FREEPORT-McMoRan

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August 1, 2023

VIA EMAIL

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> **RE:** **Amendment No. 11 to the Interim Action Workplan for the Former Satralloy Site – Borrow Soil Sampling and Analysis Workplan**

Cyprus Amax Minerals Company (Cyprus) is submitting this workplan as Amendment 11 to the Interim Action Workplan (IA Workplan) approved by the Ohio Environmental Protection Agency (OEPA). In accordance with the Consent Order for Preliminary Injunction (COPI) Section VII (Additional Work) and Section XII (Review of Submittals): "All work plans, reports, or other items required to be submitted to Ohio EPA under this COPI, including any approved additional Work, shall, upon approval by Ohio EPA, be deemed to be incorporated in and made an enforceable part of this COPI." COPI, Section XII, paragraph 32.

This amendment is for sampling and analysis of potential borrow soil in the Former Mine Area at the Former Satralloy Site (the Site) in Cross Creek Township, Jefferson County, Ohio. The Site address is 4243 County Road 74 (Gould Road), Mingo Junction, Jefferson County, Ohio. The purpose of this investigation is to obtain more detailed data on the physical and chemical properties of soil planned for use as cover material for the consolidated slag area.

Field Program

Soil samples will be collected from at least nine test pits excavated in three potential soil borrow areas in the Former Mine Area. These potential borrow areas are shown on Figure 1. Test pits will be excavated in a minimum of three locations within each borrow area as shown on Figure 2. Specific locations will be determined in the field based on excavator accessibility and safety.

Test pits will be excavated to a depth depending on bedrock, refusal, or the safe maximum reach achievable at each location, generally expected to less than 12 feet below grade. A test pit profile will be logged and photographed in the field. Up to four samples from discrete intervals will be collected from each test pit. The excavator bucket will be brushed clean, and a discrete sample will be collected from the targeted depth in the test pit side wall. The sampler will collect material from the excavator bucket, avoiding material that contacted the sides of the bucket. Samples will be placed into properly labeled and sealed plastic bags.

Upon completion of the test pits, samples will be selected for laboratory analysis based on spatial representativeness across the borrow areas. Up to 30 samples will be submitted for laboratory analysis.

If a preliminary review of sample results indicates additional samples from one or more of the proposed borrow areas would improve data evaluation, either additional test pits or soil borings will be implemented. Boreholes would be completed using a Sonic drilling rig and standard 4" x 6" sample tooling in a matter consistent with the project QAPP.

Laboratory Testing

Grain size analysis samples will be sent to the WSP USA Inc. laboratory located in Lansing, Michigan for particle size analyses (ASTM D6913).
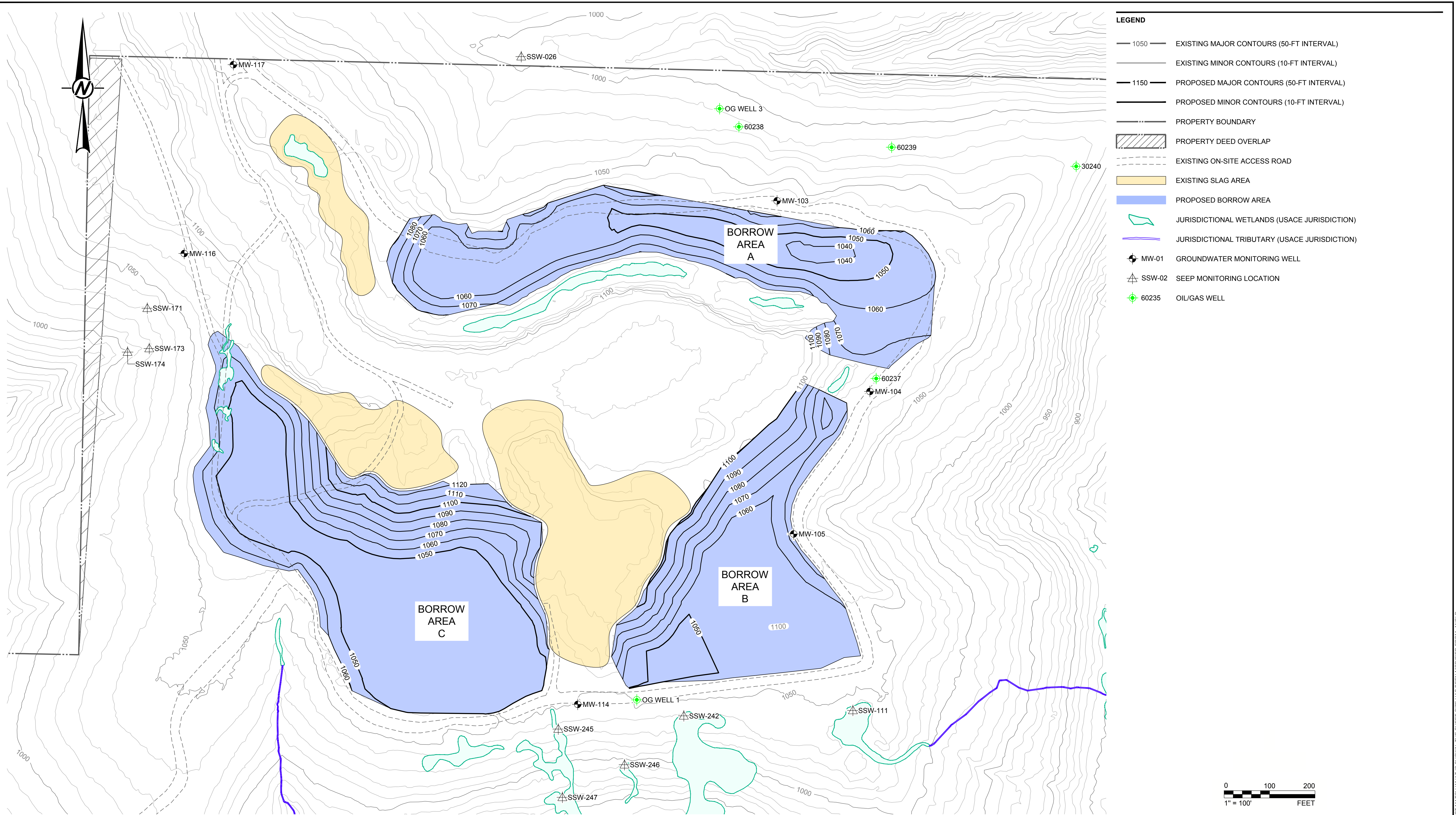
The ABA samples will be sent to the SGS Canada, Inc. laboratory located in Burnaby, Canada. The Modified ABA test method will be used, which follows the Lawrence method from Acid Rock Drainage (ARD) Prediction Manual (MEND Project 1.16.1b, March 1991) pp. 6.2-11 to 6.2-17 prepared by COASTECH Research Inc. The parameters reported will include:

- Paste pH
- Fizz rating
- Bulk neutralization potential
- Total sulfur, sulfate sulfur and sulfide sulfur
- Total carbon and inorganic carbon
- Acid generating potential (calculated)
- Net neutralization potential (calculated, including a siderite correction)

Attachments

Figure 1 – Soil Borrow Area Locations

Figure 2 – Borrow Area Sampling Areas

LEGEND

—1050—	EXISTING MAJOR CONTOURS (50-FT INTERVAL)
	EXISTING MINOR CONTOURS (10-FT INTERVAL)
—1150—	PROPOSED MAJOR CONTOURS (50-FT INTERVAL)
	PROPOSED MINOR CONTOURS (10-FT INTERVAL)
	PROPERTY BOUNDARY
▨	PROPERTY DEED OVERLAP
	EXISTING ON-SITE ACCESS ROAD
	EXISTING SLAG AREA
	PROPOSED BORROW AREA
	JURISDICTIONAL WETLANDS (USACE JURISDICTION)
	JURISDICTIONAL TRIBUTARY (USACE JURISDICTION)
◈ MW-01	GROUNDWATER MONITORING WELL
△ SSW-02	SEEP MONITORING LOCATION
◈ 60235	OIL/GAS WELL

BORROW AREA A

BORROW AREA B

BORROW AREA C

SSW-026
MW-117
OG WELL 3
60238
60239
30240
MW-103
MW-116
SSW-171
SSW-173
SSW-174
60237
MW-104
MW-105
MW-114
OG WELL 1
SSW-245
SSW-242
SSW-246
SSW-247
SSW-111
60235

0 100 200
1" = 100'
FEET

CLIENT	
CYPRUS AMAX MINERALS COMPANY	

CONSULTANT		
wsp		
	YYYY-MM-DD	2023-07-14
	DESIGNED	VMN
	PREPARED	REDMOND
	REVIEWED	FSS
	APPROVED	RSA

PROJECT
FORMER SATRALLOY SITE
SLAG REMOVAL INTERIM ACTION
JEFFERSON COUNTY, OHIO

TITLE
SOIL BORROW AREA LOCATIONS
BORROW SOIL SAMPLING AND ANALYSIS WORKPLAN

PROJECT NO.	PHASE	REV.	FIGURE
1239330907	900	A	1

BORROW AREA SAMPLING AREAS
BORROW SOIL SAMPLING AND ANALYSIS WORKPLAN
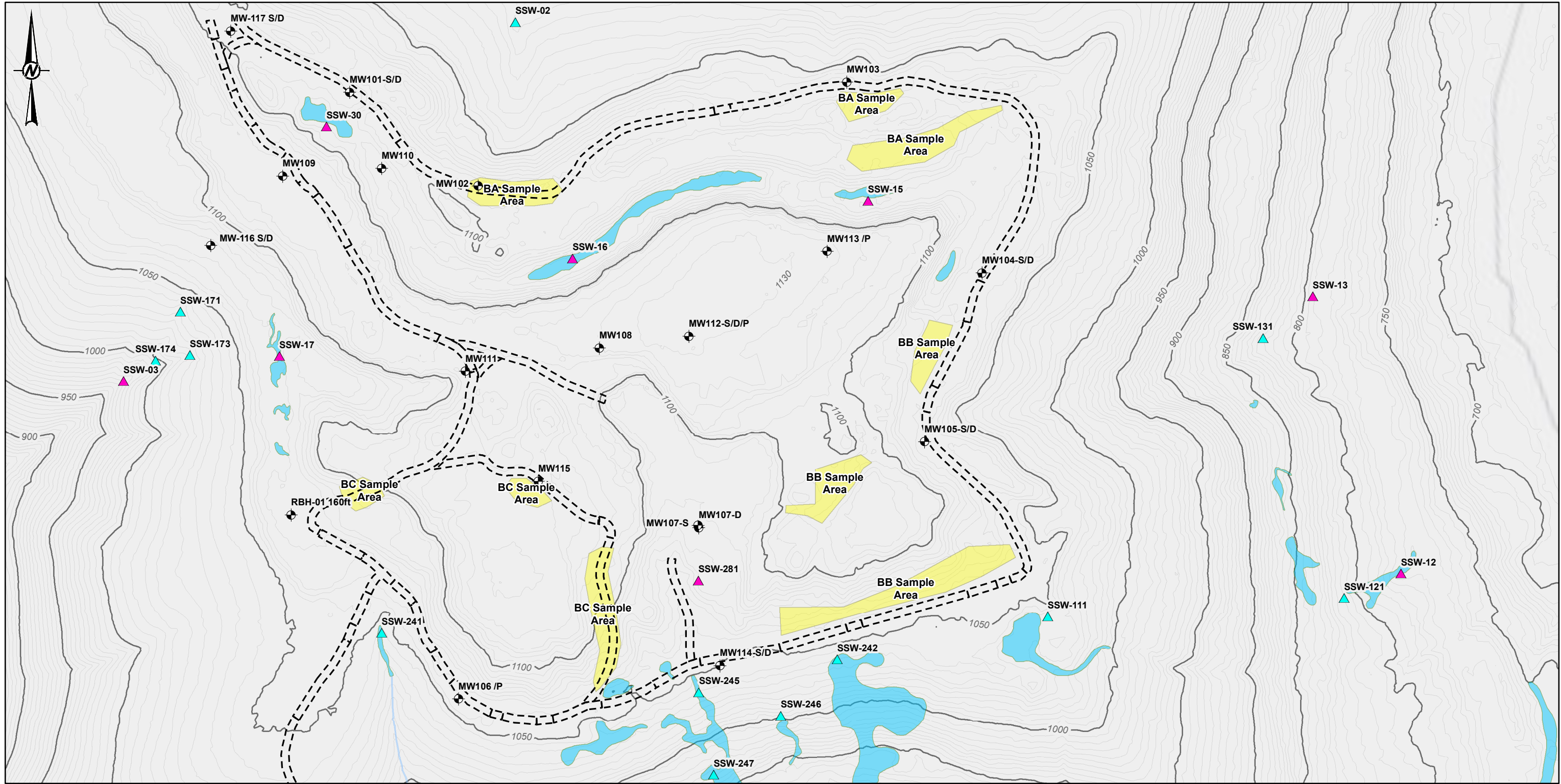
LEGEND

- ▲ Seep Location
- ▲ Surface Water Location
- ⊕ Existing Monitoring Well Location
- —— 50 ft Interval
- —— 5 ft Interval
- ┼ Railroad
- --- Roads
- Proposed Sample Area
- Tributary (Aug 2021)
- Wetland (Aug 2021)

NOTE(S)

REFERENCE(S)
1. SERVICE LAYER CREDITS: ESRI, HERE, GARMIN, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY

0   100   200   400
Feet
1 inch = 200 feet

CLIENT
CYPRUS AMAX MINERALS COMPANY

CONSULTANT

wsp

YYYY-MM-DD	7/24/2023
DESIGNED	BI
PREPARED	DTD
REVIEWED	BI
APPROVED	BI

PROJECT
FORMER SATRALLOY SITE
JEFFERSON COOUNTY, OHIO

TITLE
BORROW AREA SAMPLING AREAS
BORROW SOIL SAMPLING AND ANALYSIS WORKPLAN

PROJECT NO.	CONTROL	REV.	FIGURE
GL1239330907	-	-	2