-acre Fort Green Uplands parcel, in lieu of having that parcel included in the biological opinion review for the remainder of the Ona project. This parcel is shown in Attachment C, Figure 9, to this document.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

requiring compliance with the ITP/HCP amendment and the BO and has the ITP/HCP amendment and the BO as permit attachments.

To address listed species other than the eastern indigo snake and the Florida scrub jay in the 900-acre Fort Green Uplands parcel, the Corps sent an e-mail to the USFWS-Jacksonville dated 9 November 2018, requesting concurrence with the MANLAA determinations for the Florida panther and Florida grasshopper sparrow and confirmation that the USFWS –Jacksonville agreed that the BO addressed the requirements of Section 7 of the ESA for the overall Ona project for the wood stork and the caracara. By e-mail dated 3 December 2018, the USFWS-Jacksonville responded that they concurred with the MANLAA determinations for the Florida panther and the Florida grasshopper sparrow and agreed with the Corps' conclusions about the wood stork and the caracara.

11.1.1 Background: On 1 June 2012 the Corps published the public notice for the Ona application. That public notice included determinations of “may affect, not likely to adversely affect” (MANLAA) for the Florida grasshopper sparrow, the Florida panther, and the Florida scrub jay, and of “may affect” for the eastern indigo snake, the wood stork, and the caracara. On 1 August 2012 the Corps sent a letter to the USFWS South Florida Ecological Services Office in Vero Beach (USFWS-Vero) requesting concurrence with the MANLAA determinations for the Florida grasshopper sparrow, the Florida panther, and the Florida scrub jay, and requesting initiation of formal consultation for the eastern indigo snake, the wood stork, and the caracara.

On 29 September 2015, the Corps sent a revised coordination letter to the USFWS-Vero with additional information about the eastern indigo snake, wood stork, and caracara, including a biological assessment. That letter did not change any of the effect determinations made in the 1 June 2012 public notice or the 1 August 2012 coordination letter, and added a notification that the Corps had made a determination that the Ona project would have no effect on the bonneted bat, and that no further consultation was necessary.

On 25 September 2017, the Corps sent an e-mail to the USFWS-Vero to provide project updates including the separation of a 900-acre Fort Green Uplands from the BO review, the onsite avoidance and minimization of impacts including to wetlands and streams, the elimination of the beneficiation plant, changes to the compensatory mitigation plan, and the updates to the impact analyses from the EIS. The Corps did not change any of the previous effect determinations as described above.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

11.1.2 Additional ESA Coordination: The Corps drafted a memorandum for the record (MFR) to document and support a "no effect" determination for the manatee for the Ona project, and e-mailed a copy to the Service on 27 November 2017 along with the statement that the Corps understands that the requirements of Section 7 of the Endangered Species Act are fulfilled for the Ona application and that no further action is required. By email dated 27 November 2017 the Service acknowledged receipt of the memorandum supporting a "no effect" determination for the manatee on the proposed Ona project.

On 6 November 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 4.4.4 and 4.12.4 of the Final EIS, and Sections 6, 7 and 8 of this decision document, 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 4.2.3 and 4.12.2 of the Final EIS, and Sections 6, 7 and 8 of this decision document, 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.

On 9 October 2018, the Service published a notice in the Federal Register proposing to list the eastern black rail as a threatened species³¹. Section 7(a)(4) of the Endangered Species Act states "Each Federal agency shall confer with the Secretary on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under section 4 or result in the destruction or adverse modification of critical habitat proposed to be designated for such species."

The Ona project is within the range of the eastern black rail, and the site has suitable habitat (herbaceous marshes) for the species. However, after consideration of the avoidance and preservation of 375.6 acres of herbaceous wetlands onsite, with adjacent buffers, the proposed compensatory mitigation as described in Section 9.2.7 of this document and in the approved compensatory mitigation plan (Attachment B), including the onsite reestablishment of 1882 acres of herbaceous wetlands, with adjacent buffers, after mining, and the offsite establishment or preservation of 737.57 acres of herbaceous wetlands, with

³¹ <https://www.gpo.gov/fdsys/pkg/FR-2018-10-09/pdf/2018-21799.pdf>

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

adjacent buffers, and the FDEP-required reclamation of additional herbaceous wetland acreage, the Corps has determined that the Ona project will not jeopardize the continued existence of the eastern black rail. The Corps notes that the Service did not propose to designate critical habitat for the eastern black rail at this time. Based on this information, the requirements of Section 7 of the Endangered Species Act are fulfilled for the Ona application and that no further action is required. If after reviewing available information the Service subsequently determines that the proposed action is likely to jeopardize the eastern black rail, the Service can request a conference to address those impacts. Although not required to do so, the Corps staff discussed this determination with the Service's staff by phone on 27 November 2018 and the Service's staff agreed with the Corps' determination.

11.1.3 Compliance with ESA: Yes

11.2 Magnuson-Stevens Act – Essential Fish Habitat (EFH): 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.

11.2.1 Compliance with Magnuson-Stevens Act: Yes

11.3 National Historic Preservation Act – Section 106: 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 20 June 2012, stated that its review of the Florida Master Site File indicates that no historical properties are recorded within the project area. Furthermore, because of the location and/or nature of the project, the SHPO determined that it is unlikely that historic properties will be affected. The DA permit for Ona includes a special condition requiring protection of previously unidentified archaeological/cultural materials and notification of appropriate authorities including the SHPO and THPO.

The applicant provided a Phase 1 cultural resource survey to the SHPO for the 160-acre addition on 19 July 2013. By letter dated 14 August 2013 the SHPO stated that it concurred with the determination that mining in the project area will have no effect on cultural resources listed in the National Register of Historic Places, eligible for listing, or otherwise of archaeological, historical, or architectural value.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

The SHPO, by letter dated 19 February 2018, stated that in their opinion the proposed project is unlikely to affect historic properties, and requested a permit condition to address unexpected discoveries. As stated above, the DA permit for Ona does include such a condition.

By letter dated 5 July 2012 the Seminole Tribe of Florida's Tribal Historic Preservation Officer (STOF-THPO), identified sites within the Ona parcel about which they had concerns. By letters dated 17 July 2014 and 2 June 2017 the Corps provided the STOF-THPO with a response from the applicant, including two letters from the SHPO with their determination that both sites had been adequately mitigated, and the CRAS reports that the SHPO used to make their determinations. The 17 July 2014, letter also provided a copy of the CRAS for the 160-acre addition.

By letter dated 8 August 2014, the STOF-THPO stated that they had reviewed the CRAS for the 160-acre addition and that they had no objection to the project, and requested notification if any archaeological, historical, or burial resources were discovered. As stated above and shown in Attachment D to this decision document, the DA permit for Ona includes a special condition requiring protection of previously unidentified archaeological/cultural materials and notification of appropriate authorities including the SHPO and THPO. By letter dated 9 February 2018 the Corps provided the STOF-THPO with a copy of the Supplemental EA for the overall project.

11.3.1 Compliance with National Historic Preservation Act: Yes

11.4 Corps Wetland Policy: Based on the public interest review (Section 8 of this document), the beneficial effects of the project outweigh the detrimental impacts of the project.

11.5 Water Quality Certification under Section 401 of the Clean Water Act: The FDEP issued a water quality certification on 31 August 2015, as part of the ERP issued for the project.

11.6 Coastal Zone Management Consistency under Section 307(c) of the Coastal Zone Management Act: The FDEP issued a coastal zone management consistency determination on 31 August 2015, as part of the ERP issued for the project.

11.7 Effects on Federal Projects (33 C.F.R. § 320.4(g)(4)): This project is not located in the vicinity of an authorized federal project.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

- 11.8 Effects on the limits of the territorial seas (33 C.F.R. § 320.4(f)): This proposed project does not include any structure or work affecting coastal waters.
- 11.9 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 will require compliance with Rule 62-672, F.A.C., "Minimum Requirements for Earthen Dams Used in Phosphate Mining and Beneficiation Operations and for Dikes Used in Phosphogypsum Stack System Impoundments." Also, the Hardee County Development Order requires additional inspection, reporting, and emergency management elements that apply to the dams proposed for the South Pasture Extension.
- 11.10 Activities in Marine Sanctuaries (33 C.F.R. § 320.4(i)): 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.
- 11.11 Other Authorizations:
- a. 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 Ona's potential impacts on threatened or endangered species, fish, crustaceans, mollusks, and other aquatic organisms, and other wildlife. Section 6.0 of this decision document describes how the Corps considered the project changes listed in Section 1.4.1 of this decision document in updating effect determinations made in the Final EIS, or why updates were not necessary for some issue categories. As described in Section 11.1 of this decision document, the USFWS provided an amended ITP/HCP and a BO for the proposed project.
 - b. Marine Mammal Protection Act of 1972: The proposed project does not affect any marine mammals.
 - c. Section 7(a) of the Wild and Scenic Rivers Act: There are only two designated rivers in Florida: The Wekiva River in Central Florida (Orange, Seminole, and Lake Counties) and the Loxahatchee River in Southeast Florida (Palm Beach County), which are not located within the project area. The Corps has determined that it has fulfilled its responsibilities under the Wild and Scenic Rivers Act.
 - d. Section 402 of the Clean Water Act: The state of Florida has issued NPDES permits for the South Pasture and the Four Corners Mines. Prior to operation of

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

the Ona Mine, the applicant will need to request and receive modifications of those NPDES permits to encompass the Ona Mine property.

e. 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.

11.12 Significant Issues of Overriding National Importance (33 C.F.R. § 320.4(j)(2)):N/A

11.13 Discussion (if necessary): N/A

12.0 Final Project Description and Special Conditions:

12.1 Final Project Description: Section 1.4 of this decision document provides the final project description.

12.2 Special Conditions: Attachment D to this decision document provides the special conditions included in the DA permit for Ona.

13.0 Findings and Determinations:

13.1 Section 176(c) of the Clean Air Act General Conformity Rule Review: The proposed permit action has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit would not exceed de minimis levels of direct or indirect emissions of a criteria pollutant or its precursors and are exempted by 40 C.F.R. Part 93.153. Any later indirect emissions are generally not within the Corps' continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons, a conformity determination is not required for this permit action.

13.2 Relevant Presidential Executive Orders:

13.2.1 EO 13175, Consultation with Indian Tribes, Alaska Natives, and Native Hawaiians: This action has no substantial effect on one or more Indian tribes, Alaska or Hawaiian natives.

13.2.2 EO 11988, Floodplain Management: Alternatives to location within the floodplain, minimization and compensatory mitigation of the effects were considered above.

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army Permit Application SAJ-2011-01869

- 13.2.3 EO 12898, Environmental Justice: The Corps has determined that this proposed project would not use methods or practices that discriminate on the basis of race, color or national origin nor would it have a disproportionate effect on minority or low-income communities.
- 13.2.4 EO 13112, Invasive Species: Through the performance standards for the mitigation as described in the compensatory mitigation plan (Attachment B to this decision document and the special conditions of the DA permit (Attachment D to this decision document), the permittee will be required to control the introduction and spread of exotic species.
- 13.2.5 EO 13212 and EO 13302, Energy Supply and Availability: The project was not one that will increase the production, transmission, or conservation of energy, or strengthen pipeline safety.
- 13.2.6 EO 13547, Stewardship of the Ocean, Our Coasts, and the Great Lakes: The project would not adversely affect America's stewardship of the ocean, coasts, or Great Lakes.
- 13.3 Compliance with NEPA: All practicable means to avoid or minimize environmental harm from the alternative selected have been adopted.
- 13.4 Compliance with the Section 404(b)(1) Guidelines: Having completed the evaluation in Section 6, the undersigned have determined that the proposed discharge complies with the Guidelines.
- 13.4.1 As described in Section 5.5 of this decision document, the proposed action is the LEDPA.
- 13.5 Public Interest Determination: We find that issuance of a Department of the Army Permit is not contrary to the public interest.

CESAJ-RD-W
SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

Prepared By:



John P. Fellows
Project Manager

Date: 20 December 2018

Reviewed By:

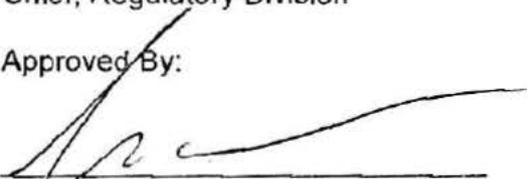
UNGER.KELLY.ENRIGHT.12 32247556
32247556

Digitally signed by UNGER KELL Y ENRIGH T 1232247556
DN: c=US, o=U S Government, ou=DoD, ou=PAI,
ou=USA, cn=UNGER KELL Y ENRIGH T 1232247556
Date: 2018.12.21 09:15:50 -0500

SHAWN H. ZINSZER
Chief, Regulatory Division

Date: 21 December 2018

Approved By:



ANDREW D. KELLY, JR.
COL, EN
Commanding

Date: 21 Dec 2018

CESAJ-RD-W

SUBJECT: Record of Decision and Statement of Findings for Department of the Army
Permit Application SAJ-2011-01869

List of Attachments

Attachment A: Public Notice Comments and Responses

Attachment B: Compensatory Mitigation Plan (CMP)

Attachment C: Maps

Attachment D: Department of the Army Permit Conditions

Attachment E: Updates

Attachment F: GW Tech Memo