REQUEST FOR APPROVED JURISDICTIONAL DETERMINATION FORMER SATRALLOY SITE

Cyprus Amax Minerals Company

Prepared for:

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WestLand Resources

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ATTACHMENTS

1. INTRODUCTION

WestLand Resources, Inc. (WestLand) was retained by Cyprus Amax Minerals Company (Cyprus) to prepare a request for an Approved Jurisdictional Determination (AJD) for the former Satralloy Site in Jefferson County, Ohio (the Analysis Area; **Figures 1 and 2**). The request represents an update of a previous AJD prepared for the site (WestLand 2007), dated August 6, 2007 (U.S. Army Corps of Engineers [Corps]) File No. 2005-2397, expired August 6, 2012), as well as a Jurisdictional Determination (JD) of a smaller project area within the property (WestLand 2015) that was approved July 14, 2016, prepared in support of a nationwide permit request (Corps. File No. 2005-2397, expired March 18, 2018). This AJD request is being submitted to support remediation planning efforts by Cyprus for the former Satralloy Site.

To determine the potential for waters of the U.S. and isolated wetlands to occur within the Analysis Area, WestLand evaluated approximately 327 acres within and surrounding the former Satralloy Site. Because the site is located in Ohio, jurisdictional waters of the U.S. and adjacent wetlands are under the purview of the Corps, while isolated wetlands are under the jurisdiction of the Ohio Environmental Protection Agency (OEPA; **Figure 3**). Analysis of the hydrological, chemical, and biological characteristics of potential waters of the U.S. was conducted in accordance with both the Clean Water Rule (Corps and EPA 2015) and the post-*Rapanos* guidance on jurisdictional determination (Corps and EPA 2008). Analysis of the physical characteristics of wetlands was conducted in accordance with Corps guidance on wetland delineation (Environmental Laboratory 1987), as well as the regional supplement for the Eastern Mountains and Piedmont Region (Corps 2012a). Isolated wetlands were evaluated using OEPA's Ohio Rapid Assessment Method (ORAM). This AJD was prepared in accordance with Regulatory Guidance Letter (RGL) No. 16-01, issued October 2016, and is being submitted to both the Corps and OEPA for review.

This request for an AJD is being submitted by WestLand on behalf of Cyprus, as is demonstrated in the Agent designation letter (**Attachment 1**). This technical memorandum provides supporting documentation for the information included on each AJD form (**Attachment 2**)**,** Eastern Mountains and Piedmont wetland determination form (**Attachment 3**), and ORAM wetland scoring forms (**Attachment 4**). A mapping of the delineation (**Attachment 5**) and associated photographs (**Attachment 6**) are submitted with this document, and the delineation with geo-referenced photographs is also provided in a kmz file (**Attachment 7**). The Corps feature upload table is provided as **Attachment 8**. Directions to the Analysis Area are provided as **Attachment 9**. An electronic copy of all materials is included with this technical memorandum for Corps use.

2. PROJECT AND ANALYSIS AREA DESCRIPTION

2.1. PROJECT DESCRIPTION AND BACKGROUND

The Analysis Area has been used for a variety of industrial purposes over the course of its history. Agriculture and coal mining (both underground and strip mining) were conducted within the Analysis Area for the first half of the 1900s. From 1958 to 1994, a ferro-chromium alloy smelter, which processed chromium ore from international mines, was in operation at the Satralloy Site. Much of the processing equipment from the plant's smelter has been removed, and the remaining structures are expected to be demolished as part of remediation efforts. Based on an aerial review, approximately 30 percent of the Analysis Area is disturbed. The disturbance includes slag from the processing plant that was placed on the ridge line to the west and north of the plant site.

The Analysis Area has been inactive since 1994. Cyprus acquired the site in 2010 and entered into a Consent Order with the OEPA to conduct a Remedial Investigation/Feasibility Study (RI/FS) to address potential impacts from past industrial operations at the former Satralloy Site. This AJD is being prepared to support Cyprus's remediation planning efforts at the former Satralloy Site.

2.2. ANALYSIS AREA DESCRIPTION

The former Satralloy Site (the Property) is located southwest of Steubenville in Jefferson County, Ohio (**Figure 1**). The approximately 327-acre Property is located in Cross Creek Township, within Township 6 North, Range 2 West of the Ohio River Survey, portions of Sections 2, 8, and 9. The Analysis Area is located on an irregularly shaped parcel of land, generally on a low finger ridge surrounded on three sides by Cross Creek (**Figure 2**). The Property address is 4243 County Road 74 (also known as Gould Road). The coordinates of the main entrance from County Road 74 are 40°18'32" North latitude and 80°40'10" West longitude, which is approximately 0.3 mile west of the intersection with Scott Featner Road.

Topographically, the Analysis Area ranges from about 700 feet above mean sea level (amsl) at Cross Creek, to approximately 1,120 feet amsl on the ridge. With the exception of the facilities area, which is fairly flat, the Analysis Area is relatively rugged, with the steepest slopes located near the ridge top and on the northwest side of the Analysis Area.

The Analysis Area is located within the Salem Creek-Cross Creek subwatershed (Hydrologic Unit Code [HUC] 0503010110) of the Upper Ohio watershed (HUC 05030101). The drainage area for the Analysis Area (calculated from the most downstream point of Cross Creek within the Analysis Area) totals 117 square miles with an estimated mean annual flow of 132 cubic feet per second (Koltun and Whitehead 2002; U.S. Geological Survey 2018).

The headwaters of Cross Creek are located approximately 12 miles west of the Analysis Area, near Bloomingdale, Ohio. Cross Creek becomes a designated Traditional Navigable Water (TNW)

approximately 2.5 miles downstream from the Analysis Area and extends for another 1.3 miles before reaching the Ohio River near Mingo Junction (Corps 2012). Mean annual precipitation measured from several climate stations in the vicinity of the Analysis Area is between 38.8 and 41.1 inches.

Approximately one-third of the Analysis Area is highly disturbed, with industrial processing and operation facilities, a slag pile, and an abandoned coal mine. The Analysis Area has several dirt and gravel roads crossing the property and two railroad spurs, which enter the Analysis Area from the east. Both railroad spurs were abandoned in the 1980s, but the lower spur was reconstructed in 2015 to support the future building demolition project. Second-growth hardwood forest dominated by American elm (*Ulmus americana*), green ash (*Fraxinus pennsylvanica*), and box elder maple (*Acer negundo*) covers most of the undisturbed portions of the Analysis Area.

3. METHODS

Prior to conducting the field investigation, WestLand reviewed the previous delineations conducted at the site (2007 and 2015) and interpreted available regional and site specific aerial photography (Google Earth imagery dated June 8, 2016) to identify surface water features and other areas potentially containing surface water features. The field investigation was then conducted from May 2 to May 11, 2018 to update the previous mapping, to identify and document physical and biological characteristics, and to measure the extent of any potential waters of the U.S. (waterways and wetlands within the jurisdiction of the Corps) as well as any isolated wetlands (within the jurisdiction of the OEPA) within the Analysis Area.

3.1. DRAINAGES

WestLand performed a delineation of drainages that are potentially jurisdictional waters of the U.S. within the Analysis Area in accordance with Corps guidance (Corps and EPA 2007). Surveyors measured the width of the Ordinary High Water Mark (OHWM)[1] on all drainages within the Analysis Area, an established standard for non-wetland waters of the U.S.

OHWM widths were measured and were documented with a Garmin Oregon Model 550T global positioning system (GPS) camera. Data was collected at field-determined intervals, usually less than 500 feet apart. Photographs were taken of both upstream and downstream views at each data collection point. An estimated OHWM was delineated for drainages that exited the property boundary to assist with determining the hydrological connection to downstream receiving waters; the estimated

[1] The OHWM is defined at 33 CFR Part 328.3(e) as "the line on the shore established by fluctuations of water and indicated by physical characteristics including a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, or the presence of litter and debris or other appropriate means that consider the characteristics of the surrounding areas."

OHWM sections are not part of the request for an approved jurisdictional determination, however, as they do not occur on the applicant's property.

WestLand identified the OHWM by the presence of one or more of the following characteristics: changes in soil character; matted-down, bent, or absent vegetation; disturbed or washed-away leaf litter; abrupt change in plant community; debris; sediment sorting (well-sorted or poorly-sorted); scour; sediment deposition; and water staining. Upland areas, roads, and other areas of sheet flow or erosional features were also documented with photographs where the presence of a drainage feature was difficult to discern from an aerial photograph.

Using data collected during the field investigations and review of both aerial photographs and site topography, measurements of OHWM widths and concurrent GPS photo locations were digitally transferred onto an aerial imagery using ArcGIS (**Figure 4**). The drainage area (in acres) was calculated in WestLand's office using a combination of measured OHWMs at known locations and aerial photography interpretation.

Areas that were determined to be non-jurisdictional by the Corps/OEPA in the previous JDs and that had not changed since the previous delineations were not re-delineated in the mapping. These areas are described in **Section 4.3**. Areas that were determined to be jurisdictional by the Corps/OEPA in the 2007 and/or 2015 JDs were all re-delineated, and any areas where changes had occurred since the previous delineation were also re-delineated.

3.2. WETLANDS

All potential wetlands were evaluated per Corps guidance for the presence of the three criteria ("diagnostic environmental characteristics") that must be met for an area to be classified as a wetland: the dominance of hydrophytic vegetation, the presence of hydric soils, and evidence of wetland hydrology (Environmental Laboratory 1987; Corps 2012a).

Visual estimates of species cover were made for the plant species at each observation point during the field survey, and the dominant species were determined separately for each vegetative stratum—trees, saplings/shrubs, herbs, and vines. The wetland indicator status of each species was determined according to the Corps' Wetland Plant List (Lichvar et al. 2016), and the Dominance Test and the Prevalence Index were used to determine the presence of hydrophytic vegetation. The colors of the soil matrix and any redoximorphic features were described using Munsell™ Soil Color Charts. Site hydrology was determined in the field based on Corps indicators including soil saturation or satiation, inundation, water marks, sediment deposits, water stained leaves, and drainage patterns. Wetland boundaries were recorded by a Trimble Geo Series handheld GPS unit and photographically documented by a GPS camera. The boundary of the wetland was then accurately mapped and, upon return to WestLand's office, acreages were calculated using ArcGIS. Wetland data collection points

are noted on the delineation mapping (**Attachment 5**) and correspond to the data point noted in the wetland datasheet (**Attachment 3**).

Wetlands adjacent to or abutting a potentially jurisdictional water of the U.S. are also considered potentially jurisdictional and would therefore be federally regulated under Section 404 of the Clean Water Act (CWA). Isolated waters (i.e., without a hydrologic connection to a TNW) in Ohio that are not adjacent to nor abut a potentially jurisdictional water would be under the jurisdiction of the OEPA and are described in the following section.

All wetlands, regardless of jurisdiction, were evaluated using OEPA's ORAM scoring system, which places wetlands in different categories (1-3) according to their quality (**Figure 5**). Wetlands within Category 1 are considered "low-quality" wetlands that support minimal wildlife habitat, have low species diversity, are dominated by invasive species, and have limited potential to achieve beneficial wetland functions. Wetlands within Category 2 are considered "good-quality" wetlands or degraded but restorable wetlands. Category 2 wetlands do not support rare or listed species but are dominated by native species and support moderate wildlife habitat. Wetlands within Category 3 are considered "high-quality" wetlands with superior habitat, high levels of diversity, dominated primarily by native species, and support rare or listed species.

3.3. JURISDICTIONAL ASSESSMENT

Since the publication of the Clean Water Rule in 2015, the applicable legal definition of waters of the U.S. and corresponding guidance for determining jurisdiction has faced multiple legal challenges, resulting in ongoing uncertainty regarding the legal interpretation of waters of the U.S. The Clean Water Rule was most recently reinstated in Ohio on August 16, 2018, by the South Carolina District Court ruling in *South Carolina Coastal Conservation League, et. al. v. Scott Pruitt, et. al.* Due to the continuing uncertainty and litigation of the definition of waters of the U.S., the potential jurisdiction of all drainage and wetland features within the Analysis Area was evaluated under both the Clean Water Rule definition of waters of the U.S. (Corps and EPA 2015) and the Corps/EPA post-*Rapanos* guidance (Corps and EPA 2008).

Clean Water Rule Evaluation

Per the Clean Water Rule, federally jurisdictional tributaries are considered to be those that: 1) are part of a tributary system that eventually flows to a TNW, 2) exhibit a bed and bank and an OHWM that indicate a sufficient volume, frequency, and duration of flow to contribute to a TNW, and 3) are not otherwise excluded under the revised definition of waters of the U.S. (33 CFR Part 328.3(b)). Drainages with flows that end without connecting (directly or indirectly) to a TNW are generally non-jurisdictional under the Clean Water Rule. The hydrologic connectivity between the nearest TNW and drainages that are not part of a tributary system was assessed, however, as waters may continue

to meet the definition of a tributary even if there is a break in the OHWM and/or bed and bank delineation, as long as the hydrologic connectivity remains (such as when the banks of a tributary disappear due to a low gradient terrain). Ditches or constructed channels that are relocated tributaries or drain wetlands are also considered federally jurisdictional under the Clean Water Rule.

The features within the Analysis Area were also analyzed for their potential to meet the two exclusive circumstances under which a significant nexus determination would be warranted, per the Clean Water Rule. The circumstances include waters located: 1) in the 100-year floodplain of a TNW, or 2) within 4,000 ft of the high tide line or OHWM of a TNW, interstate waters, territorial sea, impoundments, or tributaries. Features meeting these criteria were then assessed for a significant nexus (see below) with a TNW or interstate waters. If a significant nexus was determined to exist, the entirety of the feature was determined to be a water of the U.S.

Post-Rapanos Significant Nexus Evaluation

Per the post-*Rapanos* guidance, the drainages were analyzed for their ability to affect the hydrological, chemical, and biological integrity of the nearest TNW, a downstream portion of Cross Creek beginning approximately 2.5 miles downstream of the Analysis Area and extending for 1.3 miles to the confluence with the Ohio River (Corps 2012b). The portion of Cross Creek intersecting the Analysis Area is assessed as an RPW.

Hydrological

To assess a drainage's hydrological connection to the downstream TNW, we reviewed average rainfall and frequency of flow events site-wide, watershed size of the relevant reach, the drainage's proximity to Cross Creek, and the drainage's tributary connections (i.e., whether the drainage was tributary to Cross Creek or dissipated before reaching Cross Creek). Due to the Analysis Area's proximity to Cross Creek (no more than 0.3 miles from the farthest drainage headwater to Cross Creek), combined with Cross Creek's proximity to the nearest TNW (approximately 2.5 miles downstream), all drainages and associated wetlands tributary to Cross Creek were determined to have a significant nexus, and are therefore federally jurisdictional. Drainages without an OHWM connection were assessed further for their potential to have a significant nexus with the TNW.

WestLand also evaluated the culvert drainage system during the jurisdictional delineation to determine the extent of subsurface drainage flows through culverts within the former processing facility. Specifically, this analysis identified culvert inlet and outlet locations on and around the site to verify possible connections to Cross Creek. The methods used to determine the onsite culvert drainage system included a field investigation and a review of the facility stormwater management designs. Subsurface drainage flows that connected to downstream waters are shown on the maps with a dashed line (**Attachment 5**).

Chemical

To determine the potential for a chemical connection to the downstream TNW, we assessed site-wide contributions to the receiving reaches of Cross Creek and Ohio River downstream from the Analysis Area. These contributions were compared against the chemical makeup of the downstream receiving waterways to determine whether the Analysis Area was providing a significant contribution to the TNW.

Biological

To assess the biological connection to the downstream TNW, we analyzed the potential for a drainage to support aquatic species found in the TNW or provide a habitat characteristic integral to aquatic species' life cycles, such as spawning grounds for aquatic species that otherwise reside in the downstream TNW.

4. RESULTS

The evaluation determined that all potentially federally jurisdictional features under the post-*Rapanos* guidance remained potentially federally jurisdictional under the Clean Water Rule. With the exception of both sections of Cross Creek that were evaluated, all of the potential state and federally jurisdictional surface water features within the Analysis Area are either: 1) non-RPWs that drain directly or indirectly into a TNW, or 2) wetlands (**Table 1**). All features determined to be potentially jurisdictional demonstrated a physical hydrological connection to the TNW. Any potential biological or chemical connection to the TNW was found to be insubstantial or speculative. The assessment found no aquatic species that affect the ecological integrity of the TNW and no habitat characteristics integral to the life cycle of any species residing in the TNW. Site investigation work conducted to date has indicated that surface water and groundwater discharging from the site to Cross Creek have had no effect on water quality in the stream outside of a small mixing zone from outfalls.

In all, 59 features were reviewed, including 9 potentially jurisdictional drainages, 3 potentially non-jurisdictional drainages, 39 potentially jurisdictional (federal and state) wetlands, and 8 potentially non-jurisdictional surface water features found to have neither an OHWM nor wetland characteristics. **Table 1** provides a summary of the potential jurisdiction findings within the Analysis Area. **Tables 2 and 3** provide further discussion of each potential federally jurisdictional drainage and wetland, and **Table 4** discusses each potential OEPA jurisdictional wetland. Non-jurisdictional surface water features are discussed in **Table 5**.

Feature names established in the 2007 and 2015 JDs were used again for consistency. Newly identified features were labeled with the next available letter in the naming system. Letters for features determined to be non-jurisdictional or that no longer exist are not re-used, and as a result there are some gaps in the lettering system. The "missing" letters/features are described in **Table 5**.

Table 1. Summary of Potential Jurisdiction Findings within Analysis Area

Feature	No. of Features	Linear Feet	Acres	No. of Features	Linear Feet	Acres
Waterways	**Federally Jurisdictional**			**Non-Jurisdictional**		
RPWs that flow directly or indirectly into TNWs	2	7,234	8.19	0	0	0
Non-RPWs that flow directly or indirectly into TNWs	7	4,967	0.33	3	593	0.03
Waterways Subtotal	**9**	**12,201**	**8.52**	**3**	**593**	**0.03**
Wetlands	**Federally Jurisdictional**			**State Jurisdictional**		
Wetlands adjacent to RPWs that flow directly or indirectly into TNWs	1	---	0.11	0		0
Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs	17	---	2.31	0	---	0
Isolated wetlands	0	---	0	21	---	1.44
Wetlands Subtotal	**18**	**0**	**2.42**	**21**	**0**	**1.44**
TOTAL	**27**	**12,201**	**10.95**			

4.1. WATERS OF THE U.S.

In all, 12,794 linear feet of drainages with a bed and bank and OHWM characteristics were evaluated within the Analysis Area. Of the 12 drainages evaluated, 9 were determined to be directly or indirectly tributary to a TNW or have a significant nexus with a TNW (**Table 1**). These potential waters of the U.S. total 12,201 linear feet, and based on observed widths of the drainages, have a total calculated area of 8.52 acres.

All but four of the drainages discharge directly into Cross Creek and were, therefore, determined to have a significant nexus with the downstream TNW and be potentially federally jurisdictional. Three drainages (Tributaries DD, OO, and W) do not discharge to downstream receiving water and do not demonstrate an otherwise significant hydrological, chemical, or biological connection that would indicate a significant nexus to the TNW; therefore, they were determined to be potentially non-jurisdictional. The analysis of Tributary Q found that although the OHWM disappears approximately 150 feet upstream from Cross Creek, the tributary remains part of the tributary system through a hydrologic connection. Per Corps and EPA (2008, 2015) guidance, areas where flow occurs outside of the bounds of an OHWM due to a break in OHWM (as indicated by the blue arrows in the mapping (**Attachment 5**) can provide a hydrologic connection between waters of the U.S. The close proximity to Cross Creek, slope of the terrain, and high-water table indicate there would be minimal transmission losses from Tributary Q before flows reach Cross Creek. As the majority of flows reach Cross Creek in short order, Tributary Q was found to have a regular and significant nexus with the TNW.

Of the 39 wetlands delineated within the Analysis Area (**Table 1**), 18 wetlands totaling 2.42 acres are adjacent to or abut a channel with a significant nexus and are therefore potentially federally jurisdictional. Wetland P, the Wetland S complex, and Wetland T all flow to Wetland Q, which abuts Tributary Q, a potentially federally jurisdictional drainage. Based on their volume, the steep terrain, and the flow path, there is a significant hydrologic connection between these wetlands and the downstream TNW.

Twenty-one wetlands are not adjacent to or abut a channel with a significant nexus. These wetlands were therefore determined to be isolated wetlands under the jurisdiction of the OEPA (see **Section 4.2** for further discussion).

Many drainages and wetlands were evaluated in the 2007 and/or 2015 JDs, as is noted in their descriptions in **Tables 2 and 3**. However, a smaller review area was considered in the 2015 JD, so a number of features included in the 2007 JD were not evaluated in the 2015 JD because they occurred outside the 2015 project area boundary.

Table 2. Potential Federally Jurisdictional Surface Water Feature Physical Characteristics—Tributaries

ID	Description	Area (acres)	Linear (ft)	Avg. Width (ft)	Latitude (WGS 84)	Longitude (WGS 84)	Photo Nos.
Tributary A	Cross Creek, a perennial stream that flows into the Ohio River approximately 4 miles downstream. Portion of Cross Creek upstream from convergence with McIntyre Creek. River bank adjacent to the site is steep and rocky. Determined to be federally jurisdictional in 2007.	2.117	1894	49	-80.678491	40.312176	1, 2
Tributary B	Small drainage tributary to Cross Creek. Corps determined in the 2007 JD that this feature is not jurisdictional, but 2018 evaluation found that this feature is directly tributary to Cross Creek, indicating that it is potentially federally jurisdictional.	0.087	577	7	-80.676442	40.312383	3, 4
Tributary C	Drainage with perennial flow that discharges through culverts to Cross Creek. In 2007 and 2015, feature was more of a swale with no defined flow channel and was determined to be not be jurisdictional. Flow paths have altered since the 2007/2015 JDs, however, and an OHWM has developed along the channel. Although portions of the channel have either ephemeral or seasonal flow, the channel does have perennial outflow directly to Cross Creek. As a result, the Tributary was reclassified as potentially federally jurisdictional.	0.031	696	2	-80.668127	40.31095	5, 7, 9, 11
Tributary D	Perennial, vegetated drainage on eastern portion of site, near smelter site. Tributary D was determined to be federally jurisdictional in the 2007 JD. Wetland D, located upstream and draining through a culvert to Tributary D, contributes perennial flows to the tributary. The channel flows through a culvert directly to Cross Creek. Tributary D is upgradient of the discharge outfalls.	0.009	191	2	-80.669706	40.307925	13
Tributary F	Small tributary to Cross Creek determined to be federally jurisdictional in the 2007 JD. Flow low but presumably perennial (observed in December, May, and July). Source is Wetland F. Tributary F is comparable to Tributaries B and J upgradient of the discharge outfalls. Tributary discharges directly to Cross Creek and was determined to be potentially federally jurisdictional.	0.049	809	3	-80.675973	40.312988	16, 17

Table 2. Potential Federally Jurisdictional Surface Water Feature Physical Characteristics—Tributaries

ID	Description	Area (acres)	Linear (ft)	Avg. Width (ft)	Latitude (WGS 84)	Longitude (WGS 84)	Photo Nos.
Tributary H	Continuation of Cross Creek on south and southwestern side of site. The relevant reach for this portion includes input from McIntyre Creek. Determined to be federally jurisdictional in 2007.	6.075	5339	50	-80.671397	40.306715	20, 21
Tributary J	Several small tributaries that combine to flow through a culvert under the abandoned railroad grade into a newly established subsurface pipe, which ultimately discharges directly into Cross Creek through a culvert. Mostly narrow channels, with some wider areas of seepage; in some areas, OHWM was indistinct. Tributary J is upgradient of the discharge outfalls. Determined to be federally jurisdictional in 2007.	0.124	2178	3	-80.670344	40.312787	25, 26, 28-30
Tributary LL	Tributary LL is a constructed drainage designed to drain Wetland LL into Cross Creek through a series of culverts. It is fed by Wetland LL, located at the upstream end of the tributary, and is a new drainage that was not reviewed in the 2007 or 2015 JDs.	0.033	495	3	-80.668857	40.310682	32, 33
Tributary Q	Drainage located at downstream terminus of Wetland Q. Drainage dissipates approximately 150 feet upstream from Cross Creek but, given the slope of the terrain, proximity to Cross Creek, number and volume of receiving waters (Wetlands P, S, and T), and high-water table, the majority of flows reach Cross Creek, indicating a regular and significant nexus with the TNW. This is a relatively new tributary that was not evaluated in the 2007 or 2015 JDs.	0.001	22	1	-80.662686	40.313891	---

Table 3. Potential Federally Jurisdictional Surface Water Feature Physical Characteristics—Jurisdictional Wetlands

ID	Description	Area (acres)	ORAM Score	ORAM Category	Latitude (WGS 84)	Longitude (WGS 84)	Photo Nos.
Wetland C1	Wetland adjacent to Tributary C that is present between two culverts that connect Tributary C to Cross Creek. Although considered an isolated wetland in the 2007 and 2015 JDs, the adjacent tributary has been reclassified to be potentially federally jurisdictional due to feature changes (see Tributary C, **Table 2**).	0.039	11	1	-80.667847	40.311122	6
Wetland C2	Wetland C2 abuts Tributary C, located near the confluence with Tributary LL. Tributary C discharges into Cross Creek, and is potentially federally jurisdictional. Although considered an isolated wetland in the 2007 and 2015 JDs, the abutting tributary has been reclassified to be potentially federally jurisdictional due to feature changes (see Tributary C, **Table 2**).	0.019	11	1	-80.66856	40.310686	8
Wetland C3	Wetland C3 abuts Tributary C, downstream from the confluence with Tributary LL. Tributary C discharges into Cross Creek and is potentially federally jurisdictional. Although considered an isolated wetland in the 2007 and 2015 JDs, the abutting tributary has been reclassified to be potentially federally jurisdictional due to feature changes (see Tributary C, **Table 2**).	0.008	11	1	-80.668656	40.310433	10
Wetland C4	Wetland is a shallow basin that abuts Tributary C, located at the southwestern extent of the tributary, which discharges into Cross Creek, and is potentially federally jurisdictional. Although considered an isolated wetland in the 2007 and 2015 JDs, the abutting tributary has been reclassified to be potentially federally jurisdictional due to feature changes (see Tributary C, **Table 2**).	0.024	11	1	-80.669241	40.309617	12
Wetland D	Wetland D is located on the western portion of the Analysis Area, near the south mill building, upstream of Goulds Road. Partial fill of Wetland D was permitted in 2016 under NWP 38 (Corps File No. 2005-2397), and so the acreage and extent of the wetland has changed from the 2007 and 2015 JDs. Wetland discharges downstream through culvert to Tributary D, which was determined to be federally jurisdictional in the 2007 AJD.	0.024	13	1	-80.670202	40.30824	14, 15

Table 3. Potential Federally Jurisdictional Surface Water Feature Physical Characteristics—Jurisdictional Wetlands

ID	Description	Area (acres)	ORAM Score	ORAM Category	Latitude (WGS 84)	Longitude (WGS 84)	Photo Nos.
Wetland F	Small wetland area supplied by a seep and runoff east of slag pile. Abuts Tributary F, which was determined to be federally jurisdictional in the 2007 AJD.	0.192	27	1	-80.674151	40.313226	18, 19
Wetland I	Narrow, isolated basin at toe of slope, may have been created by construction of railroad grade. In both the 2007 and 2015 JDs, Wetland I was determined to be hydrologically isolated from downgradient receiving surface waters, and therefore under OEPA jurisdiction. The most recent survey found the extent of Wetland I has extended to the point where it is adjacent to Tributary J (a potentially federally jurisdictional channel), appears to discharge into the tributary, and is therefore potentially federally jurisdictional.	0.039	29	1	-80.671021	40.312207	22, 23
Wetland J1	Small wetland area at the headwaters of Tributary J. Tributary J discharges through a subsurface water management system into Tributary C and Cross Creek. Was determined to be federally jurisdictional in the 2007 and 2015 JDs.	0.018	45	2	-80.671019	40.314834	24
Wetland J2	Small wetland area located on eastern extent of Tributary J, adjacent to culvert beneath the upper rail spur, which discharges flows through a subsurface water management system to Cross Creek. Was determined to be federally jurisdictional in the 2007 and 2015 JDs.	0.017	27	1	-80.669898	40.31273	27
Wetland LL	Wetland LL is a riprap filled basin that collects stormwater flow from culverts created during railroad construction conducted in 2016. The wetland is adjacent to Tributary LL, which discharges to Cross Creek.	0.023	8	1	-80.668112	40.311552	31

Table 3. Potential Federally Jurisdictional Surface Water Feature Physical Characteristics—Jurisdictional Wetlands

ID	Description	Area (acres)	ORAM Score	ORAM Category	Latitude (WGS 84)	Longitude (WGS 84)	Photo Nos.
Wetland P	Extensive saturated area along abandoned railroad grade adjacent to Wetland Q. Wetland P was previously determined to be hydrologically isolated from downstream receiving surface waters and was therefore under OEPA jurisdiction in 2007. Subsequent permitted construction along railroad has altered flow regimes, however, and due to the topography and flow regimes, Wetland P flows now discharge primarily to Wetland Q, which was determined to be potentially federally jurisdictional.	0.505	28	1	-80.667965	40.312902	52-55
Wetland Q	Extensive saturated area along abandoned railroad grade, receiving discharges from Wetland P, located upstream. Wetland Q extends outside of the Analysis Area, then re-enters the downstream. The wetland discharges into Tributary Q, which is approximately 150 ft from Cross Creek, and was determined to have a significant nexus with the downstream TNW and is therefore jurisdictional. Although considered an isolated wetland in the 2007 and 2015 JDs, the flow regime has changed significantly due to construction of the railroad, with flows now ultimately discharging to Cross Creek.	0.073	25	1	-80.665627	40.312253	60
Wetland S1	Part of a series of wetlands located on steep slope upstream from Wetland P, west of Wetland T. Crosses old road related to smelting and slag disposal operations. The wetland was delineated as isolated in 2007. However, the Wetland S complex abuts Wetland P, and, due to changes in the flow regimes since 2007, is now connected to the TNW through Wetlands P and Q, which ultimately discharge to Cross Creek, and so was determined to be federally jurisdictional.	0.411	29	1	-80.668823	40.31382	65-67

Table 3. Potential Federally Jurisdictional Surface Water Feature Physical Characteristics—Jurisdictional Wetlands

ID	Description	Area (acres)	ORAM Score	ORAM Category	Latitude (WGS 84)	Longitude (WGS 84)	Photo Nos.
Wetland S2	Part of a series of wetlands located on steep slope upstream from Wetland R, west of Wetland T. Crosses old road related to smelting and slag disposal operations. The wetland was delineated as isolated in 2007. However, the Wetland S complex abuts Wetland P, and, due to changes in the flow regimes since 2007, is now connected to the TNW through Wetlands P and Q, which ultimately discharge to Cross Creek, and so was determined to be federally jurisdictional.	0.099	29	1	-80.669615	40.314125	---
Wetland S3	Part of a series of wetlands located on steep slope upstream from Wetland R, west of Wetland T. Located immediately old road related to smelting and slag disposal operations. The wetland was delineated as isolated in 2007. However, the Wetland S complex abuts Wetland P, and, due to changes in the flow regimes since 2007, is now connected to the TNW through Wetlands P and Q, which ultimately discharge to Cross Creek, and so was determined to be federally jurisdictional.	0.033	29	1	-80.669428	40.314396	---
Wetland S4	Part of a series of wetlands that merges with Wetland P across a wide saturated area. The wetland was delineated as isolated in 2007. However, the Wetland S complex abuts Wetland P, and, due to changes in the flow regimes since 2007, is now connected to the TNW through Wetlands P and Q, which ultimately discharge to Cross Creek, and so was determined to be federally jurisdictional.	0.012	29	1	-80.669052	40.314448	---
Wetland T	Wetland located on a steep slope upstream from Wetland P, east of Wetland S. Downstream end merges with Wetland P across a wide saturated area. Upper end appears to be impacted by waste disposal from coal mining operations. The wetland was delineated as isolated in 2007. However, Wetland T abuts Wetland P, and, due to changes in the flow regimes since 2007, is now connected to the TNW through Wetlands P and Q, which ultimately discharge to Cross Creek, and so was determined to be federally jurisdictional.	0.772	28	1	-80.667729	40.313809	68

Table 3. Potential Federally Jurisdictional Surface Water Feature Physical Characteristics—Jurisdictional Wetlands

ID	Description	Area (acres)	ORAM Score	ORAM Category	Latitude (WGS 84)	Longitude (WGS 84)	Photo Nos.
Wetland YY	Wetland formed in a borrow pit that is located immediately adjacent to Cross Creek on the eastern bank near the southwestern corner of the Analysis Area (near Tributary H).	0.111	37	2	-80.679841	40.305122	34, 35

4.2. ISOLATED WETLANDS

Twenty-one wetland features totaling 1.44 acres were determined to be jurisdictional to the OEPA as isolated wetlands. These features were predominantly created as a result of stormwater impoundments or a localized water source that ponded without draining to Cross Creek and are discussed further in **Table 4**.

Table 4. Potential OEPA Jurisdictional Isolated Wetland Physical Characteristics

ID	Description	Area (acres)	Latitude (WGS 84)	Longitude (WGS 84)	ORAM Score	ORAM Category	Photo Nos.
Wetland AA	Isolated, closed basin in abandoned coal strip mine. Wetland AA is hydrologically isolated from downgradient receiving surface waters and was determined to be under OEPA jurisdiction in 2007 JD.	0.039	-80.667042	40.316814	14	1	36
Wetland CC	Isolated, closed basin in abandoned coal strip mine. Wetland CC is hydrologically isolated from downgradient receiving surface waters and was determined to be under OEPA jurisdiction in 2007 JD.	0.021	-80.666557	40.316328	14	1	37
Wetland DD	Wetland in abandoned coal strip mine that discharges into Tributary DD, a hydrologically isolated channel. Wetland DD and was determined to be under OEPA jurisdiction in 2007 JD.	0.167	-80.666433	40.314208	27	1	38, 39
Wetland EE	Feature running along a hillside fed from a culvert passing under relic rail spur that supplies water to this feature from the adjacent Wetland P. All surface flow infiltrates into the ground at the toe of the slope. Wetland EE is hydrologically isolated from downgradient receiving surface waters and was determined to be under OEPA jurisdiction in 2007 and 2014 JDs.	0.031	-80.666208	40.312232	21.5	1	40, 41

Table 4. Potential OEPA Jurisdictional Isolated Wetland Physical Characteristics

ID	Description	Area (acres)	Latitude (WGS 84)	Longitude (WGS 84)	ORAM Score	ORAM Category	Photo Nos.
Wetland FF	Small, isolated wetland formed from a small seep below a rock outcropping that pools in an adjacent terrace. No downgradient connection, flow disappears through infiltration. Wetland FF is hydrologically isolated from downgradient receiving surface waters and was determined to be under OEPA jurisdiction in 2007 JD.	0.025	-80.66831	40.314005	41	2	42, 43
Wetland G	The wetland is a shallow ponded area on the east end of the slag pile. Closed basin with no discharge. At high water levels, some possible discharge adjacent to slopes where it infiltrates. Wetland G is hydrologically isolated from downgradient receiving surface waters. This wetland is almost entirely within a private inholding within the Satralloy Property. No connection to downgradient waters and was determined to be under OEPA jurisdiction in 2007 JD.	0.433	-80.672896	40.312788	15	1	44, 45
Wetland II	Wetland II is located along an old road bed, collecting water from the upgradient slope. Flows are restricted to the road bed, and the wetland is hydrologically isolated from downgradient receiving surface waters. The wetland is a newly identified feature that is believed to be an isolated wetland under OEPA jurisdiction.	0.004	-80.664574	40.315287	24	1	46
Wetland JJ	Wetland JJ is located along an old road bed, collecting water from Tributary DD located upgradient of the wetland. Waters pool along terrace created by road, and so the wetland hydrologically isolated from downgradient receiving surface waters. The wetland is a newly identified feature that is believed to be an isolated wetland under OEPA jurisdiction.	0.072	-80.664458	40.314348	27.5	1	47, 48

Table 4. Potential OEPA Jurisdictional Isolated Wetland Physical Characteristics

ID	Description	Area (acres)	Latitude (WGS 84)	Longitude (WGS 84)	ORAM Score	ORAM Category	Photo Nos.
Wetland KK	Wetland KK collects runoff and/or subsurface flows from Tributary DD and Wetland JJ, and the general hillside. Waters pool in naturally terraced areas and do not discharge downgradient. The wetland is a newly identified feature that is believed to be an isolated wetland under OEPA jurisdiction.	0.077	-80.663921	40.314204	32	2	49, 50
Wetland NN	Wetland NN is formed from a seep exiting a steep hillside. The wetland has limited surface flow that does not discharge to downgradient receiving surface waters. The wetland is a newly identified feature that is believed to be an isolated wetland under OEPA jurisdiction.	0.002	-80.676244	40.306808	22	1	51
Wetland PP1	Wetland PP1 is an upstream portion of a set of wetlands formed along rutted inactive roadway. Waters pool along the roadway and do not discharge to downgradient receiving surface waters. The wetland is a newly identified feature that is believed to be an isolated wetland under OEPA jurisdiction.	0.042	-80.671392	40.316436	29	1	57
Wetland PP2	Wetland PP2 is the middle portion of a set of wetlands formed along rutted inactive roadway. Waters pool along the roadway and do not discharge to downgradient receiving surface waters. The wetland is a newly identified feature that is believed to be an isolated wetland under OEPA jurisdiction.	0.010	-80.671408	40.316225	29	1	58

Table 4. Potential OEPA Jurisdictional Isolated Wetland Physical Characteristics

ID	Description	Area (acres)	Latitude (WGS 84)	Longitude (WGS 84)	ORAM Score	ORAM Category	Photo Nos.
Wetland PP3	Wetland PP3 is downstream portion of a set of wetlands formed along rutted inactive roadway. Waters pool along the roadway and do not discharge to downgradient receiving surface waters. The wetland is a newly identified feature that is believed to be an isolated wetland under OEPA jurisdiction.	0.007	-80.671482	40.316016	29	1	59
Wetland QQ	Wetland QQ has developed in a ditch at the toe of a hillslope. The wetland receives waters from the adjacent upland slope and upgradient abandoned railroad grade located above the North Mill building. Flows pool in the wetland and do not discharge to downgradient receiving surface waters. The wetland is a newly identified feature that is believed to be an isolated wetland under OEPA jurisdiction.	0.062	-80.669331	40.311612	15	1	61, 62
Wetland R	Wetland R is located in a constructed basin or borrow pit along a reclaimed railroad spur. Wetland R was determined to be non-jurisdictional as it is hydrologically isolated from downgradient receiving surface waters.	0.008	-80.667241	40.312803	22	1	63
Wetland RR	Wetland RR has developed from overflow from a relict concrete structure that pools immediately below the structure, causing a wetland to develop in the adjacent shallow pit. The wetland was previously connected to Tributary C; however, due to changes in stormwater flow from upgradient surface water management alterations, the wetland receives less water and has shrunk considerably, and is no longer connected to downgradient receiving waters.	0.007	-80.670388	40.31021	8	1	64

Table 4. Potential OEPA Jurisdictional Isolated Wetland Physical Characteristics

ID	Description	Area (acres)	Latitude (WGS 84)	Longitude (WGS 84)	ORAM Score	ORAM Category	Photo Nos.
Wetland SS1	Wetland SS1 is an isolated wetland on a small terrace that collects runoff from the upgradient hillslope and overflow from Wetland P. It was considered part of the Wetland P complex in the 2007 AJD but has been reassessed as a distinct and separate wetland, because Wetland P demonstrates a connection to downgradient waters that the Wetland SS complex lacks.	0.011	-80.668044	40.312682	28	1	---
Wetland SS2	Wetland SS2 is an isolated wetland located in a basin that collects overflow from the upgradient hillslope. It was considered part of the Wetland P complex in the 2007 AJD but has been reassessed as a distinct and separate wetland, because Wetland P demonstrates a connection to downgradient waters that the Wetland SS complex lacks.	0.080	-80.668172	40.312255	28	1	56
Wetland W	Isolated seepage area along an old mining road. Seepage feature W is hydrologically isolated from downgradient receiving surface waters and was determined to be non-jurisdictional in 2007 JD. The 2018 survey determined the seepage area has developed into a wetland.	0.018	-80.664504	40.314829	23	1	69
Wetland Y	Isolated, closed basin in abandoned coal strip mine. Also impacted by slag from chromium smelter. Wetland observed to support aquatic vertebrates including frogs and salamanders. Wetland Y is hydrologically isolated from downgradient receiving waters.	0.076	-80.670728	40.317759	24.5	1	70
Wetland Z	Isolated, closed basin in abandoned coal strip mine. Wetland Z is hydrologically isolated from downgradient receiving surface waters and was determined to be non-jurisdictional in 2007 JD.	0.243	-80.668507	40.316996	14	1	71, 72

4.3. NON-JURISDICTIONAL FEATURES

Non-jurisdictional features are described in **Table 5** and include features such as those determined to be non-jurisdictional in 2007, formerly jurisdictional features permitted for fill in 2016, and features that were reviewed but ultimately determined not to have OHWM indicators or wetland characteristics that would put them under the jurisdiction of the Corps or the OEPA.

Table 5. Surface Water Features Determined to be Non-Jurisdictional or Otherwise Excluded from Further Analysis (includes features analyzed in the 2007, 2015, and 2018 JDs)

ID	Description
Surface Water Feature GG	Feature is a vegetated depression that may collect infrequent surface ponding as the result of overland sheet flow Surface water feature GG does not have an OHWM or sufficient wetland indicators. Feature was determined to be non-jurisdictional in 2007 JD.
Surface Water Feature HH	Feature HH is a small basin at the toe of a slope adjacent to an old road-way. Sedimentation and changes in flow patterns from the adjacent hillside indicate a reduced amount of water is reaching this feature than has in the past. Surface water feature HH does not have an OHWM or sufficient wetland indicators. Feature was determined to be non-jurisdictional in 2007 JD.
Surface Water Feature MM	Feature MM is a small depression that collects limited overland sheet flow. Surface water feature MM does not have an OHWM or sufficient wetland indicators.
Surface Water Feature N	Feature N is a small heavily disturbed basin filled with riprap. Does not exhibit an OHWM or sufficient wetland indicators to be a jurisdictional feature.
Surface Water Feature O	Small basin with ponded stormwater. Outlet at west end to culvert that appears to connect with outlet culvert from Tributary K. Tributary O is upgradient of the discharge outfalls. Does not exhibit an OHWM or sufficient wetland indicators to be a jurisdictional feature.
Surface Water Feature OO	Surface water flow from Tributary OO, which has developed as a result of a blocked pipe located alongside the south mill, pool in a ponding area where a wetland has subsequently developed. Waters are captured in the ponding area. Does not exhibit an OHWM or sufficient wetland indicators to be a jurisdictional feature.
Surface Water Feature U	Isolated seepage area, underlain by slag material. Slag material stockpiled within the feature. Seepage feature is hydrologically isolated from downstream receiving surface waters and was determined to be non-jurisdictional in 2007 JD.
Surface Water Feature V	Saturated area along the south side of the abandoned railroad grade. Surface water infiltrates. Feature V is hydrologically isolated from downstream receiving surface waters. Does not exhibit an OHWM or sufficient wetland indicators to be a jurisdictional feature.
Surface Water Feature X	Relict drainage feature with no OHWM located at the toe of existing slag pile, underlain by slag material. No evidence of surface flow; some areas within downgradient basin (below slag pile) were saturated. Surface water Feature X is hydrologically isolated from downstream receiving surface waters, and 2007 JD determined it does not exhibit an OHWM or sufficient wetland indicators to be a jurisdictional feature.
Tributary BB	This drainage feature was analyzed in the 2007 JD but was determined to be outside of the Property boundary and was not considered further.

Table 5. Surface Water Features Determined to be Non-Jurisdictional or Otherwise Excluded from Further Analysis (includes features analyzed in the 2007, 2015, and 2018 JDs)

ID	Description
Tributary DD	Tributary DD is a channel in an abandoned coal strip mine that is fed by Wetland DD, located at the upstream terminus of the channel and was determined to be non-jurisdictional in the 2007 JD. Tributary DD does not discharge directly to downstream receiving surface waters, is not part of tributary system that eventually flows to a TNW and does not demonstrate a hydrologic connection with a downgradient tributary, so was determined to be potentially non-jurisdictional under both the Clean Water Rule and a significant nexus evaluation.
Tributary E	Was a jurisdictional drainage in 2007 and 2014 JDs. However, fill of Tributary E was permitted in 2016 under NWP 38 (Corps File No. 2005-2397). As a result, Tributary E has since been filled, and no longer exists.
Tributary K	Was a jurisdictional drainage in 2007 and 2014 JDs. However, fill of Tributary K was permitted in 2016 under NWP 38 (Corps File No. 2005-2397). As a result, Tributary K has since been filled, and no longer exists.
Tributary L	The 2007 JD found Tributary L did not discharge to downstream waters and was therefore determined to be non-jurisdictional. The feature was filled during site construction activities and no longer exists.
Tributary M	Human-induced feature in isolated, closed basin underlain by smelter slag. Tributary M was hydrologically isolated from downgradient receiving surface waters and was determined to be non-jurisdictional in 2007 AJD. Upstream flow patterns have altered to the point where this feature no longer receives sufficient water to maintain its OHWM, and no longer exists.
Tributary OO	Tributary OO is a drainage that has developed as a result of a blocked pipe located alongside the south mill. Flows from this drainage are captured in Surface Water Feature OO and do not discharge to downstream waters. Tributary OO does not discharge to downstream receiving waters, is not part of tributary system that eventually flows to a TNW and does not demonstrate a hydrologic connection with a downgradient tributary, so was determined to be potentially non-jurisdictional under both the Clean Water Rule and a significant nexus evaluation.
Tributary W	Tributary W is a drainage located at the downstream terminus of Wetland W. Tributary W does not discharge directly to downstream receiving waters, is not part of tributary system that eventually flows to a TNW and does not demonstrate a hydrologic connection with a downgradient tributary. This tributary was determined to be potentially non-jurisdictional under both the Clean Water Rule and a significant nexus evaluation.

5. CONCLUSION

The Applicant, Cyprus Amax Minerals Company, respectfully requests that the Corps review the information included in this request for an AJD for the former Satralloy Site, located in Cross Creek Township, Jefferson County, Ohio. The Applicant requests that the Corps review and concur with the identification and delineation of the Waters of the U.S. within the Analysis Area, as described in this submittal.

6. REFERENCES

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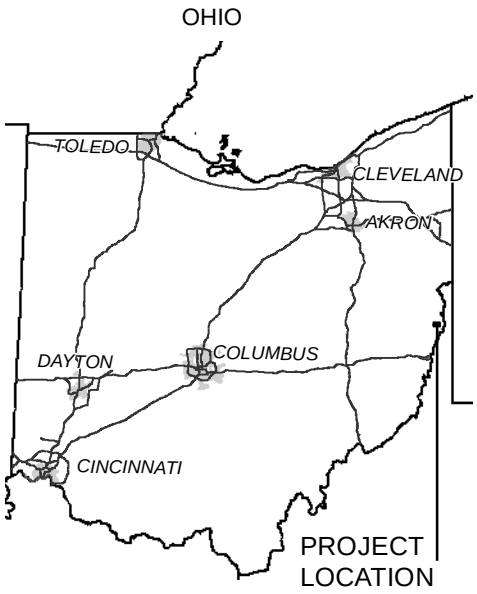
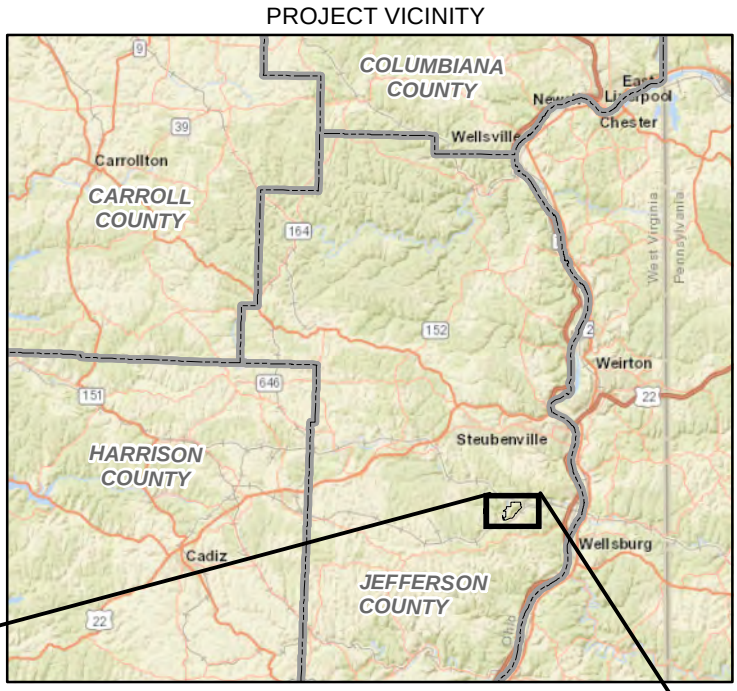
FIGURES





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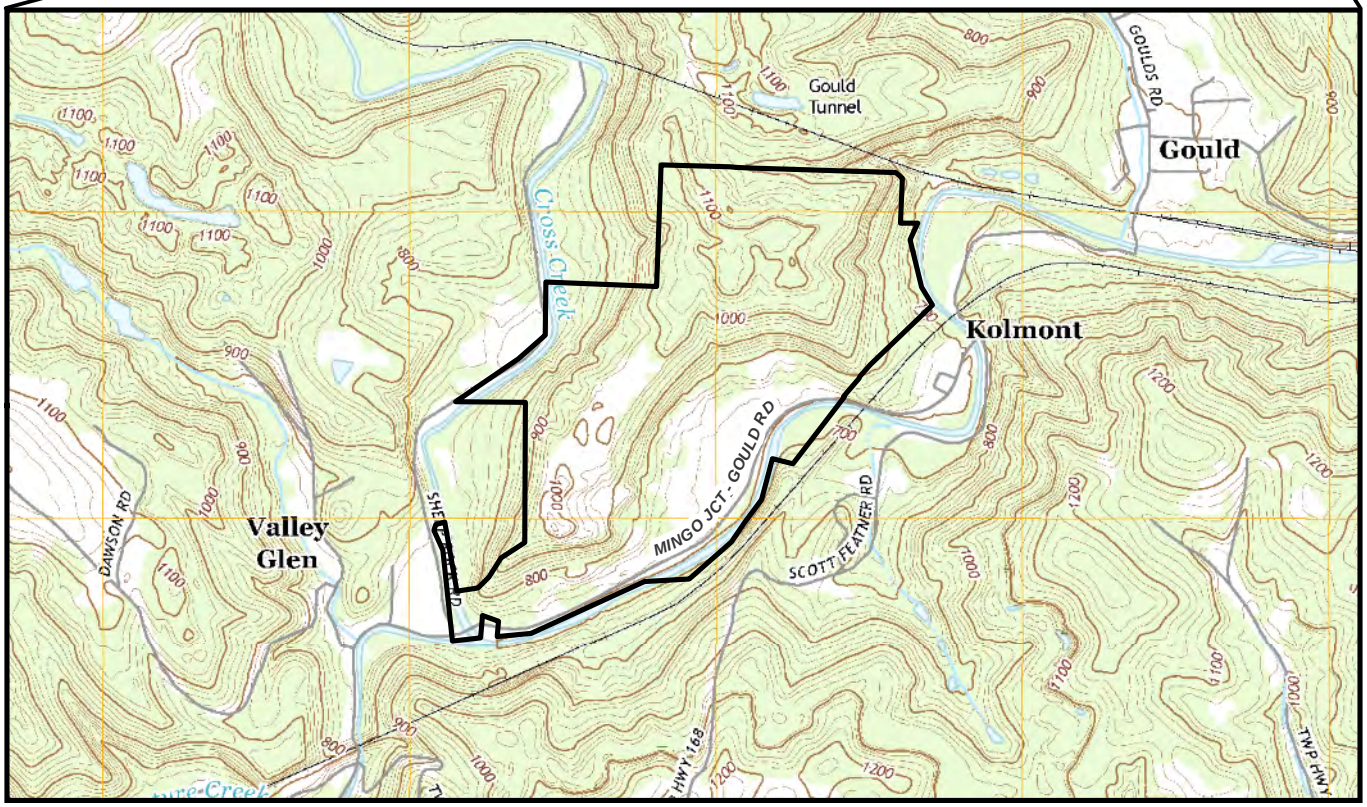


T6N, R2W, Portions of Sections 2, 8, and 9,
Jefferson County, Ohio
Steubenville West USGS 7.5' Quadrangle (2016)
Data Source: Golder
Image Source: ArcGIS Online, World Street Map

CYPRUS AMAX MINERALS CORPORATION

Former Satralloy Site
Approved Jurisdictional Determination

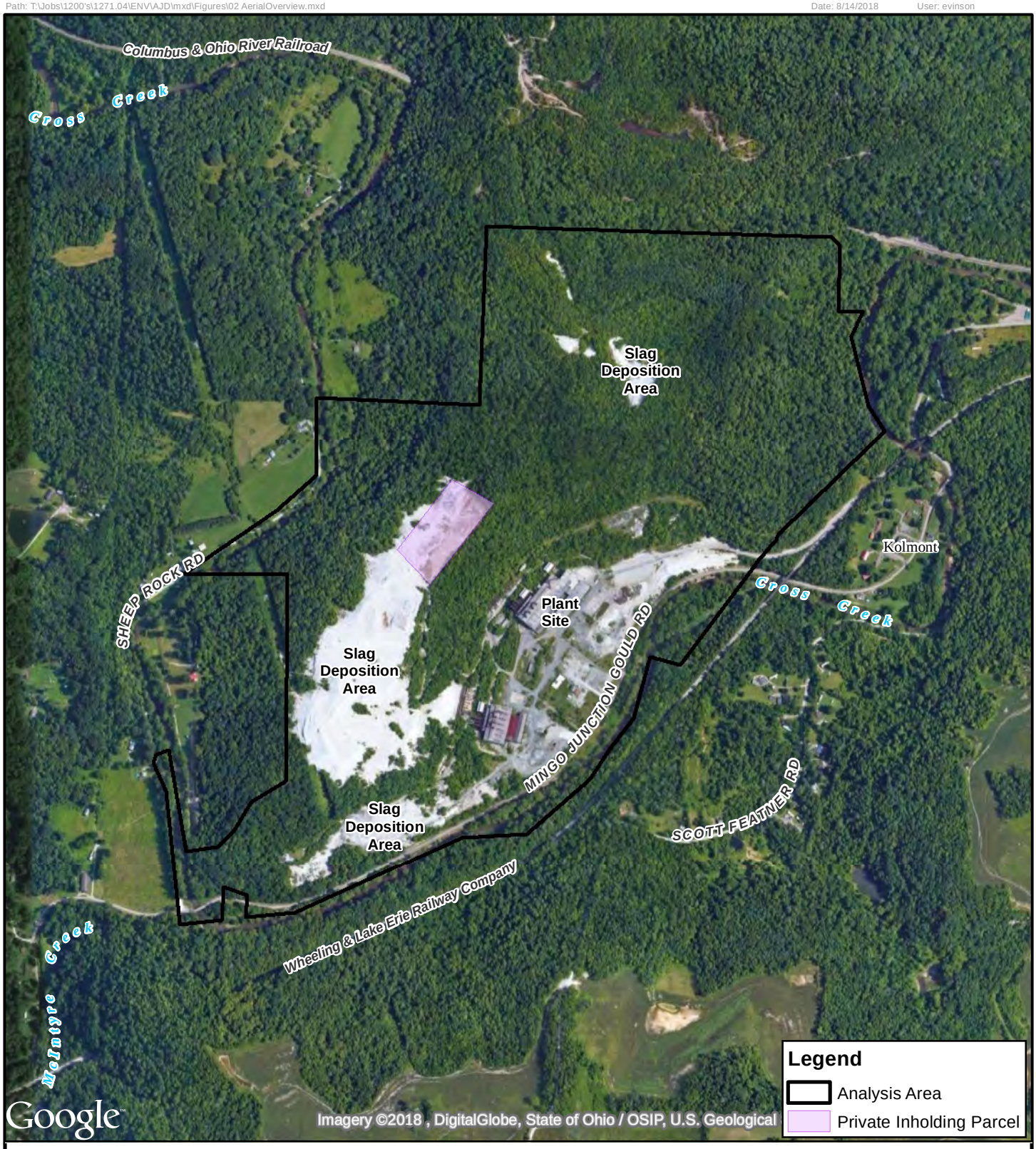
VICINITY MAP
Figure 1

WestLand Resources

N

0 1,000 2,000 Feet

0 300 600 Meters



T6N, R2W, Portions of Sections 2, 8, and 9,
Jefferson County, Ohio
Steubenville West USGS 7.5' Quadrangle (2016)
Data Source: Golder
Image Source: Google Earth 06/08/2016

CYPRUS AMAX MINERALS CORPORATION

Former Satralloy Site

Approved Jurisdictional Determination

AERIAL OVERVIEW

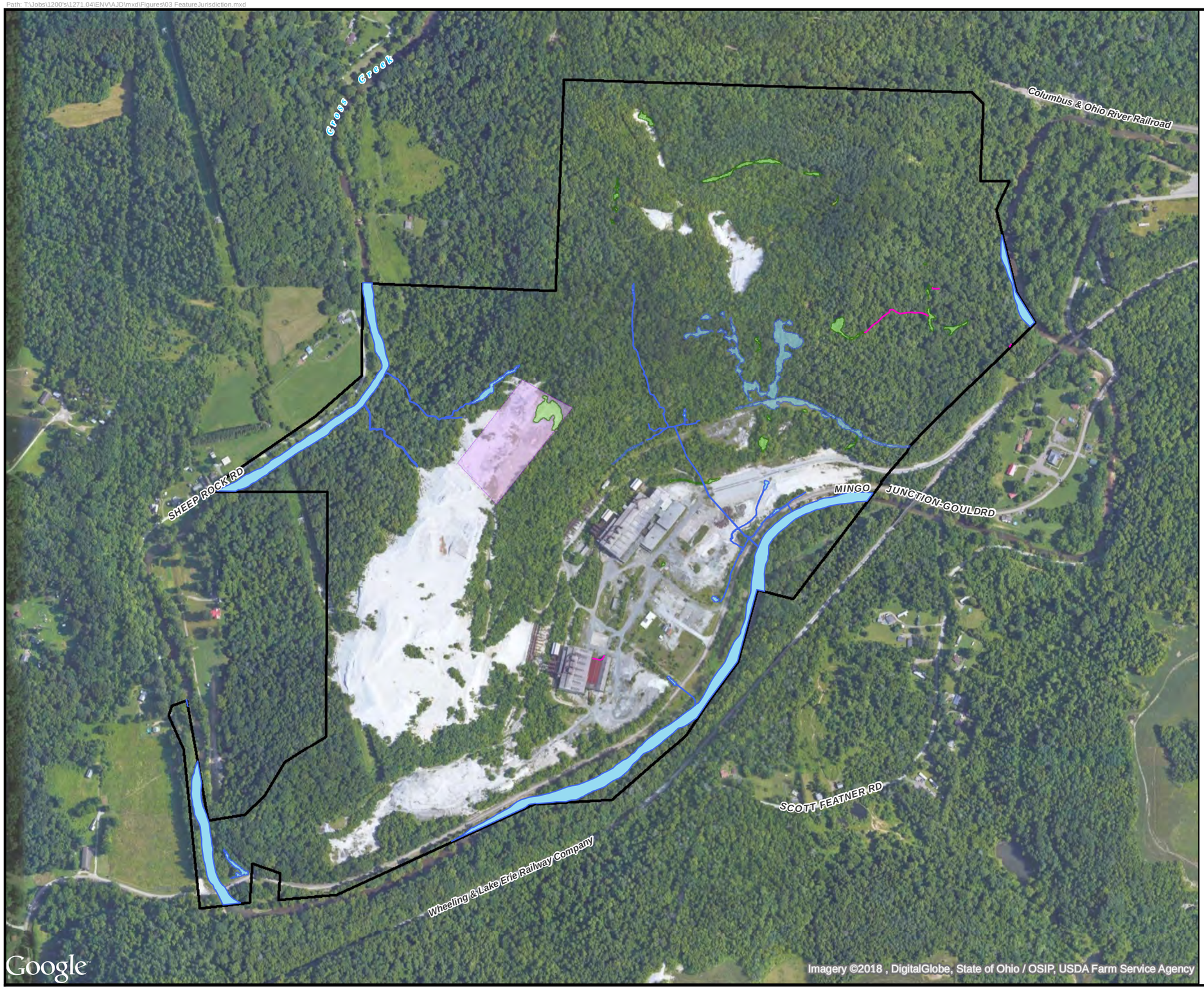
Figure 2

WestLand Resources

N

0 500 1,000 Feet

0 150 300 Meters



T6N, R2W, Portions of Sections 2, 8, and 9,
Jefferson County, Ohio
Steubenville West USGS 7.5' Quadrangle (2016)
Data Source: Golder
Image Source: Google Earth 06/08/2016

Legend

- Corps Jurisdictional
- OEPA Jurisdictional
- Non-Jurisdictional
- Analysis Area
- Private Inholding Parcel

N

0 300 600 Feet

0 100 200 Meters

WestLand Resources

CYPRUS AMAX MINERALS CORPORATION

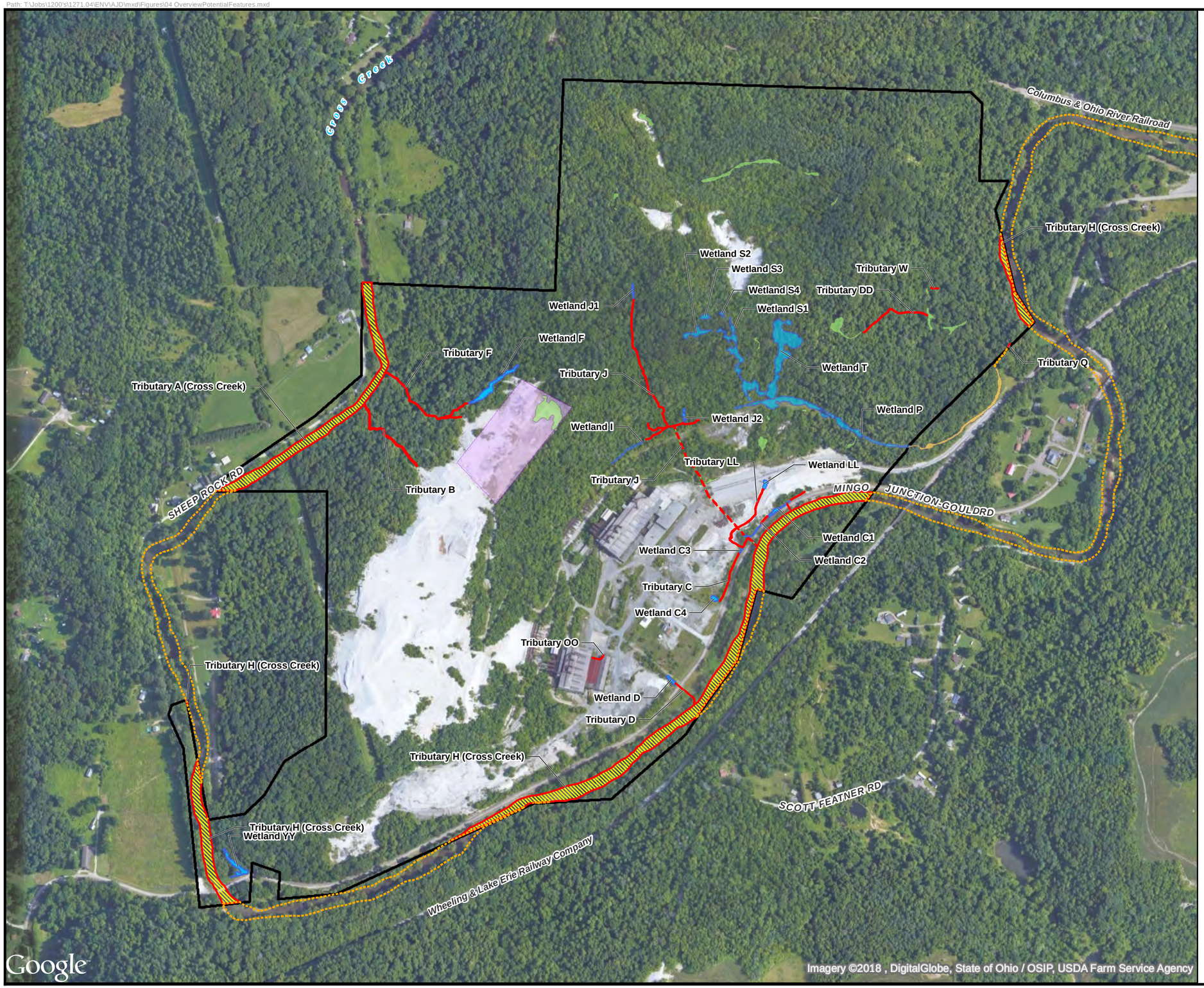
Former Satralloy Site
Approved Jurisdictional Determination

FEATURE JURISDICTION

Figure 3

Path: T:\Jobs\1200's\1271.04\ENV\AJD\mxd\Figures\04 OverviewPotentialFeatures.mxd

Date: 8/14/2018 User: evinson



T6N, R2W, Portions of Sections 2, 8, and 9,
Jefferson County, Ohio
Steubenville West USGS 7.5' Quadrangle (2016)
Data Source: Golder
Image Source: Google Earth 06/08/2016

Legend

- FlowArrow
- Waters of the United States
- Sub-surface Waters of the United States
- Ordinary High Water Mark
- Estimated Ordinary High Water Mark
- Waters of the U.S. Wetland
- Isolated Wetland
- Estimated Waters of the U.S. Wetland
- Analysis Area
- Private Inholding Parcel

N

0 300 600 Feet

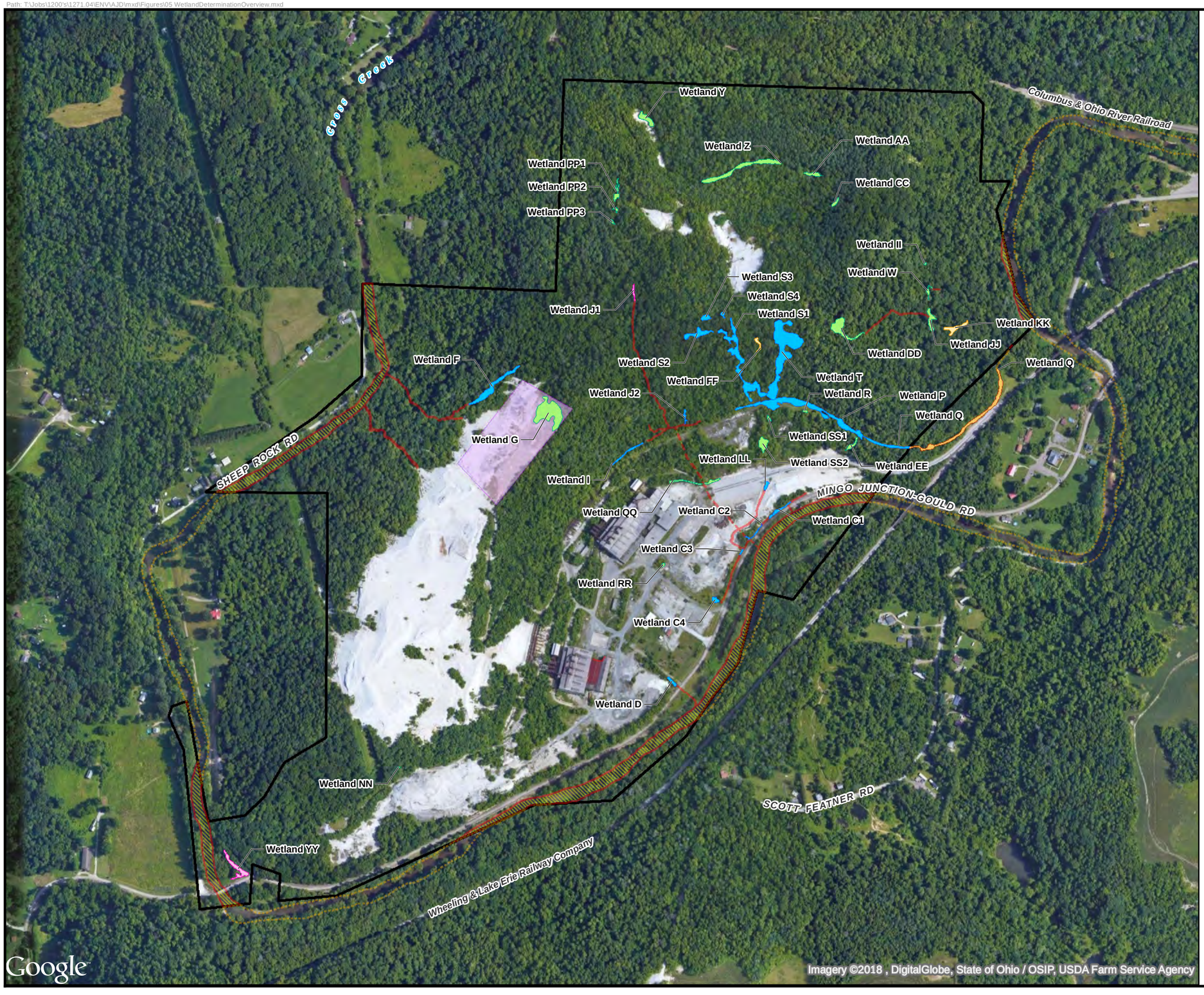
0 100 200 Meters

WestLand Resources

CYPRUS AMAX MINERALS CORPORATION

Former Satralloy Site
Approved Jurisdictional Determination

CORPS JURISDICTIONAL FEATURE OVERVIEW
Figure 4



T6N, R2W, Portions of Sections 2, 8, and 9,
Jefferson County, Ohio
Steubenville West USGS 7.5' Quadrangle (2016)
Data Source: Golder
Image Source: Google Earth 06/08/2016

Legend

- Waters of the U.S. Wetland ORAM Score 1
- Waters of the U.S. Wetland ORAM Score 2
- Isolated Wetland ORAM Score 1
- Isolated Wetland ORAM Score 2
- Estimated Waters of the U.S. Wetland ORAM Score 1
- Waters of the United States
- Sub-surface Waters of the United States
- Ordinary High Water Mark
- Estimated Ordinary High Water Mark
- Analysis Area
- Private Inholding Parcel

N

0 300 600 Feet

0 100 200 Meters

WestLand Resources

CYPRUS AMAX MINERALS CORPORATION

Former Satralloy Site
Approved Jurisdictional Determination

OEPA JURISDICTIONAL FEATURE OVERVIEW

Figure 5

ATTACHMENT 1

Agent Designation Letter and Authorization for Federal Access

ATTACHMENT 2

CWA Section 404 Jurisdictional Determination Forms

(provided electronically)

ATTACHMENT 3

Eastern Mountains and Piedmont Wetland Determination Forms

(provided electronically)

ATTACHMENT 4

ORAM Wetland Scoring Forms

(provided electronically)

ATTACHMENT 5

CWA Section 404 Jurisdictional Determination Maps

ATTACHMENT 6

Photographic Log

ATTACHMENT 7

CWA Section 404 Jurisdictional Determination KMZ File

(KMZ file provided electronically)

ATTACHMENT 8

Feature Upload Table

(Excel file provided electronically)

ATTACHMENT 9

Directions to Site