APPLICANT'S PROPOSED DRAFT SCOPE

FOR

KILBOURNE GRAPHITE PROJECT
DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

TOWN OF FOWLER
ST. LAWRENCE COUNTY, NEW YORK

DEC Facility ID 6-4038-00024

Lead Agency and Contact Person:

New York State Department of Environmental Conservation, Region 6
317 Washington Street, Watertown, New York 13601
ATTN: Miranda Gilgore, Deputy Regional Permit Administrator
(315) 704-6296

Project Sponsor and Contact Person:

Empire State Mines, LLC
408 Sylvia Lake Road, Gouverneur, NY 13642
ATTN: Joel Rheault, Vice President of Operations
(315) 535-3200

Preparer and Contact Person:

CC Environment & Planning
23 Jackson Street, Batavia, NY 14020
ATTN: Sheila Hess, Principal Ecologist
(585) 219-4030

November 17, 2026

Contents

1.0 Introduction 4
1.1 Purpose of this scope 4
1.2 SEQR status 4
1.3 Status of mitigation measures identified in this scope 4
1.4 Involved and interested agencies 4
1.5 Scoping process and public participation 5
1.6 Relationship of this scope to the Positive Declaration 5
1.7 DEIS format and preparers 6
2.0 Project Description 6
2.1 Location and setting 6
2.2 Background and existing operations 6
2.3 Purpose, need and benefits 6
2.4 Project components 7
2.5 Construction, operation and phasing 8
2.6 Reclamation and closure 8
2.7 Required permits and approvals 8
2.8 Design basis 8
3.0 Environmental Setting, Potential Impacts and Mitigation 9
3.1 Geology, soils and topography 9
3.2 Groundwater resources 9
3.3 Surface water, water quality and flooding 10
3.4 Wetlands and aquatic resources 10
3.5 Tailings and mine waste management 11
3.6 Ecological resources 11
3.7 Air quality, greenhouse gas emissions and climate 12
3.8 Noise, vibration and blasting 12
3.9 Visual resources and lighting 13
3.10 Historic and cultural resources 13
3.11 Transportation 13
3.12 Land use, recreation and community character 14
3.13 Socioeconomic conditions and environmental justice 14
3.14 Public health and safety, hazardous materials and solid waste 15
3.15 Energy and utilities 15
3.16 Agricultural resources 15

3.17 Vegetation management and pesticide use 15
4.0 Alternatives 16
4.1 No action alternative 16
4.2 Alternative sites 16
4.3 Alternative site layouts 16
4.4 Tailings management alternatives 16
4.5 Alternative scale and timing 16
4.6 Comparison of alternatives 17
5.0 Cumulative Impacts 17
6.0 Other Required Analyses 17
6.1 Unavoidable adverse impacts 17
6.2 Irreversible and irretrievable commitments of resources 17
6.3 Growth-inducing aspects 17
6.4 Use and conservation of energy 17
6.5 Solid waste management 17
6.6 Climate change and resilience 17
6.7 Summary of mitigation and monitoring 18
7.0 Issues Raised During Scoping Not Proposed for Inclusion in the DEIS 18
8.0 DEIS Appendices 18

1.0 Introduction

1.1 Purpose of this scope

Empire State Mines (ESM, the Applicant) submits this proposed draft scope pursuant to 6 NYCRR 617.8(b), following issuance by the New York State Department of Environmental Conservation (NYSDEC or the Department) of a Positive Declaration for the Kilbourne Graphite Project (the Project) on November 10, 2026. Consistent with 6 NYCRR 617.8(e)(1) through (5), the scope provides a description of the proposed action, identifies the potential significant adverse impacts to be addressed in the Draft Environmental Impact Statement (DEIS), identifies the extent and quality of information needed to address each impact and the methods for obtaining and analyzing that information, provides an initial identification of mitigation measures, and identifies the reasonable alternatives to be considered.

Consistent with 6 NYCRR 617.8(a), the scope is intended to focus the DEIS on potentially significant adverse impacts and to eliminate consideration of impacts that are irrelevant or not significant. Consistent with 6 NYCRR 617.9(b)(1) and (2), the DEIS will be analytical rather than encyclopedic, with supporting technical detail placed in appendices.

1.2 SEQR status

- The Project is classified as a Type I action under 6 NYCRR 617.4.
- NYSDEC circulated a lead agency coordination request to involved agencies on September 21, 2026. No agency sought lead agency status, and NYSDEC became lead agency on October 21, 2026.
- NYSDEC issued a Positive Declaration on November 10, 2026, determining that the Project may have a significant adverse impact on the environment and that a DEIS will be required.

1.3 Status of mitigation measures identified in this scope

Section 617.8(e)(4) calls for an initial identification of mitigation measures. The measures identified in this scope are those initial measures proposed for evaluation in the DEIS. Identification of a measure in this scope is not a commitment to implement it. The DEIS will evaluate these measures for feasibility and effectiveness in relation to the impacts they address. Mitigation measures ultimately adopted will be established through the SEQR Findings Statement and the conditions of the applicable permits. Section 3 provides a discussion of potential mitigation measures by resource.

1.4 Involved and interested agencies

The following agencies were identified by NYSDEC in its coordinated review and were notified of the Positive Declaration:

Agency	Role	Basis
NYSDEC Region 6	Lead agency	State permits listed in Section 2.7
Town of Fowler	Involved agency	Local approvals
St. Lawrence County Industrial Development Agency	Interested agency	Interest in economic development and socioeconomics
NYS Department of Transportation, Region 7	Involved agency	Highway work permits, if required
NYS Office of Parks, Recreation and Historic Preservation	Interested agency	State Historic Preservation Act consultation

Agency	Role	Basis
NYS Department of Health	Interested agency	Water supply and public health matters
St. Lawrence County Planning	Interested agency	County planning review

Federal agencies, including the U.S. Army Corps of Engineers (USACE) and the U.S. Fish and Wildlife Service (USFWS), do not hold status as involved or interested agencies under SEQR. Federal review is proceeding separately under the National Environmental Policy Act (NEPA) and the FAST-41 permitting timetable.

1.5 Scoping process and public participation

In accordance with 6 NYCRR 617.8(d), NYSDEC will circulate this draft scope for public input and will issue a final written scope within 60 days of its receipt, in accordance with 6 NYCRR 617.8(e). Prominent issues raised during scoping, and the manner in which each is addressed, will be identified in the final scope.

1.6 Relationship of this scope to the Positive Declaration

The resource sections of this scope correspond to the impacts identified in the Positive Declaration, as follows.

Impact identified in the Positive Declaration	Addressed in
Impacts on Land	3.1 Geology, soils and topography; 3.5 Tailings and mine waste; 2.6 Reclamation and closure
Impacts on Surface Water	3.3 Surface water, water quality and flooding; 3.4 Wetlands and aquatic resources; 3.17 Vegetation management and pesticide use
Impacts on Groundwater	3.2 Groundwater resources; 3.17 Vegetation management and pesticide use
Impact on Flooding	3.3 Surface water, water quality and flooding
Impacts on Air and Climate	3.7 Air quality, greenhouse gas emissions and climate; 6.6 Climate change and resilience
Impact on Plants and Animals	3.6 Ecological resources; 3.4 Wetlands and aquatic resources; 3.17 Vegetation management and pesticide use
Impact on Agricultural Resources	3.16 Agricultural resources
Impact on Historic and Archeological Resources	3.10 Historic and cultural resources
Impact on Open Space and Recreation	3.4 Wetlands and aquatic resources; 3.6 Ecological resources; 3.12 Land use, recreation and community character
Impact on Energy	3.15 Energy and utilities; 6.4 Use and conservation of energy
Impact on Noise, Odor and Light	3.8 Noise, vibration and blasting; 3.9 Visual resources and lighting
Impact on Human Health	3.14 Public health and safety; 3.2 Groundwater resources; 3.3 Surface water, water quality and flooding

The Positive Declaration's description of the action refers to purified and micronized graphite products. Micronization and purification are not part of the proposed action. The Project produces graphite concentrate, as described in Section 2.0.

1.7 DEIS format and preparers

The DEIS will be prepared by the Applicant and its consultants, led by CC Environment & Planning with technical support from the Project engineering and environmental team. The DEIS will contain: a cover sheet; table of contents; executive summary; project description; environmental setting, potential impacts and mitigation by resource area; alternatives; cumulative impacts; the other analyses required by 6 NYCRR 617.9(b)(5); a list of preparers; references; and technical appendices.

2.0 Project Description

The DEIS will describe the Project in sufficient detail to support evaluation of each potential impact identified in this scope, including the following elements.

The proposed action consists of the open-pit mine, the graphite concentrator, and the directly associated infrastructure at the Balmat site. Graphite concentrate is the Project's product and will be shipped off site; product handling and transport are addressed in Sections 2.4 and 3.11. Further processing of concentrate, including micronization, purification and coated spherical graphite production, is not part of the proposed action. ESM is separately evaluating a secondary transformation facility at a site outside New York State. That facility would be subject to its own federal and state environmental review and approvals, and it is not subject to NYSDEC approval.

2.1 Location and setting

The Project is located at the existing Empire State Mines Balmat operation in the Town of Fowler, St. Lawrence County, in the vicinity of Sylvia Lake and served by State Routes 58 and 812 and County Routes 22 and 24. The Balmat site is an existing permitted mining operation encompassing approximately 1,690 acres. The total Project disturbance is expected to be approximately 1,260 acres, 774 acres of which is new disturbance. The DEIS will include regional and site location maps, a description of the project area and overall environmental conditions, a description of surrounding land uses, and identification of the nearest residences, water supply and irrigation wells, surface waters and public resources. Sylvia Lake is classified Class AA and is used as a drinking water source.

2.2 Background and existing operations

Operations at the existing Balmat site include active underground zinc mining, the zinc mill, and an existing tailings storage facility that continues to receive tailings, as well as a demonstration-scale graphite mine and processing plant. The DEIS will describe the existing permitted operations and approvals, the existing environmental baseline associated with them, and the relationship between the continuing existing operations and the proposed graphite operation. The DEIS will evaluate the changes resulting from the Project. Existing permitted operations, including the demonstration graphite operations, are described as part of the existing baseline and are addressed in the cumulative impacts analysis at Section 5.0 rather than re-evaluated.

2.3 Purpose, need and benefits

The DEIS will describe the purpose, public need and benefits of the proposed action, consistent with 6 NYCRR 617.9(b)(5)(i). The purpose of the Project is to develop and operate a commercial-scale open-pit natural flake graphite mine and directly associated mine-site infrastructure to produce graphite concentrate over a commercially viable operating life, to supply the United States domestic market for natural flake graphite. The DEIS will describe the public need for a domestic source of natural flake graphite, including its designation as a critical mineral, the nation's current reliance on imports, and its

use in battery, energy storage, defense and advanced manufacturing applications; the national service area; and the Project's designation as a covered project under FAST-41. The DEIS will also describe the Project objectives, consistent with those stated in the federal Section 404 application, which inform the alternatives analysis in Section 4.0:

1. Produce natural flake graphite concentrate for the domestic market at a scale and configuration that supports a viable operating life and project economics.
2. Utilize and expand upon existing Empire State Mines infrastructure and water management systems, where practicable, to limit the overall environmental footprint.
3. Maintain safe and continuous operation of existing Empire State Mines zinc mining, milling, tailings management and water management facilities during development and operation of the Project.
4. Avoid and minimize impacts to wetlands, streams and other waters to the extent practicable consistent with safe and efficient mine development.
5. Maintain compliance with applicable federal and state environmental and operational requirements through all phases of construction, operation and reclamation.

It will also describe the anticipated regional economic benefits, based on available Project information, including construction and operating employment, local purchasing of goods and services, and tax and other revenues to local taxing jurisdictions.

2.4 Project components

The DEIS will describe each component of the Project within the maximum limit of disturbance (Max LOD), including:

1. Open pit mining: pit locations, ultimate pit limits, mining method, blasting, and mining sequence. Pit limits are defined by economic pit optimization at the applicable cut-off grade, together with geotechnical and site constraints. Graphite mineralization outside the ultimate pit limits is not part of the proposed action.
2. Waste rock and overburden management: surface waste rock storage facilities, overburden stockpiles.
3. Processing: crushing and conveying, the graphite concentrator operations, reagents, and product handling, shipment and transport mode.
4. Tailings management: in-pit hydraulic deposition in the Arnold Pit, followed by a filtered dry-stack facility in the northwestern portion of the site (NW Expansion) for the balance of mine life, contained by an outer shell of mine waste rock in place of a conventional engineered embankment.
5. Existing tailings relocation: relocation of existing zinc tailings from areas overlying the graphite deposit, together with construction of a containment embankment at the Kilbourne Pit, to support safe mine development and access to the mineral resource.
6. Water management: pit dewatering; contact and non-contact water conveyance; sedimentation and retention basins; dewatering and recycling of Arnold Pit water within the site water system; water treatment; withdrawals; and discharges.
7. Infrastructure: haul and access roads, tailings pipelines, power supply and transmission, and support facilities.
8. Compensatory mitigation site establishment: site preparation, planting, and vegetation management, including invasive species control, at off-site compensatory mitigation locations.

2.5 Construction, operation and phasing

The Project is expected to operate for at least 13 years. The DEIS will evaluate impacts, facility design and closure over a bounding operating period of up to approximately 20 years, consistent with the current mine plan. Actual duration within that period will depend on market and economic conditions; operation beyond it is not part of the proposed action and would be subject to further review. The DEIS will describe site preparation and construction, the operating schedule, workforce, and production over the bounding operating period: a nominal production rate of approximately 40,000 tonnes per year of graphite concentrate, approximately 30 million tons of mill feed, 43 million tons of waste rock and 9 million tons of overburden. It will describe the phasing of mining, waste rock and tailings placement, and the extent of simultaneous disturbance at each stage.

2.6 Reclamation and closure

The DEIS will describe concurrent and final reclamation, including closure of the pits, waste rock storage facilities and tailings facilities, post-mining land use, proposed wetland reclamation, and financial security, consistent with the Mined Land Use Plan. Reclamation and financial security will address closure at any stage of operation.

2.7 Required permits and approvals

The DEIS will identify the reviews, permits and approvals required for the proposed action, the agency responsible for each, and the status of each application. It will distinguish between approvals that are confirmed and those whose applicability depends on final design or agency consultation. The State and local approvals currently anticipated are listed below.

Agency	Permit or approval
NYSDEC	Mined Land Reclamation permit modification (ECL Article 23, Title 27)
NYSDEC	Freshwater Wetlands permit (ECL Article 24)
NYSDEC	Protection of Waters permit (ECL Article 15), if required
NYSDEC	Section 401 Water Quality Certification
NYSDEC	SPDES permit modification (ECL Article 17)
NYSDEC	Water Withdrawal permit modification (ECL Article 15, Title 15)
NYSDEC	Air facility permit or registration (ECL Article 19)
NYSDEC	Dam Safety permit for non-tailings structures meeting regulatory thresholds, if required
NYSDEC	Aquatic pesticide permit for vegetation management, if required
NYSDOT	Highway work permits, if required
Town of Fowler	Local approvals

2.8 Design basis

The Project is at the feasibility stage of design. The DEIS will evaluate the Max LOD as a conservative bounding envelope for land disturbance and will be based on the most current feasibility-level design and study results available when the DEIS is prepared. The DEIS will identify the design basis relied upon and describe any changes from the Project as described in this scope. Refinements within the Max LOD that do not result in new or increased potential significant adverse impacts are within the scope of this review.

Design advancement since the application was submitted has been directed at further avoidance and minimization, and the DEIS will reconcile reported impact quantities against the current limit of disturbance and explain differences from quantities stated in earlier submittals.

3.0 Environmental Setting, Potential Impacts and Mitigation

For each resource area below, the DEIS will describe existing conditions within a study area appropriate to that resource; evaluate potential impacts during construction, operation, and reclamation and closure, including short-term, long-term and cumulative impacts; identify the methodologies and significance criteria used; and identify measures to avoid, minimize or mitigate potential significant adverse impacts. The level of analysis for each resource is proportionate to the potential for significant adverse impact. Mitigation measures are identified on the basis described in Section 1.3.

3.1 Geology, soils and topography

Existing conditions. Bedrock and surficial geology; mineralogy of the graphite deposit, the host rock and the adjacent zinc mineralization, including the existing underground zinc workings; soils; topography; and existing mine-related landforms, including existing tailings.

Potential impacts. Conversion of topography and landforms to pits, waste rock storage facilities and the dry-stack facility, including the irreversible nature of extraction; soil loss and erosion associated with vegetation removal and the creation of impervious surfaces; and extension of excavation below the water table.

Methods. Results of the geotechnical investigation program; slope stability analyses for pit walls, waste rock storage facilities, the dry-stack facility and the Kilbourne Pit embankment using accepted factors of safety; to confirm that landforms are stable during operation and after closure; confirmation that open pit mining will not interact with existing underground workings, which is not geotechnically anticipated; and erosion and sediment control evaluation under the New York State Standards and Specifications for Erosion and Sediment Control.

Mitigation measures to be evaluated. Geotechnical design criteria; soil salvage and stockpiling of topsoil and suitable overburden for reuse in reclamation; erosion and sediment controls; and reclamation concurrent with operations rather than deferred to closure.

3.2 Groundwater resources

Existing conditions. Hydrogeologic setting; aquifer characteristics; existing mine water management; groundwater levels and quality from the site monitoring well network; and an inventory of private and public water supply wells within the study area, with baseline water quality sampling as appropriate.

Potential impacts. Drawdown from pit dewatering, including extent, duration and post-closure recovery; effects on private and public water supply wells; effects on groundwater-supported wetlands and stream baseflow; the hydraulic relationship between groundwater and Sylvia Lake; groundwater quality effects from waste rock, in-pit tailings deposition in the Arnold Pit, and dry-stack tailings; and pit water conditions at closure. Potential impacts associated with pesticide application, including potential migration to groundwater, will be addressed in Section 3.17.

Methods. Hydrogeologic evaluation using available site data, including groundwater level and water quality records from the existing monitoring well network, and the results of ongoing aquifer testing, including packer testing of bedrock boreholes. The evaluation will characterize groundwater conditions and hydraulic properties of the bedrock and assess potential groundwater drawdown associated with the

proposed pit dewatering, including potential effects on nearby water supply wells, wetlands, and surface water resources. A residential water supply well survey will be used to characterize existing conditions and evaluate potential impacts to nearby water supply wells. Potential groundwater quality impacts associated with waste rock and tailings management will be evaluated using the results of ongoing geochemical studies and available hydrogeologic information.

Mitigation measures to be evaluated. A Site Monitoring, Complaint Response and Well Mitigation Plan establishing baseline conditions, monitoring, complaint investigation and response procedures for potential mining-related impacts; dewatering management; containment and seepage controls for tailings and waste rock, with monitoring and action levels to be established through permitting; and groundwater monitoring with adaptive management measures.

3.3 Surface water, water quality and flooding

Existing conditions. Watersheds and drainage patterns; streams and ponds, including Sylvia Lake and the Arnold Pit; classification of receiving waters, including the Class AA classification of Sylvia Lake and its use as a drinking water source; baseline surface water quality; existing permitted discharges; and mapped flood hazard areas.

Potential impacts. Changes in stream flows, drainage areas and drainage patterns resulting from routing of Arnold Pit water, stormwater and tailings slurry, and from tailings containment basins; increases in flow, turbidity and erosion in receiving waters; water quality effects from treated mine water, treated process water and stormwater discharges; metal leaching and other geochemical effects from waste rock, tailings and pit walls, including displaced legacy zinc mine tailings; potential effects of applied pesticides on surface waters, addressed at Section 3.17; sedimentation; effects of water withdrawal; and changes in flood risk associated with approximately 150,000 square feet of new impervious surface and with altered drainage.

Methods. A site-wide water balance under average and extreme conditions; hydrologic and hydraulic modeling of design storm events, with the design storm criteria identified and their basis stated; geochemical characterization of waste rock, tailings, legacy zinc mine tailings and pit wall rock, including static acid-base accounting, kinetic testing and leach testing; characterization of Arnold Pit water; predictive water quality modeling at discharge points and post-closure, evaluated against the water quality standards in 6 NYCRR Parts 701 through 703; stormwater evaluation under the New York State Stormwater Management Design Manual; and comparison of the Max LOD and new impervious area with mapped flood hazard areas and downstream receptors.

Mitigation measures to be evaluated. Separation of contact and non-contact water; capture, recycling and treatment of contact water; dewatering and recycling of Arnold Pit, graphite pit and dry-stack tailings reclaim water within the site water system to the extent practicable, with surplus water treated and discharged under the SPDES permit; effluent limits established through the SPDES permit; stormwater controls; characterization sampling of legacy zinc tailings prior to relocation; reagent minimization review of the process circuit; spill prevention, control and countermeasure planning and secondary containment; and surface water monitoring.

3.4 Wetlands and aquatic resources

Existing conditions. Freshwater wetlands regulated by NYSDEC under ECL Article 24 and their 100-foot regulated adjacent areas; waters of the United States under USACE jurisdiction; streams and other surface water features; wetland cover types and classes; and wetland functions and values, based on the field delineation and functional assessment completed for the Project.

Potential impacts. Direct, permanent and temporary loss of wetlands, streams and other surface water features within the Max LOD; disturbance of NYSDEC regulated adjacent areas; indirect effects on wetland hydrology from dewatering and altered drainage; loss of ecosystem services, including stormwater storage and wildlife habitat; and loss of carbon storage associated with forested wetlands.

Methods. Quantification of impacts by wetland, stream, NYSDEC class, cover type and duration, reconciled against the current limit of disturbance and the delineation, with differences from quantities stated in earlier submittals explained; functional assessment using a methodology coordinated with NYSDEC and USACE; evaluation against the Article 24 weighing standards in 6 NYCRR Part 663; documentation of avoidance and minimization achieved through successive design iterations; evaluation of indirect hydrologic effects using the groundwater analysis in Section 3.2 and the catchment analysis in Section 3.3; and analysis of carbon storage loss from forested wetlands for consistency with the Climate Leadership and Community Protection Act (CLCPA).

Mitigation measures to be evaluated. Avoidance and minimization measures incorporated in the Project layout; maintenance of the contributing drainage area to avoided wetlands and clean water diversion routing; stream crossing designs maintaining natural bed substrate and aquatic organism passage; a compensatory mitigation plan under 33 CFR Part 332 and Article 24, including permittee-responsible mitigation and in-lieu fee credits as applicable, with mitigation siting prioritized within the watershed; wetland establishment through reclamation; and monitoring.

3.5 Tailings and mine waste management

Existing conditions. The existing zinc and graphite tailings storage facility, existing tailings overlying the graphite deposit, and the Arnold Pit.

Potential impacts. Stability and failure consequence of tailings containment structures, the Kilbourne Pit containment embankment and the dry-stack facility; relocation of existing zinc tailings and the potential for release of contaminated leachate from displaced legacy tailings or from graphite tailings; and long-term stability and stewardship after closure. Related groundwater, surface water, human health and dust effects are evaluated in Sections 3.2, 3.3, 3.14 and 3.7.

Methods. A summary of the tailings alternatives evaluation (see Section 4.0); design criteria and their basis; static and seismic stability and seepage analyses; hazard or consequence classification and breach or inundation assessment for structures where applicable; and the regulatory pathway for each structure under the Mined Land Reclamation Law or the dam safety regulations.

Mitigation measures to be evaluated. Filtered dry-stack placement with a waste rock outer shell; capping of graphite tailings in the Arnold Pit with relocated zinc tailings; seepage collection and return beneath tailings facilities with monitoring and action levels to be established through permitting; progressive reclamation; instrumentation, inspection and monitoring; emergency action planning where applicable; and financial security for reclamation.

3.6 Ecological resources

Existing conditions. Ecological communities and cover types, including the extent of forest cover; wildlife and habitat; fish and aquatic communities; state-listed endangered, threatened and special concern species under 6 NYCRR Part 182; federally listed and proposed species, including bats; bald eagles; and invasive species.

Potential impacts. Conversion of approximately 400 acres of forest and associated habitat disruption and fragmentation; disturbance from noise, lighting and activity over a mine life of at least 13 years; effects

on listed or rare species; effects of pesticide application on non-target species, addressed at Section 3.17; and spread of invasive species.

Methods. Ecological community and cover type mapping drawing on the mapping prepared for the wetland delineation; New York Natural Heritage Program and USFWS data requests; results of field surveys completed for the Project, including the bat acoustic survey; and a bald eagle nest survey prior to construction with application of USFWS disturbance buffers.

Mitigation measures to be evaluated. Seasonal restrictions on tree clearing where possible; habitat restoration through reclamation to forested or naturalized cover rather than grass-only stabilization; pollinator-focused seed mixes and preservation or re-establishment of milkweed within reclamation areas where practicable; and an invasive species management plan.

3.7 Air quality, greenhouse gas emissions and climate

Existing conditions. Regional air quality and attainment status; existing emission sources at the site; baseline conditions for the existing facility; and meteorological data.

Potential impacts. Fugitive dust and particulate matter from blasting, excavation, haul roads, stockpiles and dry-stack placement, including respirable crystalline silica; process emissions from crushing, the concentrator (including drying and bagging) and tailings filtration operations; hazardous air pollutant emissions, if any; mobile and equipment exhaust; and direct and indirect greenhouse gas emissions. The Project includes no processes or materials identified as generating off-site odor; odor is addressed at this level and no separate odor assessment is proposed.

Methods. An emissions inventory across construction, operations and decommissioning using EPA AP-42 emission factors and equipment data; an estimate of potential to emit for criteria pollutants and hazardous air pollutants, identifying the treatment of fugitive emissions in that estimate; an applicability review under 6 NYCRR Part 201 to determine the applicable permitting tier; air dispersion modeling to the extent required by the applicable state and federal air regulations for that tier; a greenhouse gas emissions inventory; and an evaluation of consistency with the statewide greenhouse gas emission limits under Section 7 of the CLCPA, following applicable NYSDEC policy including DAR-21. Emissions calculations, including potential to emit for criteria pollutants and hazardous air pollutants, are in preparation; the air entries in the Full EAF Part 1 were provided before those calculations were available. The DEIS will report the calculated potential to emit and the resulting permitting applicability.

Mitigation measures to be evaluated. A fugitive dust control plan and enforceable emission limits established through Article 19 permitting and the Mined Land Reclamation Law; covered fine ore stockpile and enclosure of the process circuit from grinding to product loadout within the concentrator building; dust suppressant on primary haul roads in accordance with NYSDEC guidance; concurrent reclamation and armoring with waste rock to reduce dust; and emission controls on process sources.

3.8 Noise, vibration and blasting

Existing conditions. Ambient sound levels at representative sensitive receptors, including residences on County Route 22 in proximity to the northern mining area, and the location of the nearest residences and structures.

Potential impacts. Noise from construction, mining, processing, haul traffic and backup alarms, chronic over a mine life of up to approximately 20 years rather than acute; and ground vibration and airblast from blasting, including potential effects on nearby residential structures.

Methods. Ambient sound monitoring; noise modeling of representative construction and operating conditions, evaluated under the NYSDEC program policy *Assessing and Mitigating Noise Impacts*; and evaluation of blasting against established ground vibration and airblast criteria, including U.S. Bureau of Mines guidance.

Mitigation measures to be evaluated. Berms, setbacks, retained forest cover and facility siting developed with the objective of minimizing noise at neighboring properties; equipment selection and maintenance; blast design and scheduling, and limitations on ground vibration and airblast, blast monitoring, recordkeeping and reporting as established through Mined Land Reclamation permitting; pre-blast condition surveys, which the Applicant has already offered to residential property owners within approximately 0.25 miles of the proposed quarry; and a complaint response protocol.

3.9 Visual resources and lighting

Existing conditions. The visual setting; representative public viewpoints; existing nighttime conditions in an area without significant existing sky-glow; and aesthetic resources of statewide significance within the viewshed.

Potential impacts. Nighttime lighting, spillover and sky-glow associated with an expanded mine footprint; and changes in views from pits, waste rock storage facilities, the dry-stack facility and the processing plant.

Methods. A lighting assessment addressing spillover and sky-glow; and viewshed screening with visual simulations from a limited number of representative viewpoints, following the NYSDEC program policy *Assessing and Mitigating Visual and Aesthetic Impacts* (DEP-00-2).

Mitigation measures to be evaluated. Shielded, downward-directed lighting with controllers and curfew dimming; retention of existing forested buffer along the Sylvia Lake Road corridor where the mine plan allows, with supplemental native screen planting where it does not; landform grading and contouring; and progressive reclamation.

3.10 Historic and cultural resources

Existing conditions. Results of the Phase IA cultural resources assessment and the Phase IB archaeological survey; the area of potential effects established in consultation with OPRHP; historic architectural resources within that area; and the status of consultation with OPRHP and with Tribal Nations through the federal process.

Potential impacts. Effects on archaeological sites and historic properties eligible for or listed in the State or National Registers of Historic Places.

Methods. Cultural resources investigations conducted to OPRHP standards, and the OPRHP determination of impact once issued; and consultation under Section 14.09 of the New York State Parks, Recreation and Historic Preservation Law, coordinated with consultation under Section 106 of the National Historic Preservation Act.

Mitigation measures to be evaluated. Avoidance; further investigation of eligible sites where required; and an unanticipated discoveries protocol with work stoppage and notification procedures.

3.11 Transportation

Existing conditions. The roadway network serving the site, including State Routes 58 and 812, County Routes 22 and 24, and Sylvia Lake Road; existing traffic volumes; and the availability of rail for product shipment.

Potential impacts. Construction and operating traffic, including workforce trips, deliveries and product shipment; and truck routing.

Methods. Trip generation for construction and peak operations; and traffic counts and level-of-service analysis at key intersections where trip generation indicates they are warranted.

Mitigation measures to be evaluated. Designated truck routes; shift and delivery timing; and coordination with NYSDOT, St. Lawrence County and the Town of Fowler.

3.12 Land use, recreation and community character

Existing conditions. Existing land use on and around the site; Town of Fowler Land Use Law; county plans; recreational uses in the vicinity, including Sylvia Lake; and community character. Existing conditions will also record the absence of any designated coastal area, Critical Environmental Area, designated parkland or State-owned land on or adjacent to the site.

Potential impacts. Consistency with local land use plans and zoning; conversion of open space and changes in land use during operation and after reclamation; effects on recreational use; and effects on community character.

Methods. Review of applicable plans and local laws for consistency; and a qualitative assessment of recreation and community character drawing on the noise, visual, traffic and ecological analyses. The DEIS will document that the Project is located outside a designated coastal area, that no Critical Environmental Area is designated on or adjacent to the site, and that no designated parkland or State-owned land is affected; on that basis, these matters are not carried further. Effects on open space and ecosystem services are addressed at Sections 3.4 and 3.6.

Mitigation measures to be evaluated. Buffers and setbacks; post-reclamation land use planned with the Town, with the reclamation species palette developed with local input; and community engagement, including a project webpage, a single published point of contact and a complaint response protocol.

3.13 Socioeconomic conditions and environmental justice

Existing conditions. Population, employment and income; the local and county fiscal base; and the disadvantaged community and Potential Environmental Justice Area status of the Project area and surrounding communities.

Potential impacts. Employment and income; tax and other fiscal effects; and effects on property values and on the post-closure condition of the landscape.

Methods. A qualitative assessment of economic and fiscal effects for construction and operation; and a screening of the Project area against the CLCPA disadvantaged community criteria and NYSDEC Potential Environmental Justice Area mapping. Screening to date indicates that the Project is not located within a disadvantaged community or a Potential Environmental Justice Area; the DEIS will document that screening. Should screening indicate otherwise, the DEIS will include the analysis required under NYSDEC Commissioner Policy 29 and ECL 70-0118, as applicable. On that basis, a detailed environmental justice analysis is not carried further in the DEIS.

Mitigation measures to be evaluated. Local hiring and procurement; and a clear statement of the financial assurance mechanism and its operation independent of the Applicant's corporate circumstances.

3.14 Public health and safety, hazardous materials and solid waste

Existing conditions. Existing hazardous materials storage, explosives handling, waste management and emergency response arrangements at the site; and the use of Sylvia Lake as a drinking water source.

Potential impacts. Potential release of contaminated leachate from displaced legacy zinc tailings or from graphite tailings, and the consequences of any such release for drinking water supply; blasting safety; storage and handling of fuel, explosives and process reagents; spill risk; generation and disposal of solid and hazardous waste; and public access to hazardous areas.

Methods. An evaluation of potential pathways between tailings and mine waste sources and drinking water receptors, drawing on the geochemical characterization and predictive water quality modeling in Section 3.3 and the groundwater analysis in Section 3.2; an inventory of hazardous materials and wastes; review of the applicable regulatory programs, including petroleum and chemical bulk storage; and description of site security and emergency response planning.

Mitigation measures to be evaluated. Spill prevention and response plans and secondary containment; explosives management under Mine Safety and Health Administration and Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) requirements; site security and fencing; and waste minimization and recycling.

3.15 Energy and utilities

Existing conditions. Existing electrical service, transmission, water supply and sanitary systems.

Potential impacts. Electrical demand and supply, including demand associated with heating and cooling of approximately 150,000 square feet of new building space; new or upgraded transmission; and demand on water and sanitary systems.

Methods. Estimates of energy demand by Project phase, including building heating and cooling load, and identification of the power supply and transmission requirements. Energy use is also addressed in Section 6.4 and greenhouse gas emissions in Section 3.7.

Mitigation measures to be evaluated. Energy efficiency measures in building and process design.

3.16 Agricultural resources

Existing conditions. Agricultural district designations and the extent of the Project within them; farmland soils; active agricultural operations within or adjacent to the Max LOD; and whether adjacent agricultural operations irrigate from groundwater.

Potential impacts. Irreversible conversion of agricultural district land and farmland soils to non-agricultural use; and potential effects on adjacent agricultural operations.

Methods. Review of agricultural district mapping and USDA-NRCS soils data; quantification of agricultural district land and farmland soils converted; and identification of active agricultural operations within the study area.

Mitigation measures to be evaluated. Avoidance where feasible; and soil salvage for reclamation.

3.17 Vegetation management and pesticide use

Existing conditions. Existing invasive species populations, including common reed (*Phragmites australis*), within the Project area.

Potential impacts. Potential effects of herbicide or pesticide application on wetlands, surface waters and groundwater, including groundwater used for potable supply or irrigation; effects on non-target species; and potential effects on human health.

Methods. Identification of the locations, approximate extent and timing of proposed application; the proposed products and application methods; and evaluation of transport pathways to surface water and groundwater, drawing on Sections 3.2 and 3.3.

Mitigation measures to be evaluated. Product selection and application methods appropriate to proximity to water; application by certified applicators under applicable NYSDEC requirements; buffer distances from open water and from potable and irrigation wells; timing restrictions to limit effects on non-target species; and consideration of non-chemical control methods where practicable.

4.0 Alternatives

In accordance with 6 NYCRR 617.9(b)(5), the DEIS will describe and evaluate a range of reasonable alternatives that are feasible considering the objectives and capabilities of the Applicant described in Section 2.3, at a level of detail sufficient to permit comparative assessment, and a "no action" alternative. The alternatives analysis will be consistent with the alternatives analysis prepared for the federal Section 404(b)(1) review, so that the state and federal records rest on the same information.

4.1 No action alternative

Continuation of existing permitted zinc operations without development of the graphite deposit, including the environmental and economic consequences of not proceeding.

4.2 Alternative sites

The graphite resource is fixed in location. The DEIS will explain the basis for locating the Project at the existing Balmat operation, and will evaluate alternative locations for Project components that are not tied to the deposit, drawing on the offsite alternatives evaluation prepared for the federal review.

4.3 Alternative site layouts

The sequence of conceptual layouts developed to avoid and minimize impacts to wetlands and other resources, including the limit-of-disturbance alternatives considered in Project design, the placement of waste rock in surface storage facilities compared with placement in mined-out pits, and the resulting changes in wetland and stream impacts.

4.4 Tailings management alternatives

The tailings management alternatives evaluated through a structured multi-criteria alternatives analysis that considered safety and failure consequence, environmental impact, geotechnical and foundation conditions, regulatory pathway, cost, storage capacity, water management, closure, social considerations, operational integration and constructability. The DEIS will identify the options considered, the basis for elimination of each, and the basis for the selected configuration.

4.5 Alternative scale and timing

A qualitative evaluation of reduced production or reduced mine life, and of alternative phasing, considering Project objectives and economic feasibility.

4.6 Comparison of alternatives

A comparative summary of the alternatives against the potential impacts identified in Section 3.0 and the Project objectives, with the reasons for selection of the proposed Project.

5.0 Cumulative Impacts

The DEIS will evaluate the cumulative impacts of the Project together with continuing zinc operations at Balmat and other reasonably foreseeable actions within appropriate spatial and temporal boundaries for each resource. The analysis will focus on the resources where the Project and continuing zinc operations measurably overlap: groundwater, surface water and water quality, wetlands, and air and greenhouse gas emissions. The DEIS will identify the actions considered and the basis for their inclusion, or state that no other reasonably foreseeable actions have been identified.

6.0 Other Required Analyses

In accordance with 6 NYCRR 617.9(b)(5)(iii), the DEIS will address the following matters where they are relevant and significant. Impacts on disadvantaged communities, also listed in 617.9(b)(5)(iii)(j), are addressed in Section 3.13.

6.1 Unavoidable adverse impacts

The DEIS will identify and describe any significant adverse environmental impacts that could not be avoided or adequately mitigated, by resource area.

6.2 Irreversible and irretrievable commitments of resources

The resources that would be committed by the Project, including the mineral resource, land disturbance, agricultural land, wetlands not restored, energy and materials.

6.3 Growth-inducing aspects

The potential for the Project to induce secondary development, including housing, services and related industrial activity.

6.4 Use and conservation of energy

The Project's anticipated energy demand and the measures considered to conserve energy, drawing on Sections 3.7 and 3.15.

6.5 Solid waste management

The types and quantities of solid waste generated, their management, and consistency with applicable solid waste management plans. Mine waste rock and tailings are addressed in Section 3.5.

6.6 Climate change and resilience

The Project's greenhouse gas emissions and its consistency with the statewide emission limits under Section 7 of the CLCPA, drawing on Section 3.7; the role of domestically produced natural flake graphite in energy storage technologies and the net effect of that role on greenhouse gas emissions beyond the Project site; and the Project's vulnerability to the effects of climate change, including increased precipitation intensity and flooding, as it affects the design of water management and tailings structures.

6.7 Summary of mitigation and monitoring

A consolidated summary of the mitigation and monitoring measures evaluated in the DEIS, identifying those proposed for adoption, any residual impact anticipated in each resource area, and the regulatory vehicle through which each adopted measure would be carried, for use in the Findings Statement and permit conditions.

7.0 Issues Raised During Scoping Not Proposed for Inclusion in the DEIS

In accordance with 6 NYCRR 617.8(e)(7), this section is reserved for prominent issues raised during public scoping that are determined to be neither relevant nor environmentally significant, or that have been adequately addressed in a prior environmental review, together with the reasons those issues are not included in the final scope. The Applicant has identified no such issues at this stage. Matters that the Applicant proposes be addressed at a level proportionate to the record, or that are addressed by reference to prior review, are identified within the resource sections of Section 3.0.

8.0 DEIS Appendices

In accordance with 6 NYCRR 617.8(e)(6), the following supporting information will be placed in DEIS appendices rather than in the body of the DEIS:

- Full Environmental Assessment Form, Positive Declaration, final scope, and agency correspondence
- Wetland and stream delineation report, jurisdictional documentation, and functional assessment report
- Compensatory mitigation plan
- Hydrogeologic investigation report and groundwater model documentation
- Site-wide water balance, hydrologic and hydraulic analysis, and water quality modeling
- Geochemical characterization of waste rock, tailings, legacy zinc tailings and pit wall rock
- Tailings alternatives analysis and geotechnical and stability reports
- Mined Land Use Plan summary
- Air emissions inventory, dispersion modeling, and greenhouse gas and CLCPA consistency analysis
- Noise assessment
- Visual and lighting assessment and simulations
- Cultural resources reports, with confidential site location information withheld from public distribution
- Ecological survey reports

END