

US EPA ARCHIVE DOCUMENT

**INFORMATION REGARDING THE SECTION 106 PROCESS  
UNDER THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE FLORENCE COPPER PROJECT**

The United States Environmental Protection Agency (EPA) is providing public notice and information in accordance with Section 106 of the *National Historic Preservation Act (NHPA) of 1966, as amended*, and its implementing regulations (36 CFR §800.2(d) and §800.6(a)(4)) which afford the public the opportunity to express their views on mitigating the adverse effects of the proposed project. EPA is proposing to issue a federal Class III Underground Injection Control (UIC) Permit to Florence Copper, Inc. (FCI) (formally Curis Resources [Arizona], Inc.) to construct and operate an *in situ* copper recovery (ISCR) facility known as the proposed Florence Copper Production Test Facility (PTF) located in Florence, Arizona. Under Section 106 of NHPA, issuance of a federal permit is considered a federal undertaking, and therefore, EPA is required to follow the Section 106 process pursuant to 36 CFR Part 800, *Protection of Historic Properties*.

To provide the public with the background documentation required under 36 CFR §800.6(a)(4) and §800.11(e), EPA is providing detailed information about the project and its effects on historic properties, a copy of the draft memorandum of agreement (MOA), which seeks to mitigate potential adverse effects of the project and a summary of comments from the consulting parties. EPA will consider the input from the public provided during the public comment period starting on December 7, 2014 and ending on January 30, 2015 prior to finalizing the MOA and final decision-making in resolving potential adverse effects of the proposed project on historic properties at the site.

**DESCRIPTION OF THE UNDERTAKING - PROJECT DESCRIPTION**

FCI is required to obtain an EPA issued Class III UIC permit to construct and operate 24 test wells over approximately two years, followed by a proposed five year post-closure monitoring period. The proposed PTF is a pilot-scale *in situ* copper recovery project to evaluate the feasibility of development of a full scale *in situ* mining operation. The process involves underground injection of an aqueous solution of dilute sulfuric acid into an ore body for the purpose of dissolving copper and pumping the copper-bearing solution to the surface for the recovery of the copper. The federal undertaking, as defined in 36 CFR § 800.16, is the proposed PTF consisting of the 24 test wells, point of compliance and supplemental monitoring wells, a process solution impoundment pond and temporary processing facilities, an above-ground pipeline, a 69 kV power line, and a 22-foot wide access road, as well as plugging and abandonment, closure and post-closure activities. As noted above, federal undertakings, including the issuance of a permit, are subject to consultation under Section 106 of the NHPA.

**AREA OF POTENTIAL EFFECT (APE)**

FCI holds a mineral lease from the Arizona State Land Department (ASLD) for 160 acres of State Trust land within the FC property boundary located in Florence, Arizona. The State Trust land is located in the North ½ South ½ of Section 28, Township 4 South, Range 9 East. The entire property boundary includes Sections 26, 27, 28, 33, 34, and 35 of Township 4 South,

Range 9 East. Although the test well field and supporting facilities will occur on the Arizona State Trust Land, infrastructure improvements, transportation, monitoring, and closure activities for the project may have potential effects on the larger FCI Property. In consultation with the Arizona State Historic Preservation Office (SHPO), the EPA determined the Area of Potential Effect (APE), pursuant to 36 CFR Part 800.16(d), is the entire property boundary, including the 160 acres on State Trust land administered by the ASLD and 1,182 acres surrounding it and owned by FCI.

### **IDENTIFICATION OF HISTORIC PROPERTIES**

Present within the APE are known archaeological sites that are eligible for listing in the National Register of Historic Places (NRHP). These sites and other cultural resources were the focus of a prior Programmatic Agreement between the Gila River Indian Community, Hopi Tribe, Arizona SHPO, Magma Copper Company (subsidiary of former permittee, BHP Copper) and the Advisory Council on Historic Preservation (ACHP) when EPA issued a UIC permit in 1997 to BHP Copper to conduct *in situ* copper mining at the Property. FCI compiled this archaeological survey information and provided resurvey reports conducted since 2004 to identify historic properties within the APE. FCI documented fifty-one (51) total historic properties within the APE.

EPA requested assistance in our initial correspondence in 2012 to federally-recognized tribes in Arizona to identify any additional historic properties that have traditional religious and cultural importance located within the APE. The Gila River Indian Community, the Hopi Tribe, Tohono O'odham Nation, and Yavapai-Prescott Indian Tribe participated in the Section 106 consultation process. In subsequent correspondence to these consulting tribes, EPA requested information regarding additional historic properties within the APE. In addition to tribal consulting parties, EPA identified, in coordination with the SHPO, ASLD, National Park Service, Arizona State Museum, Archaeology Southwest, and the Town of Florence as consulting parties in accordance with 36 CFR § 800.2. Through consultation, EPA solicited additional information from all consulting parties to assist in identifying properties, pursuant to 36 CFR § 800.4.

With two exceptions, all historic properties are prehistoric Hohokam (or mixed prehistoric and historic component) archaeological sites determined eligible for inclusion in the National Register of Historic Places (NRHP) solely under Criterion D (for information potential) of 36 § CFR 60.4. The historic North Side Canal has eligibility for inclusion in the NRHP under Criteria A and D of 36 § CFR 60.4. Through consultation, the Gila River Indian Community provided information regarding the Escalante Ruin having additional significance to the Community as a Traditional Cultural Property (TCP) under Criterion A. This historic property has already been identified as eligible for inclusion in the NRHP under Criterion D. The site also qualifies under Criterion A due to its association with cultural practices or beliefs of the Gila River Indian Community. EPA confirmed this determination with concurrence from the SHPO under Criterion A by consensus determination of eligibility dated December 13, 2013.

## **POTENTIAL ADVERSE EFFECTS ON HISTORIC PROPERTIES AND PROPOSED RESOLUTION OF ADVERSE EFFECTS**

In the Section 106 process, EPA determined based on the criteria in 36 CFR § 800.5(a) that the undertaking had the potential to cause adverse effects on historic properties because the proposed project may directly or indirectly alter the characteristics of some of the historic properties found within the APE. EPA notified the ACHP of the finding of potential adverse effects, and ACHP elected to participate in the Section 106 Consultation Process. With EPA's direction and consultation with all consulting parties, a "Historic Properties Treatment Plan for the Proposed Florence Copper Inc. Florence *In Situ* Copper Recovery Project Production Test Facility, Florence, Pinal County, Arizona" WCRM, 2014 (draft Treatment Plan) has been drafted to avoid, minimize, and resolve adverse effects to historic properties and revised to reflect review and comments by all consulting parties. EPA will consider the input during this public involvement process in finalizing the Treatment Plan, prior to a final permit decision.

Ground-disturbing activities in the APE ranging from core hole closures, infrastructure improvements, to PTF facilities construction will have expected direct impacts on historic properties within the FCI project area. Ground-disturbing activities include: PTF well field construction; stockpiling, staging, and laydown; pipeline corridor construction; power line and access road construction; core hole abandonment; process solution impoundment pond construction; pregnant leachate solution (PLS) and raffinate tank farm construction; and solvent extraction and electrowinning plant (SX/EW) construction. Maintenance, sampling, and logistic activities such as transportation represent additional project components, but these do not involve ground disturbance beyond the project components noted above.

Descriptions of possible effects on historic properties from each project component and proposed measures to avoid, minimize or mitigate potential adverse effects described in the draft Treatment Plan are summarized below. Overall, reasonably foreseeable scenarios that could result in effects to nearby historic properties in the APE during the life of the project are considered as potential indirect or cumulative effects. Typically, such scenarios might include vandalism and looting due to increased traffic and visibility, changes in erosion and/or deposition due to surface compaction in heavily trafficked areas, and vibration due to equipment usage near historic properties. FCI proposes to implement provisions in the draft Treatment Plan to ensure avoidance and proactively monitor the conditions of nearby historic properties during the life of the project.

### **PTF Well Field Construction**

The proposed PTF well field is not in a historic property site area and is actually far removed from any historic properties. As such, PTF well field construction will not have direct effects on any known historic properties. Because the well field will increase vehicle traffic and visibility within the property, monitoring and avoidance measures will be proposed to ensure complete avoidance of the nearby historic property, plus other sites in the immediate vicinity. Potential indirect and cumulative effects resulting from the PTF project are expected to be minimal.

### **Core Hole Abandonment**

According to proposed permit requirements, existing core holes within the Area of Review of 500 ft from the PTF well field are required to be abandoned. Out of these, two core holes are inside the boundaries of two of the historic properties. Although a core hole will need to be closed near the edge of the Escalante Ruin, the remainder of the site will be completely avoided. Because no surface resources are present at the core hole locations and they will be closed by drilling directly into the existing holes, the potential for direct effects are minimal. Potential indirect and cumulative effects to these (and other nearby) sites are not considered likely since surface resources are sparse in the immediate vicinity.

### **Process Solution Impoundment Pond**

Upon completion, the pond will cover approximately 6.5 acres. The pond area would be located on top of two historic properties. FCI will fence and avoid a Hohokam compound exposed on the ground surface within the boundaries of one of the historic properties. Two types of work activities will be necessary to install the pond: ground surface preparation and excavation/construction.

Pond construction will result in extensive direct impacts to one of the historic properties because of these work activities. Additional direct impacts are expected to two other historic properties. Mitigation, including archaeological data recovery, and monitoring measures to address the effects to these historic properties are proposed in the draft Treatment Plan. Formal avoidance of the compound and outlying portions of the historic properties is recommended by use of fencing and concrete barriers; these will preserve approximately 27 percent of the historic property from direct impact. To further ensure a portion of the properties is avoided, it is recommended that all ground disturbance within a 30 m radius be monitored by a qualified, Arizona State Museum (ASM)-permitted archaeologist.

### **PLS and Raffinate Tank Farm Area**

PLS and raffinate tank farm construction will result in extensive direct impacts to a historic property because of ground surface preparation and excavation for concrete foundations. Outside the ground-disturbance activity, the exposed Hohokam compound and other parts of the historic property site will be avoided. Archaeological data recovery is proposed in the draft Treatment Plan to mitigate adverse effects within this historic property site prior to any ground-disturbing activities. Because a portion of the historic property, such as the compound, will be avoided, in addition to surrounding it with fencing, it is further recommended that all ground disturbance within a 30 m radius be monitored by a qualified, ASM-permitted archaeologist.

### **Solvent Extraction/Electrowinning Plant (SX/EW) Area**

SX/EW plant construction will result in extensive direct impacts to a historic property because of ground surface preparation and excavations for concrete foundations. Mitigation (i.e., archaeological data recovery) and monitoring measures are proposed in the draft Treatment Plan within this site prior to any ground-disturbing activities. Because the Hohokam compound will

be avoided within its historic property, in addition to fencing, it is further recommended that all ground disturbance within a 30 m radius be monitored by a qualified, ASM-permitted archaeologist.

### **Pipeline Corridor**

Pipeline corridor construction and maintenance are not expected to result in direct or indirect effects to known historic properties, with the exception of where the corridor will be installed passing through one of the historic properties to connect to the pond and plant. Mitigation measures using data recovery is proposed in the draft Treatment Plan at this historic property site prior to any ground-disturbing activities. Although the corridor appears to pass very close to one of the historic properties, the pipeline will be located several feet down slope of the actual site. No direct effects are expected, but avoidance measures are recommended to keep all construction equipment away from the site. Potential indirect and cumulative effects in the vicinity are otherwise considered low. Because the Hohokam compound within a historic property is nearby the pipeline corridor and is planned for complete avoidance, in addition to fencing, it is further recommended that all ground disturbance associated with pipeline installation be monitored by a qualified, ASM-permitted archaeologist. In addition, FCI plans to monitor the pipeline corridor daily to ensure that there are no leaks in the line or liner. This monitoring will involve physically walking the line.

### **Power Line and Access Road**

Power line and access road construction and maintenance will result in direct effects to three historic properties. Permanent impacts will be limited, however, to installation of eight poles in the historic property sites. Access road preparation is specifically being proposed to avoid and/or minimize impacts to the historic property sites; the road will be constructed to be temporary since it will be composed of a thin layer of gravel on top of a protective geotextile. Nevertheless, heavy vehicle traffic on the road could result in some cumulative impacts over time, and regular traffic along that road could increase the awareness of the historic property sites and the potential for indirect and cumulative effects in the vicinity.

### **Stockpiling, Staging, Laydown, and Borrow Areas**

Five locations are proposed for staging and stockpiling. Work activities for preparing stockpiling, staging, and laydown areas will include brush removal by hand and/or mechanical ground surface depending on location. With the exception of Staging Area 5, stockpiling, staging, and laydown are not expected to result in direct or indirect effects to known historic properties. Staging Area 5 will directly impact resources associated with two of the historic properties. Mitigation measures using archaeological data recovery are recommended in the draft Treatment Plan prior to any ground-disturbing activities. In addition, because activity will take place near the compound within a historic property, all work within a 30 m radius should be monitored by a qualified, ASM-permitted archaeologist.

Staging/laydown area 1 (for pond construction) is located north of the historic property, called the North Side Canal. Avoidance measures, including traffic control barriers, are recommended

to keep all construction equipment away from the canal. Finally, the existing access road through Staging/Laydown Area 1 will be used to access a borrow area south of the canal. This road crosses the North Side Canal and passes close to the edge of another historic property. Concrete traffic barriers will be installed to ensure that all traffic is routed within the footprint of the existing bridge across the canal and outside historic properties. Potential indirect and cumulative effects for staging, laydown, and borrow areas are considered minimal.

### **Additional Activities**

Daily operations, sampling and maintenance activities are not expected to result in any direct effects to known historic properties. The indirect and cumulative effects associated with these operations and activities is expected to be minimal.

### **Project Closure**

Project closure will include a variety of tasks such as groundwater restoration, well removal, and facilities removal. Closure is not expected to result in any additional direct effects to known historic properties beyond those associated with the original construction of the various PTF facilities. Although removal of infrastructure will occur within known historic properties, with the exception of the Hohokam compound of one of the historic properties, it is expected that all such areas will be subject to data recovery to mitigate adverse effects prior to construction. Outside the vicinity of that compound, the indirect and cumulative effects are expected to be minimal because closure activities would be explicitly limited to already disturbed footprints. Because the compound will be completely avoided, in addition to fencing, it is further recommended that all ground disturbance within a 30 m radius be monitored by a qualified, ASM-permitted archaeologist.

### **Project Transportation**

No direct effects are expected to result from project transportation, beyond those already described above for the project. Although indirect and cumulative effects are not expected, increased vehicle traffic does at least create the potential for effects such as looting, vandalism, erosion, and vibration during the life of the project. It is recommended that monitoring measures with increased security be implemented to mitigate these potential effects.

## **SUMMARY OF PROPOSED RESOLUTION OF IMPACTS ON HISTORIC PROPERTIES**

The proposed actions may result in direct effects to seven (7) historic properties. Although a core hole will need to be closed near the edge of the Escalante Ruin, the remainder of the historic property site, including a fenced compound containing the remains of a Hohokam platform mound, will be completely avoided. Extensive impacts are expected at three other historic properties; lesser impacts are expected at the remaining historic properties. Archaeological data recovery to mitigate adverse effects, as well as formal avoidance and minimization measures, are described above and in greater detail in the draft Treatment Plan.

There is at least a reasonably foreseeable possibility for indirect and/or cumulative effects at 14 historic properties, because of their proximity to project components, although such effects would be expected to be minimal. The remaining 28 historic properties are removed from all proposed project activities, and no direct, indirect, or cumulative effects are likely. However, increased activity in any property raises the potential for looting, vandalism, and accidental impacts, and formal avoidance and monitoring procedures have been proposed to address this concern. Provisions in the draft Treatment Plan are proposed to ensure avoidance, such as site boundaries being clearly marked, and proactively monitoring the conditions of nearby historic properties during the life of the project. The draft MOA also refers to monitoring and discovery provisions to report any newly discovered properties or any inadvertent effects on historic properties and to follow post-review discovery requirements.

EPA has consulted with all consulting parties to identify historic properties, assess potential effects of the proposed project on historic properties, and propose resolution of potential adverse effects from this undertaking through the development of the draft MOA. To provide the public with the background documentation required by 36 CFR § 800.11(e), EPA is making available a copy of the draft MOA and providing a summary below of significant comments from consulting parties. EPA is seeking comment from the public to identify any additional measures to avoid, minimize, or mitigate potential adverse effects to historic properties to resolve such effects.

### **SUMMARIES OF VIEWS PROVIDED BY CONSULTING PARTIES**

As a part of the NHPA 106 consultation process, EPA has solicited the views of consulting parties on the identification of historic properties, assessment of the potential impacts from the proposed project and resolution of potential adverse effects. A number of statements in the draft MOA acknowledge the views expressed by one or more tribes in our consultation. The GRIC and the Hopi Tribe view all historic sites associated with the Escalante Ruin Community to have traditional cultural significance, an interconnectedness, and to be sacred. EPA also acknowledges that the Tohono O’odham Nation identifies groundwater in the area as sacred to their Tribe, even though potential impacts to groundwater fall outside the scope of Section 106 of the NHPA. Tribal Consulting Parties also expressed opposition to mitigation of adverse effects to historic properties through data recovery, which they consider to be destruction of nationally significant historic properties.

In the draft MOA, tribal consulting parties are listed as concurring parties. The Tohono O’odham Tribal Historic Preservation Office (THPO) suggested the tribes act as invited signatories to the MOA. Because the tribes do not have official responsibility for actions in the draft MOA, EPA has listed the tribes as concurring parties to the draft MOA.

In one comment letter, the GRIC- THPO commented that all adversely affected sites should have data recovery excavations. EPA discussed this issue further during additional consultation with the GRIC-THPO, and the THPO’s input emphasized the primary importance of avoiding historic properties to address potential adverse effects and the use of data recovery only in instances when avoidance of historic properties was not possible. Tohono O’odham Nation THPO also emphasized avoidance as the preferred approach in addressing potential effects to identified resources. FCI provided detail in the draft Treatment Plan to describe their current and ongoing

efforts to avoid potential adverse effects to the historic property sites affected by the proposed facility's activities.

The enclosed draft MOA addresses the activities proposed for the PTF to resolve anticipated adverse effects under the NHPA. One of the Hopi Tribe's comments was that EPA's use of the historic properties' Treatment Plan for the pilot study resulted in "segmenting" of adverse effects from the pilot project under consideration from any larger development of commercial copper recovery on the FCI property in the future. However, if there is a proposal for an in-situ copper recovery project on the Florence Copper property beyond the proposed PTF operation, such proposal would require submittal of an additional UIC permit application, and if there were additional impacts on historic properties, EPA would be required to reinitiate consultation under NHPA Section 106 to identify and resolve potential adverse effects on cultural and historic resources associated with a new proposal, in order to comply with 36 CFR Part 800.

In addition to the views summarized above, other consulting parties urged greater consideration of strategies that seek to avoid or minimize adverse effects to historic properties, off-site mitigation, and stabilization measures for the Escalante Ruin. Consulting parties also recommended a Historic Properties Management Plan for the whole facility detailing long-term protection of all known historic properties, consideration of the larger context for injury or loss of integrity of the landscape scale community, and mitigation of those impacts. Another consulting party expressed concerns of the potential for chemical contamination of historic properties.