

**Section  
3**

**ERP FORMS**

“ . . . [T]here is one thing that can bring our nation down – our dependence on foreign countries for food and energy. Agriculture is the backbone of our economy.”

Former Democratic Congressman John Salazar, Colorado



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# JOINT APPLICATION FOR INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT/ AUTHORIZATION TO USE STATE-OWNED SUBMERGED LANDS/ FEDERAL DREDGE AND FILL PERMIT

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FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION/  
WATER MANAGEMENT DISTRICTS/  
U.S. ARMY CORPS OF ENGINEERS

Effective October 1, 2013



**INSTRUCTIONS FOR USE OF THIS FORM:**

This form is designed to assist you in submitting a complete application. All applications must include Section A-General Information for All Activities. Sections B through H list typical information that is needed based on the proposed activities, and are only required as applicable. Part 1-C of Section A will guide you to the correct sections needed based on your proposed activities. Applicants are advised to consult Chapter 62-330, F.A.C., and the Environmental Resource Permit Applicant’s Handbook Volumes I and II for information regarding the ERP permitting process and requirements while preparing their application. Internet addresses for Chapter 62-330, F.A.C. and the Applicant’s Handbook, Agency contact information, and additional instructions for this form can be found in Attachment 1.

**What Sections of the Application Must I Fill Out?**

Does the project involve....	Section							
	A- General Information	B- Single Family Projects	C- Wetlands and other Surface Waters	D- Structures or Works in Surface Waters	E- Stormwater Management System	F- State-owned Submerged Lands	G- Mitigation Banks	H- Mines
Fill in wetlands or waters for a single family residence?	X	X						
Docks, shoreline stabilization, seawalls associated with a single family residence?	X	X				X, if applicable		
Wetland impacts (other than associated with an individual residence)?	X		X					
Boating facilities, a marina, jetty, reef, or dredging?	X		X	X		X if applicable		
Any work on state owned submerged land?	X		X			X		
Construction of a stormwater management system?	X		X, if applicable		X			
Constructing a mitigation bank?	X		X		X, if applicable		X	
Creating a mine?	X		X, if applicable		X			X

*Note- if you are required to provide Section B, then you do not have to provide any other Sections, unless the activities are on state-owned submerged lands. In that case, Section F will also be required.*

**If you have any questions, or would like assistance completing this form, please contact the staff of the nearest office of either the Florida Department of Environmental Protection (DEP) or a Water Management District (WMD) (see Attachment 2).**

# Section A: General Information for All Activities

## PART 1: NAME, APPLICATION TYPE, LOCATION, AND DESCRIPTION OF ACTIVITY

A. Name of project, including phase if applicable: **DeSoto Mine**

B. This is for (check all that apply):

- Construction or operation of **new** works, activities and/ or a stormwater management system
- Conceptual Approval** of proposed works, activities and/ or a stormwater management system
- Modification or Alteration of **existing** works activities and / or a stormwater management system. Provide the existing DEP or WMD permit #, if known: \_\_\_\_\_ Note: Minor modifications do not require completion of this form, and may instead be requested by letter.
- Maintenance or repair** of works, activities and/ or stormwater management system previously permitted by the DEP or WMD Provide existing permit #, if known: \_\_\_\_\_
- Abandonment or removal of works, activities and/ or stormwater management system  
Provide existing DEP or WMD permit #, if known: \_\_\_\_\_
- Operation of an **existing unpermitted** stormwater management system.
- Construction of additional phases of a permitted work, activity and/ or stormwater management system.  
Provide the existing DEP or WMD permit #, if known: \_\_\_\_\_

C. **List the type of activities proposed. Check all that apply, and provide the supplemental information requested in each of the referenced application sections. Please also reference Applicant's Handbooks I and II for the type of information that may be needed.**

- Activities associated with one single-family residence, duplex, triplex, or quadruplex that do not qualify for an exemption or a General Permit: **Provide the information requested in Section B. Do not complete Section C.**
- Activities within wetlands or surface waters, or within 25 feet of a wetland or surface water, (not including the activities associated with an individual residence). *Examples include dredging, filling, outfall structures, docks, piers, over-water structures, shoreline stabilization, mitigation, reclamation, restoration/enhancement.* **Provide the information requested in Section C.**
- Activities within navigable or flowing surface waters such as a multi-slip dock or marina, dry storage facility, dredging, bridge, breakwaters, reefs, or other offshore structures: **In addition to Section C, also provide the information requested in Section D.**
- Activities that are (or may be) located within, on or over state-owned submerged lands (See Chapter 18-21, F.A.C. <https://www.flrules.org/gateway/ChapterHome.asp?Chapter=18-21>): **In addition to Section B or C, also provide the information requested in Section F**

- Construction or alteration of a stormwater management system serving residential, commercial, transportation, industrial, agricultural, or other land uses, or a solid waste facility (excluding mines that are regulated by DEP). **Provide the information requested in Section E.**
- Creation or modification of Mitigation Bank (refer to Chapter 62-342, F.A.C. <https://www.flrules.org/gateway/ChapterHome.asp?Chapter=62-342>): **Provide the information requested in Section G.**
- Mines (as defined in Section 2.0 of Applicant's Handbook Volume I) that are regulated by the DEP: **Provide the information requested in Section H.**
- Other, describe: Please contact the Agency to determine which additional sections of the application are needed. See Attachment 1 for Agency contacts.

D. Describe in general terms the proposed project, system, works, or other activities. For permit modifications, please briefly describe the changes requested to the permit:

*The proposed project would result in the physical disturbance of 16,181 acres to facilitate extraction of phosphate ore at the DeSoto Mine. The proposed project would include the construction of an onsite plant, office and entrance road, railroad spur, six (6) mine access corridor stream crossings and NPDES system including clay settling areas for water handling and recycling. Onsite and Offsite mitigation is proposed to offset the impacts due to the onsite physical disturbance at the DeSoto Mine.*

*Onsite mitigation includes:*

- *Wetland and Stream Creation*
- *Wetland Mitigation Plan (Appendix 4-2-A)*

*The following offsite mitigation projects will be included within the permitting action for this project:*

- *Horse Creek Enhancement Project (Appendix 4-2-B)*

E. For activities in, on, or over wetlands or other surface waters, check the type of federal dredge and fill permit requested (if known):  Individual  Programmatic General permit #: SAJ  
 General  Nationwide permit #:  Not Applicable  Not sure

*Please note that the revised USACE Application No. SAJ-2011-01968 was filed separate from this application on June 26, 2014.*

F. Project/Activity Street/Road Address or other location (if applicable):  
 City: *Arcadia* County(ies): *DeSoto County* Zip: *34266*

Note: For utility, road, or ditch/canal activities, provide a starting and ending point using street names and nearest house numbers or provide length of project in miles along named streets or highways.

G. Project location map and Section, Township, and Range information (use additional sheets if needed):  
***Please attach a location map showing the location and boundaries of the proposed activity in relation to major intersections or other landmarks. The map should also contain a north arrow and a graphic scale; show Section(s), Township(s), and Range(s); and must be of sufficient detail to allow a person unfamiliar with the site to find it.***

Section(s):                      Township:              Range:                      Land Grant name, if applicable:  
Section(s):                      Township:              Range:  
Section(s):                      Township:              Range:

*Please refer to the attached Table 1-2 for a listing of the acres by Section, Township and Range and Map 1-2 for a location map.*

- H.      Latitude (DMS)  $27^{\circ} 16' 17.668''$       Longitude (DMS)  $81^{\circ} 59' 3.304''$       (Taken from central location of the activity). Explain source for obtaining latitude and longitude (i.e. U.S.G.S. Quadrangle Map, GPS, online resource):

*The latitude and longitude for the central location was obtained using GIS locational datum from Arc Map 10.2.*

- I.      Tax Parcel Identification Number(s): *Please refer to the Tax Parcel Identification Numbers found on the deeds (attached in Appendix 1-2) for each parcel (or set of parcels) located within the DeSoto Mine Boundary.*

[Number may be obtained from property tax bill or from the county property appraiser's office; if on multiple parcels, provide multiple Tax Parcel Identification Numbers]

- J.      Directions to Site (from major roads; include distances and landmarks as applicable):

*From Tampa, take I-75 south to SR-70 East. Travel east on SR-70 for approximately 28 miles. Property is on north and south sides of SR-70.*

- K.      Project area or phase area:

*DeSoto Mine Boundary totals approximately 18,287 acres.*

- L.      Name of waterbody(ies) (if known) in which activities will occur or into which the system will discharge:

*Stormwater discharges will be contained by the mine water system, except for the proposed stormwater management system / program plans for the DeSoto Railroad Spur. Similar to existing Mosaic phosphate mines, an application to collect, manage, and discharge process water in accordance with Chapters 62-620 and 62-671, F.A.C. will be submitted. A Stormwater Management Plan is provided in Appendix 3-6-C.*

***The following questions (M-O) are not applicable to activities related to a single-family residence, including private single-family residential docks, piers, seawalls or boat ramps.***

- M.      Is it part of a larger plan of development or sale?                       yes     no

*NA*

- N.      Impervious or semi-impervious area excluding wetlands and other surface waters (if applicable):

0 acres or 0 square feet

- O.      Volume of water the system is capable of impounding (if applicable):                      NA acre-feet.

**PART 2: SUPPLEMENTAL INFORMATION, AND PERMIT HISTORY**

- A. Is this an application to modify an existing Environmental Resource Permit, or to construct or implement part of a multi-phase project, such as a project with a Conceptual Approval permit?  Yes  No *If you answered "yes", please provide permit numbers below:*

AGENCY	DATE	PERMIT/APPLICATION NO.	PROJECT NAME

- B. Indicate if there have been any **pre-application meeting(s)** or other discussions about the proposed project, system or activity. If so, please provide the date(s), location(s) of the meeting, and the name(s) of Agency staff that attended the meeting(s):

*Please refer to the attached Table 1-3 for a list of the pre-application meetings.*

- C. **Attach a depiction (plan and section views), which clearly shows the works or other activities proposed to be constructed.** Use multiple sheets, if necessary, a scale sufficient to show the location and type of works, and include a north arrow and a key to any symbols used. **Specific information to be included in the plans is based on the activities proposed and is further described in Sections B-H.** However, supplemental information may be required based on the specific circumstances or location of the proposed works or other activities.

*Please refer to the attached Map 4-2-B-i, Map 4-2-B-ii, and Map 4-3-B for the proposed post reclamation land use/vegetation and streams.*

- D. Processing Fee: **Please submit the application processing fee along with this application form and supplemental information.** Processing fees vary based on the size of the activity, the type of permit applied for, and the reviewing Agency. Please reference Attachment 3 to determine the appropriate fee.

*The required fee for this application is \$14,000. This is being satisfied by the attached check.*

**PART 3: APPLICANT AND ASSOCIATED PARTIES INFORMATION**

Instructions: Permits are only issued to entities having sufficient real property interest as described in Section 4.2.3 (d) of Applicant’s Handbook Volume I. Please attach evidence of sufficient real property interest over the land upon which the activities subject to the application will be conducted, including mitigation (if applicable). Refer to Section 4.2.3 (d) for acceptable ownership or real property interest documentation. For corporations, list a person who is a registered agent or officer of the corporation who has the legal authority to bind the corporation.

<b>A. APPLICANT (ENTITY MUST HAVE SUFFICIENT REAL PROPERTY INTEREST)</b>			
<input checked="" type="checkbox"/> <b>THIS IS A CONTACT PERSON FOR ADDITIONAL INFORMATION</b>			
Name: Last: <b>Jagiella</b>		First: <b>Diana</b>	Middle: <b>M.</b>
Title: <b>Senior Director Mine Permitting and Regulatory Affairs</b>		Company: <b>Mosaic Fertilizer, LLC</b>	
Address: <b>13830 Circa Crossing</b>			
City: <b>Lithia</b>		State: <b>FL</b>	Zip: <b>33547</b>
Home Telephone:		Work Telephone: <b>813-500-6820</b>	
Cell Phone:		Fax: <b>813-571-6925</b>	
E-mail Address: <b>Diana.Jagiella@Mosaicco.com</b>			
<b>Correspondence will be sent via email.</b> Check here to receive correspondence via US Mail: <input type="checkbox"/>			
<b>B. LAND OWNER(S) (IF DIFFERENT OR IN ADDITION TO APPLICANT)</b>			
<input type="checkbox"/> <b>CHECK HERE IF LAND OWNER IS ALSO A CO-APPLICANT</b>			
Name: Last: <b>See Table 1-1 Property Owners (pages 5-8) and Appendix 1-2 Landowner Agreements / Deeded Mineral Interest</b>		First:	Middle:
Title:		Company:	
Address:			
City:		State:	Zip:
Home Telephone:		Work Telephone:	
Cell Phone:		Fax:	
E-mail Address:			
<b>Correspondence will be sent via email.</b> Check here to receive correspondence via US Mail: <input type="checkbox"/>			
<b>C. OPERATION AND MAINTENANCE ENTITY (see Applicant’s Handbook I, Section 12.3)</b>			
Entity Name: <b>Same as Applicant</b>		Contact: Last:	First: Middle:
Title:		Company:	
Address:			
City:		State: <b>FL</b>	Zip:
Home Telephone:		Work Telephone:	
Cell Phone:		Fax:	
E-mail Address:			
<b>Correspondence will be sent via email.</b> Check here to receive correspondence via US Mail: <input type="checkbox"/>			



<b>D. CO-APPLICANT (IF DIFFERENT OR IN ADDITION TO APPLICANT AND OWNER)</b>		
Name: Last:	First:	Middle:
Title:	Company:	
Address:		
City:	State:	Zip:
Home Telephone:	Work Telephone:	
Cell Phone:	Fax:	
<b>Correspondence will be sent via email.</b> Check here to receive correspondence via US Mail: <input type="checkbox"/>		
<b>E. ENGINEERING CONSULTANT <input type="checkbox"/> THIS IS A CONTACT PERSON FOR ADDITIONAL INFORMATION</b>		
Name: Last: <b>See footnote<sup>1</sup> below.</b>	First:	Middle:
Title:	Company:	
Address:		
City:	State:	Zip:
Home Telephone:	Work Telephone:	
Cell Phone:	Fax:	
E-mail Address:		
<b>Correspondence will be sent via email.</b> Check here to receive correspondence via US Mail: <input type="checkbox"/>		
<b>F. ENVIRONMENTAL CONSULTANT <input type="checkbox"/> THIS IS A CONTACT PERSON FOR ADDITIONAL INFORMATION</b>		
Name: Last: <b>See footnote<sup>1</sup> below.</b>	First:	Middle:
Title:	Company:	
Address:		
City:	State:	Zip:
Home Telephone:	Work Telephone:	
Cell Phone:	Fax:	
E-mail Address:		
<b>Correspondence will be sent via email.</b> Check here to receive correspondence via US Mail: <input type="checkbox"/>		
<b>G. AGENT AUTHORIZED TO SECURE PERMIT (IF DIFFERENT FROM CONSULTANT) <input type="checkbox"/> THIS IS A CONTACT PERSON FOR ADDITIONAL INFORMATION</b>		
Name: Last: <b>Same as Applicant</b>	First:	Middle:
Title:	Company:	
Address:		
City:	State:	Zip:
Home Telephone:	Work Telephone:	
Cell Phone:	Fax:	
E-mail Address:		
<b>Correspondence will be sent via email.</b> Check here to receive correspondence via US Mail: <input type="checkbox"/>		

***If necessary, please add additional pages for other contacts and property owners related to this project.***

<sup>1</sup> Various engineering and environmental consultants have performed analyses and provided designs that are appended to this application. Where required, those reports and designs have been signed and sealed by the principal engineer responsible for the preparation of the analyses and designs provided by their firm.

**PART 4: SIGNATURES AND AUTHORIZATION TO ACCESS PROPERTY**

Instructions: For multiple applicants please provide a separate Part 4 for each applicant. For corporations, the application must be signed by a person authorized to bind the corporation. A person who has sufficient real property interest (see Section 4.2.3 (d) of Applicant’s Handbook Volume I) is required in (B) to authorize access to the property, except when the applicant has the power of eminent domain.

A. By signing this application form, I am applying for the permit and any proprietary authorizations identified above, according to the supporting data and other incidental information filed with this application. I am familiar with the information contained in this application and represent that such information is true, complete and accurate. I understand this is an application and not a permit, and that work prior to approval is a violation. I understand that this application and any permit issued or proprietary authorization issued pursuant thereto, does not relieve of any obligation for obtaining any other required federal, state, water management district or local permit prior to commencement of construction. I agree to operate and maintain the permitted system unless the permitting agency authorizes transfer of the permit to a different responsible operation and maintenance entity. I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001.

<b>Diana M. Jagiella</b>		
Typed/Printed Name of Applicant or Applicant’s Authorized Agent	Signature of Applicant or Applicant’s Authorized Agent	Date

**Senior Director Mine Permitting and Regulatory Affairs**

(Corporate Title if applicable)

**B. CERTIFICATION OF SUFFICIENT REAL PROPERTY INTEREST AND AUTHORIZATION FOR STAFF TO ACCESS THE PROPERTY:**

I certify that:

***I possess sufficient real property interest in or control, as defined in Section 4.2.3 (d) of Applicant’s Handbook Volume I,*** over the land upon which the activities described in this application are proposed and I have legal authority to grant permission to access those lands. I hereby grant permission, evidenced by my signature below, for staff of the Agency and the U.S. Army Corps of Engineers to access, inspect, and sample the lands and waters of the property as necessary for the review of the proposed works and other activities specified in this application. I authorize these agents or personnel to enter the property as many times as may be necessary to make such review, inspection, and/ or sampling. Further, I agree to provide entry to the project site for such agents or personnel to monitor and inspect permitted work if a permit is granted.

**OR**

I represent an entity having ***the power of eminent domain and condemnation authority,*** and I/we shall make appropriate arrangements to enable staff of the Agency and the U.S. Army Corps of Engineers to access, inspect, and sample the property as described above.

<b>Diana M. Jagiella</b>		
Typed/Printed Name	Signature	Date

**Senior Director Mine Permitting and Regulatory Affairs**

(Corporate Title if applicable)

**C. DESIGNATION OF AUTHORIZED AGENT (IF APPLICABLE):**

I hereby designate and authorize \_\_\_\_\_ to act on my behalf, or on behalf of my corporation, as the agent in the processing of this application for the permit and/or proprietary authorization indicated above; and to furnish, on request, supplemental information in support of the application. In addition, I authorize the above-listed agent to bind me, or my corporation, to perform any requirements which may be necessary to procure the permit or authorization indicated above. I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001.

_____ Typed/Printed Name of Applicant	_____ Signature of Applicant	_____ Date
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\_\_\_\_\_  
(Corporate Title if applicable)

(9.25.13)

**SECTION C: SUPPLEMENTAL INFORMATION FOR WORKS OR OTHER ACTIVITIES IN, ON, OR OVER WETLANDS AND/OR OTHER SURFACE WATERS**

**(Note: This section is not required if all the proposed activities are covered in Section B.)**

Instructions: This section is for ERP applications that do not involve activities associated with an individual single-family residence, duplex, triplex or quadruplex. For those activities, please use Section B. This form is to be completed if the proposed work or activity will occur in, on, over, or within 25 feet of a wetland or other surface water. The supplemental information required by this section is in addition to the information required by Section A of the ERP application.

**PART 1: WETLAND OR OTHER SURFACE WATER IMPACT SUMMARY**

1. Describe the basic purpose of the project or activity:

*Consistent with the project purpose identified in the DeSoto Mine revised Federal Section 404 Dredge and Fill Permit Application (submitted to the Army Corps of Engineers on June 26, 2014), the basic project purpose is to extract phosphate ore.*

*The Overall Project Purpose is to extract phosphate ore from the mineral reserves located in the Central Florida Phosphate District (CFPD) in order to replace the phosphate rock supplied by the currently permitted reserves located at the Hookers Prairie and South Fort Meade Mines and thereby maintain current production levels without interruption, 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.*

2. Total area of work (dredging, filling, construction, alteration, or removal) in, on, or over wetlands or other surface waters:

*The total area of work proposed to be disturbed within the DeSoto Mine boundary of FDEP jurisdictional areas (including FLUCFCS 500, FLUCFCS 600, and OSW) is 126,324,000 sq. ft.; 2,900 ac. Of those acres, approximately 2,220 acres are located within the proposed mining area, leaving approximately 680 acres that will be disturbed but not mined.*

*Please note: Acres have been rounded. Please refer to Tables 2-2-C-i and 3-1-B for the estimated FDEP jurisdictional area proposed impact.*

3. Total volume of material in wetlands or other surface waters:

a. *Total volume of materials in wetlands or other surface waters to be dredged: 157.6 million cubic yards (based on mining approximately 2,220 acres of FDEP jurisdictional area with an average matrix thickness of approximately 21 feet),*

b. *Total volume of materials in wetlands or other surface waters to be filled: NA cubic yards.*

*(Please note: All mined/disturbed wetlands will be reclaimed following mining as required by Rule 62C-16, F.A.C.)*

4. Identify the seasonal high water level (SHWL) and wetland normal pool elevations for each wetland or surface water within the project site. For tidal wetlands and/or surface waters provide the elevation of mean high and mean low water. Include an aerial photograph showing the location of each sampling location, dates, datum, and methods used to determine these elevations.

*Please refer to Sections 1.4.4 and 1.7.2 in the attached Supplemental Information Document (SID) for the discussion regarding the seasonal high and normal pool elevations.*

5. Name of waterbody(ies) (if applicable & if known) in which work will occur?

*Waterbodies proposed to be disturbed within the DeSoto Mine include portions of Horse Creek, Brandy Branch, Buzzard Roost Branch and Oak Hill Branch watersheds. Please refer to Map 1-3 and Map 2-2-B-i. The proposed disturbances to the listed streams are principally limited to the mine infrastructure corridor crossings.*

6. Is the activity proposed in an Outstanding Florida Water or Aquatic Preserve?

yes, name:                       no                       I don't know

7. Has there ever been a formal or informal wetland determination for the project site? If yes, provide the identifying number and/ or a copy of the jurisdictional map.

*FDEP issued two Formal Blinding Determinations of the Landward Extent of Wetlands and Other Surface (FD-14-0304081-00 and FD-14-0125890-002) for the DeSoto Mine, which remain valid through October 7, 2016 and August 10, 2015, respectively. Please refer to Section 1.4.1 in the attached SID for more information on DeSoto's jurisdictional areas.*

8. Provide a map(s) of the project area and vicinity delineating USDA/NRCS soil types.

*Please refer to the attached Map 2-5 for the existing soil types within the Desoto Mine Boundary. Table 2-5-A provides descriptions of the soil types shown on Map 2-5.*

9. Provide recent aeriels, legible for photointerpretation (no photocopies) with a scale of 1" = 400 ft, or more detailed, with project boundaries and wetland boundaries delineated on the aerial.

*Please refer to Appendix 1-4-A for a tiled map set displaying a recent aerial photograph.*

10. Provide existing and proposed maps indicating vegetative community types based on Florida Land Use and Cover Classification System (FLUCCS) (FDOT 1999). For vegetated areas dominated by exotic vegetation, use the FLUCCS code representative of the native community type that was present prior to exotic infestation.

*Please refer to Map 2-1-B-i and Map 2-1-B-ii for maps indicating the current vegetative community types based on the Florida Land Use, Cover and Forms Classification System (FLUCFCS) using Level I and Level III respectively. Consistent with Rule 62C-16.0051, F.A.C., wetlands subject to FDEP jurisdiction have been mapped using the 600 series codes rather than FDOT 1999 codes.*

*Please refer to Map 4-2-B-i and Map 4-2-B-ii for maps showing the proposed vegetative community types based on the Florida Land Use, Cover and Forms Classification System (FLUCFCS) using Level I and Level III respectively.*

11. Provide existing and proposed maps indicating vegetative community types based on the Florida Natural Areas Inventory Guide to the Natural Communities of Florida.

*Existing and proposed vegetative community types are reflected in the maps referenced in response to Question 10 above. FNAI and FLUCFCS codes are cross-referenced in Section 1.3 of the SID.*

12. Impact Summary Tables (located at the end of this section):

- a. For all projects, complete Table 1, 2 and 3 as applicable.

*The required information regarding FDEP wetland impacts can be found in the attached Table 2-2-C-ii. The onsite and offsite mitigation summary can be found in the attached Table 2-4-B.*

- b. For shoreline stabilization projects, provide the information requested in Table 4.

*N/A*

13. Adjacent property owners. The following information is required only for projects proposed to occur in, on or over wetlands that need a federal dredge and fill permit and/or authorization to use state owned submerged lands and is not necessary when applying solely for an Environmental Resource Permit. If the activity is located on state owned submerged lands and requires a lease or easement, provide a list of names and addresses from the latest county tax assessment roll of all property owners located within a 500 ft. radius of the proposed lease or easement boundary in mailing label format, or you may elect to send notice to those persons by certified mail, with the return-receipt card addressed to the DEP or water management district, as applicable, in accordance with subsection 18-21.005(3), F.A.C., and Section 253.115, F.S. For projects that need a federal dredge and fill permit, please provide the names, addresses and zip codes of property owners whose property directly adjoins the project (excluding applicant). Attach additional sheets if necessary.

*A list of adjacent property owners can be found in Table 1-1 as shown on Map 1-6.*

*No activity within the DeSoto Mine boundary is located on state owned submerged lands. Please refer to Appendix 2-8-B for additional information regarding the navigability study that was conducted for the portion of Horse Creek within the DeSoto Mine. Mosaic received a letter from the Division of State Lands indicating "that the proprietary requirements normally applied to state owned land not apply at this site." This letter is also found in Appendix 2-8-B.*

## PART 2: ENVIRONMENTAL CONSIDERATIONS

Note: for many questions, a state rule/Applicant's Handbook Volume I (AH I) section is cited to assist the applicant in addressing these questions. However, additional Federal criteria may apply.

1. Elimination or Reduction of Impacts (Avoidance and Minimization). Describe measures taken to eliminate or reduce impacts to wetlands and other surface waters (Refer to AH I Section 10.2.1).

*Please refer to Section 3.0 in the attached SID for details regarding the elimination or reduction of impacts including a description of the measures taken.*

2. Fish, Wildlife, Listed Species and their Habitats. Provide results of any wildlife assessments that have been conducted on the project site and provide any comments pertaining to the project from the Florida Fish and Wildlife Conservation Commission and/or the U.S. Fish and Wildlife Service (Refer to AH I Section 10.2.2).

*Please refer to the following Sections and Appendices in the attached SID for details regarding wildlife:*

- *Section 1.8 – Wildlife*
- *Section 2.2.2. – Wildlife Considerations*
- *Section 3.2.5 – Impacts to Wildlife*
- *Section 5.6 – Wildlife Utilization*
- *Appendix 2-6-A – Wildlife Survey Reports*
- *Appendix 2-6-B – Wildlife Habitat Management Plan*

3. Water quantity impacts to wetlands and other surface waters (Refer to AH I Section 10.2.2.4 and AH II).

- a. Does the activity include a proposed stormwater water management system with a control elevation different than the wetland normal pool elevation(s) of existing or proposed created wetlands or other surface waters?

*No. The DeSoto Railroad Spur Appendix 3-1-D, titled Stormwater Management Plan and Construction Erosion Plan, provides details of the stormwater management system that is proposed outside of the mine's NPDES system. While the mine water recirculation system will include water control structures set at various elevations, those structures will be internal within the mine (within the NPDES system). Upon completion of the construction phase, the mine will be reclaimed without the need for a permanent stormwater management system or control structures. The normal pool elevations of proposed created wetlands and other surface waters will be consistent with the elevations in adjacent wetlands.*

- b. If yes to (a), provide documentation (e.g. drawdown assessment or other methods) that shows the proposed surface water management system will not change the hydroperiod of the existing or created wetland or other surface water.

*The DeSoto Railroad Spur (Appendix 3-1-D) provides an analysis of the water quality treatment systems and their discharges which will not change the hydroperiod / drainage of the existing wetland or connecting surface water. Table 6 of the report provides the calculated one-inch runoff volume in acre-feet requiring treatment in the wet detention system for each identified drainage basin, illustrated in Figures 1-6 & 1-7.*

*ICPR Modeling was performed for each railroad basin by Florida Engineering and Design (FED), using a one-inch rainfall simulated with 100% runoff to the designed treatment pond. The time of discharge for the full treatment volume stage and half treatment volume stage were determined from the model for the purpose of evaluating compliance with SWFWMD requirements for wet detention treatment. In each drainage basin, the time of half treatment discharge was greater than 60 hours and the time of total discharge greater than 120 hours, in compliance with SWFWMD guidelines for treatment.*

*In addition, the trackside detention ponds were sized to contain 100-year storm event with the treated water designed to be released slowly into nearby wetland systems. The pond discharge design includes risers to control discharges and stilling basins with rock rip-rap over geo-textile material shields to prevent erosion. The outfalls were designed to return treated water via grass lined swales to pre-mining drainage features. The grass lined swales are designed with 4:1 side slopes and a 5 foot base width. The detention ponds discharge peak velocities were calculated using Bentley Flow Master Program. This modeling confirms that 100-year storm event's treated waters will rejoin the existing wetland drainage at non-erosive velocities, thus indicating no disturbance to the receiving waters. The Flow Master Worksheets for each pond can be found in Stormwater Management Plan - Appendix III.*

*In addition, Mosaic will construct a perimeter ditch-and-berm / recharge system to isolate the internal mine water elevations so as to ensure adjacent groundwater levels are sufficiently established and maintained to assure the hydroperiods for adjacent floodplain / preserved wetlands are not impacted.*

*Also, as part of Mosaic's Integrated Water Use Permit (IWUP) No. 2011400.025, an expansive Environmental Monitoring Program (EMP) will be implemented to ensure that groundwater withdrawals do not result in adverse impacts to the environmental features adjacent to and in areas surrounding the mine project boundaries. For additional details regarding the EMP, please refer to Section 2.11.3 of the attached SID. A copy of the current IWUP can be found in Appendix 2-3-A.*

4. Public Interest Test. Please describe how the proposed activity will **not be contrary** to the public interest, OR if such an activity significantly degrades or is located within an Outstanding Florida Water (OFW), that the regulated activity will be **clearly in** the public interest (Refer to AH I Section 10.2.3).

*Section 378.202, Florida Statutes, provides: "The extraction of phosphate is important to the continued economic well-being of the state and to the needs of society." This legislative declaration supports the position that the proposed activity is in the public interest.*

*Phosphate rock is a strategic mineral of global importance needed in order to increase crop yields to help keep the growing world population supplied with food and fiber. Please refer to SID Section 3.2.6 for additional discussion on the importance of phosphorus.*

- a. Please describe how the project will be designed to avoid adverse effects to public health, safety, or the welfare or the property of others.

*Please refer to Section 3.2.7.1 of the attached SID document for information regarding how the project will be designed to avoid adverse effects to public health, safety, or the welfare or the property of others.*



- b. Please describe how the project will be designed to avoid adverse effects to the conservation of fish and wildlife, including endangered or threatened species, or their habitats.

*Please refer to the following Sections and Appendices in the attached SID for details regarding wildlife:*

- *Section 1.8 – Wildlife*
- *Section 2.2.2. – Wildlife Considerations*
- *Section 3.2.5 – Impacts to Wildlife*
- *Section 3.2.7.2 – Conservation of Fish and Wildlife*
- *Section 4 – Mitigation Plan*
- *Section 5.6 – Wildlife Utilization*
- *Appendix 2-2-B-ii - Fish Monitoring Report*
- *Appendix 2-6-A – Wildlife Survey Reports*
- *Appendix 2-6-B – Wildlife Habitat Management Plan*
- *Appendix 2-6-B – Wildlife Habitat Management Plans*

- c. Please describe how the project will be designed to avoid adverse effects to navigation or the flow of water or cause harmful erosion or shoaling.

*Please refer to Section 3.2.7.3 of the attached SID document which discusses how adverse effects to navigation are avoided*

- d. Please describe how the project will be designed to avoid adverse effects to the fishing or recreational values or marine productivity in the vicinity of the activity.

*Please refer to Section 3.2.7.4 of the attached SID document which discusses how adverse effects to fishing or recreational values are avoided.*

- e. Will the project be of a temporary or permanent nature?

*Phosphate mining is considered a temporary land use (Florida Statute 378.02).*

- f. Please describe how the project will be designed to avoid adverse impacts to significant historical and archaeological resources, under the provisions of section 267.061, F.S.

*Please refer to Sections 1.9, 3.2.4, and 3.2.7.6 of the attached SID and Appendix 2-10 for additional information regarding cultural and historical resources.*

- g. Please describe how the project will be designed to avoid adverse affects to the current condition and relative value of functions being performed by areas affected by the proposed regulated activity.

*The proposed mitigation plan detailed in Section 4 of the SID will fully offset the functions currently provided by wetlands and streams within the limits of the proposed mining disturbance on the DeSoto site.*

5. Water Quality. Provide a description of how water quality will be maintained in wetlands and other surface waters that will be preserved or will remain undisturbed, both on and offsite. Please address both short-term (such as during construction) and long-term water quality considerations (Refer to AH I Section 10.2.4).

*Short-term water quality considerations – Mosaic will construct a berm around the perimeter of all active mining areas to sever the mining operations from waters of the state. The berm will be constructed and maintained in accordance with Chapter 62-671, F.A.C., and will meet the Department’s Best Management Practices specifications for non-clay berms. Process water from the mine will be released to waters of the state only through outfalls permitted by the Department under its Industrial Wastewater Facilities Programs and Rules (i.e. the NPDES Program) following treatment to ensure applicable technology, water quality, and aquatic life based effluent standards are met. SID Sections 2.3.2, 2.11, and 2.12 provide additional information.*

*Long-term water quality considerations – In accordance with Maps 4-2-B-i, 4-2-B-ii, and 4-3-B, all mined areas will be reclaimed. Consistent with Rule 62C-16.0051, F.A.C., the perimeter berms described above will be maintained until runoff from reclaimed lands meets water quality standards. Thereafter, the site will drain into waters of the state without need for water quality treatment.*

6. Class II Waters; Waters approved for shellfish harvesting (Refer to AH I Section 10.2.5).

*N/A- Class II waters are not located within the vicinity of the DeSoto Mine boundary.*

- a. Will the project occur in Class II that are NOT approved for shellfish harvesting? If yes, please provide a plan or procedure detailing the measures to be taken to meet the requirements of AH I Section 10.2.5(a).

*N/A*

- b. Is the project located adjacent to or in close proximity to Class II waters? If yes, please provide a plan or procedure detailing the measures to be taken to meet the requirements of AH I Section 10.2.5(b).

*N/A*

- c. Is the project located in Class II or Class III waters that are classified as “approved”, “restricted”, “conditionally approved”, or “conditionally restricted”? If yes, demonstrate that the project meets the requirements of AH I Section 10.2.5(c).

*N/A*

7. Vertical seawalls. Are vertical seawalls proposed in an estuary or lagoon as part of the project? If yes, please describe how the project meets the requirements of AH I Section 10.2.6.

*N/A- There are no vertical seawalls proposed with this application.*

8. Secondary Impacts (AH I Section 10.2.7).

- a. Will an upland buffer, with a minimum width of 15' and an average width of 25', be provided between the proposed activities and existing wetlands or wetlands to be preserved, enhanced, restored, or created? Provide the location and dimension of all buffers on the plans. If not, demonstrate that secondary impacts will not occur or how they will be offset.

*An upland buffer will be provided in the form of a grassed berm along the perimeter adjacent to preserved areas as depicted on Map 3-2. This upland buffer system width will exceed the specified upland buffer requirements.*

- b. If listed species are present or may be present then coordination with wildlife agencies is needed. Have you coordinated with the FFWCC and/or USFWS? If so, please provide correspondence from the wildlife agencies indicating concurrence with the species management plan(s).

*Mosaic has coordinated with USFWS and is working to obtain the wildlife agencies' approval and/or concurrence with DeSoto's Wildlife Management Plans. Please refer to the following Sections and Appendices in the attached SID for details regarding wildlife:*

- *Section 1.8 – Wildlife*
- *Section 2.2.2. – Wildlife Considerations*
- *Section 3.2.5 – Impacts to Wildlife*
- *Section 3.2.7.2 – Conservation of Fish and Wildlife*
- *Section 5.6 – Wildlife Utilization*
- *Appendix 2-6-A – Wildlife Survey Reports*
- *Appendix 2-6-B – Wildlife Habitat Management Plan*

- c. What measures will be taken to avoid impacts to wetland-dependent wildlife and/or listed species that use uplands for nesting or denning?

*A 100% visual coverage survey of the property will be conducted prior to disturbance/mining and species management will take place in accordance with the applicable sections of the Wildlife Habitat Management Plan. Please refer to Appendix 2-6-B for additional information.*

- d. Describe whether there are any other relevant activities that are very closely linked and causally related to any proposed dredging or filling in wetlands or other surface waters that have the potential to cause impacts to significant historical and archaeological resources.

*All known historical and archaeological resources will be avoided as required by the SHPO project release letter. Please refer to Sections 1.9 and 3.2.4 of the SID, and Appendix 2-10 for additional information regarding cultural and historical resources.*

- e. Are there additional future phases or extensions of the proposed activities that are not shown? If yes, please describe.

*N/A*

9. Cumulative Impacts. Is the proposed mitigation located within the same drainage basin (Refer to AH I Figures 10.2.8.1 – 10.2.8.5) as the proposed wetland impacts? If not, please submit a Cumulative Impact Evaluation in accordance with AH I Section 10.2.8.

*Yes. All proposed mitigation is located in the Peace River / Horse Creek drainage basins.*

10. Mitigation Plan (Refer to AH I Section 10.3).

- a. If a mitigation bank is proposed to offset wetland/other surface water impacts, provide:

*N/A- A Mitigation Bank is not proposed with this application.*

- i. the name of the bank: . A letter of reservation from the banker will be required once the application has been evaluated.
  - ii. If the mitigation bank was assessed using UMAM, provide UMAM worksheets for impact area(s). If the bank was assessed using a method other than UMAM, then prepare the impact assessment using the same method.
- b. If mitigation is proposed to offset wetland/other surface water impacts, please provide a mitigation plan that includes, at a minimum, the following:

*Please refer to Section 4 within the attached SID for mitigation plan details.*

- i.  Proposed mitigation narrative:
  - (1)  Describe the current and proposed condition for each type of mitigation component (restoration, enhancement, creation, preservation), including:

*Please refer to Section 4 of the attached SID for details regarding each type of proposed mitigation and proposed preservation.*

- (a)  Describe current and proposed vegetation

*Please refer to Section 1.3 of the attached SID document for a description of the current vegetation within the DeSoto Mine boundary. Details regarding the existing onsite wetlands, including wetland functional analysis can be found in Section 1.4 of the attached SID. Also, the following Maps, Tables, and Appendices provide additional information in regards to the existing conditions at the DeSoto Mine:*

- *Map 2-1-B-i – FDEP Existing Land Use and Vegetation ( Level I)*
- *Map 2-1-B-ii – FDEP Existing Land Use and Vegetation (Level III)*
- *Map 2-4-B – Wetland UMAM Assessment*
- *Table 2-1-A-ii – Site Land Use Summary*
- *Table 2-2-C-i – FDEP JD Wetland Impact Summary by Land Use*
- *Appendix 2-2-B-i – Stream Reclamation Plan*
- *Appendix 2-4-B-i – UMAM Data and Analysis*
- *Appendix 2-4-B-iv – Existing Habitat Descriptions*

*Please refer to Section 2.10 of the attached SID document for a description of the proposed post reclamation vegetation within the DeSoto Mine boundary. Details regarding the proposed onsite wetlands, including wetland functional analysis can be found in Section 4.1.6 of the attached SID. Also, the following Maps, Tables, and Appendices provide additional information in regards to the proposed post reclamation conditions at the DeSoto Mine:*

- *Map 4-2-B-i – FDEP Post Reclamation Land Use and Vegetation (Level 1)*
- *Map 4-2-B-ii – FDEP Post Reclamation Land Use and Vegetation (Level III)*
- *Map 4-8-B-iii – Post Reclamation UMAM Scores With Project*
- *Table 2-1-A-ii – Site Land Use Summary*
- *Table 2-2-C-i – FDEP JD Wetland Impact Summary by Land Use*
- *Table 2-4-B – Summary of UMAM Values*
- *Appendix 2-4-B-iii – Post Reclamation UMAM Datasheets*
- *Appendix 4-2-A – Wetland Mitigation Plan*

Please refer to Section 4.1.7.8 for a description of the proposed offsite mitigation project. Also, the following appendices describe each project:

- Appendix 4-2-B – Horse Creek Enhancement Plan

- (b)  Describe current and proposed hydrologic conditions for the proposed mitigation.

The following sections within the SID document, along with the attached Appendices, provide additional details about the current and proposed hydrologic conditions:

- Section 1.4.3 – Wetland Functional Analysis
- Section 1.4.4 – Wetland Hydroperiods
- Section 1.6.2 – Floodplains
- Section 5.3.1 – Post Reclamation Hydroperiods
- Section 5.4.3 – Pre vs Post Hydrologic and Hydraulic Analysis
- Appendix 2-2-A-ii – Existing Wetland Hydroperiod Analysis
- Appendix 2-2-A-iv – Post Reclamation Hydroperiod Modeling
- Appendix 2-4-B-i – UMAM Data and Analysis
- Appendix 2-8-A – Floodplain Study
- Appendix 2-9 – Pre vs Post Hydrologic and Hydraulic Study

Please refer to Section 4.1.7.8 for a description of the proposed offsite mitigation project. Also, the following appendices describe each project:

- Appendix 4-2-B – Horse Creek Enhancement Plan

- (c)  Describe the soil types from NRCS maps and confirm if actual soil conditions appear to match.

Sections 1.5 and 2.9 in the attached SID provide information regarding the existing and proposed post reclamation soils.

- (2)  Provide details of the proposed construction/mitigation activities including phasing and timing, as appropriate.

Please refer to Sections 2.10.7 and 3.0 within the attached SID for additional details regarding Construction Schedule and Sequence. The following Maps and Tables also provide additional information:

- Map 3-1 – Mine Plan
- Map 4-1 – Reclamation Schedule
- Table 4-1 – Mine Reclamation Schedule
- Table 4-2 – Minimum FDEP Rule Reclamation Schedule

- (3)  Identify measures that will be implemented during and after construction to avoid adverse impacts related to the proposed activities.

*Mosaic, other mine operators, and publicly and privately funded researchers have developed structural and non-structural best management practices (BMPs) over the last 50 years that have proven effective at eliminating or reducing impacts historically associated with phosphate mining. These measures have proven protective of wildlife, groundwater, soils, air quality, and water quality resources on phosphate mining sites, adjacent lands, and the west-central region of Florida. The following is a list of some of the measures Mosaic is proposing to implement on the DeSoto Mine:*

- *Wildlife and Habitat Management Plan (SID Sections 1.8 and 2.2.2)*
- *Ditch and Berm Systems (SID Section 2.1)*
- *Buffers (SID Section 2.1.3)*
- *Wind and Water Erosion Control (SID Section 2.2.1)*

*Also, as discussed in Section 2.11.3 of the attached SID, an Environmental Management Plan (EMP) will be implemented in accordance with the Integrated Water Use Permit No. 2011400.025 (IWUP). This EMP outlines the processes and procedures Mosaic must implement to ensure that the project does not result in adverse impacts to environmental features adjacent to and in areas surrounding the mine boundary.*

- (4)  A mitigation implementation and monitoring schedule with dates.

*Onsite wetland creation/mitigation will be implemented as shown on the Reclamation Schedule (Map 4-1). A monitoring schedule will be developed after construction for each mitigation area and results will be reported annually to FDEP.*

*Onsite enhancement within the preservation areas, as described in Appendix 4-2-A, will be implemented in advance or concurrent with onsite disturbance, but not prior to permit issuance from all appropriate agencies. A monitoring schedule will be developed after construction for each mitigation area and results will be reported annually to FDEP.*

*The offsite mitigation project such as the Horse Creek Enhancement Project, described in Appendix 4-2-B, will be implemented prior to onsite disturbance within the DeSoto Mine boundary, but not prior to permit issuance from all appropriate agencies. A monitoring schedule will be developed after construction for each mitigation area and results will be reported annually to FDEP.*

- (5)  Identify the success criteria.

*Please refer to Section 4.4 of the attached SID Document for additional information regarding the proposed success criteria.*

- (6)  Describe the anticipated site conditions in and around the mitigation area after the mitigation plan is successfully implemented.

*Please refer to SID Section 5 – Conditions upon Completion of Reclamation and Mitigation.*

- (7)  Provide a comparison of current fish and wildlife habitat to expected habitat after the mitigation plan is successfully implemented.

*Please refer to SID Section 5.6 – Wildlife Utilization.*

- ii.  Provide a Management Plan that includes, as appropriate, aspects of operation and maintenance, including water management practices, vegetation establishment, exotic and nuisance species control, fire management, and control of access.

*Please refer to Section 4.5 in the attached SID Document.*

- iii.  Maps:  
(1)  Soil map (include soil names/codes, hydrologic soil groups and hydric soil types).

*Please refer to attached Map 4-4 for Post Reclamation Soils.*

- (2)  Topographic map of the mitigation area and adjacent contributing and receiving areas.

*Please refer to attached Map 4-5 for Post Reclamation Topography*

- (3)  Hydrologic features map of the mitigation area and adjacent contributing and receiving areas.

*Please refer to attached Map 4-6 for Post Reclamation Drainage Basins.*

- (4)  Vegetative communities map (using FLUCCS or other appropriate classification system).

*Please refer to Map 4-2-B-i and Map 4-2-B-ii for maps showing the proposed vegetative community types based on the Florida Land Use, Cover and Forms Classification System (FLUCFCS) using Level I and Level III respectively*

- (5)  For all maps, identify source.

- iv. Provide the necessary supporting information for the application of sections 62-345.400 - .600 (Uniform Mitigation Assessment Method (UMAM)). To meet this requirement, submittal of UMAM worksheets is acceptable for impact and mitigation areas.

*Please refer to Table 2-4-B for the Summary of UMAM Values and Appendix 2-4-B-i and Appendix 2-4-B-iii for the UMAM datasheets.*

- v. If onsite and/or offsite applicant-responsible mitigation is proposed, submit a draft Conservation Easement document or other form of restrictive covenant that provides for protection of the mitigation area in perpetuity. Standard forms, as described in subsection 62-330.301(6), F.A.C., are available from the Agency or on its website.

*Appendix 4-4-A contains a Conservation Easement template that Mosaic proposes to utilize for protection as described in Section 4 of the attached SID.*

- vi. If onsite and/or offsite applicant-responsible mitigation is proposed, submit a cost estimate for completing the mitigation, including monitoring and maintenance.

*Section 373.414(19)(a), F.S. establishes the initial financial responsibility criteria for phosphate extraction activities with a duration of more than three years to be 110 percent of the estimated mitigation costs for wetlands and other surface waters affected during the first three years of operation under the permit. The financial responsibility requirements presented in Section 4.2 of the attached SID are calculated based upon these two criteria. This financial responsibility will be updated annually to include the annual increase for inflation and to area disturbed during the life of the mine.*

- vii. If onsite and/or offsite applicant-responsible mitigation is proposed and the proposed mitigation exceeds \$25,000, please provide a draft financial assurance document.

*Mosaic will provide bonds, or other forms of financial assurance, similar to instruments used and accepted by FDEP in the recent past, to ensure that the mitigation through wetlands creation success will be completed as designed.*

- viii. Identify the entity responsible for monitoring, maintenance and long-term stewardship of the mitigation area (i.e. the landowner or homeowner association, not the consultant or contractor that will do the work).

*Mosaic is responsible for monitoring, maintenance, and long-term stewardship of the mitigation areas.*

### **PART 3: PLANS**

PLANS: The information listed in the checklist below represent the typical information required on the submitted project plans. The Plans checklists in each application section are cumulative unless otherwise noted. Separate plans for each application section are not required.

1.  Include the following on the construction plans and cross sections:
- a.  An Existing Conditions sheet showing the entire project and wetland/other surface water boundaries. Include the following: Acreage and type (herbaceous, forested or other surface water) of each wetland/other surface water.

*Please refer to the following Maps and Tables for the required information:*

- *Map 2-2-B-i – FDEP Jurisdictional Wetlands and Other Surface Waters*
- *Map 2-2-B-ii – FDEP Jurisdictional Streams*
- *Table 2-2-C-i – FDEP JD Wetland Impact Summary by Land Use*
- *Table 2-2-D-i – FDEP JD Stream Impact Summary*

- b.  A Proposed Conditions sheet showing the entire project and wetland/other surface water boundaries with construction plan overlay.

*Please refer to the following Maps and Tables for the required information:*

- *Map 4-2-B-i – FDEP Post Reclamation Land Use and Vegetation (Level I)*
- *Map 4-2-B-ii – FDEP Post Reclamation Land Use and Vegetation (Level III)*
- *Map 4-3-B – FDEP Post Reclamation Streams*



- *Table 2-2-C-i – FDEP JD Wetland Impact Summary by Land Use*
- *Table 2-2-D-i – FDEP JD Stream Impact Summary*

c.  A Proposed Wetland Impact sheet that include the following:

- i.  Acreage and type (herbaceous, forested or other surface water) of each wetland/other surface water to be impacted.

*Please refer to Table 2-2-C-ii FDEP JD Wetland Impact Summary by ID.*

- ii.  Proposed upland buffers with dimensions.

*An upland buffer will be provided in the form of a grassed berm along the perimeter adjacent to preserved areas and property boundaries as depicted on Map 3-2. The berm is typically 25-50 ft. wide. The actual width will depend upon the site specific design and may vary from this width in some locations. Additional upland buffer adjacent to preserved wetlands is shown on Map 3-6.*

- iii.  Identify the seasonal high water and wetland normal pool elevations on the plans.

*Please refer to Sections 1.4.4 and 1.7.2 in the attached Supplemental Information Document (SID) for discussion regarding the seasonal high and normal pool elevations.*

- iv.  Separately identify WMD/FDEP and USACE wetland/other surface water impacts if different.

*This application only addresses impacts to FDEP jurisdictional wetlands/other surface waters.*

*A separate application was submitted to the USACE in June 2014 that addresses impacts to USACE jurisdictional areas.*

- d.  Include wetland boundaries on all construction plan sheets.

*Existing FDEP jurisdictional wetland boundaries have been provided on all applicable maps included within this application.*

2.  If onsite and/or offsite applicant-responsible mitigation is proposed, submit mitigation permit plans and cross sections including, at a minimum:

- a.  existing conditions plan sheet identifying upland and wetland communities and acreage of each, topography, drainage patterns, and location of cross-section detail.

*Please refer to the following Maps, Tables, and Appendices for the required information:*

- *Map 2-1-B-i – FDEP Existing Land Use and Vegetation ( Level I)*
- *Map 2-1-B-ii – FDEP Existing Land Use and Vegetation (Level III)*
- *Map 2-2-B-i – FDEP Jurisdictional Wetlands and Other Surface Waters*
- *Map 2-2-B-ii – FDEP Jurisdictional Streams*
- *Map 2-7 – Existing Topography*
- *Map 2-9-A – Existing Onsite Drainage Basins*
- *Table 2-1-A-ii – Site Land Use Summary*
- *Table 2-2-C-i – FDEP JD Wetland Impact Summary by Land Use*
- *Table 2-2-D-i – FDEP JD Stream Impact Summary*
- *Appendix 2-2-A-i – Existing Wetland Cross Sections*

Please refer to SID Section 4.1.6.8 for a description of the proposed offsite mitigation project which is also described in the following appendix:

- Appendix 4-2-B – Horse Creek Enhancement Plan

- b.  proposed conditions plan sheet identifying proposed improvements by type (restoration, enhancement, creation, preservation), acreage of each, topography, drainage patterns, and location of cross-section detail.

Please refer to the following Maps, Tables, and Appendices for the required information:

- Map 4-2-B-i – FDEP Post Reclamation Land Use and Vegetation (Level I)
- Map 4-2-B-ii – FDEP Post Reclamation Land Use and Vegetation (Level III)
- Map 4-3-B – FDEP Post Reclamation Streams
- Map 4-5 – Post Reclamation Topography
- Map 4-6 – Post Reclamation Drainage Basins
- Map 4-8-D – Post Reclamation Wetland Cross Section Locations
- Table 2-2-C-i – FDEP JD Wetland Impact Summary by Land Use
- Table 2-2-D-i – FDEP JD Stream Impact Summary
- Appendix 2-2-A-iii – Post Reclamation Wetland Cross Sections

Please refer to SID Section 4.1.6.8 for a description of the proposed offsite mitigation project, which is also described in the following appendix:

- Appendix 4-2-B – Horse Creek Enhancement Plan

- c.  monitoring plan sheet including proposed improvements, monitoring transects, photostations, and mitigation signage (if applicable).

Monitoring plans for each mitigation area, including monitoring transects, photo-stations, and signage, will be provided by Mosaic once each mitigation area has been constructed. Results of any monitoring will be provided annually to the FDEP

- d.  cross-section and/or profile detail(s) sheet(s) including representative section of each type of mitigation component. Include existing and proposed conditions and representative elevations.

Please refer to the following Maps and Appendices for the required information:

- Appendix 2-2-A-i – Existing Wetland Cross Sections (Including Map with Location of each Cross Section)
- Map 4-8-D – Post Reclamation Cross Section Locations
- Appendix 2-2-A-iii – Post Reclamation Wetland Cross Sections

Please refer to SID Section 4.1.6.8 for a description of the proposed offsite mitigation project which is also described in the following appendix:

- Appendix 4-2-B – Horse Creek Enhancement Plan

- e.  planting schedule, plant species including common and scientific names divided into three sections (canopy, shrub, herbaceous) by mitigation component, quantity, spacing, size, and elevation range.

*Please refer to the following Tables and Figures for the required information:*

- *Table 4-3-A: Proposed Plantings in Bay and Gum Swamps (FLUCFCS 611 and 613)*
- *Table 4-3-B: Proposed Plantings in Inland Pond and Sloughs (FLUCFCS 616) and Mixed Wetland Hardwoods (FLUCFCS 617)*
- *Table 4-3-C: Proposed Plantings in Cypress Forests (FLUCFCS 621)*
- *Table 4-3-D: Proposed Plantings in Wetland Forested Mix (FLUCFCS 630)*
- *Table 4-3-E: Proposed Plantings in Freshwater Marsh (FLUCFCS 641)*
- *Table 4-3-F: Proposed Plantings in Wet Prairie or Ephemeral Wetlands (FLUCFCS 643)*
- *Table 4-3-G: Proposed Plantings in Shrub Marsh (FLUCFCS 647)*
- *Table 4-3-H: Proposed Plantings in Hydric Pine Flatwoods (FLUCFCS 625)*
- *Table 4-3-I: Proposed Plantings in Hydric Pine Savanna (FLUCFCS 626)*
- *Figure 7-A: Typical Cross Section of Bay and Gum Swamps (FLUCFCS 611 and 613)*
- *Figure 7-B: Typical Cross Section of Inland Pond and Sloughs (FLUCFCS 616) and Mixed Wetland Hardwoods (FLUCFCS 617)*
- *Figure 7-C: Typical Cross Section of Cypress Forests (FLUCFCS 621)*
- *Figure 7-D: Typical Cross Section of Wetland Forested Mix (FLUCFCS 630)*
- *Figure 7-E: Typical Cross Section of Freshwater Marsh (FLUCFCS 641)*
- *Figure 7-F: Typical Cross Section of Wet Prairie or Ephemeral Wetlands (FLUCFCS 643)*
- *Figure 7-G: Typical Cross Section of Shrub Marsh (FLUCFCS 647)*
- *Figure 7-H: Typical Cross Section of Hydric Pine Flatwoods (FLUCFCS 625)*
- *Figure 7-I: Typical Cross Section of Hydric Pine Savanna (FLUCFCS 626)*

*Section 2.10.4 in the attached SID provides additional details regarding wetland revegetation. Section 2.10.7 discusses the Construction Schedule and Sequence.*

*The elevation range for each wetland will vary across the site. Elevation design based on target hydroperiods is provided as discussed in Section 5.3.1 of the attached SID.*

*Please refer to Section 4.1.6.8 for a description of the proposed offsite mitigation project which is also described in the following appendix:*

- *Appendix 4-2-B – Horse Creek Enhancement Plan*

*Please note: The required information regarding FDEP wetland impact can be found in the attached Table 2-2-C-ii. The onsite and offsite mitigation summary can be found in the attached Table 2-4-B. The information required in Tables 1, 2 and 3 below are provided by Tables 2-2-C-ii and 2-4-B.*

**TABLE 1 - PROJECT WETLAND (WL) AND OTHER SURFACE WATER (SW) AND IMPACT SUMMARY**

WL & SW ID	UMAM ASSESSMENT AREA NAME(S)	WL & SW TYPE	WL & SW SIZE (acres)	WL & SW NOT IMPACTED (acres)	TEMPORARY WL & SW IMPACTS		PERMANENT WL & SW IMPACTS		MITIGATION ID
					IMPACT SIZE	IMPACT TYPE	IMPACT SIZE	IMPACT TYPE	
<b>PROJECT TOTALS:</b>									

Comments:

Codes (multiple entries per cell not allowed):

- Wetland & Surface Water ID: Include ID on submitted wetland and surface water impact maps
- Wetland Type: from an established wetland classification system
- Impact Type: D=dredge; F=fill; H=change hydrology; S=shading; C=clearing; O=other

**Form #62-330.060(1)** - Joint Application for Environmental Resource Individual Permit/ Authorization to Use

State-Owned Submerged Lands/ Federal Dredge and Fill Permit

Incorporated by reference in subsection 62-330.060(1), F.A.C. (10-1-2013)

**TABLE 2 - PROJECT ON-SITE MITIGATION SUMMARY**

MITIGATION ID	UMAM ASSESSMENT AREA NAME(S)	TARGET TYPE	CREATION	RESTORATION	ENHANCEMENT	WETLAND PRESERVE	UPLAND PRESERVE	OTHER
			AREA (acres)	AREA (acres)	AREA (acres)	AREA (acres)	AREA (acres)	AREA (acres)
<b>PROJECT TOTALS</b>								

COMMENTS:

Codes (multiple entries per cell not allowed):

- Target Type or Type=target or existing habitat type from an established wetland classification system or land use classification for non-wetland mitigation

**TABLE 3 - PROJECT OFF-SITE MITIGATION SUMMARY**

MITIGATION ID	UMAM ASSESSMENT AREA NAME(S)	TARGET TYPE	CREATION	RESTORATION	ENHANCEMENT	WETLAND PRESERVE	UPLAND PRESERVE	OTHER
			AREA (acres)	AREA (acres)	AREA (acres)	AREA (acres)	AREA (acres)	AREA (acres)
<b>PROJECT TOTALS</b>								

COMMENTS:

Codes (multiple entries per cell not allowed):

- Target Type or Type=target or existing habitat type from an established wetland classification system or land use classification for non-wetland mitigation

**TABLE 4 - SHORELINE STABILIZATION**

<i>Stabilization</i>	<i>Linear Ft. New</i>	<i>Linear Ft. Replaced</i>	<i>Linear Ft. Repaired</i>	<i>Linear Ft. Removed</i>	<i>Slope H:</i>	<i>Toe Width (Ft.)</i>
<i>Natural Vegetation (living shoreline)</i>					<b>N/A</b>	<b>N/A</b>
<i>Rip Rap + Vegetation</i>						
<i>Rip Rap</i>						
<i>Seawall + Rip Rap</i>						
<i>Vertical Seawall</i>						
<i>Other Shoreline Stabilization Type</i>						

*Size of Rip Rap*

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*Type of Rip Rap*

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## SECTION H: SUPPLEMENTAL INFORMATION FOR APPLICATIONS FOR ENVIRONMENTAL RESOURCE PERMITS INVOLVING WATER MANAGEMENT SYSTEMS FOR MINES

Instructions: The supplemental information required by this section is in addition to the information required by Section A and Section C (if applicable) of this application. This section is required for mines that provide a permit application to the Department based on the Operating Agreement with the appropriate water management district.

The information listed in the checklists below represents the level of information that is usually required to evaluate an application. Information can be provided within reports, plans and other documents. Provide a response to item below indicating specifically where in the reports, plans, and other documents the information may be found. The level of information required for a specific project will vary depending on the nature and location of the site and the activity proposed. Conceptual approvals generally do not require the same level of detail as a construction permit. However, providing a greater level of detail will reduce the need to submit additional information at a later date. If an item does not apply to your project, indicate that it does not and proceed to the next item.

### PART 1: SUPPLEMENTAL WETLAND AND OTHER SURFACE WATERS IMPACT INFORMATION

- a.  Part 1 of Section C of the application requires the applicant to provide the volume (in cubic yards) of material to be dredged from wetlands and other surface waters. Do not include the volume of upland material to be dredged in the estimated volume.

*Please refer to Part 1 Section C for the cubic yards of material to be dredged from wetlands and other surface waters.*

- b.  Applicants that elect to use alternative wetland mitigation associated with the mining of high-quality peat, in accordance with Section 373.414(6)(e), F.S., shall provide all information required by Chapter 62-348, F.A.C.

*N/A- The mining of high-quality peat is not proposed for this application.*

- c.  Wetland mitigation costs and financial responsibility mechanisms for phosphate and limestone mines should be presented in 3-year stages, as provided by Section 373.414(19), F.S.

*Please refer to Section 4.2 in the attached SID. Section 373.414(18), Florida Statutes (F.S.), establishes the Uniform Mitigation Assessment Methodology as the statewide basis for determining the sufficiency of the proposed mitigation. Section 373.414(19)(a), F.S. establishes the initial financial responsibility criteria for phosphate extraction activities with a duration of more than three years to be 110 percent of the estimated mitigation costs for wetlands and other surface waters affected during the first three years of operation under the permit. The financial responsibility requirements presented in Section 4.2 of the SID are calculated based upon these two criteria. This financial responsibility will be updated annually to include the annual increase for inflation and in area disturbed during the life of the mine.*



- d.  If the activity includes a proposed final stormwater management system with a control elevation different than the normal pool (NP) elevation(s) of avoided existing or proposed created wetlands or other surface waters, provide documentation (e.g. drawdown assessment, seepage and/or drainage analysis or other methods) that shows that the permanent proposed stormwater management system will not adversely impact the hydroperiods of avoided existing or created wetlands or other surface waters.

*N/A – At the end of the life of mine there will not be a final stormwater management system with control elevations since the entire site will be either reclaimed or preserved and therefore the final normal pool elevations in the post reclamation condition will be similar to existing conditions.*

- e.  Provide a monitoring plan for any avoided wetlands and other surface waters adjacent to the project boundary or proposed excavation. The monitoring plan should include staff gauge and/or piezometer locations on a map, data monitoring instrumentation or collection methods (for water levels and groundcover species), data collection and downloading frequency (including when pre-mining monitoring will begin), available remedial measures, a typical gauge/piezometer schematic and datum, and reporting frequency and report contents. The monitoring period is from prior to the start of mining to the completion of reclamation.

*Mosaic’s Integrated Water Use Permit (IWUP) (see Appendix 2-3-A) provides documentation on the proposed water level maintenance measures that will be employed in connection with the potential effect of water table drawdown including preventative measures, monitoring and water table mitigation.*

*The IWUP Environmental Maintenance Plan (EMP) at DeSoto requires a two-step process that includes site-specific analyses to establish the baseline subsurface and hydrogeologic conditions of a given mining block (area) prior to the initiation of mining activities. The water level maintenance measures will be tailored to the specific conditions of the area to ensure their success, and the detailed monitoring and reporting required by the EMP will ensure the water level maintenance measures are performing as expected.*

*The EMP once fully implemented at DeSoto will establish a Mandatory Mitigation Distance (MMD) for the mine site. The MMD is defined as: the minimum distance between Mine Activities and a protected environmental feature or property boundary where if the minimum distance is not maintained the water level could be impacted, thus requiring a Site Specific Drawdown Mitigation Plan (SSDMP). The MMD is used to determine when and for which areas along the mine / no mine boundary Mosaic must install and operate a SSDMP, to prevent, offset, or mitigate for any water table drawdown of the Surficial Aquifer System (SAS).*

*Therefore, an EMP monitoring program is set up in advance of mining along the “no mine boundary” to document / establish the SAS water levels (during wet and dry season) for reporting and protecting the preservation / no mine areas during the course of mining and reclamation. This final monitoring program is called a “Drawdown Mitigation Plan” (DMP), which will include the site-specific water level maintenance measures, wells to be monitored, etc., which will be approved by SWFWMD before mining activities can occur.*

*Since mining at DeSoto Mine is not proposed to begin until around 2021, the four year monitoring requirement has not yet begun. Therefore, MMD, SASMP or SSDMP have not yet been submitted. However, some site specific testing and exploration has been conducted by ECT and Ardaman. These data have been used by Ardaman to developed a typical recharge system design using steady-state seepage analyses, see Appendix 3-2. Ardaman’s modeling demonstrates that the water table mitigation plan can be effectively implemented to maintain the SAS during mining and reclamation at the DeSoto Mine.*

Furthermore, as part of this ERP / IWUP process, Ardaman has estimated the MMD to be 1,660 feet for DeSoto for agency approval. The MMD calculation was based on the computer application of the site specific soil profiles, testing and hydraulic conductivity performance field tests. Please refer to Appendices 2-3-G, 3-2, 3-4-B, 3-4-C for testing details.

The specific IWUP EMP requirements to be implemented prior to initiating Mine Activities within MMD setback at DeSoto (a two-step process) consisting of the following:

1) Submittal to the SWFWMD a proposed Surficial Aquifer System Monitoring Plan (SASMP) including site specific stratigraphic borings and cross-section profiles, proposed staff gauge and/or monitor well locations and proposed environmental transect monitoring locations within the adjacent environmental feature. Once submitted, the proposed monitoring plan is reviewed by SWFWMD and approved before implementation. Once approved, Mosaic will install the monitoring network and begin baseline monitoring efforts, typically for a period of four years prior to mining activities. Baseline monitoring will include monthly measurements at all staff gauges and/or monitor wells and annual monitoring along environmental transects. The baseline monitoring will establish the normal range of water level fluctuations within their historic range and the condition along the environmental transects within the period of record. Monitoring results for the DeSoto Mine will be reported as required by the approved IWUP EMP. A recent monitoring report (September 2013) is included in Appendix 2-3-A as an example.

2) Submittal of a SSDMP including aerial photos, soil borings collected along the mine – no mine boundary, geologic cross-sections, results of any field tests used to characterize subsurface flow conditions in the area, historic water levels from monitor wells collected along the protected area boundary, and the proposed design of the SSDMP system accompanied by the results of the modeling used to design the system. Once submitted, the proposed EMP is reviewed by the SWFWMD and approved before implementation. A recent SSDMP submittal and approval letter received by the SWFWMD is included in Appendix 2-3-A. This SSDMP demonstrates the level of site-specific detail and analyses that goes into the preparation of a SSDMP. The same level of site-specific detail will be used to prepare the DeSoto Mine SSDMPs.

Based upon the above IWUP permit requirements, data collection, field testing and analyses all provide reasonable assurance that the recharge system proposed for the DeSoto Mine will be sufficient to maintain the water levels of the SAS.

Please refer to Section 2.11.3 for additional information regarding the Environmental Management Plan (EMP) required by the IWUP.

- f.  Provide a hydrological analysis for proposed wetland mitigation. The hydrological analysis should evaluate the wetland types and appropriate hydroperiods, historical and proposed conditions, and whether the wetlands were perched, seepage dependent, or groundwater-supported. Provide monitoring locations for piezometers and staff gauges, construction details, measurement frequency, data collection method, and reporting format.

The following Sections within the SID document, along with the attached Appendices, provide additional details about the current and proposed hydrologic conditions:

- Section 1.4.3 – Wetland Functional Analysis
- Section 1.4.4 – Wetland Hydroperiods
- Section 1.6.2 – Floodplains
- Section 5.3.1 – Post Reclamation Hydroperiods
- Section 5.4.3 – Pre vs Post Hydrologic and Hydraulic Analysis
- Appendix 2-2-A-ii – Existing Wetland Hydroperiod Analysis

- *Appendix 2-2-A-iv – Post Reclamation Hydroperiod Modeling*
- *Appendix 2-4-B-i – UMAM Data and Analysis*
- *Appendix 2-9 – Pre vs Post Hydrologic and Hydraulic Study*

*Please refer to Section 4.1.6.8 for a description of the proposed offsite mitigation project. Also, the following appendix describes the project:*

- *Appendix 4-2-B –Horse Creek Enhancement Plan*

*Final monitoring plans for each mitigation area, including locations of piezometers and staff gauges, will be provided by Mosaic once each mitigation area has been constructed concurrent with SWFWMD submittal for review and comment. Results of any monitoring will be provided annually to the FDEP.*

*Appendix 2-3-A provides a recent SSDMP submittal and demonstrates the level of site-specific detail and analyses that goes into the preparation of these plans. The same level of site-specific detail will be used to prepare the DeSoto's SSDMPs.*

## **PART 2: STORMWATER MANAGEMENT SYSTEM SUMMARY**

Provide drainage calculations, signed, sealed and dated by an appropriate registered professional, and supporting documentation demonstrating that the proposed project meets the conditions for issuance under Rules 62-330.301(1)(a),(b),(c), and (e), F.A.C. **Larger mines or more complex mine plans may require one or more intermediate stage maps and drainage calculations to explain how the proposed water management system and offsite flows will change as mining and reclamation progress.** The stormwater management system summary should include, but not necessarily be limited to, the following:

### **1. Site Information:**

- Provide separate pre-development (existing), construction phase (during mining and reclamation) and post-development (post-reclamation) drainage maps, as appropriate, that include drainage patterns and basin/sub-basin boundaries. Provide the acreage for each basin/sub-basin and include flow direction arrows including any off-site runoff being routed through or around the system; topographic information; and connections between wetlands and other surface waters below the 25-year 24-hour design storm event. Merge the construction phase and post-development elevation contours with the existing elevation contours in areas that will remain undisturbed.

*Pre-mining and post-reclamation drainage maps with drainage patterns and sub-basin boundaries are included in the Pre vs. Post Hydrologic and Hydraulic Analysis prepared by Ardaman and Associates, Inc. (Appendix 2-9). The report also provides acreage for each sub-basin, topographic information, and connections between wetlands and other surface waters at elevations below the design storm event. The post-reclamation elevation contours are similar to existing elevations and tie into the existing contours of the surrounding undisturbed land as shown on Map 4-5.*

- b.  Where agricultural ditches are present, illustrate how the area hydrology will be altered due to the proposed project. Provide plan drawings that show the internal, perimeter, and surrounding agricultural ditches for the existing, construction, and post-reclamation phases. Clearly indicate whether the perimeter ditches are within or outside the project area. Flow direction arrows (include any seasonal flow reversals with an explanation of use, if applicable) and proposed alterations to the ditches should be shown in each drawing. Provide maps that clearly depict the progression of ditch severance as the stormwater management system expands.

*There are agricultural ditches within the mine boundary; however, the agricultural ditches are typically small and shallow, contain only ephemeral flow, and have limited catchment. Mining is not expected to alter the hydrology of the site, as the analyses submitted in response to Part 2, Question 1, and in response to Part 3 demonstrates. [See Ardaman's reports in Appendices 2-8-A, 2-9-A, 2-9-B, 3-5] The hydrology analyses considered the effect of the existing agricultural ditches on site. The attached maps (Map 2-7 3-1, and 4-5) indicate the location of the existing ditches relative to the mine footprint, the annual mine sequence which will be expanded as discussed in the SID will be encompassed by a perimeter ditch and berm system. Map 4-5[mine sequencing map with timing], in conjunction with Map 2-7, indicates the general progression of agricultural ditch severance as mining progresses across the site."*

*The agricultural ditches within the mining disturbance boundary will be: (1) severed from waters of the state by construction of a berm meeting FDEP's non-clay phosphate BMP Berm specifications; and (2) excavated during mining. Agricultural ditches are not planned in the post-reclamation condition. The existing ditches pre-date and are not related to a permitted agricultural stormwater management system. The existing ditches are shown as depressions on the existing topography Map 2-7 and the lack of ditches in the post-reclamation condition is shown on the post-reclamation topography Map 4-5. Unlike large irrigation ditches or canals in use in some parts of Florida, existing agricultural ditches within the DeSoto Mine Boundary are ephemeral and used for limited catchment.*

- c.  Provide the results of any percolation tests, where appropriate, and soil boring logs that are representative of the actual site conditions to the proposed excavation depth(s). Identify the wet season high water table elevations for the project area and hydraulic conductivity values. Include dates, datum, and methods used to determine these parameters.

*Appendix 3-1-D provides the details of the DeSoto Railroad Spur's Stormwater Management plans. The Railroad Spur's Stormwater Management System (RR Management System) will consist of two components, the mine recirculation system for all stormwater within the mine infrastructure footprint, which will be governed by the DeSoto Mine's NPDES Permit, and the RR Management System, which will provide stormwater treatment for the first one-inch of stormwater runoff for stormwater associated with the eastern 8.5 miles of the railroad spur.*

*As noted elsewhere in this application, no portions of the proposed stormwater management system will rely on infiltration or percolation (e.g., rapid infiltration basins). Therefore, no percolation tests have been completed.*

*Please refer to SID Sections 1.7.2 and 1.7.3 for information regarding the seasonal high water table elevation and hydraulic conductivity values at the DeSoto Mine site and Map 2-3-F for the approximate elevation of the seasonal high water table. Soil boring logs and slug test data will be provided under separate cover in Appendix 2-3-G. Average depth of excavation is expected to be approximately 42 feet below grade. Isopach Maps that show contours of the matrix top and bottom elevations are provided in Appendix 3-7.*

- d.  Identify the existing onsite hydrologic soil classifications (e.g. Type A, B/D, D). Reference the source, such as the U.S. Department of Agriculture/Natural Resource Conservation Service Soil Survey, used in estimating the onsite hydrologic soil classification. Provide maps, as appropriate, with the project limits delineated.

*Sections 1.5 and 2.9 in the attached SID provide information regarding the existing and proposed post reclamation soils. Table 2-5-A provides descriptive information about the existing soils excerpted from the DeSoto County Soil Survey.*

*Please refer to attached Map 2-5 for the existing soil types within the DeSoto Mine Boundary, and Map 4-4 for the proposed Post Reclamation Soils.*

- e.  Identify the seasonal high water or mean high tide elevation for receiving waters/wetlands into which runoff will be discharged. Include dates, datum, and methods used to determine these elevations.

*Five future NPDES outfalls have been identified within the DeSoto Mine Boundary and their conceptual locations shown on Map 3-2. NPDES outfall elevations and adjacent wetland's seasonal high water and normal pool will be surveyed once outfall locations are approved.*

- f.  Indicate the existing and post-development land use and land cover. Provide the acreage, and percentages of the total project, of the following:

- Impervious surfaces (and directly connected impervious surfaces) excluding buildings, wetlands and other surface waters;

*NA – there are no impervious surfaces in the current or post reclamation condition.*

- Buildings;

*Existing buildings are limited to small residential/recreational structures that will be demolished if located within the disturbance boundary. These structures cover approximately 7.4 acres, including surrounding yards, or about 0.04 percent of the total project area, and are mapped using FLUCFCS code 111 and 150 in Table 2-1-A-ii and Map 2-1-B-ii.*

- Pervious surfaces (green areas not including wetlands);

*Please refer to Section 1.3 of the attached SID document for a description of the current vegetation within the DeSoto Mine boundary. Pervious surfaces (not including wetlands or other surface waters) total approximately 13,986 acres, or 76 percent of the project area. The pervious surfaces (not including wetlands or other surface waters) consist of the 200, 300, and 400 series classifications shown on the following Maps and Tables:*

- *Map 2-1-B-i – FDEP Existing Land Use and Vegetation ( Level I)*
- *Map 2-1-B-ii – FDEP Existing Land Use and Vegetation (Level III)*
- *Table 2-1-A-ii – Site Land Use Summary*

Please refer to Section 2.10 of the attached SID document for a description of the proposed post reclamation vegetation within the DeSoto Mine boundary. In the post reclamation condition, pervious surfaces (not including wetlands or other surface waters) total approximately 13,386 acres or 73 percent of the project area. The pervious surfaces (not including wetlands or other surface waters) consist of the 200, 300, and 400 series classifications shown on the following Maps, and Tables:

- Map 4-2-B-i – FDEP Post Reclamation Land Use and Vegetation (Level I)
- Map 4-2-B-ii – FDEP Post Reclamation Land Use and Vegetation (Level III)
- Table 2-1-A-ii – Site Land Use Summary

Lakes, canals, retention areas, other open water areas; and

Open water areas consist of the 500 series classifications on the above-referenced table and maps and comprise approximately 142 acres, or 0.8 percent of the project area, in the existing condition and 440 acres, or 2 percent of the project area, in the post-reclamation condition.

Wetlands (Please refer to Section C to ensure consistency in wetland acreages).

Wetlands consist of the 600 series classifications on the above-referenced table and maps and comprise approximately 4,096 acres, or 22 percent of the project area, in the existing condition and approximately 4,458 acres, or 24 percent of the project area, in the post-reclamation condition.

g.  Describe how the system will be operated and maintained for each stage throughout the life of the project.

As described in the attached SID (Section 2.3.2), all active mining, beneficiation plant, mine infrastructure, and reclamation areas are encircled by perimeter berms and ditches. Stormwater will be managed in accordance with the future DeSoto Mine NPDES Permit. The DeSoto Railroad Spur will provide stormwater treatment (wet detention) for the first 1 inch of stormwater runoff during the life of the mine. Refer to Appendix 3-1-D for more information.

h.  Identify the name and Waterbody Identification (WBID) number, if known, established for the Total Maximum Daily Load (TMDL) Program, of each receiving waterbody to which the proposed stormwater management system will discharge.

Stormwater will be managed in accordance with the future DeSoto Mine NPDES Permit. NPDES outfalls are proposed for the following waterbodies:

- Horse Creek above Peace River: WBID 1787A
- Unnamed Stream (Tributary to Buzzard Roost Branch): WBID 1957

i.  Provide the location and description of any nearby existing offsite features (such as wetland and other surface waters, municipal well fields, large irrigation wells, stormwater management ponds, and building or other structures) which might be affected by or affect the proposed construction or development.

Please refer to Section 1.10 of the attached SID document for the location and description of nearby existing offsite features.

## 2. Water and Soil Quality Analysis:

- a.  Provide a description of the proposed stormwater treatment methodology that addresses the type of treatment, pollution abatement volumes, and recovery analysis. Provide construction plans and calculations that address the required treatment volume and recovery, as well as stage-storage and design elevations, which demonstrate compliance with the appropriate water quality treatment criteria in the applicable Applicant's Handbook, Vol. II. If a computer program is used for the analysis, provide the name of the program, a description of the program, input and output data, and justification for model selection. Based on the proposed activity and land use, water quality sampling may be required for surface water discharge from the project area.

*Processed water (water within the active mine) / water quality will be governed and subject to the provisions of the future DeSoto Mine NPDES Permit. In accordance with Chapter 62-671 in the Administrative Code, all stormwater runoff from active mining operations will be collected and routed to the mine water recirculation system for re-use or discharge through one of five permitted outfalls. Prior to discharge to waters of the state, water will be treated in clay settling areas to meet technology, water quality, and aquatic life based numerical effluent limitations.*

*The Railroad Spur's stormwater treatment methodology for the railroad alignment outside the NPDES system is provided in Appendix 3-1-D. The RR Stormwater Management System will consist of two components, the mine recirculation system for all stormwater within the mine infrastructure footprint (western most portion of the RR spur approximately beginning 1 mile west of the SR. 70 Railroad Spur Crossing and going south of the plant) which will be governed by the DeSoto Mine's NPDES Permit, and the RR Management System, which will provide stormwater treatment for the first one-inch of stormwater runoff for stormwater associated with the eastern 8.5 miles of the railroad spur. The Railroad Spur's Stormwater Management Report provides details for the detention ponds and various culvert crossings designed to safely pass the existing drainage along the railroad tracks proposed alignment.*

*ICPR Modeling was performed for each basin by Florida Engineering and Design (FED) using a one-inch rainfall simulated with 100% runoff to the designed treatment pond. The time of discharge for the full treatment volume stage and half treatment volume stage were determined from the model for the purpose of evaluating compliance with SWFWMD requirements for wet detention treatment. In each drainage basin, the time of first half treatment discharge was greater than 60 hours and the time of total discharge greater than 120 hours, in compliance with SWFWMD guidelines for treatment. Table 6 of the report provides the calculated one-inch runoff volume in acre-feet requiring treatment in the wet detention system for each identified drainage basin, illustrated in Figures 1-6 & 1-7.*

*In addition, the trackside detention ponds were sized to contain the 100-year storm event with the treated water released into nearby wetland systems. The pond discharge design includes risers to control discharges and stilling basins with rock rip-rap over geo-textile material shields to prevent erosion. The outfalls were designed to return treated water via grass lined swales to pre-mining drainage features. The grass lined swales are designed with 4:1 side slopes and a 5 foot base width. The detention ponds discharge peak velocities were calculated using Bentley Flow Master Program. This modeling confirms at the 100-year storm event, treated waters will rejoin the existing wetland drainage at non-erosive velocities, thus indicating no disturbance to the receiving waters. The Flow Master Worksheets for each pond can be found in Stormwater Management Plan - Appendix III.*

- b.  If the receiving waterbody is known to be impaired, and/or has an established Total Maximum Daily Load (TMDL) or Basin Management Action Plan (BMAP), provide specific descriptions of all water quality parameters for which the waterbody is known to be impaired. For more information about water quality, impaired waters, and to determine whether a TMDL has been adopted in your area, refer to: <http://waterwebprod.dep.state.fl.us/basin411/downloads/Florida-Adopted-TMDLs.pdf>. To determine whether a BMAP exists, or is being developed in your project area, refer to: <http://www.dep.state.fl.us/water/watersheds/bmap.htm#rad>. Provide calculations demonstrating that the proposed project will not contribute to violations of state water quality standards in accordance with the applicable Applicant's Handbook, Vol. II.

*The quality of water discharge will be governed by the future DeSoto Mine NPDES Permit, which will ensure conformance with applicable TMDL regulations.*

- c.  Identify public water supply wells within 500 feet of the proposed extraction area and private water supply wells located on properties that are immediately adjacent to the project boundary. Identify the wellfield cone of depression, if available, and source of information for public water supply wells.

*There are no public water supply wells within 500 feet of the proposed mining area. Please see attached Map 2-3-C for the location of private wells within the 500 foot zone.*

- d.  If the project will have a direct discharge to a Class I, Class II, Outstanding Florida Waters or Class III waters that are approved, conditionally approved, restricted, or conditionally restricted for shellfish harvesting, provide additional treatment in accordance with the applicable Applicant's Handbook, Vol. II. To determine whether your project is within, or will discharge to an OFW, or for more information about OFWs in general, refer to: <http://www.dep.state.fl.us/water/wqssp/ofw.htm>.

*N/A - There will be no direct discharge to a Class I, Class II, Outstanding Florida Waters or Class III waters that are approved, conditionally approved, restricted, or conditionally restricted for shellfish harvesting. As stated above, the water quality for this mine area will be governed by the future NPDES Permit.*

- e.  Provide a typical hydrostratigraphic column and/or representative hydrogeologic cross-sections for the proposed project site. Describe the hydrostratigraphic units and define all aquifer(s) and/or aquiclude(s) (semiconfining/confining beds) present at the project site.

*The attached Figure 10 provides the typical hydrostratigraphic column and/or representative hydrogeologic cross-sections for the site.*

- f.  Contact the Department to discuss whether ambient surface water and groundwater quality characterization and compliance monitoring are necessary for the proposed project. If it is necessary, groundwater sampling will be required by depth intervals to at least the proposed depth of extraction. It may be necessary to install permanent nested wells at different depths for compliance monitoring. If poorer water quality (e.g. for chloride, sulfates, total dissolved solids, etc.) is detected within a deeper portion of the aquifer than in the shallower part of the aquifer, extraction depth(s) may be limited.



Groundwater and surface water quality and monitoring is governed by Mosaic's SWFWMD Water Use Permit No. 2011400.025 and the future NPDES Permit. (See Appendix 2-3-A for copy of permit). Monitoring data has already been collected which characterizes ambient surface and groundwater on the DeSoto Mine site.

Existing water quality monitoring data and monitoring locations can be found on the following maps and tables:

- Map 2-3-A – Groundwater Monitoring Stations
- Map 2-3-B – Stream Monitoring Locations
- Table 2-3-A – Groundwater Quality
- Table 2-3-A-i – Groundwater Monitoring Station Information
- Table 2-3-B – Surface Water Quality
- Table 2-3-B-i – Surface Water Monitoring Station Information

The data presented in these tables accurately documents pre-mining , or baseline, water quality conditions and demonstrates poorer water quality (e.g. chloride, sulfates, total dissolved solids, etc.) is not present at the depths Mosaic is proposing to mine at DeSoto.

- g.  If the proposed project site is located in or near a karst-sensitive area, a springshed, a public supply wellfield or other karst features, submit a preliminary geotechnical assessment report. Provide information on how ambient water quality will be protected in groundwaters under the direct influence of surface waters during mining operations and under post-development conditions. Some karst-sensitive areas or springsheds may require a karst study be conducted for the proposed project site. Contact the Department to discuss a proposed study design.

*N/A - The site is not near a karst-sensitive area, springshed, public supply wellfield, or other karst features. A report was prepared by Ardaman and Associates, Inc. providing a karst area evaluation for the DeSoto Mine and can be found in Appendix 3-4-C.*

- h.  If the project will allow a reclaimed created lake to connect to offsite wetlands or other surface water during storms less than the 25-year, 24-hour design storm, or if the reclaimed lake will have more than one property owner, then the reclaimed lake will be "waters of the state" and must meet the water quality standards of Chapter 62-302, F.A.C. Describe how surface water quality standards will be met in waters of the state. If it is expected that the dissolved oxygen within the constructed surface water management system will not meet the water quality standard defined in Rule 62-302.530, F.A.C., then, a petition for variance may be provided per Sections 373.414(17) and 403.201(1), F.S. The format for the petition must follow the outline provided by Rule 62-110.104(1), F.A.C. For the facts showing that a variance should be granted, describe how the project meets one or more of the reasons listed in Section 403.201(1), F.S.

*Reclaimed lakes proposed in the post reclamation landscape at the DeSoto Mine are shown on Map 4-2-B-ii. Dissolved oxygen levels in the lake's discharge will meet the criteria adopted by Rule 62-302.533 in 2013 and thus will not require a variance.*

- i.  Identify the classification(s) (e.g. Class F-1, G-1, G-II, G-II and G-IV) of the groundwater in the project area and immediate vicinity according to the designated uses provided in Rule 62-520.410, F.A.C.

*Groundwater in the project area and immediate vicinity is classified G-II according to Rule 62-520.410, F.A.C.*

- j.☒ Provide the names, locations, and storage conditions for any chemicals that will be stored onsite. This includes all pH adjusters and water conditioners that may be used in the process water. Additionally, include how the chemicals will be utilized, e.g. blasting, vehicle maintenance, vegetation maintenance, and process water treatment. Identify on plans separate containment areas for equipment maintenance, and the storage of petroleum and hazardous substances that can prevent surface water from entering the mine pit to the standards specified in the Applicant's Handbook.

*All petroleum and other regulated substances will be managed (contained and stored) in accordance with FDEP regulations (e.g. hazardous wastes, biohazards, special wastes, etc.) and by the future NPDES Permit.*

**Reagents Utilized in Beneficiation Process [Stored at the Plant Site with Secondary Containment]**

*Mining and beneficiation processes do not utilize detergents or solvents. Small amounts of detergents and solvents are, however, used in the offices and shops of the plant area for personal hygiene and plant maintenance. These materials are treated within the onsite domestic wastewater treatment system or managed as other wastes as described below.*

*Within the beneficiation plant, a number of organic and inorganic reagents are used in the various steps of the flotation process. Table H-1 indicates the type, concentration in the process water, and consumption quantities for typical operation.*

**Table H-1  
Projected Reagent Consumption**

Reagent	Typical Usage (lb/ton concentrate)	Typical PPM Concentration (in recirculated water)
Fuel Oil	3.8	Trace
Sulfuric Acid	6.9	About 300 (as sulfate)
Fatty Acid	6.7	Trace
Soda Ash/ Caustic Soda	4.8	0

*The large volumes of water associated with the in-plant recovery process significantly dilute the reagents. These extremely low concentrations are further reduced by natural biological activity and/or adsorption of the chemicals on the deposited clays. The fate of each reagent is as follows:*

*Fatty Acid--Reacts with the phosphate rock, clays, and cations in the water to form insoluble, biodegradable soaps. Most of this reagent is ultimately absorbed on the clays and then deposited with them in the clay pond.*

*Sulfuric Acid--The sulfate probably enters into the sulfur cycle. The hydrogen ion (acidity) reacts almost immediately with the alkalinity in the rock and other reagents and the resulting pH of the water and slurry flows is near neutral.*

*Fuel Oils --These substances evaporate, form emulsions and can be used as food for bacteria. Much of the oil is adsorbed by the clay, and does not enter the water cycle.*

*Soda Ash/ Caustic Soda—used for its hydroxyl radicals and the natural biochemical activity in the clay ponds maintaining its equilibrium within the system (sodium and carbonate being common ions). At one time ammonia was used, but it was discontinued in early 1990's in favor of soda ash.*

*The actual concentrations of the reagents of any mine site discharges will be from zero (0) to only a minute fraction of the level shown in the previous table, as the reagents are consumed, degraded, or captured by the recirculation system. The historic NPDES water quality at the existing mines supports this conclusion.*

**Clay Flocculant Use for Water Clarification [Use infrequently, as needed]**

*Since the 1970s, efforts to accelerate the dewatering of the clay slurries that are pumped to settling areas have included the examination of polyelectrolyte solutions as flocculants. The continuous use of flocculants, to date, has not proven to be beneficial because the amount of water liberated does not exceed the amounts liberated in the clay settling areas.*

*Mosaic has been using clay flocculation at the Four Corners in Manatee & Hillsborough Counties and at the Hopewell Mine since 2003 to maintain better water clarity from time to time and to enhance clay settling. The water quality at these locations has benefited from its intermittent use when a turbidity levels in the mines recirculation system is high. Flocculants used over the years include FLOPAM AN 934 IMC and/or similar flocculants are generically called “anionic polyacrylamide”.*

*These types of flocculants are produced by the polymerization of acrylamide, mainly sodium acrylate. Anionic polyacrylamide has no systemic toxicity to aquatic organisms or micro-organisms, as the polymer molecular structure is too large to be absorbed into tissues and cells. As such, this flocculant is not toxic to wildlife or aquatic organisms and is similar to other Ciba polymers that are approved for use in potable water treatment systems by the National Sanitation Foundation. Water is used as the wetting agent and the proposed FLOPAM AN 934 IMC application rate is typically 14 ppm or less.*

*At the dosage rates proposed, use of FLOPAM AN 934 IMC and/or similar flocculants will not result in measurable differences in the quality of water in the mine recirculation system as it is adsorbed onto the clay particles and rapidly settles and clears the mine’s water. In addition, polyacrylamide does not accumulate in the environment, as it is broken down by ultra-violet light and biodegrades.*

**Other Chemicals and/or Solid Wastes**

*The following information is a summary of actual existing practices at the mine. Note that we are not listing the current vendors that provide the disposal service, as they may change due to the new mine locations and/or future market conditions.*

- i. Oil filters – collected in 55-gallon drums at the auto shop, picked up by vendor for off-site crushing and disposal in accordance with FDEP waste regulations. Approximate generation rate = 3300 gallons per year (60 drums).*
- ii. Waste grease – stored at an onsite-designated location in 55-gallon drums. Transported by vendor where they use the waste as fuel to make cement products. Approximate generation rate = 10,000 – 15,000 gallons per year.*
- iii. Batteries – picked up and recycled by by vendor. Approximate generation rate = 40 per month.*
- iv. Tires – old vehicle tires are exchanged by tire distributor. Tires that are found or dumped on mine property are collected and transported to an approved landfill for proper disposal. Approximate generation rate = 50 per month.*
- v. Trash and construction debris – collected in dumpsters located throughout the plant site, emptied by vendor for disposal at the County landfill. Estimate that up to six dumpsters (8 cubic yards) will be emptied weekly. In addition, a 20 cubic yard roll-off container is used for construction debris and is emptied on an as-needed basis.*

vi. Solvents – spent mineral spirits are picked up for recycling by vendor. Approximate generation rate = 2,000-2,500 gallons per year.

vii. Used oil – generated in various locations throughout the plant and mine and stored in above ground storage tanks or 55-gallon drums. Tanks and drums are pumped out by vendor for recycling at their facility. Approximate generation rate = 15,000 – 20,000 gallons per year. The offices, warehouses, and labs all produce typical administrative solid wastes, primarily paper. This material is placed in a dumpster which in turn is emptied on a regular basis by an approved waste hauler. These materials will be transported to the nearest County landfill.

viii. Surfactants – to modify the bubble surface tension, similar to a detergent. Average use is 0.23 lb/ton concentrate per 18 months.

The quiescent settling treatment technique employed by Mosaic, combined with the fact that pollutants that require specialized treatment are not introduced at deleterious levels during mining and beneficiation, results in effluent characteristics that meet Class III standards so that mixing zones are not required to maintain water quality in the receiving system. As part of the renewal process of the NPDES discharge permits for phosphate mines, FDEP conducts comprehensive “fifth-year” inspections that consist of toxics sampling inspections, compliance biomonitoring inspections, impact bioassessment inspections, and water quality inspections.

As detailed above, the Desoto Mine NPDES Permit will be in place before any mining begins on site and will contain requirements for the use, containment / storage and management of the chemicals expected to be used during the life of the mine.

- k.  For previously mined (currently not in a construction phase of an ERP) lands, provide the lake depths of each existing lake. Identify areas of any existing lakes to be excavated deeper. Identify any onsite lake that has penetrated a confining layer between the water table aquifer and a lower aquifer. Include a discussion of the site-specific geology (including sand tailings and overburden deposition and orientation, if known) and aquifers and aquitards.

*N/A - No previously mined lands are within the DeSoto Mine boundary.*

- i.  Contact the Department to discuss whether soil sampling is necessary and if so, what parameters are required. Based on existing and previous land uses, an analysis of the soils may be required to identify chemical concentrations that exceed the Cleanup Target Levels (CTL) specified in Chapter 62-777, F.A.C. Land uses and analytes may include:

- Agricultural areas - ethylene dibromide, nitrates, nitrites, phosphorus, cadmium, pesticides, fungicides and herbicide residues in the surface soils of crop lands. Identify chemical storage areas, maintenance areas, and areas of strained vegetation on an aerial.
- Fuel storage and fueling areas - total recoverable petroleum hydrocarbon (TRPH) and related volatile organic compounds (e.g., BTEX);
- Cattle dip vats – arsenic and pesticides.

*N/A - FDEP's cattle dipping vat registry does not list historical vats on the property. Review of aerial photographs dating back to 1940 has not identified adverse effects associated with historical agricultural uses of the property (e.g. barren areas associated with pesticide spills).*

*The DeSoto Mine property has been owned and managed by phosphate mine developers for several decades, during which time the land has been used for agricultural purposes under leases that require the proper management and storage of petroleum and agricultural chemicals. Since 2009, thousands of hours of field work have been completed onsite by consultants retained by Mosaic and there have been no reports of mismanagement of regulated substances (e.g. stained soils, discarded drums, etc.) In addition, surface and groundwater quality monitoring has been conducted by Mosaic during this same time horizon and results do not indicate elevated levels of any agricultural related pollutants. Based on this record and the available data, there is no basis for conducting soil sampling for the referenced elements or compounds.*

### 3. Water Quantity Analysis:

- a.  Provide mine-wide drainage analyses of the pre-development and post-development peak rate of discharge, volume of runoff, and peak stages for the appropriate design storm events demonstrating that the project meets the applicable design criteria as indicated in the applicable Applicant's Handbook, Vol. II. Account for all onsite depressional storage and offsite contributing area. Please refer to the applicable Applicant's Handbook, Vol. II for the design storm event(s) that apply to your project. Typically, the information would include, at a minimum, but is not necessarily limited to, the following:
- Runoff characteristics, including area, runoff curve number or runoff coefficient, and time of concentration for each drainage basins in the pre-development and post-development condition;
  - Design storms used including rainfall depth, duration, frequency, and distribution;
  - Runoff hydrograph(s) for each drainage basin, for all required design storm event(s);
  - Stage-storage computations for any area such as a reservoir, closed basin, detention area, or channel, used in storage routing;
  - Stage-discharge computations for any storage areas at a selected control point, such as control structure or natural restriction;
  - Flood routings through on-site conveyance and storage areas;
  - Water surface profiles in the primary drainage system for each required design storm event(s);
  - Runoff peak rates and volumes discharged from the site for each required design storm event(s);
  - Design tailwater elevation(s) for each storm event at all points of discharge (include source or method of estimate); and
  - Pump specifications and operating curves for range of possible operating conditions (if used in system).

Provide a description of the engineering methodology, assumptions and references for the parameters listed above, and a copy of all such computations, engineering plans, and specifications used to analyze the system. Include basin-node-reach schematics and show the time of concentrations, flow conveyance structures, and Flow Comparison Points (Flow Evaluation Points or Critical Points) in the engineering plans. If a computer program is used for

the analysis, provide the name of the program, input and output data, justification for model selection, and, if necessary, a description of the program.

*The information identified above is included in the Floodplain Study (See Appendix 2-8-A) and the Pre vs. Post Hydrologic and Hydraulic Analysis (See Appendix 2-9-A). Both reports were prepared by Ardaman and Associates, Inc.*

- b.  Provide sufficient freeboard in the stormwater management system to prevent the occurrence of overtopping. Provide the basis for determining the freeboard, such as staging the appropriate design storm event on the seasonal high water elevation (or control elevation) plus an effective freeboard. Perform a wave run up analysis, if necessary.

*Ditch-and-berm systems will be constructed in accordance with Mosaic's Stormwater Ditch, Berm and Retention System Design Policy (See Appendix 3-6-A) and FDEPs BMPs for Non-Clay, Phosphate Mining and Reclamation Berms and Impoundments (See Appendix 3-6-B), both of which include calculations to demonstrate adequacy of the designed freeboard. Clay settling area design standards in Chapter 62-672, F.A.C. include minimum freeboard depths as well. The clay settling area design report includes a demonstration of conformance with these standards and will be submitted to FDEP in accordance with the requirements of Chapter 62-672, F.A.C. and the NPDES permit.*

- c.  Provide groundwater contour maps showing pre-development (existing), during mining and post-development (post-reclamation) elevations extending at least 100 feet off the proposed project site. All elevations should be referenced to the common benchmark or datum (NGVD/NAVD) being utilized for the project site. Cite the date and data source for the existing condition. Identify if the contours represent average seasonal high water (SHW), normal pool (NP) or seasonal low water (SLW) table elevations. Note that it may be necessary to monitor groundwater elevations under pre-development, during mining and under post-development conditions to ensure no major changes occur due to mining.

*Please refer to Maps 2-3-E and 2-3-F for the Normal and Seasonal High Water Table Elevations which extend to at least 100-feet off of the proposed project site. Elevations were determined in NGVD 1929 vertical datum.*

- d.  Changes in pre-development groundwater elevations on the proposed mining site may adversely impact the hydrology of onsite or offsite wetlands and other surface waters (including lakes, streams, and spring discharges). Identify operational procedures and/or hydrologic measures which will be implemented to maintain the water elevations. Provide the following, as applicable:

- A water budget analysis for the existing, during mining, and post-reclamation conditions, as applicable. State the assumptions, scope of the water balance analyses, the source(s) of the data used in the calculation(s) and the name of the computer model, if applicable.

*As part of the SWFWMD permitting process for Mosaic's facility-wide Water Use Permit No. 2011400.025, Mosaic submitted a detailed water balance prepared by Ardaman and Associates, Inc. for SWFWMD's review in 2011. The water balance was revised in 2014 (see Appendix 2-3-F). Separate water balances were prepared for the average rainfall year, the 1 in 5 dry rainfall year, and 1 in 5 wet rainfall years. It is important to note that the water budgets depicted in Appendix 2-3-F represent a conservative estimate whereby no storage is available to store and recover excess rainfall in later wet and / or dry years as might be available at an existing operation.*

- A drawdown analysis supporting the use of a water elevation maintenance system. Include a cross section drawing of the hydration system, injection well, or recharge ditch in relation to features such as, the mine-cut face, cast overburden/seepage face, the ground surface, the overburden and matrix layers and the water table.

*As required by the EMP, prior to initiating mine activities adjacent to any protected environmental features and/or offsite property boundary, Mosaic will develop a Site Specific Drawdown Mitigation Plan. Further details regarding the development of the plan can be found in Section 2.11.3 of the attached SID and in response to Section H Part 1(e).*

- e.  If a dredge will be used, specify the approximate depth and area that will need to be excavated before the dredge will become operational. Describe the excavation method that will be used initially and the approximate length of time. If temporary dewatering will be conducted, please evaluate the projected drawdown of the water table in the preserved wetlands and provide this information. If necessary based on the results, provide protective measures, such as the construction of recharge ditches.

*N/A – Dredge mining is not currently planned to be utilized at the DeSoto Mine.*

- f.  If the project area is in the watershed of a first order stream (headwater), second order stream, etc., of a river where Minimum Flows and Levels (MFLs) have been established, provide a water quantity simulation representing the peak severance/dewatering conditions to demonstrate that the proposed activity will not contribute to violations of the established MFLs.

*The DeSoto Mine site is drained from north to south by Horse Creek, with Brandy Branch, Buzzard Roost Branch, and unnamed tributaries draining from the east and west into Horse Creek, which ultimately flows to the Peace River. Two headwater forks to Oak Hill Branch, a separate tributary to the Peace River, drain east portions of the DeSoto Mine site. Most of these streams are ephemeral or intermittent and do not normally contribute flow to downstream water bodies during low flow periods. Additionally, peak severance conditions affect a very small percent of the overall watershed for the Peace River and therefore any mining affect would be de minimis.*

*The proposed Desoto Mine is located within the Peace River Basin with portion of the mine property drained by streams that enter the Peace River both above and below Arcadia.*

#### **Upper Peace River**

*The following minimum flows have been established for the Peace River above Arcadia:*

- 1) *When the measured flow at the gaging station is less than or equal to 67 cfs, no water should be withdrawn from the River above the gage.*
- 2) *When the measured flow at the gaging station is greater than 1,362 cfs, up to 8% of the flow may be withdrawn from the River above the gage.*
- 3) *When the measured flow at the gaging station is between 67 cfs and 1,362 cfs, up to 10% of the flow can be withdrawn from the River above the gage during the period between April 20 and June 25; up to 13% of the flow can be withdrawn from the River above the gage during the period between June 26 and October 26; and up 18% can be withdrawn from the River above the gage during the period between October 27 and April 19.*

*Two headwater forks to Oak Hill Branch, a tributary to the Peace River, drain the eastern portions of the DeSoto Mine site. Oak Hill Branch enters the Peace River above Arcadia. Peak severance conditions for the Oak Creek tributaries affect a very small percent of the overall watershed for the Peace River. Predicted flow reductions during low, moderate and high flow periods are described in Appendix 2-9-B.*

No flow reductions are predicted during low flow periods. The proposed recharge system is expected to maintain or even increase base flow during low flow periods. During high flow periods, when the allowable reduction in flow is 8 percent, the reduction in flow at Arcadia is predicted to be less than 1 percent. During moderate flow periods, when the allowable reduction in flow is between 10 and 18 percent, the reduction in flow at Arcadia is predicted to be less than 0.5 percent.

The streamflow simulations demonstrate that there will be no contribution to violations of established MFLs for the Peace River above Arcadia as a result of the proposed activity.

### **Lower Peace River**

The following minimum flows have been established for the lower Peace River, i.e., for the combined flow of the Peace River at Arcadia, Horse Creek near Arcadia and Joshua Creek near Nocatee:

- 1) When the combined flow at the three gaging stations is less than or equal to 130 cfs, no water should be withdrawn from the basin.
- 2) When the combined flow at the three gaging stations is greater than 130 cfs but less 625 cfs, up to 16% of the flow may be withdrawn from the basin.
- 3) When the combined flow at the three gaging stations is greater than 625 cfs, up to 16% of the flow can be withdrawn from the basin during the period between April 20 and June 25; up to 38% of the flow can be withdrawn from the basin during the period between June 26 and October 26; and up 29% can be withdrawn from the River above the gage during the period between October 27 and April 19.

The western portion of the DeSoto Mine site is drained from north to south by Horse Creek, with Brandy Branch, Buzzard Roost Branch, and unnamed tributaries draining from the east and west into Horse Creek, which ultimately flows to the Peace River. All of these streams, except Horse Creek, are ephemeral or intermittent and do not normally contribute flow to downstream water bodies during low flow periods. Peak severance conditions within the Horse Creek watershed affect a very small percent of the overall watershed for the Peace River. Predicted flow reductions during low, moderate and high flow periods are described in Appendix 2-9-B.

No measurable flow reductions are predicted during low flow periods. The proposed recharge system is expected to maintain or even increase base flow during low flow periods. During high flow periods, when the allowable reduction in flow is between 16 and 38 percent, the reduction in flow in the lower Peace River is predicted to be less than 3 percent. During moderate flow periods, when the allowable reduction in flow is 16 percent, the reduction in flow at Arcadia is predicted to be less than 0.2 percent.

The streamflow simulations demonstrate that there will be no contribution to violations of established MFLs for the Peace River above Arcadia as a result of the proposed activity.

## **4. Floodplain Analysis (where applicable).**

- a.  Provide a Federal Emergency Management Agency (FEMA) flood map (include the project boundary on the map).

The FEMA 100-year flood zone is included on Map 2-8-D. Please note that Ardaman and Associates, Inc. conducted a site specific floodplain study (see Appendix 2-8-A) for the DeSoto Mine. The Ardaman 100-year floodplain can be found on Map 2-8-A.



- b.  If the project is in a known floodplain of a lake, stream or other water course, provide plan and cross-section figures showing the locations and elevations of the proposed berms and water control structures (to prevent erosion) that will allow offsite runoff to either enter the stormwater management system or be routed around the project area. Discuss these conditions for the during-mining and post-reclamation scenarios.

*No mining will occur within the 100-year floodplain of Horse Creek and its named tributaries within the DeSoto Site as defined by DeSoto County's Phosphate Mine Overlay Map I-7 (Figure 11). However, access corridor crossings which are located within the 100-year floodplain are required for these systems and the proposed locations are shown on Map 3-1. FED has prepared a stream crossing design report, in Appendix 3-1-D, which addresses the construction and operation of the proposed crossings during mining. A Stream Reroute Design Report was prepared by Ardaman and Associates, Inc. and can be found in Appendix 3-5, which addresses the handling of offsite flows during mining and reclamation.*

*In the post-reclamation condition, all runoff and flow from offsite properties will cross the reclaimed DeSoto Mine in existing streams not disturbed by mining operations or through channels designed and constructed on the reclaimed landscape as required by Rule 62C-16.0051, F.A.C. No water control structures will be present in the post-reclamation condition, with the exception of road culverts to support agricultural uses.*

- c.  For traversing works, in accordance with the applicable Applicant's Handbook, Vol. II, provide:

- Hydraulic calculations for all proposed traversing works; and
- Water surface profiles showing upstream impact of traversing works.

*Please refer to the above referenced stream crossing design report found in Appendix 3-1-A.*

- d.  For impacts to regulated floodplains, in accordance with the applicable Applicant's Handbook, Vol. II, provide:

- Location and volume of encroachment within regulated floodplain(s); and
- Plans and calculations for compensating floodplain storage, if necessary, and calculations required for determining minimum building and road flood elevations.

*In accordance with the Applicant's Handbook, Volume II, encroachment within the 100-year floodplains as shown on Map 2-8-D will occur at the dragline crossings addressed in Appendix 3-1-A.*

*Where Mosaic is proposing to mine within a drainage feature or a stream that conveys water to or from offsite lands, flows will be re-routed in advance into alternate flow ways as described and designed in Appendix 3-5. These alternate channels will be constructed in advance of mining and final post reclamation will restore these streams or drainage features. The alternate channels will be sized to convey the 100-year flood flows without overtopping. Therefore, the relocation of the floodplains temporarily into the alternate flow ways will not adversely affect conveyance, storage, water quality, or adjacent lands.*

*In the post-reclamation condition, the affected 100-year floodplains will be re-established in the same locations. The pre vs. post hydrology and hydraulic analysis presented in Appendix 2-9 demonstrates the reclamation designs will maintain flood flow conveyance and storage capacity, as well as water quality, and will be protective of adjacent lands*

### **PART 3: CONSTRUCTION PLANS**

Provide clear, construction level detailed plans for the system, including specifications, plan (overhead) views, cross section views (with the locations of cross section shown on the corresponding plan view) and profile (longitudinal) views of the proposed project. The plans must be signed, sealed, and dated by an appropriate registered professional. These plans should include cumulative information from all applicable sections of the application.

- a.  Provide the project boundary and total acreage, including distances and orientation from roads or other landmarks on a recent aerial legible for photo interpretation with a scale of 1 inch = 400 feet, or more detailed. Include the date of the photo. The project boundary should not include the portions of the property that will not be altered or disturbed by permitted activities. Include surface areas where there will be construction, alteration, operation, maintenance or repair, abandonment, or removal of any stormwater management system, dam, impoundment, reservoir, work (including dredging or filling), or appurtenant work. This would also include wetland mitigation areas.

*See Map 1-4 for the project boundary on a recent aerial (December 2012). A tiled version of this map can also be found on the enclosed CD.*

*The DeSoto Mine boundary is approximately 18,287 acres. SR 70 and SR 72 run east/west through the project boundary while CR 661 runs north/south along the east side of the mine boundary.*

- b.  On each plan sheet, include a scale and scale bar. Include the county name, Section, Township, and Range, and a north arrow on each plan view.

*Noted.*

- c.  Provide individual plans for the existing, during-mining (and intermediate stages, if necessary), and post-reclamation conditions. Include the following:

- Topography extending at least 100 feet off the project area shown on a recent aerial map. All topography shall include location and description of benchmarks referenced to NGVD 1929 or NAVD 1988 along with the conversion factor. Match the contours within with the undisturbed contours.

*Map 2-7 and Map 4-5 show topography that extends 100-feet off the project boundary for the pre-mining and post-reclamation conditions, respectively. Elevations were determined in NGVD 1929 vertical datum.*

- US Geological Survey topographic map for comparison.

*Map 1-3 shows the site with USGS topography.*

- Land use and land cover (acreage), and on-site natural communities, including wetlands and other surface waters, aquatic communities, and uplands. Use the Florida Land Use Cover and Classification System (FLUCCS)(Level 3). Also identify each community with a unique identification number which must be consistent in all exhibits.

*Mosaic notes that land use classifications to the Level III FLUCCS are not required for phosphate mine reclamation. Rule 62C-16.0051(4), F.A.C. (type for type wetland restoration is required only to Level II FLUCCS; upland reclamation is not required to be type-for-type). To facilitate this application review, Mosaic has voluntarily provided this level of detail in this application.*

*Please refer to Map 2-1-B-i and Map 2-1-B-ii for maps indicating the current vegetative community types based on the Florida Land Use, Cover and Forms Classification System (FLUCFCS) using Level I and Level III respectively.*

*Please refer to Map 4-2-B-i and Map 4-2-B-ii for maps showing the proposed vegetative community types based on the Florida Land Use, Cover and Forms Classification System (FLUCFCS) using Level I and Level III respectively.*

*The FLUCFCS classifications shown on these maps have been modified in accordance with Rule 62C-16.0051, F.A.C.*

- Wetlands and other surface waters to be impacted or avoided and mitigation areas.

*Please refer to the following Maps and Tables for the required information:*

- *Map 2-2-B-i – FDEP Jurisdictional Wetlands*
- *Map 2-2-B-ii – FDEP Jurisdictional Streams*
- *Map 4-8-B-i – FDEP Mitigation Wetlands and Streams*
- *Table 2-2-C-i – FDEP JD Wetland Impact Summary by Land Use*
- *Table 2-2-D-i – FDEP JD Stream Impact Summary*
- *Table 2-4-B – Summary of UMAM Values*

*Please refer to Section 4.1.6.8 for a description of the proposed offsite mitigation project. Also, the following appendix describes the project:*

- *Appendix 4-2-B – Horse Creek Enhancement Plan*

- Undisturbed upland buffers adjacent to wetlands and other surface waters.

*An upland buffer will be provided in the form of a grassed berm along the perimeter adjacent to preserved areas as depicted on Map 3-2. Additional undisturbed upland buffers can be seen on Map 3-6.*

- Areas to be excavated, the proposed mine cells and sequence of mining or excavation.

*Map 3-1 illustrates the proposed mine plan for the DeSoto Mine.*

- Staging/temporary overburden storage areas, product stockpiles areas, processing areas, and waste disposal areas (e.g. disposal areas for humate, clays, and tailings).

*Map 3-4 illustrates the waste disposal areas for the DeSoto Mine.*

- Utility, pipeline, equipment, dredge and dragline crossings and corridors. Distinguish between temporary (single use) and long-term crossings and corridors. Provide an estimated time schedule for construction and removal of each crossing or corridor.

*Map 3-1 and Map 3-2 illustrates the location of long-term crossings and corridors. Additional temporary corridors will branch off from these main access corridors as the mining progresses throughout the site.*

- Impervious surfaces (including directly connected impervious surfaces), vehicle parking areas and haul roads including stormwater management systems for these areas.

*N/A – There are no impervious surfaces planned for the post-reclamation condition.*

- Internal and external perimeter berms.

*Figure 3-B provides a cross sectional view of a typical perimeter BMP berm system which will be constructed along the property boundary and adjacent to all preserved areas as shown on Map 3-1 and Map 3-2.*

- Recirculation ditches, recharge ditches, stormwater ditches.

*Figure 3-B provides a cross sectional view of a typical perimeter BMP recharge and stormwater ditch system which will be constructed along the property boundary and adjacent to all preserved areas as shown on Map 3-1 and Map 3-2.*

- Connections/outfalls to wetlands or other surface waters.

*The proposed outfall locations are shown on Map 3-4. The outfalls will be managed in accordance with the future DeSoto Mine NPDES Permit.*

- Normal mine operation water elevation, and the seasonal high and low water elevations.

*As required by the EMP, prior to initiating mine activities adjacent to any protected environmental features and/or offsite property boundary, Mosaic will develop a Site Specific Drawdown Mitigation Plan. If a recharge ditch is in place, the normal water elevation will be maintained in accordance with the Site Specific Drawdown Mitigation Plan. Further details regarding the development of the plan can be found in Section 2.11.3 of the attached SID.*

*Within the perimeter ditch and berm system where mining operations will be conducted, mine water elevations will vary depending on the mining operation being conducted and the antecedent weather conditions. These varying elevations will be managed in accordance with the NPDES permit to prevent unauthorized releases of process water and by the EMP as noted above.*

- All water management structures, volumes and invert elevations.

*N/A – There are no water management structures proposed for the post-reclamation condition. However, the Railroad Spur's stormwater water management plans (during mining) are provided in Appendix 3-1-D.*

- Where the proposed water management system for a mine will partially replace an existing surface water management system, provide drainage plans and reports showing how the system outside of the mine will function as mining and reclamation proceed.

*N/A- a water management system is not proposed to replace an existing one.*

- For phased projects where each phase is a stand-alone system, provide a master development plan clearly delineating the limits of each phase of construction.

*N/A- this is not a phased project with stand-alone systems.*

Applicants should be aware that a Conceptual Reclamation Plan, or a Notice of Intent to Mine may be required by the Department in accordance with Chapter 378, F.S., prior to the start of mining operations. The plan for the proposed (post reclamation) conditions should meet the requirements of the appropriate reclamation rules.

*Noted.*

- d.  Paving, Grading, and Drainage Information for the existing, during-mining (and intermediate stages, if necessary), and post-reclamation conditions, which includes, but not necessarily limited to, the following:

- Plan view of proposed development, including processing area and water quality treatment areas.

*Please refer to Map 2-1-B-i and Map 2-1-B-ii for maps indicating the current vegetative community types based on the Florida Land Use, Cover and Forms Classification System (FLUCFCS) using Level I and Level III respectively.*

*Please refer to Map 4-2-B-i and Map 4-2-B-ii for maps showing the proposed vegetative community types based on the Florida Land Use, Cover and Forms Classification System (FLUCFCS) using Level I and Level III respectively, as modified by Rule 62C-16.0051, F.A.C.*

*The proposed location of the plant site and clay settling areas can be found on Maps 3-2 and 3-4 respectively.*

*Maps 3-1, 3-3, and 5-2-G illustrate the proposed locations of the DeSoto's beneficiation plant site and associated mine infrastructure. In addition the DeSoto Railroad Spur Plans and route alignment are provided in Appendix 3-1-D. Since the DeSoto Plant is not fully designed at this time the estimated total impervious area during mining is projected to be approximately 30 acres or less including the plant entrance road. The entrance road will extend south from SR 70 to the DeSoto Mine plant site and will be about 1.1 miles in length. Impervious areas will be limited to the mine entrance road, plant offices, parking lots, utility bridges and the areas near and directly under the beneficiation plant to allow any spillage or ore overflow to be washed into recycle sumps, where it will be pumped back into the plant process.*

*Approximately 4.5 years are estimated to be required to complete final engineering design and construction of the ore separation/beneficiation plant, initial clay settling area, railroad spur to CSX mainline, water supply line from the Fort Green Plant and associated mine infrastructure*

*The storm water from the plant area, parking lots and associated mine infrastructure will be directed into the mine's NPDES operating system as addressed in this application.*

*The RR Stormwater Management System will consist of two components, the mine recirculation system for all stormwater within the mine infrastructure footprint (western most portion of the RR spur approximately beginning 1 mile west of the SR. 70 Railroad Spur Crossing and going south of the plant) will be governed by the DeSoto Mine's NPDES Permit, and the RR Management System, which will provide stormwater treatment for the first one-inch of stormwater runoff for stormwater associated with the eastern 8.5 miles of the railroad spur. The Railroad Spur's construction and stormwater treatment methodology for the railroad alignment outside the NPDES system is provided in Appendix 3-1-D.*

- Proposed elevations and/or profiles.

*Post Reclamation*

*Map 4-5 identifies the topography of the site for post-reclamation conditions.*

*During Mining:*

*The Railroad Spur's construction and stormwater treatment methodology for the railroad alignment outside the NPDES system is provided in Appendix 3-1-D. Florida Engineering and Design (FED) has prepared a stream crossing design report, which can be found in Appendix 3-1-D, which addresses the construction and operation of the proposed mine access corridor crossings required by mining. A Stream Reroute Design Report was prepared by Ardaman and Associates, Inc. and can be found in Appendix 3-5, which addresses the handling of offsite flows during mining and reclamation.*

- Roadway, parking, and pavement grades.

*N/A – There are no roadways, parking areas, or pavement planned in the post reclamation condition.*

- Floor slabs, walkways, and other paved surfaces.

*N/A – There are no floor slabs, walkways, or other paved surfaces proposed in the post reclamation condition.*

- Earthwork grades for pervious landscaped areas.

*Map 4-5 identifies the topography of the site for post-reclamation conditions.*

- Perimeter site grading, tying back into existing grades.

*Map 4-5 identifies the topography of the site for post-reclamation conditions.*

- Location of all water management areas, including elevations, dimensions, side slopes, and design water depths.

*NA – There are no water management areas proposed in the post reclamation condition.*

- Location, size, and invert elevations of existing and proposed stormwater conveyance systems.

*N/A – There are no stormwater conveyance systems proposed in the post reclamation condition. However, the Railroad Spur's stormwater water management plans and Alternate Flowways / Stream Reroutes (during mining) are provided in Appendices 3-1-D and 3-2, respectively.*

- Vegetative cover plan for all on-site and off-site earth surfaces disturbed by construction.

*Please refer to Map 4-2-B-i and Map 4-2-B-ii for maps showing the proposed vegetative community types based on the Florida Land Use, Cover and Forms Classification System (FLUCFCS) using Level I and Level III respectively, as modified by Rule 62C-16.0051, F.A.C.*

*Please refer to Section 4.1.6.8 for a description of the proposed offsite mitigation project. Also, the following appendix describes the project:*

- *Appendix 4-2-B – Horse Creek Enhancement Plan*

- Rights-of-way and easements for the system, including all on-site and off-site areas to be reserved for water management purposes (including access), and rights-of-way and easements for the existing drainage system, if any.

*N/A – There are no water management areas proposed in the post reclamation condition.*

- e.  Provide the geometric characteristics of each disposal area, including the average dike height (feet), dike crest elevation, maximum operating water level, crest width (feet), outside and inside slopes (below and above grade), effective area (acres), effective depth (feet), effective pit bottom depth below grade(feet) and effective storage volume (acre-feet).

*Please refer to the Life of Mine Waste Disposal Plan in Appendix 3-4-A for a description of each clay settling area.*

- f.  Stormwater detail information, including but not necessarily limited to, the following:

- Cross section of all stormwater management areas, including elevations, dimensions, crest widths, side slopes, and proposed stabilization measures (with location of the cross section(s) shown on the corresponding plan view).
- Provision for permanent stabilization of the slopes through the establishment of permanent vegetative cover or other appropriate methods.
- Detail of all proposed control structures, including elevations, dimensions, and skimmer, where applicable.
- Details of proposed stormwater management systems, such as underdrains, exfiltration trenches, vaults, and other proposed Best Management Practices (BMPs).

*As noted in the response to Part 2, 2.a above, conventional stormwater management facilities described in the Applicants Handbook will not be installed. Rather, to meet phosphate mining specific NPDES program requirements, all stormwater will be collected and routed to clay settling areas for re-use or treatment prior to discharge. SID Sections 2.1, 2.3, 2.11, and 2.12 provide a complete explanation of the stormwater management system proposed.*

- g.  Provide a cross sectional view of the reclamation lake(s); show the lake configuration, including side slopes and grade-break, elevations for the shoreline, lake bottom elevation, the average (normal pool), seasonal high, and seasonal low water elevations, littoral zone, and associated control structures.

*Please refer to Appendix 2-2-A-v for the cross sectional view of the reclaimed lake proposed at the DeSoto Mine.*

- h.  For limestone mines, provide a cross-sectional view of reclaimed sheer walls. Provide a plan view showing the location and extent of areas to be reclaimed with sheer walls. For fuller's earth and other resources (gravel, sand, clay) mines provide a cross-sectional view of reclaimed high walls. Provide a plan view showing the location and extent of areas to be reclaimed with high walls. Refer to Rules 62C-38.008 or 62C-39.008, F.A.C., for limits on steepness of slopes. Provide the appropriate geotechnical engineering study if slopes will be steeper than the limits provided by rule.

*N/A- a limestone mine is not proposed with this application.*

#### **PART 4: CONSTRUCTION SCHEDULE AND TECHNIQUES**

Provide a construction schedule, and a description of construction techniques, sequencing and equipment. This information should include, as applicable, the following.

- a.  Access and staging of equipment.

*Please refer to SID Section 2.0 – Project Description and Plans.*

- b.  Location and details of the erosion, sediment and turbidity control measures to be implemented during each phase of construction and all permanent control measures to be implemented in post-development conditions.

*Please refer to SID Section 2.1 for a description of the perimeter ditch and berm systems, including erosion control measures proposed.*

*No permanent control measures are currently proposed in the post reclamation condition.*

- c.  The location of disposal site(s) for any excavated material, including temporary and permanent disposal sites.

*Please refer to Map 3-4 for the location of the waste disposal sites. Additional information regarding the life of mine disposal plan can be found in Appendix 3-4-A.*

- d.  A demolition plan for any existing structures to be removed.

*Mosaic's Demolition plan is provided in Appendix 1-9.*

- e.  Dewatering plan details. Provide the dewatering location(s), methods to contain the discharge, methods of isolating dewatering areas, the period dewatering structures will be in place, and the hydrologic monitoring plan. **Note: a Consumptive Use or Water Use permit may be required for dewatering.**

*Please refer to SID Section 2.1.2 for discussion regarding dewatering protection. Also, as required by the EMP, prior to initiating mine activities adjacent to any protected environmental features and/or offsite property boundary, Mosaic will develop a Site Specific Drawdown Mitigation Plan. Further details regarding the development of the plan can be found in Section 2.11.3 of the attached SID.*

*See also the response provided in this section Part 3 (d).*

- f.  Methods for transporting equipment and materials to and from the work site. If barges are required for access, provide the low water depths and draft of the fully loaded barge.

*Access to the site will mainly be via Mosaic's rail spur, plant entrance road and mine access corridors / roads shown on Maps 3-3 and 3-4. If oversized equipment is transported using the existing adjacent roads, Mosaic will obtain proper permits from DeSoto County. No barges will be used.*

- g.  Describe the measures that will be taken to protect and secure any monitoring wells, piezometers and staff gauges from mining and reclamation activities so that they will be available for water quality and quantity sampling. Also, describe how the monitoring equipment will be surveyed and if the elevations will be intermittently confirmed.



*All of the perimeter monitoring wells, piezometers, and staff gauges are located outside of (or within) the BMP ditch-and-berm system to assure their continued integrity throughout the mining and reclamation process. Monitoring stations are geo-located and monitored in accordance with Mosaic's SWFWMD Water Use Permit No. 2011400.025.*

*Monitoring wells located within the mining area that extend below the phosphate matrix zone will be properly abandoned prior to disturbance.*

- h.  Identify the schedules and parties responsible for completing hydrologic and vegetative monitoring, and record drawings and as-built certifications for the project when completed.

*Mosaic is the party responsible for completing all monitoring and other project requirements. Reclamation is scheduled to be conducted in accordance with the proposed Reclamation Schedule shown on Map 4-1 and Table 4-1.*

- i.  Provide a detailed Stormwater Pollution Prevention Plan (SWPPP) that includes Best Management Practices to control erosion, sediment, and turbidity. The plan should identify the construction activities for the proposed project; address the control measures for the pre-construction (e.g., land preparation) and construction phases (mining), and all permanent control measures to be implemented in post-development (reclamation) conditions. Show the locations of staff gauges/piezometers and erosion, sediment, and turbidity controls, direction of storm water runoff and other details, as appropriate.

*N/A – The detailed SWPPP will be prepared as part of the DeSoto Mine NPDES permitting process in accordance with Applicant Handbook Section 11.3.*

- j.  Provide projected production and disposal schedule for waste materials, such as clay, humate, tailings, by year and location. Provide total storage capacity for each disposal location and the remaining capacity (if it is an existing disposal location).

*The following SID Sections, Maps, Tables, and Appendices provide additional information regarding waste disposal:*

- *Section 2.3.3 – Clay Settling Areas*
- *Section 2.8 – Sand Backfill*
- *Map 3-4 – Waste Disposal*
- *Table 3-4-A – Clay Settling Area Summary*
- *Table 3-4-A-i – Clay Settling Area Filling Summary*
- *Table 3-4-B – Estimated Sand Tailing Schedule*
- *Appendix 3-4-A – Life of Mine Waste Disposal Plan*

- k.  Provide a production and utilization schedule for the backfill materials to demonstrate that there is sufficient backfill material available to construct the proposed post-reclamation elevations.

*Please refer to Table 3-4-B for the Estimated Sand Tailing Schedule.*

**PART 5: OPERATION AND MAINTENANCE AND LEGAL DOCUMENTATION:**

- a.  Describe the overall maintenance and operation schedule for the proposed system.

*N/A - This part appears to only cover to post-reclamation operation and maintenance of stormwater treatment systems. No stormwater treatment systems are proposed post-reclamation; accordingly, none of the requests below are applicable to the DeSoto Mine. Relevant information for the proposed mitigation is provided in response to Section C.*

- b.  Identify the entity (or entities) that will be responsible for operating and maintaining the system (or parts of the system) to demonstrate that the entity (or entities) meet(s) the requirements of Section 12.3 of the Applicant's Handbook, Vol. I.

*N/A - There will be no stormwater treatment system remaining in the final post-reclamation condition.*

- c.  If different from the permittee, provide a draft document enumerating the enforceable affirmative obligations on the entity to properly operate and maintain the system for its expected life, and documentation of the entity's financial responsibility for long-term maintenance.

*N/A - There will be no stormwater treatment system remaining in the final post-reclamation condition.*

- d.  If the proposed operation and maintenance entity is not a property owner's association, provide proof of the existence of an entity, or the future acceptance of the system by an entity which will operate and maintain the system.

*N/A - There will be no stormwater treatment system remaining in the final post-reclamation condition.*

- e.  Provide drafts of all proposed conservation easements, stormwater management system easements, draft property owner's association documents, and plats for the property containing the proposed system.

*N/A - There will be no stormwater treatment system remaining in the final post-reclamation condition.*

- f.  Provide legal reservations for access to the treatment system for maintenance and operation by future maintenance entities for subdivided projects.

*N/A - There will be no stormwater treatment system remaining in the final post-reclamation condition*

- g.  Provide indication of how water and wastewater service will be supplied.

*N/A - There will be no water or wastewater service supplied in the final post-reclamation condition*

- h.  Provide a copy of the boundary survey and/or legal description and acreage of the total land area of contiguous property owned/controlled the applicant.

*N/A*

**PART 6: WATER USE**

- a.  Describe how irrigation will be provided to the project. Identify if the surface water system that will be used for water supply, including landscape irrigation, or recreation.

N/A

- b.  If a Consumptive Use or Water Use permit has been issued for the project, state the permit number:

*SWFWMD Water Use Permit No. 2011400.025 (Please refer to Appendix 2-3-A.)*

- c.  If a Consumptive Use or Water Use permit has not been issued for the project, indicate if such a permit will be required and when the application will be submitted.

N/A

- d.  Indicate how any existing water use wells located within the project site will be utilized or abandoned.

*All water use wells drilled to depths below the phosphate matrix will be abandoned according to SWFWMD rules.*

**PART 7: SPECIAL BASIN INFORMATION**

Is your project within a special basin as described in the applicable Applicant's Handbook, Vol. II?

yes  no  don't know

If yes, please demonstrate that the project will meet the applicable special basin criteria.