



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road MS 3577
Tallahassee, Florida 32399-2400

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Ryan E. Matthews
Interim Secretary

April 7, 2017

Mosaic Fertilizer, LLC
c/o Mr. Russell Schweiss
Director of Land and Resource Strategies
13830 Circa Crossing Drive
Lithia, Florida 33547
Russell.Schweiss@mosaicco.com

**RE: REVISED Approval of Conceptual Reclamation Plan MOS-DS-CP
Mosaic Fertilizer, LLC, DeSoto Mine, DeSoto County
File No. MMR_0331292-002**

Dear Mr. Schweiss:

On December 10, 2014, the Florida Department of Environmental Protection (Department) received an application from Mosaic Fertilizer, LLC (Mosaic), seeking approval of a conceptual reclamation plan (CRP) for its DeSoto Mine in DeSoto County, Florida. The CRP application was assigned reclamation application code MMR_331292-002, and MOS-DS-CP. The application was reviewed by Department staff and interested parties. On December 10, 2014, Mosaic also applied for an environmental resource permit (ERP) for mining and reclamation activities within the DeSoto Mine, pursuant to Part IV of Chapter 373, Florida Statutes, (F.S.), and Chapter 62-330, Florida Administrative Code (F.A.C.). The CRP and ERP applications were reviewed and processed concurrently. Additional Information for both applications was received by the Department on May 27, 2015 and July 1, 2016.

The application was deemed complete as of July 1, 2016. The applicant waived the time requirement for the Department to issue or deny an application for a permit until December 14, 2016. The Department issued Approval of Conceptual Reclamation Plan MOS-DS-CP, File No. MMR_331292-002 on December 9, 2016. On December 21, 2016, DiMare Fresh, Inc. (DiMare) requested a time extension to file a petition for formal administrative proceeding. The Department granted the time extension to January 16, 2017. On January 13, 2016, DiMare filed a petition for formal administrative proceeding. The petition was assigned OGC Case No. 16-1483. The case was referred to the Division of Administrative Hearings (DOAH) and assigned DOAH Case Number 17-

0672. On February 22, 2017, Mosaic submitted a revised Conceptual Reclamation Plan to correct the referenced acreages for conservation easements. The petition filed by DiMare was voluntarily withdrawn on April 3, 2017. On April 5, 2017, the Administrative Law Judge ordered the file closed and relinquished jurisdiction back to the Department.

The DeSoto Mine is approximately 18,287 acres in size and is located in northwest DeSoto County, Florida, west of the town of Arcadia, in DeSoto County, Florida. The project includes all or portions of Sections 31 through 33, Township 36 South, Range 23 East; Sections 1 through 24, 26 through 29, and 32 through 34, Township 37 South, Range 23 East; Sections 4 through 11, and 16 through 20, Township 37 South, Range 24 East; and Sections 4 through 5, and 8 through 9, Township 38 South, Range 23 East and includes lands within the Horse Creek and its named tributaries, Brandy Branch, Buzzard Roost Branch, and unnamed tributaries, and Oak Hill Branch, which is a separate tributary to the Peace River, all Class III waters.

The project is to conduct phosphate mining activities on 16,181 acres of uplands, wetlands and other surface waters within an approximately 18,287-acre area and to reclaim approximately 16,181 acres of uplands, wetlands and other surface waters following the completion of mining activities. The project includes the construction of the DeSoto beneficiation plant, associated infrastructure (i.e. entrance road, office, maintenance shops, railroad spur, etc.) an approximately 37-mile 30-inch water pipeline connecting the DeSoto Mine with water supplies on the Fort Green Mine site in Polk County.

The uplands to be disturbed consist of approximately 10,945.2 acres of agricultural areas, 691.7 acres of prairies and rangelands, 1,601 acres of upland forests, and 60.8 acres of urban, barren, and road areas. The project includes the disturbance of approximately 2,881.8 acres of wetlands and other surface waters (OSW), which includes 1,473.1 acres of herbaceous wetlands, 1,273.3 acres of forested wetlands, 135.4 acres of OSW, and disturbance of approximately 54,901 linear feet of streams which includes 36,050 linear feet of ditched natural stream channels and 18,851 linear feet of natural stream channels. The herbaceous wetlands to be disturbed consist of 1,062.3 acres of freshwater marshes, 35.8 acres of wet prairies, 104.3 acres of shrubby wetland, and 270.8 acres of wet pastures. The forested wetlands to be disturbed consist of 120.3 acres of bay swamps, 9.2 acres of gum swamps, 43.5 acres of inland ponds and sloughs, 677.8 acres of mixed wetland hardwoods, 150.9 acres of cypress, 8.5 acres of hydric pine flatwoods, 7.6 acres of hydric pine savanna, and 255.5 acres of wetland forested mixed. The other surface waters to be disturbed consist of approximately 7 acres of ditched natural stream, 18.3 acres of wetland cut ditch, 75 acres of upland cut ditch, and 35.2 acres of cattle ponds. Approximately 1,738 linear feet of streams and 26 acres of wetlands within the avoided areas will be disturbed for access corridor crossings and restored in place.

Reclamation consists of approximately 6,707.1 acres of agricultural areas, 893 acres of prairies and rangelands, 5,029.2 acres of upland forests, 0.2 acre spoil area, 1,556.2 acres

of herbaceous wetlands, 1,561.5 acres of forested wetlands, and 433 acres of OSWs. Upon completion of reclamation, the DeSoto Site will include over 668.9 acres of additional wetlands and OSWs than currently exist, as well as over 8,974 linear feet of additional streams. Approximately 2,107 acres will remain unmined, including 1,349.2 acres of wetlands, 6.7 acres of other surface waters, and 751.1 acres of undisturbed uplands.

A conservation easement and management plan will be implemented on approximately 1,891.5 acres of unmined wetlands within the DeSoto Mine associated with the riparian corridors of Horse Creek and its four main tributaries, Brandy Branch, Buzzard Roost Branch, unnamed Buzzard Roost Branch tributary, and unnamed Horse Creek tributary. A conservation easement and management plan will also be implemented on approximately 2,319.8 acres of reclaimed habitats within the DeSoto Mine associated with these same riparian corridor areas.

The 18,287-acre DeSoto Mine is located in DeSoto County in the Peace River Basin. Agricultural uses, specifically cattle grazing, are the most common historic and current land uses. Approximately 62 percent of the property has been converted from native vegetative cover into pastures, row-crop fields, groves, roads, or livestock watering ponds. Native upland cover (i.e., rangeland and forests) is present on approximately 15 percent of the site. Wetland vegetative cover or other surface water is present on approximately 23 percent of the site. The remaining portions of the site are comprised of spoil areas (18.2 acres) and by roads and rights-of-way (38.4 acres). The majority of the roads are internal to the property, unpaved, and utilized to support the overall agricultural use of the property.

The DeSoto Mine property consists of six sub-basins: Unnamed Stream (C), Buzzard Roost Branch (BRB), Brandy Branch (BB), Horse Creek (HC), Oak Hill Branch (OHB), and Unnamed Slough (B), which drain to the Peace River. Sub-basin C contains an unnamed second-order stream which drains to Buzzard Roost Branch. Sub-basin BRB contains Buzzard Roost Branch, a third-order stream draining to Horse Creek. The upper portion of this stream has been channelized, deforested, and is heavily impacted by cattle and vehicular traffic. A chain of wetlands provides flow from the west. Sub-basin BB contains Brandy Branch, a third-order stream draining to Horse Creek. Brandy Branch's riparian corridor is intact with little agricultural impact. One small stream segment draining a bayhead enters Brandy Branch from the west. Sub-basin HC contains Horse Creek, a fifth-order stream draining to the Peace River. This basin is quite extensive within Mosaic's property boundaries. The main Horse Creek flows through the north central portion of the property, where it is joined by four headwater drains and two chains of wetlands. The upper wetland chain begins as a ditched segment with little to no riparian zone, while the lower portions are natural streams with relatively intact riparian zones. In the western portion of the basin, two main areas contribute flow. South of Highway 72, a ditched chain of wetlands provides flow that ultimately reaches Horse Creek. Sub-basin OHB drains directly to the Peace River. Portions located within the

DeSoto Mine Tract consist of two ditched chains of wetlands, two ditched headwater drains, and a ditched upper branch which flows through a small Mosaic landholding on the far eastern part of the property. A small portion of Sub-basin B exists on the DeSoto Mine Tract. It contains a single ditched headwater drain that has been heavily impacted by cattle.

Waste clays produced from mining at the DeSoto Mine will be placed in clay settling areas constructed in the DeSoto Mine. Optimization of clay deposition was done through modeling of clay generation, deposition and consolidation. This optimization will continue through site-specific clay monitoring and modeling until mining has been completed. Eight clay settling areas are proposed to be constructed on the DeSoto Mine. Several will share common dams to reduce the total clay settling area footprint. Construction, inspection and maintenance of clay settling area dams will be conducted in accordance with the requirements of Chapter 62-672, F.A.C. A contingency plan, as required in Rule 62-672.550, F.A.C., will be prepared for the facility and updated as needed upon Department approval for construction of each new dam.

Much of the high quality wildlife habitat is located within preserved areas along the floodplains of Horse Creek and smaller preserved tributaries and headwater wetlands. Wildlife surveys were conducted on the DeSoto Mine by Mosaic's consultants from 2006 through 2014. The surveys included vehicular and pedestrian transects, aerial surveys and species-targeted sampling and gopher tortoise (*Gopherus polyphemus*), northern crested caracara (*Caracara cheriway*), red-cockaded woodpecker (*Picoides borealis*), Florida grasshopper sparrow (*Ammodramus savannarum floridanus*), Florida scrub jay (*Aphelocoma c. coerulescens*) and Southeastern kestrel (*Falco sparverius Paulus*) surveys. Wildlife utilization was also noted during the extensive qualitative upland and wetland assessments and UMAM functional assessments. Preservation of high quality habitat areas will maintain viable populations of wildlife species. Mining will result in the displacement of wildlife from the native wetlands and uplands disturbed by mining operations. This disturbance will occur gradually over a period of eighteen years and will be offset by land reclamation and habitat restoration. Impacts to listed species will be minimized by following Mosaic's Wildlife Habitat Management Plan for the DeSoto Mine. This plan will be implemented throughout the life of the mine and includes avoidance of the majority of riparian native habitat within the site, conducting detailed pre-mining wildlife surveys, requirements for the timing of disturbance of listed species and associated habitat, and specific relocation protocols. The disturbance of habitat and nesting areas, relocation of Florida mice (*Podomys floridanus*), burrowing owls (*Speotyto cunicularia*), gopher tortoises and commensals such as gopher frogs (*Lithobates capito*), will be conducted following guidance from the Florida Fish and Wildlife Conservation Commission (FFWCC). All wildlife management activities will be coordinated with the FFWCC and/or the United States Fish and Wildlife Service (USFWS) as required. Following the completion of reclamation activities, approximately 5,164 acres will be in the form of preserved wildlife habitat or preserved reclaimed habitat analog.

The existing wetlands and other surface waters to be disturbed within the DeSoto Mine include a variety of community types in terms of vegetation composition, hydrology, and wildlife utilization. Herbaceous wetlands, both isolated and connected, range from wet prairies and sedge marshes to more permanently flooded flag and shrub marshes. Forested wetlands include sparsely forested, low diversity, seasonally flooded woodland pasture and oak hammock areas, through more densely forested bay swamps and high diversity mixed hardwood forests, to deep water gum swamps and inland ponds and sloughs. Streams within the project vary from small, simple channels to large, more complex systems. The mitigation plans for the DeSoto Mine include creation of the same diversity of wetlands, streams and other surface waters.

As part of the reclamation plan, a variety of herbaceous wetlands including freshwater marshes and wet prairies will be created on sand tailings or overburden capped with sand tailings. Marshes will be constructed with variations in slope and hydroperiod to maintain the diversity of habitats and community types that currently exist on site. Many herbaceous wetlands will receive wetland muck or topsoil. Direct transfer of topsoil will be used when feasible to maximize use of available natural seed banks. Wetlands not receiving muck or topsoil or that have not achieved adequate cover by desirable wetland species following muck or topsoil placement, will be planted with a variety of desirable species such as saw grass (*Cladium jamaicense*), sand cordgrass (*Spartina bakeri*), maidencane and other panic grasses (*Panicum* spp), pickerel weed (*Pontederia cordata*), duck potato (*Sagittaria lancifolia*), sedges (*Cyperus* spp.), yellow eyed grasses (*Xyris* spp.), spikerushes (*Eleocharis* spp.), canna lily (*Canna flacida*), meadow beauty (*Rhexia* spp.), button bush (*Cephalanthus occidentalis*), gallberry (*Ilex glabra*), and fetterbush (*Lyonia lucida*).

A diverse assemblage of forested mostly headwater and riparian wetland communities will also be reclaimed following mining. The forested wetlands will be constructed on sand tailings or overburden capped with sand tailings and most will receive wetland muck or topsoil. A variety of trees and shrubs such as laurel oak (*Quercus laurifolia*), water oak (*Quercus nigra*), swamp bay (*Persea palustris*), red maple (*Acer rubrum*), swamp tupelo (*Nyssa biflora*), loblolly bay (*Gordonia lasianthus*), sweetbay (*Magnolia virginiana*), sweetgum (*Liquidambar styraciflua*), dahoon holly (*Ilex cassine*), possumhaw (*Viburnum nudum*), Walter's Viburnum (*Viburnum obovatum*), Virginia willow (*Itea virginica*), and high bush blueberry (*Vaccinium corymbosum*) will be planted based on the community types to be restored at each location. Additional shade-adapted herbaceous species including lizard's tail (*Saururus cernuus*), spider lily (*Crinum americanum*), and various ferns will be provided through natural recruitment and planted once the planted trees provide sufficient cover.

Water balance modeling of representative created wetlands was conducted to verify that the appropriate water levels and hydroperiods will be created for each wetland community type. Representative wetlands will be re-modeled using refined site-specific

input data prior to finalization of wetland designs and contouring to ensure that the reclamation conditions will support the planned wetland or surface water community.

Streams directly impacted by mining will be reclaimed in a manner that results in channel morphology consistent with natural topographic conditions on site. For some streams, this will result in improvements of existing channel configurations that have been modified by agricultural operations. The mitigation plans include a stream restoration document that incorporates state of the art methods and provides reasonable assurance that stream segments disturbed by mining operations will be restored at least foot for foot. The reference reach concept and regional curve approach were used in the design for the reclaimed streams. Data were collected on a representative range of existing stable streams and used to design the reclaimed streams. Data collected included slopes, drainage area, meander belt width, radius of curvature, sinuosity, and various cross-sectional-bankfull-based measures that allowed each stream to be given a Rosgen (1996) Level II classification. The stream restoration plan provides specific plan, profile, and cross-section information to use in the final design and construction of each reclaimed stream. The streams created will be either Rosgen Level II C5 or E5 streams. The specific design parameters for each reclaimed stream are based on application of fluvial geomorphology to develop self-sustaining fluvial systems that are compatible with on-site hydrology and sediment texture. Hydrologic modeling of each stream basin will also be conducted prior to final grading in order to refine the final designs, and verify that the existing conditions will support the approved design and Rosgen classification type.

Stream banks will be constructed using encapsulation of soil with biodegradable fabric allowing them to be stabilized and revegetated until the soil structure and vegetation develop to stabilize the banks. Restored sites will primarily have forested riparian zones based on planting plans designed to create either closed hardwood canopies or more open canopies of pine, oak and palmetto. The creation of functional in-stream habitat will be expedited by excavating pools and installing large woody debris. The stream restoration plan and supporting hydrologic modeling provides reasonable assurance that the biological functions of the existing streams will be maintained or improved following reclamation.

Approximately 339.3 acres of Lake will be created on contoured overburden. These lakes were designed to concentrate littoral vegetation in a broad, shallow shelf. This will provide improved wildlife habitat and water quality treatment to the water leaving the lake.

In addition to wetlands, streams, and other surface waters, the reclamation plan includes the creation of a variety of upland habitat types including pine flatwoods, palmetto prairie and rangeland, sand live oak, coniferous forest, and mixed forest, beyond what is required by the existing reclamation rules. This will be accomplished either by topsoiling or by planting of a diversity of native species including trees, shrubs, and groundcover species. The soil in areas to be reclaimed as pine flatwoods, palmetto prairie, or xeric

oak will consist of varying thicknesses of sand tailings placed over contoured overburden. A combination of topsoil transfer, green manuring, supplemental planting, and direct seeding will be used to establish a diverse natural groundcover in reclaimed native habitats. Most of the mitigation wetlands will be created with these upland habitats surrounding them, resulting in enhanced wildlife and water quality functions. The final reclamation plan also expands existing wildlife corridors by creating additional upland buffers along many of the preserved streams and wetland systems.

The remaining areas, including the clay settling areas, will be reclaimed as pasture. Soils outside the clay settling areas will be composed of sand tailings or contoured overburden. Soils of the clay settling areas will be composed of clay in the interior and composed of overburden in the dam wall areas. Some of the dam wall overburden will be graded over the outer edge of the clays. Clay settling areas will be dewatered by ditching, and the clays allowed to further consolidate until the dams can be abandoned under the requirements of Chapter 62-672, F.A.C. The dam walls will then be graded to the approved elevations and the area planted with pasture grasses. Surface drainage off the settling areas will be through contoured swales.

Post reclamation drainage patterns will be similar to those within the existing landscape. Post reclamation soils will be composed of sand tailings and overburden that will be placed to create permeability comparable to existing conditions and provide comparable amounts of groundwater to unmined streams and wetlands. Outfall swales for the reclaimed clay settling areas will be constructed at elevations below the final clay consolidation elevations to provide surface water drainage, and will be located to provide post reclamation contributing basins that are similar in size to the pre-mining condition.

Quantitative modeling demonstrates that post reclamation hydrologic conditions will result in baseflow and runoff amounts similar to existing conditions. Pre and post floodplain modeling of the major stream systems verifies that floodplain functions will be restored following reclamation. Modeling of existing and post reclamation discharges based on stormwater runoff provides reasonable assurance that water levels and stream flows in preserved tributaries will be maintained. No significant increases in peak flow or stage levels are projected to occur off site, providing reasonable assurance that there will be no increased risk of off-site flooding.

Water quality will be protected by installing a perimeter ditch and berm that will sever areas to be impacted from adjacent waters. Any turbid runoff resulting from site preparation, construction, mining, and/or reclamation activities will be rerouted through the ditch to the mine water re-circulation system where it will be clarified before being monitored and discharged through permitted outfalls in accordance with Chapter 62-620, F.A.C. Turbidity will also be sampled during construction in connected wetlands and other surface waters, as required under the permit. Water quality in the created wetlands and other surface waters will also be monitored prior to reconnection. Water quality is

expected to meet Class III standards within all reclaimed wetlands and other surface waters.

The disturbance of a total of 2,936 acres of wetlands and other surface waters and 54,901 feet of stream channel for mining activities at the DeSoto Mine will result in the temporary loss of some herbaceous and forested wetlands, streams and other surface waters within the Horse Creek and Peace River basins. The creation of 3,117.7 acres of forested and herbaceous wetlands and other surface waters and 63,875 feet of streams will provide habitat, structure, and hydrologic functions similar to or better than those of the existing wetlands, streams, and other surface waters. The creation of 5,922.4 acres of associated palmetto prairie, mixed rangeland, shrub and brushland, pine flatwoods, upland coniferous forest, temperate hardwood forest, live oak forest, sand live oak forest, xeric oak forest, and hardwood-conifer mixed forest habitats will serve to enhance the habitat and functions of the created wetlands, streams, and surface waters. Preservation and management in perpetuity of core habitat within the DeSoto Mine property will maintain the existing diversity of wetland communities, species, and habitat in the project area, will serve to provide refuge for fauna displaced by mining activities, and will provide a source for faunal re-colonization following reclamation. The final reclamation plan includes an increase in upland forested and wetland habitat types and expands the existing wildlife corridors by providing additional upland buffers along many of the preserved streams and wetland systems. Thus, the proposed preservation, reclamation, and management plans will provide and maintain a diversity of wetland and upland communities, species, and habitats in the project area and minimize adverse impacts to fish, wildlife, and habitat.

The application complies with the standards and criteria of Chapters 211, Part II, and 378, Part II, F.S., and Chapter 62C-16, F.A.C. This letter serves as notification that your application for conceptual reclamation plan MOS-DES-CP is hereby approved, with the following conditions:

GENERAL CONDITIONS

1. Approval of this application shall not constitute a statement, admission or waiver by the state of Florida concerning the ownership of any interest in lands within the conceptual plan area.
2. The conceptual plan is a general overall plan, which explains how and when affected lands in the conceptual plan are to be reclaimed. Approval of this conceptual plan does not relieve the company of the obligation to comply with the standards and criteria set forth in Chapter 62C-16, F.A.C., and any inconsistencies between the conceptual plan and these standards and criteria shall be resolved in favor of the specific standards and criteria of Chapter 62C-16, F.A.C.

3. In restoring drainage patterns, the Department and the applicant reserve the right to reexamine the placement and configuration of the lakes, streams, wetlands, and watersheds which have been proposed in the conceptual plan, to ensure that the natural functions of the lakes, streams, and wetlands are restored in accordance with the provisions of the then-existing standards and criteria of Chapter 62C-16, F.A.C.
4. The applicant shall notify the Department in writing of any approvals of Master Mine Plans, Mining Unit Plans, or modifications of said plans within 72 hours of approval by any affected county. Written notification shall consist of an affidavit of approval by the affected county government, a copy of the approved plan, and all pertinent attachments and exhibits. After timely review, the Department will notify the applicant whether the approved county plan requires subsequent modification of the Conceptual Reclamation Plan.
5. The approval of this application shall not relieve the applicant of the obligation to obtain any required federal, state, local and special DEP authorizations or permits, prior to the start of any activity approved by this conceptual plan authorization.
6. Within all wetland and upland-forested areas, the applicant shall adhere to reclamation standards set forth in Rule 62C-16.0051, F.A.C. Tree species selected for reforestation of wetlands and uplands, however, should be suited for the correct hydrological zone. The applicant is encouraged to implement the Integrated Habitat Network (IHN) concept (where possible) when establishing reclaimed upland and wetland forested areas.
7. Ground cover established in all upland forests shall include one or more of the following native plant types: fruit-bearing shrubs, low-growing legumes, native grasses and sedges.
8. The applicant shall utilize grasses and shrubs when creating and restoring grasslands and shrub and brush land habitats. Pasture grasses such as Bahia grass (*Paspalum notatum*) Bermuda grass (*Cynodon dactylon*) shall be acceptable groundcover in all areas reclaimed as cropland and pastureland.
9. Areas reclaimed as pasture or improved pasture shall incorporate clumps or windrows of trees in order that every ten (10) acres has some trees. Areas to be reclaimed as cropland or citrus grove shall have windrows of trees along transportation corridors and between fields to act as a buffer and prevent the loss of topsoil as a result of wind erosion.
10. The applicant shall make every effort to control nuisance and exotic species within the mine boundary. Nuisance and exotic species shall be controlled through the use of selective herbicides, fire, and/or mechanical methods. Invasive

exotic vegetation such as *Melaleuca quinquenervia* (Melaleuca), *Sapium sebiferum* (Chinese tallow) and *Schinus terebinthifolius* (Brazilian pepper) shall not be considered an acceptable component of the vegetation community. Where an adjacent property's vegetative cover perpetuates this problem, the applicant will notify the Department, and the Department will work with the applicant in proposing a species management plan.

11. The applicant agrees to comply with all reclamation standards as listed in Chapter 378, F.S., and Chapter 62C-16, F.A.C. Any deviations from these standards must be approved by the Department in the form of a variance.

SPECIFIC CONDITIONS

1. The applicant shall follow the DeSoto Mine Wildlife Habitat Management Plan (Appendix 2-6-B) for all preclearing wildlife surveys, timing of habitat disturbance and relocation activities or as required by FFWCC/USFWS permits or management plans. The appropriate FFWCC/USFWS coordination shall be initiated prior to the disturbance of habitat, if it is being utilized by listed species, or relocation of any listed wildlife species. Copies of all correspondence, permits, authorizations and reports to or from these agencies shall be provided to the Department.
2. The applicant is encouraged to relocate listed plant species encountered prior to and during clearing for mining to suitable reclamation sites.
3. Stream systems (FLUCFCS 511) shall be constructed in accordance with the design criteria set forth in Appendix 2-2-B-i (DeSoto Mine Stream Reclamation Plan, DeSoto County, Florida). Individual stream lengths may vary based on Department approval of final design plans. Prior to construction, final design plans based on the actual post mining conditions shall be developed based on hydrologic modeling that includes estimating bankfull flow. Hydrologic modeling results shall be compared to the low flow data collected on the existing first and second order streams within the project to confirm that designed stream flow and the percent of time that water is present above the bed is at least within the range of existing streams. Modeling results, final design documents and construction drawings shall be submitted to the Department for approval.
4. Within 90 days after final grading of a restored stream (FLUCFCS 511), the applicant shall prepare a construction report documenting that the restored reach has been constructed in accordance with the specifications outlined in Appendix 2-2-B-i and the final design plans. The construction report shall include a longitudinal profile of the entire stream reach and representative cross sections. Cross sections shall include the flood prone width. Reports documenting

restoration of the final slough/strand lengths shall also be provided to the Department.

5. The following practices shall be implemented in the reclamation of upland habitat areas to maximize benefits to wildlife and adjacent wetlands:
 - a. Rangeland (FLUCFCS 300 series), other than palmetto prairie (FLUCFCS 321), shall be revegetated to achieve a general target of a 50/50 percent mixture of grassland and shrub-brush cover. Revegetation shall be done by topsoiling, direct seeding or planting a diverse combination of the shrub and groundcover species listed in Table 4-4-A. Saw palmetto (*Serenoa repens*) and wiregrass (*Aristida stricta*) shall be planted or recruited, but at densities below those for palmetto prairie.
 - b. Pine flatwoods (FLUCFCS 411) and palmetto prairie (FLUCFCS 321) shall be reclaimed by placing a minimum layer of 18 inches of sand tailings over the overburden. In addition, three (3) to six (6) inches of direct transferred native topsoil from pine flatwoods or palmetto prairie areas shall be applied. If topsoil is not available, a green manure crop shall be seeded and disked in after it has matured before applying a flatwoods or palmetto prairie native ground cover seed mix to the site. In flatwoods reclamation sites, longleaf pine (*Pinus palustris*) or slash pine (*Pinus elliottii*) shall be planted in the appropriate areas to achieve densities between 25 and 75 trees per acre. In flatwoods and palmetto prairie reclamation sites, shrubs typical of central Florida flatwoods and palmetto prairies will be recruited from the topsoiling, planting, and/or seeding to achieve a minimum average density of 300 shrubs or subshrubs per acre. The shrub and groundcover species listed in Tables 4-4-A and 4-4-B shall be recruited or planted to achieve a total vegetation cover of at least 60 percent.
 - c. Areas designated as xeric oak scrub (FLUCFCS 421) and sand live oak forest (FLUCFCS 432) shall have several feet of sand tailings placed over the overburden. In addition, three (3) to six (6) inches of direct transferred native topsoil shall be applied. If topsoil is not available, a green manure crop shall be seeded and disked in after it has matured before applying a scrubby flatwoods or scrub native ground cover seed mix to this site or planting with the species listed in Table 4-4-C. Trees and shrubs typical of central Florida scrubs shall be recruited from the topsoil, planted, and/or seeded to achieve a minimum density of 300 plants per acre. Vegetative cover in these areas shall be greater than 50 percent.
 - d. Upland coniferous forest areas (FLUCFCS 410), other than pine flatwoods (FLUCFCS 411), are designed to serve as greenbelts around the created wetlands, as wildlife habitat, and as forested corridors. These areas will be revegetated by seeding and/or planting a diverse combination of the native species listed on Table 4-4-B and planting with long leaf pine (*Pinus elliottii*) and slash pine (*Pinus palustris*) to achieve a density of 200

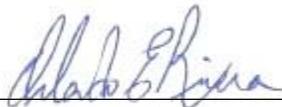
- trees per acre. A minimum of 5 native species will be planted and cover by bahia grass (*Paspalum notatum*) and Bermuda grass (*Cynodon dactylon*) shall be minimized. Soil types and hydrology will be considered when selecting species to be planted or seeded.
- e. Other upland forest areas, including FLUCFCS 425, 427 and 434, shall be revegetated with the native ground cover, shrub and trees species listed in Tables 4-4-D and 4-4-E to achieve a density of 200 trees per acre and 100 shrubs per acre. Soil types and hydrology will be considered when selecting species to be planted or seeded.
 - f. Native grass species shall be incorporated into the groundcover in all reclaimed native habitat areas. Local seed sources for easily established perennial native grasses will be used to the extent available, as a measure to pre-empt colonization by exotics. Examples of such native grasses include lovegrasses (*Eragrostis elliottii*, *E. spectabilis*), fingergrass (*Eustachys petraea*), thin paspalum (*Paspalum setaceum*), and beaked panicum (*Panicum anceps*)
 - g. Bahia grass (*Paspalum notatum*), Bermuda grass (*Cynodon dactylon*), and exotic grass species shall not be used in the ground cover in native habitat areas except in limited amounts where needed for initial stabilization in areas highly prone to erosion. If these grasses must be used in such areas, they shall be maintained to prevent their proliferation.
6. The applicant shall make every effort to control cogon grass (*Imperata cylindrica*) within the project by eradicating existing cogon grass prior to mining, removing cogon grass that may colonize spoil piles during mining, inspecting donor topsoil areas to prevent infestation, regularly treating cogon grass on reclaimed sites to maintain coverage below ten (10) percent (%), and below five (5) percent (%) within 300 feet of reclaimed wetlands, and treating equipment that may have been operated in infested areas prior to being brought on site.
7. The applicant shall provide updates to the waste clay and sand tailings disposal plans as follows:
- a. An Annual Narrative on Waste Clay Disposal for the mine shall be completed and submitted annually. The Narrative shall describe the clay disposal and waste clay sampling activities and provide the available sampling data from the previous and current years.
 - b. An updated Waste Clay Disposal Plan (Appendix 3-4-A) and Phosphatic Waste Clay Consolidation Model for the mine shall be completed and submitted every five (5) years or when there is a major change in the Waste Clay Disposal Plan. Changes in the Waste Clay Disposal Plan shall include, but are not limited to, changes in the production rate, addition of reserves and changes in the approved waste clay disposal areas. The updated Phosphatic Waste Clay Consolidation Model shall incorporate the clay disposal information and the Waste Clay sampling data acquired

- since the previous update. The permittee may request modification to the requirements of this specific condition.
- c. An Annual Narrative on Sand Tailings Disposal for the mine shall be completed and submitted annually. The Narrative shall identify the overall facility sand tailings production and utilization based on known production and mining areas, and identify the Reclamation Parcels where tailings were disposed the previous year. The Narrative shall also include the proposed Reclamation Parcels for tailings disposal during the current year.
 - d. An updated Sand Tailings Disposal Plan for the mine shall be completed and submitted every five (5) years. A year by year production and void creation for the overall facility shall be provided, in order to evaluate potential stockpiles or deficits that will occur through the life cycle. The plan shall also provide yearly sand tailings disposal projections specific for each Reclamation Parcel. In the event that a sand tailings balance assessment identifies a potential sand tailings deficit that could affect an area exceeding 5% of the remaining sand tailings disposal acreage, then the assessment shall also identify the specific sand tailings areas where the approved land surface elevations shown on Map CRP-7A may not be able to be established, and describe all wetlands, streams, or other surface waters identified on Maps CRP-12, CRP -12A and CRP-13 and Tables CRP-4 and CRP-5 that may be affected by a deficit in material. In the event that such areas are identified, the permittee shall, within 90 days, submit a plan to the Department detailing actions that will be taken to ensure that all required mitigation will be completed in a timely manner.
8. The clay settling areas shown on Map CRP-3 and described in Appendix 3-4-A (Updated Life of Mine Waste Disposal Plan, DeSoto County Mine) are conceptually approved in accordance with the following:
- a. The applicant shall request, in writing, and receive approval from the Department's Mining and Mitigation Section prior to commencing construction of any new clay settling area – after the initial clay settling areas D-1A and D-1B within the DeSoto Mine are constructed and are in operation. The requested approval shall include information demonstrating whether or not additional waste clay disposal capacity is needed when considering the most recently updated Life of Mine Waste Clay Disposal Plan, and a comparison of updated clay production estimates with the remaining storage capacities for existing clay settling areas in the DeSoto Mine.
 - b. An update to the Hydrology Analysis shall be required prior to approval of changes to the footprint of the approved waste clay disposal area. Such changes shall include but not limited to the addition of a new clay settling area, the deletion of a clay settling area, and the expansion or reduction of

- a clay settling area. The permittee may request modification to the requirements of this specific condition.
- c. Detailed construction plans for any dam break diversion and containment systems to the Department's Mining and Mitigation Section for review and approval at least three months prior to initiating construction. Any proposed delays in the completion of reclamation due to construction and operation of the containment systems shall be noted in the Annual Report.
 - d. The outfalls for all reclaimed clay settling areas shall be designed to manage the mean annual, 25-year, and 100-year peak storm events while minimizing the potential for erosion and maintaining the downstream pre-mining flow volumes. Interim and final outfall installations must be approved prior to commencement of construction. Interim and final outfall configurations shall take into account the effects of additional incremental clay consolidation and the ultimate consolidated clay elevation, respectively, based on consolidation modeling and yearly data collected for the clay monitoring program. Reclaimed clay settling areas and associated final outfall structures shall be designed and maintained within the DeSoto Mine to preclude non-modeled storage of rainfall runoff below the lowest outfall control elevation.
9. No reclamation parcel or portion thereof shall be released from the requirements of Chapter 62C-16, F.A.C., if it still reports to any surface water discharge outfalls permitted under Chapter 62-620, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION



Orlando E. Rivera, PWS
Program Administrator
Mining and Mitigation Program
Orlando.Rivera@dep.state.fl.us

Prepared by Dennis Tyus

ATTACHMENTS:
List of Attachments

LIST OF ATTACHMENTS

The following are hereby attached to, and become part of this plan:

Designation	Description	Date Received
CRP Tables		
CRP-1	Site Land Use Cover - Vegetation Cover	July 1, 2016
CRP-2	Acres by Township, Range, Section and LRU	May 27, 2015
ERP Tables		
4-1	Mine Reclamation Schedule	May 27, 2015
4-2	Minimum FDEP Rule Reclamation Schedule	May 27, 2015
4-3-A	Proposed Plantings in Bay & Gum Swamps (FLUCFCS 611 & 613)	May 27, 2015
4-3-B	Proposed Plantings in Inland Ponds & Sloughs and Mixed Hardwoods (FLUCFCS 616 & 617)	May 27, 2015
4-3-C	Proposed Plantings in Cypress Wetland Forests (FLUCFCS 621)	May 27, 2015
4-3-D	Proposed Plantings in Wetland Forested Mix (FLUCFCS 630)	May 27, 2015
4-3-E	Proposed Herbaceous to be Planted in Freshwater Marsh (FLUCFCS 641)	May 27, 2015
4-3-F	Proposed Herbaceous to be Planted in Wet Prairie Marsh or Ephemeral Wetlands (FLUCFCS 643)	May 27, 2015
4-3-G	Proposed Herbaceous to be Planted in Shrub Marsh (FLUCFCS 647)	May 27, 2015
4-3-H	Proposed Plantings in Hydric Pine Flatwoods (FLUCFCS 625)	May 27, 2015
4-3-I	Proposed Plantings in Hydric Pine Savanna (FLUCFCS 626)	May 27, 2015
4-4-A	Proposed Plantings in Palmetto Prairie (FLUCFCS 321)	May 27, 2015
4-4-B	Proposed Plantings in Pine Flatwoods (FLUCFCS 411)	May 27, 2015
4-4-C	Proposed Plantings in Xeric Oak Scrub (FLUCFCS 421) and Sand Live Oak (FLUCFCS 432)	May 27, 2015
4-4-D	Proposed Plantings in Live Oak and Temperate Hardwood (FLUCFCS 427 & 425)	May 27, 2015
4-4-E	Proposed Plantings in Hardwood-Conifer Mixed (FLUCFCS 434)	May 27, 2015
4-4-F	Proposed Plantings in Cabbage Palm Hammock (FLUCFCS 428)	May 27, 2015

4-4-G	Proposed Plantings in Upland Forests (FLUCFCS 420) and Mixed Hardwoods (FLUCFCS 438)	May 27, 2015
-------	--	--------------

ERP MAPS

4-1	Reclamation Schedule	May 27, 2015
4-2-B-i	FDEP Land Use & Vegetation (FDOT Level I)	July 1, 2016
4-2-B-ii	FDEP Land Use & Vegetation (FDOT Level III)	July 1, 2016
4-2-B-ii-a	FDEP Land Use & Vegetation (FDOT Level III) Tiled Sheets	July 1, 2016
4-3-B	FDEP Post Reclamation Streams	July 1, 2016
4-3-B-a	FDEP Post Reclamation Streams Tiled Sheets	July 1, 2016
4-4	Post Reclamation Soils	July 1, 2016
4-5	Post Reclamation Topography	July 1, 2016
4-5-A	Post Reclamation Topography Tiled Sheets	July 1, 2016
4-6	Post Reclamation Drainage Basins	July 1, 2016

CRP Maps

CRP-1	General Location	May 27, 2015
CRP-2	Mined, Disturbed Areas and Crossings	May 27, 2015
CRP-3	Waste Disposal Areas	May 27, 2015
CRP-4A	Existing Topography	May 27, 2015
CRP-4B	Existing Drainage Basins	May 27, 2015
CRP-5	Existing Land Use & Vegetation (FLUCFCS Level III)	May 27, 2015
CRP-5A	Existing Land Use & Vegetation (FLUCFCS Level III) Tiled Sheets	May 27, 2015
CRP-6	Listed Species Observation	May 27, 2015
CRP-7A	Post Reclamation Topography	July 1, 2016
CRP-7B	Post Reclamation Drainage Basins	July 1, 2016
CRP-8	Post Reclamation Land Use & Vegetation (FLUCFCS Level III)	July 1, 2016
CRP-8A	Post Reclamation Land Use & Vegetation (FLUCFCS Level III) Tiled Sheets	July 1, 2016

CRP-9	2014 Aerial	May 27, 2015
CRP-9A	2014 Aerial Photo Tile Sheets	May 27, 2015
CRP-10	LRU Boundaries	May 27, 2015
CRP-11	Existing Streams	May 27, 2015
CRP-12	Post Reclamation Streams	July 1, 2016
CRP-12A	Post Reclamation Streams Tiled Sheets	July 1, 2016
CRP-13	Jurisdictional Wetlands and OSW	Sep 29, 2016
CRP-13A	Jurisdictional Wetlands and OSW Tile Sheets	Sep 29, 2016

Figures

7-A	Typical Cross Section of FLUCFCS 611 & 613	May 27, 2015
7-B	Typical Cross Section of FLUCFCS 617	May 27, 2015
7-C	Typical Cross Section of FLUCFCS 621	May 27, 2015
7-D	Typical Cross Section of FLUCFCS 630	May 27, 2015
7-E	Typical Cross Section of FLUCFCS 641	May 27, 2015
7-F	Typical Cross Section of FLUCFCS 643	May 27, 2015
7-G	Typical Cross Section of FLUCFCS 647	May 27, 2015
7-H	Typical Cross Section of FLUCFCS 616	May 27, 2015
7-I	Typical Cross Section for FLUCFCS 625 & 626	May 27, 2015

Appendices

2-2-A-iii	Post Reclamation Cross Sections	May 27, 2015
2-2-A-iv	Post Reclamation Hydroperiod Modeling	July 1, 2016
2-2-A-v	Post Reclamation Lake Cross Section	May 27, 2015
2-2-B-i	Stream Report	July 1, 2016
2-6-B	Site Habitat Management Plan	May 27, 2015
3-4-A	Life of Mine Waste Disposal Plan	May 27, 2015
4-6-I	PR-E Construction Sequence Presentation	May 27, 2015

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this REVISED APPROVAL OF CONCEPTUAL RECLAMATION PLAN and all copies were sent on the filing date below to the following listed persons:

USACE, Jacksonville District Regulatory Division, SAJ-RD@usace.army.mil
FDEP, Office of General Counsel, Agency_Clerk@dep.state.fl.us
FDEP, Florida Park Service, Greg.Kaufmann@dep.state.fl.us
FDEP, Florida Park Service, Chris.Becker@dep.state.fl.us
FDEP, Florida Park Service, Chelsey.Sprouse@dep.state.fl.us
FDEP, Florida Park Service, Cheri.Albin@dep.state.fl.us
FDEP, South District, Jennifer.Carpenter@dep.state.fl.us
FDEP, GIS, Angela.Bozeman@dep.state.fl.us
FDEP, John.Coates@dep.state.fl.us
DeSoto County Administrator, Mandy Hines, m.hines@desotobocc.com
DeSoto County Attorney, Donald D. Conn, d.conn@desotobocc.com
DeSoto County Development Director, Earl Hahn, e.hahn@desotobocc.com
Hardee County Permitting, Debra.Butler@hardeecounty.net
Hardee County Mining Coordinator, West.Palmer@hardeecounty.net
Hardee County Manager Lex Albritton, Jr., lex.albritton@hardeecounty.net
Hardee County Board of County Commissioners, bcc@hardeecounty.net
Hardee County Attorney, Ken Evers, kevers@hardeelaw.com
Manatee County Administrator, Ed.Hunzeker@mymanatee.org
Manatee County Attorney, Mitchell.Palmer@mymanatee.org
Manatee County Mining Services, Alissa.Powers@mymanatee.org
Manatee County Natural Resources, Kathleen.Barrett@mymanatee.org
Mosaic Fertilizer LLC, Russell.Schweiss@mosaicco.com
Mosaic Fertilizer LLC, Bartley.Arrington@mosaicco.com
Mosaic Fertilizer LLC, Bethany.Niec@mosaicco.com
Mosaic Fertilizer LLC, Shelley.Thornton@mosaicco.com
Mosaic Fertilizer LLC, Bryant.Grant@mosaicco.com
Mosaic Fertilizer LLC, William.Brammell@mosaicco.com
Mosaic Fertilizer LLC, Curt.Wade@mosaicco.com
Mosaic Fertilizer LLC, Gary.Blicht@mosaicco.com
Mosaic Fertilizer LLC, Jeff.Dodson@mosaicco.com
Mosaic Fertilizer LLC, Laura.Morris@mosaicco.com
Mosaic Fertilizer LLC, Lee.Killinger@mosaicco.com
Mosaic Fertilizer, LLC, Jon.Faletto@mosaicco.com
Mosaic Fertilizer, LLC, Subrata.Bandyopadhyay@mosaicco.com
Mosaic Fertilizer, LLC, Santino.Provenzano@mosaicco.com
de la Parte & Gilbert P.A., Edward P. de la Parte Jr., Lfoy@dgfirm.com
de la parte & Gilbert P.A., Susan L. Levine, SLevine@dgfirm.com
Ard Shirley & Rudolph P.A., Scott Shirley, sshirley@asrlegal.com

Mosaic DeSoto Mine
Conceptual Reclamation Plan MOS-DS-CP
File No. MMR_331292-002
Page 19 of 19

Hopping Green & Sams P.A., Amelia Savage, amelias@hgslaw.com
Hopping Green & Sams P.A., Susan L. Stephens, susans@hgslaw.com
Hopping Green & Sams P.A., Timothy M. Riley, timothy@hgslaw.com
Gunster Law Firm, Terry Cole, tcollection@gunster.com
City of North Port, Elizabeth Wong, ewong@cityofnorthport.com
Protect our Watersheds Inc., Helen J. King, thekingsom@gmail.com
Charlotte Harbor National Estuary Program,, Jennifer Hecker, jhecker@pgorda.us
W. Ben Hart & Associates, W. Ben Hart, WBenHart@gmail.com
Norma Killebrew, tiff313@aol.com
Lance McNeill, Minerals Development, lance@mindev.us
Mari Hollingsworth, marihollingsworth2004@yahoo.com
Lampl Herbert Consultants, Gregory M. Hitz P.G., gmhitz@lampl-herbert.com
Gurr Professional Services Inc., T. M. (Mike) Gurr, Mike.Gurr@Gurr.US
CH2M Hill, Randall Bushey, Randy.Bushey@ch2m.com
Friends of Horse Creek, Robert Navin, robertnavin@yahoo.com
Florida Sierra Club, Percy Angelo, medintzm@yahoo.com
Center for Biological Diversity, Margaret E. Townsend,
mtownsend@biologicaldiversity.org, foia@biologicaldiversity.org
Kim Allen, allenk@tcc.fl.edu
Karen Miller, millerka@tcc.fl.edu

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section 120.52, F. S., with the designated Department Clerk, receipt of which is hereby acknowledged.

Marjane C. Taylor
Clerk

4/07/2017
Date