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DRAFT ENVIRONMENTAL IMPACT STATEMENT**October 2002****ONA MINE PROJECT
IMC PHOSPHATES COMPANY
HARDEE COUNTY, FLORIDA****LEAD AGENCY: Jacksonville District, U.S. Army Corps of Engineers (USACE)**

IMC Phosphates Company (IMC) proposes to construct and operate a surface mine for the recovery of phosphate rock from its 20,676-acre property in western Hardee County near the rural community of Ona, Florida. As proposed, IMC would mine 15,527 acres of the Ona site, and recover approximately 103 million tons of phosphate rock. An additional 309 acres would be disturbed, and approximately 4,839 acres, or about 23 percent of the entire Ona site, would not be disturbed. Initially, only mining and reclamation would occur on the Ona site, with the mined phosphate rock being sent to the existing IMC beneficiation plant at the Fort Green Mine located in Polk and Hardee Counties for beneficiation and shipment. At a later date, which is yet to be determined, a new beneficiation plant would be constructed at the Ona site, and would include a washer, flotation plant, product inventory, shipping facility, and miscellaneous support facilities. Once this plant is operational, the reserves remaining at the Ona Mine would be processed at the new Ona Mine beneficiation plant. There would be no chemical plant, gypsum stack, or rock dryer at the Ona site. This Environmental Impact Statement evaluates the environmental effects of five alternatives, including IMC's Proposed Action (Compromise Area Alternative), No USACE Wetland Impacts Alternative, and the No Action Alternative.

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EXECUTIVE SUMMARY
PRELIMINARY DRAFT
ENVIRONMENTAL IMPACT STATEMENT
OF
PROPOSED PHOSPHATE MINE
ONA, HARDEE COUNTY, FLORIDA

1. NEED OR OPPORTUNITY

Phosphate is essential to every living thing because it is necessary for many of the biochemical molecules and processes that define life itself. Phosphate is a natural, non-renewable resource that is obtained by mining phosphate-containing minerals. Approximately 90 percent of the phosphate that is mined is used to produce phosphate fertilizers.

The United States (US) produces the most phosphate in the world, while Morocco and China rank second and third, respectively. Because of the economic attractiveness of the Florida phosphate deposits and the existence of transportation infrastructure and nearby fertilizer plants, Florida is presently providing approximately 75 percent of the nation's supply of phosphate fertilizer and about 25 percent of the world's supply (Florida Institute of Phosphate Research [FIPR], 2001).

IMC Phosphates (IMC) is the world's leading producer of concentrated phosphates and accounts for 30 percent of the US capacity and nine percent of the world capacity. IMC is currently mining phosphate from the Fort Green Mine and Fort Green Southern Reserves tract in central Florida. Mining reserves on these tracts will be depleted in approximately three years.

The proposed Ona Mine site is adjacent to the Fort Green Mine and this proximity would allow IMC to initially continue to use the existing Fort Green Beneficiation Plant and mine infrastructure, thus extending the useful life of these facilities. Mining the Ona site would also maintain or increase the number of jobs and the amount of taxes provided to the region (IMC, 2002). The phosphate mining industry in Florida directly employs nearly 8,000 workers, and more than 40,000 in secondary and tertiary supporting businesses (IMC, 2002). It has been shown that improving agricultural performance can help reduce the conversion of forestland to agricultural uses (Columbia University's Center for International Earth Science Information Network [CIESIN], 2002; International Food Policy Research Institute [IFPRI], 2002). Since there is no substitute for phosphate, and because of the important role of phosphate-based fertilizers in sustaining high levels of agricultural production, phosphate mining and processing will continue to be a necessary and important industry.

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Therefore, IMC has foreseen the need to mine the Ona site to continue to produce phosphate fertilizer and animal feed; to maintain or expand jobs within the region; to maintain or increase economic benefits to the region; and to continue to be a profitable company.

For the purpose of this Environmental Impact Statement (EIS), the US Army Corps of Engineers (USACE) has determined that the overall purpose of the mining activities is to extract and process naturally occurring phosphate for various uses throughout the world.

2. MAJOR FINDINGS AND CONCLUSIONS

A. Beneficial Impacts

Socioeconomic benefits that would result from the estimated 24-year mining duration at the proposed Ona Mine would be direct, indirect, and cumulative economic benefits. These benefits would be derived in the form of employment, wages and payroll, and ad valorem revenue and taxes. Benefits of the proposed action also include the continued availability of phosphate from a US source, thus maintaining the viability of the US market.

As part of the Ona project, IMC would grant four conservation easements at the Ona site and one conservation easement on the adjoining Fort Green Southern Reserves site. These conservation easements would cover about 20 percent of the property, including the floodplains of Horse and Brushy Creeks, and would be granted to the State of Florida and managed in perpetuity to ensure that large areas of natural habitat are not developed.

Watercourses such as Oak and Hickory Creeks that have, in the past, been channelized would be reclaimed to eliminate the channelization and ditching. The reclamation would result in several benefits including improved water quality from rerouting the streams through wetlands, reduced flow gradients to attenuate fluctuations in the wetland soil moisture, reductions in peak flow without reducing the total flow of water, and decreases in flood elevations.

Net Ecological Benefits (NEBs) associated with proposed reclamation plans are included in the Ecosystem Management Agreement for this project and fall into two basic categories: 1) Items that have true Ecosystem Benefit; and, 2) Items that have Community Value or public interest and benefit. The proposed NEBs have varying economic cost and value. For more information please see the Ecosystem Management Agreement.

B. Adverse Impacts

1. Vegetation

Temporary adverse impacts from site clearing in preparation for mining operations would result in the direct loss of approximately 8,000 acres of native habitat and 7,800 acres of pasture from the Ona site. This loss is not considered permanent, as the total acreage of

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each vegetative community in most cases would be restored during post-mining reclamation. Major changes would be the addition of several large lakes on the eastern side of the property, totaling 1,019.3 acres.

2. Wetlands

There would be a temporary adverse impact with 2,764.7 acres (56.4 percent) of the 4,901.0 acres of USACE jurisdictional wetland communities impacted. The proposed action would leave 2,136.4 acres (43.5 percent) undisturbed. These impacts would be mitigated by the creation of 3,898.5 acres of wetlands, including 31.7 acres of offsite mitigation at the FG-3 reclamation program area.

3. Fish and Wildlife Resources

There would be a temporary adverse impact to aquatic biota including loss of wetland habitat, alteration of stream flow and discharge, and potential for increased turbidity. Mobile species would relocate; benthic macro-invertebrates would be lost during mining, but would re-establish in reclaimed aquatic habitats through natural dispersal.

4. Threatened and Endangered Species

A temporary adverse impact would result from the Proposed Action Alternative. Mobile wildlife species, including threatened and endangered wildlife would relocate to undisturbed areas of the property during land clearing, while less-mobile listed species such as gopher tortoises and their commensals would be captured and relocated. No federally-listed plant species would be affected. However, state-listed species of plants may be lost during land clearing. Efforts to avoid impacts to threatened and endangered plant and animal species would include pre-clearing surveys, collection, and subsequent relocation to undisturbed or reclaimed habitats on- or off-site.

5. Surface Water

Quantity

A minor temporary adverse impact would result from a slight reduction in rainfall runoff from mined areas being captured within the recirculation system. These reductions are partially offset by maintenance of base flow during mining and discharge of excess water to streams during periods of above-normal rainfall. Net effect to natural drainage systems would be minimal during low flows. Attenuation of peak flows would result in discharge over an extended period when mine storage capacity is exceeded. After mining is complete, high-flow discharges would likely be slightly reduced from pre-mining conditions. The expected changes in stream flow during mining, which are expected only ten percent of the time during higher flows, are anticipated to have no significant impact on public water supply facilities.

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Quality

Phosphate mining has been conducted in the Peace River basin area by IMC for many decades. IMC's existing operations have been issued NPDES permits for the discharge of excess water and storm water. All discharges must satisfy permit limits and not result in water quality standard violations. The quality of IMC's mine process water is good, once suspended solids are allowed to settle.

The expected water quality discharged from the NPDES outfalls are not expected to adversely affect the water quality in Horse Creek and Brushy Creek. A potential increase for dissolved oxygen and pH from NPDES discharges relative to the existing stream water concentrations would generally improve water quality conditions within the streams and would have the potential to reduce the number of naturally occurring water quality contraventions of Class III criteria. Potential increases in conductivity are not expected to approach limiting Class III standards. Additionally, potential increases in phosphorus concentrations are not cause for concern as the systems would be nitrogen limited and would not develop excessive plant growth beyond the amount of available nitrogen in the system. Therefore, potential impacts to the water quality are expected to be minimal and the NPDES outfall concentrations are expected to be typical of natural systems in Florida.

Temporary water quality impacts are of concern if a spill occurred at a stream crossing. The spill of phosphate rock could result in increased suspended solids in the stream and water quality could be temporarily degraded.

6. Groundwater

Quantity

The use of groundwater would have localized minor temporary adverse impacts on the Floridan aquifer, but by the Southwest Florida Water Management District (SWFWMD) approving IMC's water use permit (WUP) in 1996, they determined that the off-site impacts, if any, would be minor and justifiable. Groundwater withdrawals would be within the limits established by IMC's existing WUP.

Quality

Extensive water quality analyses of IMC's and other mining companies' mine process water has demonstrated compliance with primary drinking water standards. Based upon these data, FDEP has concluded that mine process water is not a threat to groundwater quality and has exempted phosphate mines from the requirement to conduct groundwater quality monitoring. Section 4.6.1 includes a description of the water in the ditch and berm system, which encompasses all the mining areas. Data provided in that section shows that water quality is generally good based on sampling in these systems at other mines.

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Prior to mining, IMC's policy is to sample and inventory neighboring wells located within 1,200 feet of a mining area. Water quality of the well would be characterized at that time. This effort is voluntary and is done at no cost to the neighbor. Results of the analyses are provided to the resident. This pre-mining water quality is used for reference should any concerns arise during mining and reclamation. Additionally, IMC would continue to monitor on-site water quality during the life of the mine. Any changes in water quality would first be noticed in these on-site wells.

No significant changes in the water quality of aquifers are expected as a result of groundwater withdrawals at the Ona site. In addition, significant impacts on groundwater quantity or quality are not expected to result from discharging excess water from the mine-recirculation system to surface water streams. Discharges would only be made during periods of excess rainfall, when the storage capacity of the mine recirculation system is exceeded. Groundwater pumping would be utilized during dry periods when storage capacity has reached a minimum threshold within the recirculation system. Since IMC's mine process water meets FDEP primary groundwater standards, no adverse groundwater quality impacts are expected.

7. Topography and Soils

Onsite soils would have major changes from their existing conditions in that some areas would consist entirely of waste clay. Site topography in these areas would also vary, in that above ground settling areas would remain elevated after reclamation. This would result in a minor adverse impact.

8. Hazardous, Toxic and Radioactive Waste

No adverse impacts would result because any generation of hazardous waste, which would be limited to spent fluids used to maintain mobile equipment and the plant infrastructure, and would be managed to prevent release to the environment. No toxic wastes would be generated.

The relationship between naturally occurring radiation and phosphate mining activities has been studied for many years. In general, the results of the various studies show that, with the exception of construction on reclaimed lands, there is no increase in risk associated with radiation and phosphate mining. This increased risk can be mitigated through the use of radon-resistant construction techniques. A more detailed discussion of radiation and phosphate mining is presented in Section 4.17.1.1.

9. Socioeconomics

Significant temporary land use changes would occur at the Ona site. No adverse indirect, secondary, or cumulative impacts to land use are anticipated.

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There would be no adverse traffic or transportation impacts. Existing trip generation levels would continue on State Route (SR) 37, SR 62, and old SR 37 for the commensurate time period with traffic eventually increasing on SR 64 and County Road (CR) 663 (the Fort Green-Ona Road) as employment shifts from Fort Green Mine to the Ona Mine.

The Proposed Action Alternative would result in minor visual and lighting impacts.

10. Air Quality

The Proposed Action Alternative would result in temporary localized adverse impacts from fugitive dust and equipment emissions. No off-site impacts are anticipated.

11. Noise

Minor temporary adverse impacts are anticipated from the operation of equipment at the mine.

12. Historic Properties

No adverse impacts are anticipated for historic properties, providing Phase II testing is conducted to determine the eligibility of site 8HR779. If the site was determined eligible, and the State Historic Preservation Officer (SHPO) concurs, data recovery from this site must be conducted to mitigate any impacts, to complete the Section 106 process and to obtain release from the SHPO.

13. Cumulative Impacts

A cumulative impact assessment was conducted as part of this EIS. Several analytical techniques were employed including, GIS analysis, land use/cover mapping, analysis of historical data, and a variety of qualitative analyses. For most resources, the analysis used mapping for 1975, 2000, and 2025 to assess the cumulative impacts of land use/cover changes within the Peace River basin over that timeframe.

Biological Resources

Several government agencies, including FDEP, FFWCC, and USFWS, have assessed the potential cumulative impacts associated with phosphate mining, and the proposed mine at Ona. The findings show that if existing or reasonably predictable new reclamation technology is employed, there are no cumulative adverse impacts when specific protective measures are employed.

General land use/cover trends in the study area include increases in urban and agricultural lands with a corresponding reduction in rangeland, upland forests, and wetlands. Because upland habitats are not afforded the same level of state and federal protection as wetlands, they have been drastically reduced in acreage through conversion to agriculture, urbanization, and mining. In the short-term, the combined effect of this land conversion is significant. However, unlike urban and agricultural land uses, upon completion of mining

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all of the mined lands are reclaimed, many of which are reclaimed as natural areas, thereby helping to offset the basinwide loss of habitat to urbanization. Reclamation plans are designed to integrate the reclaimed lands into the surrounding natural habitats to create corridors. This improves upon the pre-mining patchwork of natural areas fragmented by agricultural uses. Therefore, the long-term impact of mining, through reclamation, can have a beneficial impact on natural ecosystems and provides improved habitat. Technological advancements will continue to improve the science of land reclamation, further minimizing the cumulative effect of mining on biological resources.

Water Resources

The cumulative water resources impacts from phosphate mining in the Peace River basin were evaluated by utilizing extensive water quantity and quality data collected over the past three decades. The water quantity assessment included an evaluation of water use and runoff. SWFWMD information indicated that the phosphate industry had reduced its water use by over 190 mgd from 1975 to 1999, which represents a 74 percent decrease in use. Water use for the phosphate industry is projected to remain low relative to historical use and relative to other users. Regional analyses of stream flow have indicated that the majority of the decrease in flow in the Peace River can be attributed to a regional reduction in rainfall. In addition, a comparison between three tributaries to the Peace River did not indicate significant differences between runoff rates from extensively mined drainage basins and those with no mining.

Surface water quality data was also evaluated for the Peace River basin and the three tributaries. The cumulative water quality evaluation did not indicate significant increasing trends in the streams highly influenced by mining for parameters showing overall increasing trends in downstream portions of the Peace River basin. In other words, phosphate mining does not appear to have an adverse effect on water quality relative to turbidity, nitrate, nitrite, and chlorophyll-a. Therefore, the cumulative effects of continued mining and reclamation in the Peace River basin are not expected to significantly influence these parameters in the future.

The cumulative impact assessment for groundwater focused on the FAS, since the withdrawal of water can cause regional water quality problems from upconing or saltwater intrusion. A comparison of wet and dry season potentiometric maps representing a change over two decades indicated a net improvement in potentiometric surfaces in the phosphate region, which is partially attributed to the net reduction of pumping in the area. The water use requirements for the phosphate mining operations as they move south in the region are not expected to have any significant adverse effects on the region. Similarly, a comparison of water quality contours over the past two to three decades for chloride, sulfate, and total dissolved solids did not indicate any significant increases in concentration associated with phosphate mining in the region. Since water use for mining is not

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expected to increase significantly over the next two decades, future changes in groundwater quality from phosphate mining in the region are not expected to occur.

Socioeconomics

The cumulative impacts to socioeconomic resources of the region were evaluated by looking at economic growth of the area, including the positive impact on the Port of Tampa. The assessment includes direct socioeconomic impacts as a result of actions taken by IMC associated with the proposed action, as well as indirect socioeconomic impacts that result from actions taken by parties other than IMC.

The primary socioeconomic benefit that would result from the estimated 24-year mining duration at Ona Mine is direct and indirect economic benefits. These benefits would be derived in the form of employment, wages and payroll, and ad valorem revenue and taxes.

Land Use

To assess the potential for phosphate mining to have a cumulative impact on changes in land use within the Peace River basin, a comparison was made of land use/cover within the basin in 1975, 2000, and 2025

For this analysis cover types were combined into Urban/Infrastructure (FLUCFCS 100 [less 160] and 800), Agricultural (FLUCFCS 200), Undeveloped (FLUCFCS 300, 400, 500, 600, and 700), and Extractive (FLUCFCS 160). A comparison was made of the change in acres of these land use/cover classifications to determine the cumulative land use change associated with each of these uses.

The analyses show that cumulative impacts on land use change within the Peace River basin is greater from the conversion of land to Agricultural or Urban/Infrastructure land use/cover than for Extractive uses, such as phosphate mining. As mined lands are reclaimed as natural areas, acreage of Extractive land use in the basin is reduced. Thus, the potential impact of the proposed action on cumulative land use trends in the study area is minimal due to reclamation.

C. Mitigation

An important part of a mining plan is the reclamation plan. IMC proposes to reclaim 15,836 acres of mined or disturbed lands to replace natural ecosystem functions on a portion of the Ona site, as well as to provide lands for agricultural and recreation/development uses. Twenty-eight Florida Land Use, Cover, and Forms Classification System (FLUCFCS) categories would be created, including both upland and wetland communities.

At a minimum, reclamation activities would fulfill the applicable obligations concerning post-reclamation vegetation conditions imposed by Chapter 62C-16, Florida Administrative

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Code (F.A.C.) and Section 2.06.06 of the Hardee County Unified Land Development Code (LDC), and the USACE mitigation requirements.

1. Vegetation

IMC's reclamation plans for the Ona site include 11,541.5 acres of upland communities, which would result in a total of 14,884.8 acres of uplands on the Ona site at the conclusion of reclamation. This corresponds to a ten percent loss in acreage of upland vegetative communities between the pre- and post-mining landscape. The reduction in acreage of upland communities arises from the reclamation of improved and unimproved pastures to other land uses, and does not reflect a loss of upland forest acreage.

Currently, open water areas at the site are limited to cow ponds and ditches. IMC proposes to reclaim 1,034.5 acres of mined lands as open water, predominantly in the form of lakes. The total post-reclamation area of open water is projected to be 1,065.1 acres.

Based upon previous reclamation results, reclaimed and revegetated agricultural lands reach maximum productivity within one year, and herbaceous rangelands and wetlands reach maturity in approximately three years. Forested upland and wetland communities would require 40 years to reach maturity, although much of their ecological functional capacity is realized in about 15 years. The existing patchwork quilt of upland and wetland vegetation would be replaced with three large vegetative community types positioned and targeted towards three post-reclamation land uses: agricultural, recreation/development, and natural systems.

The natural systems would be reclaimed to form a contiguous mosaic of upland and wetland forests, rangeland, and herbaceous marshes that includes all of the north-south stream floodplain corridors as well as an east-west linkage to connect the stream corridors together. The repositioning of natural vegetative communities from the patchy distribution that currently exists to a connected belt of natural communities habitat corridor would result in the best long-term opportunity for significant habitat improvement.

2. Wetlands

Wetland would be created during the reclamation process to mitigate impacts. Wetland created to fulfill mitigation requirements are a subset of the wetlands that would be created as part of the reclamation plan. Due to discrepancies between the FDEP and USACE's jurisdictional wetland determinations, there are small differences in the acreage of wetlands being created as part of the state reclamation plan versus the mitigation plan for USACE jurisdictional wetlands. For example, USACE wetland mitigation would propose mitigation for 69.2 acres of disturbed bay swamp, whereas FDEP mitigation rules would propose replacement of 99.5 acres of disturbed wetlands during reclamation. However,

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most FLUCFCS show no difference between reclamation and mitigation, and the number of acres of proposed mitigation is always met, and often exceeded.

IMC's plans for the Ona site include mitigation of 1,252.7 acres of forested wetlands, 1,611.8 acres of herbaceous wetlands including 31.7 acres of offsite mitigation at the FG-3 reclamation program area, and 1,034.0 acres of open water including 1,019.3 acres of lakes. This would result in a post-mining total of 2,847.5 acres of USACE jurisdictional wetlands and 1,019.3 acres of lakes on the Ona site, as well as 31.7 acres of shrub swamps at the FG-3 reclamation program area.

The existing acreage of USACE jurisdictional areas by FLUCFCS code, acreage to be disturbed, and acreage to be mitigated is found in Chapter 4.0. The locations and identification numbers of wetlands to be created are also shown in Chapter 4.0.

3. Fish and Wildlife Resources

The wildlife and habitat management plan is considered the conceptual framework for the maintenance of habitat during mining and following reclamation. Based upon this framework, precise area-specific plans would be implemented in advance of clearing particular portions of the site for mining. This approach is preferable due to the estimated 30-year mining and reclamation period and the 15,836 acres involved in the development of the Ona Mine, during which time the mining plans could change.

The goals and objectives of the plan are to minimize the loss of wildlife and wildlife habitat during the mining phase, and to create suitable wildlife habitat through the land reclamation process. Listed species present on areas to be cleared would be relocated to other suitable habitat in accordance with approvals granted by the USFWS and/or the FFWCC. In this context, the success of the management plan would be the maintenance of viable populations of wildlife in the Hardee County region.

4. Threatened and Endangered Species

Reclamation activities relative to the protection of threatened and endangered species only involve the restocking portion of pre-clearing surveys and capture process prior to the commencement of land clearing. The actual reclamation activities (earth moving, planting, etc.) of the mined land would not normally impact federal- or state-listed species. The only exception is where listed species have occupied the active mine area (clay settling areas, etc.). In general, listed flora and fauna species would be protected by:

- A. Relocation to reclaimed suitable habitat or other protected areas elsewhere on IMC property, but not necessarily on the Ona site;
- B. Planned or natural reintroduction into reclamation areas, depending upon specific species requirements;

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- C. Allowing the species to migrate to adjacent habitat on their own, and/or;
- D. Protecting the habitat that is proposed not to be disturbed.

Pre-clearing survey techniques, clearing or mining activity restrictions, and relocation details for selected species are listed in Section 4.4.

5. Surface Water

Prior to disturbing mining areas, IMC would design and construct a ditch and berm system capable of retaining all runoff from a 25-year, 24-hour storm event in accordance with FDEP and SWFWMD regulations. As new perimeter berms are constructed the following features are used for erosion control.

- A. Silt screens are installed at the base of the berm. These screens are inspected and maintained as required.
- B. Grass is planted on the exterior slope of the berm.
- C. The berm is sufficiently flat in slope to control excessive erosion.
- D. The roads on top of the berms are sloped toward the mine and away from the adjoining property or wetland.

Similar systems would be designed and installed sequentially across the Ona site in advance of clearing portions of these tracts for mining. The proposed system would prevent potential surface water quality impacts off-site.

The two stream segments directly impacted by mining, Oak Creek south of SR 64 and the headwater tributary to Hickory Creek, would be reclaimed to eliminate the channelization and ditching that has occurred historically. On directly impacted stream segments within the portions of the drainage conveyance where a sinuous channel is expected to develop, stacks of logs, snags, brush, and other energy absorption techniques would be used to reduce flow velocity to less than one foot per second. These techniques should retard natural erosional development and result in the desired sinuous stream channel geometry. Such methods would minimize impacts to water quality from erosion in streams. The final reclamation step would be the rerouting of flow into the reclaimed wetlands from a temporary alternate flow way and the subsequent regrading and revegetation of the then former temporary alternate flow way. The rerouting, in areas of previous ditching, is expected to result in a net water quality benefit when compared to the existing conditions. This benefit is increased water quality treatment capability because flow-through wetlands would replace ditched wetlands, thereby increasing retention time during low flow conditions.

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IMC's existing operations have been issued National Pollution Discharge Elimination System (NPDES) permits for the discharge of excess water and storm water. All discharges must satisfy permit limits and not cause violation of water quality standards. The quality of IMC's mine process water is good, once suspended solids are allowed to settle.

All reclaimed land must meet water quality standards before it can be released from Florida Department of Environmental Protection (FDEP) mine reclamation requirements. The FIPR-funded research and other water quality analyses illustrate that reclaimed land does not cause violations of water quality standards (IMC, 2002).

6. Groundwater

There is a potential for water elevations in the mine cuts to remain below historical water table elevations through contouring of earth in reclamation. For this reason, IMC is proposing to continue to operate recharge ditches at least until contouring is completed in reclamation. The approximately 3,685 acres of the Ona site that are reclaimed from clay settling areas would have a surface soil with a reduced permeability compared to existing soils, whereas, the land reclaimed from overburden-capped sand tailings would have permeability similar to or higher than the pre-mine condition at the site. Almost immediately after mining, water elevations within the mine cut would begin to recover.

Prior to mining, IMC's policy is to sample and inventory neighboring wells located within 1,200 feet of a mining area. Water quality of the well would be characterized at that time. This effort is voluntary and is done at no cost to the neighbor. Results of the analyses are provided to the resident. This pre-mining water quality is used for reference should any concerns arise during mining and reclamation. Additionally, IMC would continue to monitor onsite water quality during the life of the mine. Should changes in water quality occur, they would first be noticed in these on-site wells.

7. Topography and Soils

All of the land that is mined would be backfilled with sand or clay, or would be reclaimed by shaping the existing overburden spoils as part of the reclamation process. All of the sand and clay backfill would originate from IMC mine property and the overburden spoil generated by mining the Ona site parcels would be beneficially used onsite as part of the reclamation process. The general topography and slopes that would be created would conform to the current FDEP and Hardee County standards that no slope be steeper than four feet horizontal (H) to one foot vertical (V). The only areas that would have slopes that approach this steepness are those around the reclaimed clay settling area dams. Generally, the site would be returned to the same relatively flat topography as currently exists.

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Best management practices (BMPs) to control erosion and sedimentation would be utilized during the site preparation, construction, mining, and reclamation activities.

8. Hazardous, Toxic and Radioactive Waste

If hazardous materials were encountered within the project area during construction, they would be disposed of in accordance with appropriate federal and state regulations.

9. Socioeconomics

Visual impacts would be similar to those presently experienced along SR 62, which is parallel to and north of SR 64. Impacts would be mitigated by roadside ditch and berms systems, setbacks, and the duration of mining activity along highway frontage. Visibility from the roads could be mitigated somewhat by landscaped berms along the right-of-ways.

10. Air Quality

The operation of heavy equipment would have minor, temporary negative impacts on air quality during the construction and operation of the mine for either of the action alternatives. These impacts would be primarily in the form of increased exhaust emissions, which would be minimized by good vehicle maintenance. Windblown soil and dust may also occur during the construction phase as a result of equipment movement over exposed soil areas. Fugitive dust can be greatly minimized by appropriate dust control measures such as wetting the surfaces and by re-vegetating disturbed areas as soon as practicable.

11. Noise

The operation of heavy equipment would have minor, temporary negative impacts on noise during the construction and operation of the mine for either of the action alternatives. These impacts would be minimized by the mufflers on the equipment, and by restricting the times when equipment use would be allowed.

12. Historic Properties

Phase II testing must be conducted to determine the eligibility of site 8HR779. If the site was determined eligible, and the State Historic Preservation Officer (SHPO) concurs, data recovery from this site must be conducted to mitigate any impacts, to complete the Section 106 process and to obtain release from the SHPO.

Coordination with the representatives of the Seminole and Miccosukee Tribes has been initiated.

If any archaeological resources are encountered during construction, work in the immediate area would stop and the USACE and the SHPO would be notified so that

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compliance with Section 106 of the National Historic Preservation Act would be accomplished.

3. ALTERNATIVES

A. **Compromise Area Alternative (IMC's Proposed Action)**

Under this alternative IMC proposes to construct and operate a surface mine for the recovery of phosphate rock from its 20,676-acre property in western Hardee County near the rural community of Ona, Florida. As proposed, IMC would mine or disturb 15,527 acres of the Ona site, and recover approximately 103 million tons of phosphate rock. An additional 309 acres would be disturbed, and approximately 4,839 acres, or about 23 percent of the entire Ona site, would not be disturbed. Initially, only mining, clay settling, and reclamation would occur on the Ona site, with the mined phosphate matrix being sent to the existing IMC beneficiation plant at the Fort Green Mine located in Polk and Hardee Counties for beneficiation and shipment. At a later date, which is yet to be determined, a new beneficiation plant would be constructed at the Ona site, and would include a washer, flotation plant, product inventory, shipping facility, and miscellaneous support facilities. Once this plant is operational, the reserves remaining at the Ona Mine would be processed at the new Ona Mine beneficiation plant. There would be no chemical plant, gypsum stack, or rock dryer at the Ona site.

Over many decades, significant portions of the Ona Mine site have been converted from their natural state to agriculture, chiefly as improved pastureland. The natural ecosystems on most of the agricultural lands have been altered for agricultural use. IMC proposes to mine these areas and to reclaim them to a blend of agricultural use and natural habitat values. However, within the Ona site there are also areas of less historic disturbance that are considered to be of ecological value. Consequently, IMC proposes not to mine about 4,839 acres including ecologically valuable areas. This no mine area is approximately 23 percent of the total acreage of the Ona site.

IMC intends to use the "opencast" surface mining method for development of the Ona Mine. This method begins when large electrically powered excavators (draglines) first remove and set aside the overlying soil overburden and then excavate the phosphate ore matrix. The matrix is then placed by the dragline into a shallow depression at the ground surface where it is disaggregated and mixed with water and converted into slurry form. Then electric pumps are used to transport the matrix through pipelines to the beneficiation facility, where the phosphate rock is separated from the sand and clay in which the ore is found.

The proposed operations would involve mining and processing methods that are commonly used in the extraction and processing of phosphate ore in the Central Florida Land-Pebble Phosphate District. Major phases of the proposed operation would include:

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1. Clearing and preparing the site for operations;
2. Constructing the clay settling areas, perimeter berm and recharge ditches, wells, water and wastewater control and re-circulation systems;
3. Constructing onsite transportation systems, and other ancillary operations;
4. Constructing the beneficiation plant (at a later date);
5. Uncovering and extracting the phosphate ore-bearing matrix by electric-powered dragline;
6. Transporting the matrix to the existing Fort Green or proposed Ona beneficiation plant by slurry pipeline;
7. Physically separating the phosphate ore from the sand and clay (wastes);
8. Disposing of the sand and clay wastes in the mine area;
9. Shipping the phosphate ore from the facility by rail; and,
10. Reclaiming or restoring the disturbed areas.

Three distinct methods of reclamation would be used in creation of the post-reclamation landscape. These are known as: 1) the sand fill with overburden cap method, 2) the shaped overburden (land and lake) method, and 3) the crustal development method for reclamation of clay settling areas.

In addition to the three basic alternatives evaluated, within the Proposed Action Alternative various mining techniques were also considered for:

1. Mining Area Selection
2. Mining Methods
3. Matrix Transport
4. Matrix Processing
5. Plant Siting
6. Process Water Sources
7. Excess Water Discharge
8. Sand and Clay Residuals Management
9. Reclamation
10. Product Transport

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B. IMC's Original Area to be Mined Alternative

IMC's original mining plan was prepared based on avoiding large floodplains, and those habitat areas where there was little or no ore. This plan proposed mining of approximately 17,593 acres of the Ona site to recover approximately 112 million tons of phosphate rock. This proposed area is presented on Figure 2.1-1. The primary habitat areas avoided were the Horse Creek and Brushy Creek floodplains.

The mining methods and proposed operations would be the same as those described in Section A. for the Proposed Action Alternative.

C. Natural Systems Group Recommended Areas of Conservation

From 1997 through 2000 intensive series of meetings, workshops, field tours, and work sessions were convened to implement the ecosystem management/team permitting process (see Section 1.7). Beginning in mid-1999, the natural systems sub-group of the AWG began focusing on which lands possess sufficient ecological attributes such that they are considered to not be disturbed by mining operations. Such areas have been termed "areas of conservation interest" by the AWG and PWG. There was not unanimous agreement among the AWG and PWG members as to which areas were of conservation interest. To help the process move forward, the members were asked to identify, in an ideal world, all areas of ecological interest that they would want to save. This resulted in a "first cut" for the "areas of conservation interest."

Representatives of both the principal and commenting agencies utilized this "first cut" as well as the results from the wildlife surveys, upland and wetland vegetative descriptions and analyses that are presented in Sections 3.2, 3.3 and 3.4, to support the review process. As described in the CDA, some AWG members participated in site tours and discussions concerning the potential to reclaim mined land to specific habitat types. These efforts led to the development of an AWG delineation of areas of conservation interest in July 1999 as shown on Figure 2.1-2. This alternative proposed mining approximately 12,969 acres of the Ona site and recovering approximately 85 million tons of phosphate rock.

The mining methods and proposed operations would be the same as those described in Section A. for the Proposed Action Alternative.

D. No USACE Jurisdictional Wetlands Impacts Alternative

Under the No USACE Jurisdictional Wetlands Impacts Alternative, IMC would only conduct mining operations in the upland areas of the Ona site that are accessible from the existing Fort Green Mine without crossing any jurisdictional wetlands. This alternative would result from the denial of the Section 404 Dredge and Fill Permit for IMC's proposed

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Ona Mine and would reduce the area of mining by 93 percent. A 200-foot buffer around the wetlands for ditch/berm systems and slope cut by mining, and a 500-foot buffer for dragline operations, would further limit the mineable area. Thus, mining would be limited to some small upland areas on the western side of Horse Creek, which is approximately 1,122 acres. This 93 percent reduction in size would make the Ona Mine uneconomical as a stand-alone facility.

E. No Action Alternative

Under this alternative, a permit for the Proposed Action would not be issued and no mining would occur on the Ona site. The existing environment on the site may or may not remain unchanged. More intensive agricultural land uses are displacing agricultural land in the urbanizing areas of central Florida, such as near Tampa, Orlando, and Bradenton-Sarasota. As these urban areas continue to grow and displace agricultural land, there may be more demand to use the Ona site for more intensive agricultural activities. Additional development is presently underway in the vicinity of the Ona site in the form of utility infrastructure, including several power plants and a wastewater treatment plant.

4. PREFERRED ALTERNATIVE(S)

The USACE's preferred alternative is undetermined at this time.

5. ISSUES RAISED BY THE PUBLIC AND AGENCIES

An intensive public and agency scoping process involving numerous meetings and field trips, contributed to the development of IMC's Proposed Action. Initially IMC proposed to mine 17,593 acres of the entire 20,676 acres at the Ona site. Between August 1999 and February 2000, agency workgroup (AWG) and public workgroup (PWG) members attended additional meetings and site tours. As described in Section 2.4.3, these groups identified "areas of conservation interest," and suggested an alternative to mine only 12,969 acres, and preserve the rest of the site.

To address the concern over preserving areas of conservation interest, over time IMC developed the Compromise Area Alternative, which would disturb approximately 15,836 acres of the Ona site. IMC's proposed mining area is a compromise to mine part of the ore reserve while conserving much of the natural ecosystem. This alternative would not disturb 1,448.7 acres of wetlands, or about 36 percent of all wetland areas on the site. In addition, mining related activities would not disturb 30.7 acres of open water, 3,359.2 acres of uplands, and one acre of barren land or roadways, for a total of 4,839 acres or about 23 percent of the entire Ona site. This total includes lands considered as "areas of conservation interest," as well as land within property line setbacks or natural and

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improved lands that are not economically mineable. The “areas of conservation interest” include xeric forests, pine flatwoods, palmetto prairie, and wetlands.

IMC proposes the Compromise Area Alternative as a balance between the need to minimize impacts to important natural habitat types, and the need to extract and beneficially utilize the geologic phosphate rock resource. This is IMC’s preferred alternative.

6. AREAS OF CONTROVERSY

Two primary issues were raised through the AWG/PWG process, as well as in the comments received in response to the NOI. These two areas of controversy are 1) the perceived need for a cumulative assessment of phosphate mining in central Florida, and 2) water balance and water quality, particularly relative to downstream water supply.

The Central Florida Regional Planning Council (CFRPC) and other entities are currently conducting a regional assessment of cumulative impacts from phosphate mining in central Florida. The EIS team coordinated with the team conducting the CFRPC study and utilized data from that analysis as part of the cumulative impacts assessment for this EIS. The cumulative impact assessment conducted as part of this EIS process focuses on geographic and temporal boundaries that are appropriate under the National Environmental Policy Act (NEPA), and evaluates the impact of the phosphate industry, as a whole, on the Peace River basin for the time points of 1975, 2000, and 2025. Cumulative impacts are discussed in Section 4.26 of this EIS.

Impacts relative to water balance and water quality were assessed as part of this EIS and are described in Sections 4.5, 4.6, and 4.7.

7. UNRESOLVED ISSUES

There are no unresolved issues associated with the NEPA process for the proposed IMC mine.