

**PROFESSIONAL SERVICES LEGAL REPRESENTATION AGREEMENT BETWEEN
UNION COUNTY, ALACHUA COUNTY, AND DE LA PARTE & GILBERT, P.A.**

THIS Professional Services Legal Representation Agreement, entered into when executed by all parties this _____ day of _____, 2021 by and between Union County, a political subdivision of the State of Florida, by and through its Board of County Commissioners, (hereinafter referred to as “Client” or “Union County”), Alachua County, a charter county and political subdivision of the State of Florida, by and through its Board of County Commissioners, (hereinafter referred to as “Alachua County”), and de la Parte & Gilbert, P.A. (hereinafter referred to as the "FIRM").

WITNESSETH:

WHEREAS, Alachua County and the Firm hereto previously entered into a Legal Representation Agreement dated March 22, 2019, as prepared and submitted by the FIRM (the “Agreement”), for the provision of legal representation of the CLIENT with regards to the proposed HPSII phosphate mine in Union/Bradford Counties; and

WHEREAS, Union County wishes to retain the professional services of the Firm with regards to ongoing litigation involving the proposed HPS II phosphate mine in Union/Bradford Counties; and

WHEREAS, Alachua County has an interest in the shared resource of the Santa Fe River, and as a downstream user of the Santa Fe River, Alachua County has an interest in preserving the natural health and scenic beauty of the River and its ecosystems due to concerns for the environment, as well as to protect the local eco-tourism industry supported by a protected Santa Fe River; and

WHEREAS, Union County shares these interests with Alachua County and is seeking the services of the Firm in order to protect the natural state of the Santa Fe River from the potential impacts of the proposed HPS II phosphate mine in Union/Bradford Counties; and

WHEREAS, in furtherance of these shared interests, Alachua County is willing to waive limited potential conflicts and allow the Firm to also represent Union County in its ongoing Bert Harris litigation with HPS II (Case No. 63-2019-CA-0023); and

WHEREAS, the parties agree that if the interests of Alachua County and Union County diverge and are no longer shared, then Union County shall consent to the Firm’s withdrawal from

its representation of Union County under the terms of this Agreement and will continue to represent Alachua County, to the greatest extent possible; and

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, Union County, Alachua County, and the Firm do mutually agree as follows:

Section 1. Term. This Agreement shall commence upon execution by all parties, and end upon , unless terminated earlier, as provided for herein.

Section 2. Scope of services. The Firm shall serve as co-counsel to Union County in the above referenced Bert Harris litigation with HPS II (Case No. 63-2019-CA-0023) and provide necessary professional services to litigate that matter. In addition, the Firm's retained experts will provide the services outlined in Exhibit A to Union County at the time intervals provided therein.

Section 3. Compensation. The Firm shall invoice Union County for services provided and costs incurred under this Agreement. For all services actually, timely, and faithfully rendered, Union County shall compensate the Firm in an amount not to exceed \$250,000, as described below. There will be no charge for travel time or expenses, no charge for Westlaw, Lexis, or other equivalent research service fees, and no charge for long-distance charges or postage. No "overhead factor" will be charged. Out-of-pocket costs (such as court filing fees, process server fees, witness fees, and court reporter fees) will be charged at cost, with no mark-up or multiplier, and only with the prior authorization of Union County or its designee. There will be no separately billed copying charges unless copies are made through a third party copying firm, with the prior authorization of Union County or its designee.

The Firm shall submit to Union County monthly invoices at the end of each month, detailing the service performed and costs incurred for which payment is being requested. All invoices for payment shall be submitted to:

James Williams, CPM, CBC
County Coordinator
15 NE 1st Street
Lake Butler, Florida 32054
(386) 496-4241

Payment to the Firm shall be made after review and approval of the invoice by Union County. In addition to the costs outlined in Exhibit A, Union County agrees to pay the Firm for legal services in the amount of \$250,000 to compensate the Firm for all fees and costs through final judgment in the above referenced Bert Harris litigation with HPS II (Case No. 63-2019-CA-0023).

Section 4. Coordination with County staff. Union County designates Russ Wade, Union County Attorney, to serve as a liaison with the Firm to coordinate the services provided for in this Agreement.

Section 5. Conflict of interest. The Firm represents, acknowledges, and affirms that its client under this Agreement is Union County, notwithstanding the fact that another entity may pay the fees and costs incurred under this Agreement. Further, the Firm assures Union County that, to the best of its knowledge, signing this Agreement does not create any conflict of interest between itself, its associates, any principal of its firm, or any member or employee of Union County.

Attorneys providing services to Union County on behalf of the Firm are bound by, and shall follow the Florida Bar Rules of Professional Responsibility when addressing issues of confidentiality, conflict of interest and the attorney-client relationship with Union County.

Alachua County joins in this Agreement for the sole purpose of providing a waiver of conflict to allow the Firm to represent Union County in its ongoing Bert Harris litigation regarding the proposed HPS II phosphate mine in Union and Bradford counties. Alachua County's waiver is limited only to the extent that Union County's interests remain aligned with Alachua County's interest of protecting the natural ecosystems, water quality, and scenic beauty of the Santa Fe River from potential impacts of the proposed HPS II phosphate mine. Alachua County will continue to use the Firm for professional services as its representation in the HPS II phosphate mine matter, pursuant to the terms of the March 22, 2019 Agreement and any subsequent amendments between the Firm and Alachua County. Pursuant to this Agreement, the Firm will provide services to Union County, including those services of all experts previously retained by and working on behalf of Alachua County under the March 22, 2019 Agreement between the Firm and Alachua County. This Agreement is not a waiver of Alachua County's access to, or use of, any experts provided by the Firm under the March 22, 2019 Agreement and Alachua County retains all rights to utilize the experts, including in litigation, pursuant to the terms and tasks of Alachua County's agreement with the Firm, including any subsequent amendments. The work product of the experts provided by the Firm under this Agreement shall remain the property of Alachua County and may be used by Alachua County during the term of this Agreement and after its expiration or termination.

Alachua County may revoke this limited consent and waiver if, in its sole discretion, it determines that the shared interest of Alachua County and Union County no longer exists. If Alachua County revokes the limited consent and waiver of conflict provided in this section due to a conflict of interests arising between Union County and Alachua County, particularly as those shared interests are outlined in the Preamble of this Agreement, then the Firm and its attorneys shall seek to withdraw from representation of Union County and shall continue to represent Alachua County in matters related to the proposed HPS II phosphate mine.

Section 6. Independent contractor. In the performance of this Agreement, the Firm will be acting in the capacity of an independent contractor, and not as an agent, employee, partner, joint venture or associate of Union County or Alachua County. The Firm shall be solely responsible for the means, method, techniques, sequences, and procedures utilized by the Firm and its attorneys in the full performance of this Agreement.

Section 7. Insurance.

a. The Firm shall provide, pay for, and maintain in force at all times during the term of this Agreement such insurance, including Worker's Compensation Insurance and Professional Liability Insurance (errors and omissions).

b. Such policy or policies shall be issued by a company or companies authorized to do business in the State of Florida. All policies required to be carried pursuant to this section shall provide coverage for any and all claims based on the actions of the Firm in performing its services under this Agreement. Any liability policy or policies shall, at a minimum, carry limits of at least One Million Dollars (\$1,000,000.00).

d. The maintenance of the insurance coverage set forth herein shall not be construed to limit nor have the effect of limiting the Firm's liability under the provisions of the indemnification clause.

Section 8. Ownership of documents. Upon completion of the agreed-to services by the Firm, or upon termination of this Agreement pursuant to section 11, hereof, all finished and unfinished documents, data, studies, surveys, reports, etc. of any kind, and in whatever form prepared by the Firm, or any experts retained by the Firm, under this Agreement shall, at the option of Alachua County, become the sole property of Alachua County.

Section 9. Termination:

a. Union County may terminate this Agreement at any time by giving written notice to the other parties specifying the termination date, which shall not be less than 20 calendar days from the date said notice is received. Alachua County may terminate this Agreement at any time by giving written notice to the other parties identifying a conflict between the interests of Union County and Alachua County. Alachua County's termination and revocation of its consent and waiver provided in section 5 of this Agreement requires the Firm to seek to withdraw from its representation of Union County within 15 calendar days and Union County shall be deemed to consent to the Firm's withdrawal under these circumstances. If this Agreement is terminated by any party under the terms of this paragraph, Union County shall pay the Firm an amount to adequately compensate it for that portion of the services provided prior to the termination date and properly invoiced in accordance with this Agreement. Waiver or breach of any provision of this Agreement shall not be construed to be modification of the terms of this Agreement.

b. This Agreement is expressly conditioned upon the availability of funds lawfully appropriated and available for the purposes set out herein as determined in the sole discretion of Union County. In the event funds to finance this Agreement become unavailable, Union County may terminate this Agreement upon no less than 24 hours' notice, written and delivered to the Firm. Said notice of termination shall be delivered by certified mail, return receipt requested, or in person with signed proof of delivery. Union County shall be the sole and final authority as to the availability of funds.

Section 10. Notices. Except as otherwise provided herein, any notice, acceptance, request, or approval from either party to the other party shall be in writing and sent by certified mail, return receipt requested, and shall be deemed to have been received when either deposited in a United States Postal Service mailbox or personally delivered with signed proof of delivery. Union County's representative and the Attorney's representative are:

County: James Williams, CPM, CBC
County Coordinator
15 NE 1st Street
Lake Butler, Florida 32054
(386) 496-4241

Attorney: Russell A. Wade, III P.A.
County Attorney
P.O. Box 172
Lake Butler, Florida 32054
(386) 496-9656

Section 11. Non-assignment. The Firm may not assign, convey, pledge, sublet, or otherwise dispose of any interest in this Agreement and shall not transfer any interest in the same, whether by assignment or novation, without prior written consent of Union County.

Section 12. Amendments. This Agreement may be amended by mutual written agreement of the parties hereto. Any change in the scope of services provided under this Agreement will require the written consent and waiver of Alachua County. Further, this Agreement, including without limitation, all changes in the maximum indebtedness, scope of services, or time of completion and other material terms and conditions, may be changed only by such written amendment.

Section 13. Severability. If any provision, or any portion thereof, contained in this Agreement is held unconstitutional, invalid or unenforceable, the remainder of this Agreement, or portion thereof, shall be deemed severable, shall not be affected and shall remain in full force and effect.

Section 14. No Waiver of Sovereign Immunity. Nothing contained herein shall constitute a waiver by Union County or Alachua County of sovereign immunity or the provisions or limitation of liability of Sec. 768.28, Fla. Stat.

Section 15. Project Records.

(a) General Provisions:

Any document submitted to Union County may be a public record and is open for inspection or copying by any person or entity. "Public records" are defined as all documents, papers, letters, maps, books, tapes, photographs, films, sound recordings, data processing software, or other material, regardless of the physical form, characteristics, or

means of transmission, made or received pursuant to law or ordinance or in connection with the transaction of official business by any agency per Sec. 119.011(11), Fla. Stat. Any document is subject to inspection and copying unless exempted under Chapter 119, Fla. Stat., or as otherwise provided by law.

In accordance with Sec. 119.0701, Fla. Stat., the Firm, when acting on behalf of Union County, as provided under Sec. 119.011(2), Fla. Stat., shall keep and maintain public records as required by law and retain them as provided by the General Record Schedule established by the Department of State. Upon request from Union County's custodian of public records, provide Union County with a copy of the requested records or allow the records to be inspected or copied within a reasonable time unless exempted under Chapter 119, Fla. Stat., or as otherwise provided by law. Additionally, the Firm shall provide the public records at a cost that does not exceed the cost provided in Chapter 119, or as otherwise provided by law.

(b) Confidential Information:

During the term of this Agreement, the Firm may claim that some or all of the Firm's information, including but not limited to, software documentation, manuals, written methodologies and processes, pricing, discounts, or other considerations (hereafter collectively referred to as "Confidential Information"), is, or has been treated as confidential and proprietary by the Firm in accordance with Sec. 812.081, Fla. Stat., or other law, and is exempt from disclosure under Chapter 119, Fla. Stat.. The Firm shall clearly identify and mark Confidential Information as "Confidential Information" or "CI" and Union County shall use its best efforts to maintain the confidentiality of the information properly identified by the Firm as "Confidential Information" or "CI."

Union County shall promptly notify the Firm in writing of any request received by Union County for disclosure of the Firm's Confidential Information and the Firm may assert any exemption from disclosure available under applicable law or seek a protective order against disclosure from a court of competent jurisdiction. The Firm shall protect, defend, indemnify and hold Union County, its officers, employees and agents free and harmless from and against any claims or judgments arising out of a request for disclosure of Confidential Information. The Firm shall investigate, handle, respond to, and defend, using counsel chosen by Union County, at the Firm's sole cost and expense, any such claim, even if any such claim is groundless, false or fraudulent. The Firm shall pay for all costs and expenses related to such claim, including, but not limited to, payment of attorney fees, court costs and expert witness fees and expenses. Upon completion of this Agreement, the provisions of this paragraph shall continue to survive. The Firm releases Union County from claims or damages related to disclosure by either County.

(c) Project Completion:

Upon completion of, or in the event this Agreement is terminated, the Firm, when acting on behalf of Union County as provided under Sec. 119.011(2), Fla. Stat., shall transfer, at no cost, to Union County all public records in possession of the Firm or keep and maintain public records required by Union County to perform the service. If the Firm transfers all public records to Union County upon completion or termination of this Agreement, it must destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Firm keeps and maintains public records upon the completion or termination of this Agreement, all applicable requirements for retaining public records shall be met. All records stored electronically shall be provided to Union County, upon request from Union County's custodian of public records, in a format that is compatible with the information technology systems of Union County.

(d) Compliance

If the Firm does not comply with Union County's request for records, Union County shall enforce the contract provisions in accordance with this Agreement. If the Firm fails to provide the public records to Union County within a reasonable time, it may be subject to penalties under Sec. 119.10, Fla. Stat.

IF THE FIRM HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE FIRM'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

Kellie Hendricks Rhoades, CPA
Union County Clerk of Courts & Comptroller
55 W. Main Street, Room 103
Lake Butler, Florida 32054
(386) 496-3711

Section 16. Governing law and venue. This Agreement shall be construed in accordance with the laws of the State of Florida. Venue shall be in Union County.

Section 17. Entire agreement.

a. It is understood and agreed that the entire Agreement of the parties is contained herein and that this Agreement supersedes all oral agreements and negotiations between the parties relating to the subject matter hereof, as well as any previous agreements presently in effect between the parties relating to the subject matter hereof.

b. Any alterations, amendment, deletions, or waivers of the provisions of this Agreement shall be valid only when expressed in writing and duly signed by the parties.

IN WITNESS WHEREOF, the Union County and the Firm have caused this Agreement for Legal Representation between Union County and de la Parte & Gilbert, P.A. to be executed for the uses and purposes therein expressed, on the day and year first above written.

UNION COUNTY, FLORIDA

Richard Helms, Chair
Union County Board of County Commissioners

Date: _____

APPROVED AS TO FORM

Union County Attorney

WITNESS TO ATTORNEY:

ATTORNEY

Signature

Print Name

Print Name

Date: _____

ALACHUA COUNTY, FLORIDA (for the limited purposes identified in this Agreement)

Ken Cornell, Chair
Alachua County Board of County Commissioners

Date: _____

APPROVED AS TO FORM

Alachua County Attorney

Exhibit A

Investigations of Potential Effects of the Proposed HSP II Mine

Introduction

To fully evaluate the impacts of the proposed HPSII mine, field data will need to be collected and the data will be used to develop a series of hydrologic and hydraulic models. The data and models will be used to evaluate the impacts the mine will have on the water quantity and water quality and environment of the region.

Scope

To fully understand the potential impacts of the proposed phosphate mine, additional field work, modeling, and regulatory compliance must be performed. The field work is necessary to better understand the watershed response, the groundwater properties, and existing biota. The modeling will enable the evaluation of basin alterations between pre-mining and post-reclamation phases. The changes will be quantified and evaluated to regulatory constraints including the Santa Fe River MFL and TMDL. The scope is divided into the principal experts on the team; water resources modeling with Patrick Tara/INTERA, geologic characterization with Sam Upchurch, ecological and water quality assessment with Tony Janicki/Janicki Environmental, and biological assessment with Tom Crisman. The sections below describe the detailed scopes and budget for each expert.

Field Work

It is understood that access to the property will be made available for a short period of time. When access is granted a brief field investigation will be performed to collect necessary data. The collected data will help gain a better understanding of the surface water and groundwater processes. The data will be necessary to evaluate local hydrologic characterization.

Modeling Work

Hydrologic and hydraulic models will be developed of the proposed mine site. The models will be necessary to represent the impacts on the water resources of the region. The models will be essential to quantify the impacts against regulatory compliance metrics. The required modeling will assess impacts to the surface water balance and discharge, impacts to groundwater processes including baseflow, and impacts to habitat and ecosystems. The proposed innovative reclamation plan includes the use of untested sand clay mix. The impacts of the mine operations and the reclaimed landscape.

Regulatory and Biological Assessments

The assessment of impacts will include regulatory metrics such as the Minimum Flow and Level defined for the Santa Fe River and the Total Maximum Daily Load for the watershed. Other impacts to biota and ecology of the area will be evaluated.

Budget

Alachua County HPSII Phosphate Mine Impact Analysis Budget			
Project & Task Description	Estimated Budget	Task Totals	Project and Grand Totals
Project Expert: Patrick Tara/INTERA			
<u>Task 1. Field Data Collection</u>			
<i>Survey Cross-sections</i>	\$ 56,000		
<i>River Stages</i>	\$ 16,000		
<i>River Flows</i>	\$ 16,000		
Task 1 Total		\$ 88,000	
<u>Task 2. Hydrologic and Hydraulic Modeling</u>			
<i>Surface Water Model</i>	\$ 89,000		
<i>Groundwater Model</i>	\$ 93,500		
<i>Hydraulic</i>	\$ 58,000		
Task 2 Total		\$ 240,500	
Project Total			\$ 328,500
Project Expert: Tony Janicki			
<u>Task 1. Instream Habitat</u>			
<i>Habitat Suitability, Fish Passage</i>	\$ 87,000		
<u>Task 2. Water Quality</u>	\$ 22,000		
Project Total			\$ 109,000
Project Expert: Sam Upchurch			
<u>Task 1. Sinkholes</u>			
<i>Standard Penetration Test (STP) Borings</i>	\$ 15,000		
<i>GPR and ERT Transects</i>	\$ 15,000		
<i>Sinkhole Risk Analysis</i>	\$ 3,000		
Task 1 Total		\$ 33,000	
<u>Task 2. Hydraulic/Hydrogeologic Isolation of Sediments to be Mined</u>			
<i>Monitoring Well Installation</i>	\$ 60,000		
<i>Aquifer Performance Testing (APT)</i>	\$150,000		
Task 2 Total		\$ 210,000	
<u>Task 3. Assessment of Cody Escarpment and Risk of Mining on Santa Fe River and Springs</u>			
<i>Cody Escarpment Evaluation</i>	\$ 5,000		
<i>*Evaluation of Mining and Reclamation on MFLs</i>	\$ 6,000		
Task 3 Total		\$ 11,000	
<u>Task 4. Groundwater Flow Modeling</u>	\$ 4,800		
Project Total			\$ 258,800
Project Expert: Thomas L. Crisman			
<u>Task 1. Wildlife Survey of Floodplain Riparian Zone</u>	\$ 26,500		
<u>Task 2. Endangered and Threatened Aquatic Cave Fauna</u>	\$ 19,000		
<u>Task 3. Survey of Endangered and Threatened Stream Fauna</u>	\$ 15,000		
Project Total			\$ 60,500
Grand Total			\$ 756,800

--Scope of Work and Estimated Cost--

Hydrologic, Groundwater, and Hydraulic Investigations of Potential Effects of the Proposed HSP II Mine

Patrick Tara/INTERA

April 29, 2021

Task 1. Field Data Collection

It is understood that access to the property will be made available for a short period of time. When access is granted a brief field investigation will be performed to collect necessary data. The collected data will help gain a better understanding of the surface water and groundwater processes. The data will be necessary to evaluate local hydrologic characterization.

Survey Cross-sections

Cross sections will be identified and surveyed along the New River. These cross sections will be used to develop a HEC-RAS model of the river. The cross sections will be spaced to adequately represent the significant hydraulic features in the river. The cross-sections will need vertical control to known benchmarks. The cross-section data will also be used to identify the habitat suitability described below.

Estimated Budget

\$56,000

River Stages

To assess habitat suitability, river stages will be measured at the surveyed cross-sections. The stage data will be used to calibrate and validate the HEC-RAS model. Pressure transducers will be installed to continuously record the river stage at two or three locations. The loggers will be corrected for barometric fluctuations by using on-site barometric data collected with an additional data logger.

Estimated Budget

\$16,000

River Flows

To understand the surface water hydrologic response of a basin, long term data is preferred. There is a long term USGS flow station just upstream of the mine site. A few synoptic flow measurements would enable the development of statistical flow relationships between upstream and downstream of the proposed mine site. A station will be identified on the New River downstream of the mine site to measure streamflow. At least 3 measurements will be recorded at a variety of flow conditions. The data will be used to identify the additional flow from the USGS gauge located just upstream of the proposed mine site. The flow data will be used to calibrate and validate the surface water model. The flow data will also be used to calibrate and validate the HEC-RAS model.

Estimated Budget

\$16,000

Task 2. Hydrologic and Hydraulic Modeling

Surface Water Model

A surface water model will be developed to assess the impacts to the hydrologic water balance of the basin. The surface water model will be used to predict the changes in river flow and groundwater recharge associated with the proposed phosphate mine operations. The natural pre-mining condition will be used to define the baseline hydrologic water balance from the proposed mine site. The proposed post-reclamation plans will be used to construct a model that will represent the post-mining condition. A notable change in land cover as part of the mining and reclamation processes will be the addition of large lakes. The land and lakes restored landscape is typical to reclaimed phosphate mines since a large volume of material was removed from the site. The new lakes will increase the surface water storage and reduce surface water runoff in dry seasons. The mine pits for the proposed mine operation will be filled with a sand clay mix. This technology is unproven on a large scale, so a great deal of uncertainty surrounds the hydrologic response of the sand clay mix. The infiltration capacity of the sand clay mix will be highly variable since it is very possible the matrix will naturally segregate while the open pit is exposed to wind and rain. The change in the hydrologic response will be simulated as the difference between the two models.

Estimated Budget

\$89,000

Groundwater Model

A groundwater model will be developed to simulate the impacts the proposed mine has on water levels and baseflow. The model construction and calibration will utilize the geophysical characterization field work. The groundwater model will also capitalize on the existing North Florida South East Georgia (NFSEG) regional groundwater model as both a starting point as well as defining the lateral boundary conditions. The sub-regional models developed will represent the major features such as the New River and will represent both the pre-mining and post-reclamation landforms. Just as in the surface water modeling, the groundwater model will address the uncertainty in the post-reclamation surficial aquifer properties. The mine pits will be filled with a sand clay mix and the modified soil properties will be uncertain. The groundwater model will be linked to the surface water model. The linking will pass recharge and baseflow between the surface water model and the groundwater model. The linking will preserve mass in the basin and improve the overall hydrologic simulation. The simulated changes in total flow in the New River will be used to simulate the New River hydraulics and ultimately used to assess the MFL and ecologic function of the river.

Estimated Budget

\$93,500

Hydraulic

A HEC-RAS model of the New River will be developed to support the habitat suitability assessment. The HEC-RAS model domain will stretch from the USGS gauge 02321000 NEW RIVER NR LAKE BUTLER FLA to the confluence with the Santa Fe River. The District established a MFL for the Santa Fe and utilized a HEC-RAS model to simulate the stage discharge and flow relationships. The District's model will be used to define the downstream boundary condition of the proposed New River HEC-RAS model. The hydraulic model will utilize surface water inflows defined by the surface water model. The HEC-RAS model will

simulate the stage, discharge, and velocities in the river for both the pre-mining and post-reclamation scenarios. The HEC-RAS results will be used to assess the habitat suitability of the river ecosystem using habitat suitability and fish passage, the same metrics as the District used to define the MFL.

Estimated Budget

\$58,000

--Scope of Work and Estimated Cost--

Instream Ecologic Investigations of Potential Effects of the Proposed HSP II Mine

Tony Janicki

April 29, 2021

The proposed HSP II Mine has the potential of significantly degrading the ecologic conditions in the New River, upper Santa Fe River, and lower Santa Fe River. These potential impacts are of particular concern given that the Suwannee River WMD has established MFLs for both the upper and lower Santa Fe rivers. Potential water quality effects, specifically nutrient loading, are also of importance as the Florida DEP has established TMDLs for the Lower Santa Fe River.

This scope identifies several tasks that will address the likely effects of the HSP II Mine on the ecologic concerns associated with the current regulatory scene.

Task 1. Instream Habitat

There are several water resource values (WRV) that the Florida WMDs use to establish MFLs in river ecosystems. This task entails the investigation of the mine effects on the New River and upper and lower Santa Fe rivers.

- **Habitat Suitability**

The WMDs currently apply a model that relates river flow on the availability of physical habitat for a number of fishes and benthic invertebrates. The environmental flow analysis (SEFA) software uses output from HEC-RAS models and a series of habitat suitability index (HSI) curves that relate habitat suitability to water depth, velocities, and substrate. This task depends upon the availability of HEC-RAS model output for each of the three river segments of concern. The model outputs will represent both current and post-mining conditions.

- **Fish Passage**

The WMDs also use the WRV associated with fish passage. The integrity of fish communities depends upon the ability of the fishes to traverse the rivers unimpededly. Again, using the HEC-RAS model output, the effect of river flow changes can be investigated to quantify the river flows that do not impede fish passage.

Estimated Budget (assuming HEC-RAS model results can be provided by others)

\$87,000

Task 2. Water Quality

This task will entail the estimation of the potential change in watershed nutrient loading on the New River and lower Santa Fe River. Loading estimates will be based on recent literature that reports on nutrient loading in Florida.

Estimated Budget

\$22,000

--Scope of Work and Estimated Cost--
Hydrogeological Investigations at the Proposed HSP II Mine

Sam Upchurch

April 29, 2021

Statement of Needs

The documentation provided either does not address or misrepresents several issues of concern. This scope of work and estimated costs addresses the most significant of these issues. The issues, scope of work, and estimated costs are listed below grouped according to issues.

Sinkholes

The permit application documents state that there are no sinkholes on the proposed mine site. However, there are closed depressions shown on site topographic maps and LiDAR images within the proposed mine, and Brooks Sink, a large collapse sinkhole, is near the property to the east. Several of these depressions should be investigated by subsurface borings and geophysical (ground penetrating radar or GPR) and/or electrical resistivity imaging tomography (ERT).

It is proposed that four depressions be investigated, with at least one in each county. The investigation will include a standard penetration test (SPT) borehole, two GPR transects, and two ERT transects at each depression.

Standard Penetration Test Borings - The four SPT borings will each be approximately 100 feet deep. Standard protocols for advancing and recording drilling conditions and a lithologic log will be utilized. The borings will penetrate the phosphatic ore that the applicant proposes to mine. The lithology of this unit will be described, but no attempt will be made to evaluate the economic importance of the unit. A geologist will be on site to monitor drilling and record blow counts, field sample characterizations, and drilling conditions. The borings will be plugged according to water management district rules. A maximum of one day will be required for each boring. Lithologic/boring condition logs and visual or laboratory sample characterization are included in the cost estimate. Dr. Upchurch will prepare the reports and oversee the drilling and sample characterization. Cost estimate includes travel and per diem for the drilling crew and field geologist.

Estimated cost for the four SPT borings plus analysis and report	\$15,000
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GPR and ERT Transects - The GPR and ERT transects will require three days to complete at all four sites. Costs include travel and field work, data synthesis, and report preparation. The GPR and ERT transects will be obtained using industry accepted protocols. A field geologist will be present to supervise and record field conditions. Preparation of the transects will be done in the office using industry standard software. A report will be prepared for Dr. Upchurch's review and approval.

Estimated cost for the eight GPR and eight ERT transects and analysis	\$15,000
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Sinkhole Risk Analysis – Dr. Upchurch will incorporate the findings of the SPT borings and geophysical data into a report concerning sinkhole risk and consequences.

Estimated cost for a sinkhole risk report	\$3,000
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<u>TOTAL COST</u>	<u>\$33,000</u>
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Hydraulic/Hydrogeologic Isolation of the Sediments to Be Mined

The permit application states that all mining will be in the surficial aquifer (SA) and that the aquifers below the surficial will not be affected by mining because of the confining unit that separates the surficial and upper Floridan aquifers. This “confining unit” is correctly termed the Intermediate Aquifer and Confining Unit or Intermediate Aquifer System (IAS) because it includes known aquifers and varies in its ability to confine the upper Floridan aquifer (UFA). These IAS aquifers are known to exist in Union and Bradford counties, so there may be communication of the SA with the underlying UFA. If there is connection, there is risk to currently permitted water supplies and domestic wells, water quality and quantity within the mine, and spring discharge downstream on the Santa Fe River from Worthington Springs.

No evidence is presented in the application to support the applicants’ claim that the IAS and UFA will not be affected by mining. In fact, there is no evidence presented concerning the ability of the IAS to confine the UFA. Subsurface boring data are needed to establish the ability of the IAS to ensure the applicant’s conjecture that there will be hydrologic isolation of the SAS and depth of the UFA. This will include lithologic data as well as aquifer hydraulic data as obtained by aquifer performance testing (APT). The on-site APT data will greatly enhance any modeling efforts to evaluate area hydrology and will be utilized in model development as part of INTERA’s model development.

Monitoring Well Installation - It is proposed that two nested well systems be installed, one in each county and within the proposed footprint of the mine. Each well site will include a shallow, SA monitoring well, IAS well, and UFA well. All wells will be installed according to best practices and DEP/SRWMD rules. It is estimated that the UFA well will be between 100 and 150 feet in depth. Wells will be properly designed, sealed and screened, have secure pads and lifts, and will be ready for APTs. Each well will be logged by a senior geologist who is an expert on the local geology, especially the Hawthorn Group, which includes the ore body and confining strata. An experienced geologist will be present and supervise drilling conditions and methods, sample acquisition and curation, and participate in preparation of the well completion report.

The borings will penetrate the phosphatic ore that the applicant proposes to mine. The lithology of this unit will be described, but no attempt will be made to evaluate the economic importance of the unit. Upon completion, the wells will be turned over to the appropriate parties for long-term use and monitoring wells.

The estimated costs per well group (SA, IAS, and UFA wells) include well design and permitting, drilling costs, drill crew’s and site geologist’s time and per diem, and completion reports. The estimated cost for each set of monitoring wells is \$30,000. The estimates are contingent on location and access conditions, geological conditions encountered during drilling, and any special conditions related to site access, permits, and oversight parties or requirements.

Estimated total cost for installation of two monitoring well clusters	\$60,000
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Aquifer Performance Testing – Once the two clusters of three monitoring wells are installed and prepared for APT procedures, we propose to conduct testing to determine hydraulic conditions in the SA, IAS, and UFA. Actual methods for the testing cannot be predicted at this time because we know so little about the three hydrostratigraphic units. At best, pumping tests will be designed to

evaluate the storage capacities and hydraulic conductivities of each aquifer system. The three-well cluster will have been designed to allow for evaluation of vertical leakance between the three aquifer systems. Dr. Upchurch will work with the senior hydrogeologist during the design and implementation phases of the project.

Costs of the APTs include design and performance based on conditions encountered during the monitoring well installation. Costs include field staff, travel and per diem costs, permits, and supervisory staff costs. A senior hydrogeologist will supervise, and appropriate permits will be obtained. The results of the APTs will be modeled to determine the aquifer hydraulic properties, and a report will be prepared by the supervising hydrogeologist and Dr. Upchurch. The estimated cost for each of the APTs is \$75,000.

Estimated total cost for APTs at the two monitoring well clusters	\$150,000
<u>TOTAL COST</u>	<u>\$210,000</u>

Assessment of the Extent of the Cody Escarpment and Risk of Mining on Santa Fe River and Springs

There are three “big picture”, regional issues that need to be addressed based on the more site-specific activities proposed by the team of experts. These are (1) how will the proposed mine affect recharge to the underlying aquifer systems and availability of water to nearby water users, (2) effects of mining and reclamation on flows in New River and the Santa Fe River, and (3) potential effects on springs on the upper and lower Santa Fe River.

Evaluation of the Extent of the Cody Escarpment - The Cody Escarpment (Scarp) is a fluvio-karst escarpment that extends north and west onto the proposed mine site. It is an area of sinkhole development and enhanced recharge to the UFA because of penetrations of the IAS by karst activity and other passages of groundwater. The proposed groundwater modeling, sinkhole investigations, and hydrogeologic characterization of the SA, IAS, and UFA will enhance our ability to better evaluate the regional risks to the underlying aquifers by mining and reclamation.

Dr. Upchurch will complete this task and prepare a report using GIS coverages and the newly acquired data.

Estimated total cost for the Cody Scarp evaluation	\$5,000
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Evaluation of Mining and Reclamation on MFLs - Both the upper Santa Fe River, which extends from the headwaters of the river to Worthington Springs, and the lower Santa Fe, which extends from Worthington Springs to the Suwannee River have highly constrained Minimum Flows and Levels (MFLs). The MFL for the upper Santa Fe River does not indicate any available water at low flows at the Worthington Springs gage on the river. This gage is downstream from the mouth of the New River and is likely to govern water management at the mine. The MFL for the lower Santa Fe River is even more restrictive in that it sets a minimum median flow and does not allow for any change in the flow duration curve shape based on the median flow. The issue with the lower Santa Fe is “what is the contribution of the water discharging from the mine to total flows and is it enough to cause violation of the MFL?” **It is anticipated that all the team will be involved in this issue, not just Dr. Upchurch. The estimated cost is for Dr. Upchurch’s time only.**

Estimated total cost for Upchurch's involvement with MFL evaluation	\$6,000
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Potential Effects of Springs - Finally, there are no accurate measurements of the potentiometric surface of the UFA in the vicinity of the proposed mine, but regional maps show UFA groundwater flowing to springs in the upper reaches of the lower Santa Fe River. The mine's permit application does not address this issue, which will affect MFLs and, perhaps water quality, if real. With the new data from the two proposed monitoring well clusters, the potentiometric surface and potential flows to the springs should be reevaluated through updating of the UFA potentiometric surface and examination of the groundwater flow net in the area from the proposed mine and springs.

Estimated total cost for evaluation of potential impacts to area springs	\$6,000
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<u>TOTAL COST</u>	<u>\$17,000</u>
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Groundwater Flow Modeling

INTERA will be developing a model to allow for evaluation of the fate of groundwater within and outside of the proposed mine. As a person familiar with the hydrogeology of the area, the Cody Scarp and its hydrology, and model development in the area, INTERA has asked that I budget some time to assist in model conceptualization and development. It is estimated that assisting INTERA may require up to two days of cumulative time. No other costs are anticipated.

Estimated total cost for assistance in model development	\$4,800
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<u>TOTAL COST</u>	<u>\$4,800</u>
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Scope of Work and Estimated Cost

Biological Investigations to Evaluate Potential Impact of the Proposed HSP II Mine

Thomas L. Crisman

30 April 2021

Task 1. Wildlife Survey of Floodplain and New River Riparian Zone

The floodplain of the New River is potentially of great importance for wildlife passage along the river. This task will assess the wildlife utilizing this area for habitat as well as passing along the river. This task will have two components. The first will be a review of Florida and federal records of wildlife in the area and discussion with agency biologist familiar with the area and fauna. Of particular note is the distribution of black bear. The second component will consist of installation of movement activated cameras to throughout the floodplain along the river to record major species and timing of movements. Camera surveys will be run for several months. A survey will also be conducted to note paths of animal movements and then install cameras as well.

Estimated Cost: \$26,500

Task 2. Endangered and Threatened Aquatic Cave Fauna

There are several endangered and threatened species of aquatic invertebrates and fish living in the groundwater systems in the vicinity of the proposed mine. Some invertebrates, including some crayfish species, are endemic to one or a few cave systems of the area. It is critical to record the distribution of cave fauna in the proposed mined area and immediately down gradient in the groundwater. This study will consist to two parts. The first will be a detailed analysis of historical reports of species from the area based on reports, government documents and museum collections. The second part will be a diver-based survey of sinkholes on and near the property with connection to the groundwater. Special interest regards potential discharge of water and sediment into sinkholes leading to the groundwater and the potential impact on cave fauna.

Estimated Cost: \$19,000

Task 3. Survey of Endangered and Threatened Stream Fauna

There are several threatened and endangered aquatic invertebrate species in the stream and river systems of the area. Of particular note are the mussels, Suwannee Moccasinshell and Oval Pigtoe. The former is endemic to the New River and connecting systems and was last seen in the New River in 1996,

while the latter is present with the New River considered as critical habitat. It is important to determine the status of these and other aquatic species of concern, evaluate potential impact from mining, and assess whether critical habitat can be preserved and potentially expanded both in area and quality. This task will have two components. The first is a detailed examination of historical distribution of aquatic species, especially mussels, in the New River and connecting streams/rivers through State of Florida, federal records, museum collections, and discussions with agency staff. The second component will be a snorkel-based survey of the New River in the proposed mining area and downstream to document the mussel community and quality of habitat for potential mussel reintroduction.

Estimated Cost: \$15,000