Graphite One COE Public Notice Project Description

The proposed project would permanently discharge approximately 16,400 cubic yards (cy) of fill material into 2.21 acres of waters including wetlands that have been asserted by the applicant as jurisdictional and requiring permitting under Section 404 of the Clean Water Act. The project would also incur temporary impacts to 0.39 acres of applicant-determined jurisdictional waters. The total extent of permanent impacts to wetlands and other waters would be 414.68 acres and the total extent of temporary impacts to wetlands and other waters would be 1.18 acres. In addition, approximately 12,440 linear feet of stream would be diverted into artificially constructed channels away from the mine site. The total extent of jurisdictional waters that would be impacted by the discharge of fill is unknown at this time and will be determined by completing an approved jurisdictional determination.

Mine Site

Construction of the mine pit and facilities would involve the permanent discharge of fill into 0.21 acres of waters (predominantly streams) and 0.13 acres of wetlands asserted by the applicant as jurisdictional. A total of 381.2 acres of waters including wetlands would be permanently eliminated within the 1,176.0-acre footprint of the mine site. A total of 0.12 acres of applicant-asserted jurisdictional waters would be temporarily filled via construction of the access ramp for the construction staging pad along the edge of the Imuruk Basin.

The mine site would include the mine pit, a processing plant, a waste management facility (WMF), a water treatment facility, electrical power generation and distribution, fuel storage and dispensing, explosive and emulsion storage, a helipad, and roads (not including the access road). Additionally, it would include administration offices, warehousing, a metallurgical lab, a crusher, a mill, tailing filtration and thickening, concentrate loading, a truck shop, parts storage, a wastewater (sewage) treatment plant, a drinking water well, emergency accommodations for employees, concentrate container storage, and emergency response. The mine would operate 365 days per year, 24 hours per day.

Mining would occur via open pit mining using conventional drill, blast, load, and haul to deliver ore to a crusher where the ore process begins. The mine is designed to deliver up to 11,000 tons of ore daily. With a life-of-mine strip ratio of 3.2:1, on average, approximately 35,400 tons of waste would also be handled daily. The overall size and design of the pit was based on open pit economic optimization and geotechnical considerations.

Mine facilities would be shipped as modularized units to the Port of Nome for transport to the mine. The facility modules and mine construction equipment would be brought to

the mine either via the new access road or barged to the construction staging pad via the Imuruk Basin.

The buildout of the mine site would occur in three distinct development phases. Phase 1 would occur within the first five years; Phase 2 would occur from Years 6 through 12; Phase 3 would occur from Years 13 through closure. These phases are closely linked to the water management strategy and are intended to minimize contact water generation throughout the life of the mine. The largest infrastructure element, and the one driving all others, would be the WMF. The first phase of the WMF, mill facility construction and initial pit development, would involve the most land disturbance.

To reduce the quantity of contact water and reduce the need for pit dewatering, Graphite Creek would initially be diverted downslope (north) of the mine pit during the establishment of the first phase of the WMF. The surface diversion would take the flow from Graphite Creek to the Glacier Canyon Creek channel west of the WMF final footprint. Once the mine pit progresses to Graphite Creek, an upstream diversion structure would be constructed to redirect creek flows around the pit and all operational areas into Glacier Canyon Creek to the west. North of the pit, Lower Graphite and Ruby Creeks would be conveyed in a diversion that would flow south and west around the WMF. Glacier Canyon Creek would flow into this diversion with Lower Graphite and Ruby Creeks, then flow northward into the original Glacier Canyon Creek channel north of the mine facilities. A total of 12,440 feet of stream would be diverted at full buildout. Additionally, five culvert crossings would be established for roads within the mine site.

The processing plant would use crushing, grinding, and flotation processes. A jaw crusher would reduce ore, which would then be conveyed to a covered stockpile. The crushed ore would then be conveyed to a semi-autogenous grinding mill. Ground ore would pass through seven stages of flotation and three stages of regrinding, producing a 95 percent pure graphite concentrate. The concentrate would be dewatered and dried before being placed in fully enclosed shipping containers for truck transport to Nome.

A process water pond would support operational needs at the mill and capture runoff from the mill area. Sediment basins would be constructed to settle out sediments in the runoff from the mill area before it enters the process water pond. The process water pond would be hydraulically linked with the water treatment ponds to maintain the balance between re-use and treatment.

The waste management facility would store both waste rock material (non-ore) from the pit and tailings (coarse and fine) produced from the milling operation. The fine, wet tailings would be stored in a conventional tailings pond that would be constructed within the WMF. The dam for the tailings pond would be built in stages using compacted waste rock material and coarse tailings. Upon filtering and drying to 8-12 percent moisture content, the coarse tailings would be co-mingled with waste rock as dry-stack storage.

Co-mingling and compaction would occur in the WMF using heavy equipment, such as dozers, roller compactors, and graders. The objective of the co-mingling strategy is to create blended, compacted, low-permeability material. Placement of co-mingled material over the life of the operation would result in a very large, stabilizing buttress adjacent to the tailings dam. The WMF would be constructed in multiple stages, and contemporaneous closure activities would be used wherever practical.

The tailings pond would be constructed during the initial stage of WMF development. The elevation of the dam would be raised over time, as operations progress and more tailings storage is needed. Wet tailings would be pumped from the processing pad to the tailings pond by a pipeline. Approximately 25 to 30 percent of the milled material is expected to be diverted to the wet tailings pond for disposal.

A high-density polyethylene (HDPE) or clay basin liner would be installed under the WMF prior to material placement. Additionally, the inside slope of the tailings dam would be lined. An underdrain system would be installed with the WMF. This system would assist in transporting water that drains through the co-mingled material to collection sumps that would deliver this water to the water management ponds. Water from the collection pond would either be recycled for use at the mill or treated for discharge.

Water management facilities would include water management ponds, a water treatment plant (WTP), diversion ditches, contact water ditches, stormwater settling structures, and a diversion structure for Graphite Creek above the mine pit. Water management ponds would be used to store water that runs off from within the mine (contact water) and settle sediments prior to recycling or treatment. The WTP would treat all contact water to State of Alaska standards prior to discharging to Glacier Canyon Creek. The WTP would use precipitation, flocculation, settling, filtration, and reverse osmosis processes prior to discharge. Monitoring wells would be installed downgradient of the WTP and within Glacier Canyon Creek to detect any changes in water quality that may result from the mining operation.

Diversion ditches along the mine site perimeter would route surface runoff away from site facilities so that surface water remains unaffected by project activities. Graphite Creek would require diversion in Year 1 of mine operations to allow for the tailings pond construction and once again in Year 5 when the pit footprint encroaches on this non-fish bearing stream. A diversion structure would be constructed uphill from the mine site to convey water in a pipeline that would discharge the flow into Glacier Canyon Creek west of the pit footprint. With the exception of supporting very few slimy sculpin (Cottus cognatus) on an intermittent basis, Glacier Canyon Creek is also non-fish bearing and is the natural ultimate discharge point of Graphite Creek. Small sections of other streams in the mine footprint would also be diverted away from the mine and into artificially constructed channels that would lead to natural channels downstream.

Due to lack of other power sources within the region, diesel powered generators would be used to provide electrical power at the mine site. Two 7.5-megawatt (MW) generators would operate to supply the 12.5 MW of nominal electrical operating load. A third 7.4-MW generator would be installed as a standby spare for a total 22.5 MW of generating power installed. These generators would be located on the same pad as the processing plant.

Fuel for power generation, concentrate drying, and mobile equipment would be trucked from a bulk fuel tank farm in Nome. Two weeks of fuel storage would be located at the Project site in a double-walled, 850,000-gallon, steel tank. The fuel tank would be located within a containment structure adjacent to the power generation facility. A fueling station and 4,000- gallon gasoline tank for light vehicles would be co-located in the containment.

High- and low-explosive materials would be stored on a gravel pad along the main mine haul road connecting the pit with the WMF on pads built specifically for this purpose. The magazines would be situated a sufficient distance from occupied facilities to meet regulatory safety requirements. The two magazines would be adequately barricaded by berms, isolated from mine traffic, and properly located away from one another to provide the required physical separation distance.

Construction Staging Pad

A 5-acre gravel staging pad and temporary access ramp would be constructed near Imuruk Basin to support mine site construction, mine facility staging and transport, access road construction, and bulk ore sample shipment. This staging pad and temporary ramp would be developed in coordination with the landowner, Bering Straits Native Corporation, who would lease the site to Graphite One for use during the Project construction phase. As mentioned above, a total of 0.12 acres of applicant-asserted jurisdictional waters would be temporarily filled via construction of the access ramp.

The gravel fill to construct the staging pad would likely be sourced from Brevig Mission and brought to the site by barge via the Imuruk Basin. The temporary ramp would be constructed using mats and clean gravel to allow vehicles equipped with low-pressure tires to transport the construction equipment and modules to the staging pad. It is expected that the ramp would be in place for less than three years. Once the construction equipment and mine facility modules are transported to the mine, the temporary ramp would be removed. The area within the temporary ramp would be re-contoured to preconstruction conditions.

Graphite One would use a shallow-draft barge or landing craft, which can be moored on the shoreline of Imuruk Basin, to offload and store construction equipment and modularized mine facilities during the open-water season. Equipment and facility

modules would be staged on the gravel pad until winter, when an approximately four-mile long ice and snow road could be constructed to transport these materials to the mine. The staging pad would also be used to store a bulk ore sample from the mine until the following open water season for barging to the Port of Nome.

Access Road

Construction of the access road would involve the permanent discharge of gravel fill into 1.27 acres of waters (predominantly rivers and streams) and 0.20 acres of wetlands asserted by the applicant as jurisdictional. A total of 33.5 acres of waters including wetlands would be permanently eliminated within the 568.2-acre footprint of the access road and associated material sites. A total of 0.27 acres of applicant-asserted jurisdictional waters would be temporarily filled via construction of the temporary bridge access roads and placement of the temporary piles for trestles during bridge construction.

The access road would begin at approximately Milepost 30 of Kougarok Road, north of Nome, and traverse through Mosquito Pass to the mine site. The access road would be used to transport graphite concentrate to the existing road system in custom, polymer-lined, 20-foot shipping containers with a net capacity of 21 tons. A single truck would haul two graphite concentrate containers at a time. The access road has been designed to meet American Association of State of Highway Traffic Officials (AASHTO) standards for design speed or specialized carrier requirements for oversized loads. The road would be built across land owned by the Alaska Department of Natural Resources (ADNR) and may be closed to the public for vehicle access. ADNR would make the final determination on public vehicle access and use of the roadway.

The access road surface would be 28 feet wide to accommodate two-way traffic, with side slopes that range from 2:1 to 3:1 (horizontal to vertical). To insulate the permafrost and thereby construct a stable road, the fill for the road would be typically 10 feet thick; the road surface would be typically 10 feet above the ground surface. In locations with soft spots or poor underlying material, additional road prism borrow or geo-fabric may be required. A dust palliative such as calcium chloride may be mixed in with the crushed aggregate surface course material to control dust.

Typical road construction methods would be used to construct road segments in wetlands. Construction would consist of clearing, grubbing, and placing fill; blasting existing rock, in some cases; and/or excavating existing material to reach the proposed design grade. The overall embankment width would generally vary from 50 to 80 feet. The construction limits would include a 20-foot buffer on either side of the toe of slope to account for temporary activities during construction, such as vegetation clearing and/or equipment operating. With the construction limits, the overall disturbance footprint would

range between 100 to 120 feet. No grubbing would occur within the temporary disturbance limits, and vegetation would be cleared above the ground surface.

Locally sourced material extracted from several proposed gravel borrows and rock quarry sites along the route would provide the vast majority of the material needed for road construction. Road construction would typically entail fill placement over native soils. However, cut-to-fill road construction would occur in areas with substantial side slopes and suitable subgrade conditions.

Several streams would be traversed by the access road. Table 1 divides the stream crossings by stream width category and shows the number of streams that would be crossed by culverts and bridges and the number of streams that support anadromous fish or only resident fish (streams that only support fish species that complete their entire life cycle within the stream). Crossings would be accomplished with culverts or bridges, depending upon the ordinary high water (OHW) stream widths, stream characteristics, and various topographic considerations.

Table 1. Stream Crossings

Stream Width (feet)	Stream Crossings – Culvert	Stream Crossings – Bridges	Anadromous Fish Stream Crossings	Resident and Anadromous Fish Stream Crossings
0–1	11	0	0	0
>1–5	26	0	2	2
>5–10	3	0	1	2
>10–15	2	0	1	2
>15–25	3	0	1	2
>25	1	6	5	6
Total	**46**	**6**	**10**	**14**

Most of the stream crossings along both the access road and within the mine (outside the pit) would be accomplished with culverts ranging from 3 feet to 55 feet wide. As part of the design effort, culvert crossings were categorized based on stream width and fish presence, as shown in Table 2. Culverts in categories #4 and #7 would be placed in streams that do not support fish as determined by baseline monitoring that began in 2018. There are no streams within the project area that require installment of culverts in category #5.

Table 2. Culvert Crossing Categories

Culvert Category #	Crossing Type and Size	Mapped Stream Width at OHW	Design Passage for Fish?	Count
1	Circular culvert 3-foot diameter	Installed as needed during road construction for cross drainage; not for mapped streams	No	To be determined at final design
2	Circular culvert 4-foot diameter	Up to 2 feet	No	29
3	Circular culvert 9-foot diameter	>2 to 6 feet	Yes	7
4	Circular culvert 9-foot diameter	Up to 6 feet	No	3
5[a]	Pipe arch 15 feet wide	>6 to 10 feet	No	0
6	Pipe arch 15 feet wide	>6 to 10 feet	Yes	1
7	Site-specific pipe arch up to 20 feet wide	>10 to 17 feet	No	2
8	Site-specific pipe arch up to 50 feet wide	>13 to 55 feet	Yes	4

[a] Although no Category 5 culverts are currently included within the design, the culvert types is included because it may be necessary with additional data collection.

The same approach to culvert design would be followed for the five culvert crossings needed at the mine site. Where the access road would cross seasonally flowing drainages and wetlands, minor culverts consisting of corrugated metal pipe with a minimum diameter of 3 feet would be installed to maintain hydrological connectivity and prevent ponding immediately adjacent to the road.

Full span bridges would be constructed across six named rivers, each of which is over 25 feet in width at OHW. Table 3 lists these bridge crossings and their key details. All bridges would be designed as steel plate girder bridges with a concrete deck. The bridges would be designed for 80-ton capacity and have overall width of 16 feet.

Table 3. Bridge Crossings

Stream Name	Milepost	Approximate Length (feet)	Number of Spans
Nome River	0.1	80	1
Buffalo Creek	0.8	95	1
Sinuk River	4.3	80	1
Windy Creek	6.7	131	1

Stream Name	Milepost	Approximate Length (feet)	Number of Spans
Osborn Creek	13.7	90	1
Cobblestone River	16.5	160	2

Nome Support Facilities

New support facilities in Nome would include ore concentrate storage areas, additional fuel storage capacity, and employee housing.

Ore concentrate storage would occur at two sites located in Nome. One is on an approximately 23-acre parcel owned by the Bering Straits Native Corporation (BSNC). The BSNC pad site is partly constructed, and it was permitted for full construction for the purpose of rock and gravel storage by a Department of the Army permit POA-2020-00218 issued on November 20, 2020. The second concentrate storage location is an existing pad that is approximately 10-acres and is owned by the City of Nome and situated very near the BSNC pad site.

Graphite concentrate would only ship during the ice-free season; therefore, Graphite One would need to stage the 20-foot shipping containers at a facility near the Port of Nome. The containers would be stacked three to four high in rows until container ships are able to access the port during ice-free months. Graphite One has assumed that the Port of Nome expansion project would have progressed sufficiently to allow self-loading container ships to load containers dockside. The design-basis ship for transporting the graphite concentrate is assumed to have a 37-foot draft. If the Port of Nome expansion does not proceed, Graphite One would examine options to use shallow draft boats to transport concentrate containers to a vessel anchored in deeper water.

Fuel storage would occur within a 1.6-acre portion of an existing gravel pad located in Nome and owned by the Sitnasuak Native Corporation (Sitnasuak) and their subsidiary Bonanza Fuel. Graphite One is working with Sitnasuak to add bulk tankage in addition to the existing nine tanks at that location.

In order to support year-round mine operations, the Project would require eight million gallons of fuel to be stockpiled in Nome by October 1 each year. Due to sea ice formation on the Bering Sea and Norton Sound, shipping of fuel, concentrates, and other bulk commodities can only occur between approximately June and October. Graphite One has assumed that it would use excess capacity in existing bulk storage owned by the BNSC, but an additional four million gallons of diesel fuel storage would be required. Graphite One is negotiating the construction and operation of that storage with local businesses, which would also be contracted to deliver the fuel to the Graphite Creek Mine. Two 14,000-gallon truck/trailer loads would be required daily.

Graphite One intends to provide long-term housing by constructing a subdivision with singleand multi-family housing as well as apartments for Nome-based employees. Housing would be constructed within a set of adjoining parcels totaling 157 acres, owned by BSNC, and located just north of Nome. This area is in proximity to utilities (electrical, sewer, & drinking water) and is predominantly barren land recently disturbed by placer mining and lacking permafrost.

In addition, Graphite One would construct camp-style accommodations at the mine site to be used during the construction phase of the project. During mine operation, this facility would be used for emergency housing for workers when a storm or some other event causes the access road to become temporarily impassable. During normal operations, Graphite One would bus all workers to and from Nome each day.

Improvements to and Use of Public Roads

The Alaska Department of Transportation and Public Facilities (ADOT&PF) intends to improve Kougarok Road and other existing roads within Nome in ways that would accommodate transportation of ore concentrate from the mine site. The improvements would include widening, curve straightening, and capping existing roads.

Both construction and operation of the Project would use highway-legal vehicles that do not require additional road design standards and improvements. Currently, ADOT&PF conducts year-round maintenance of the Kougarok Road from its origin in Nome to milepost 13. Graphite One estimates that transporting dried ore concentrate from the mine to the Port of Nome would increase the average daily traffic on the Kougarok Road by 12 round trips per day.

ADOT&PF performed an initial investigation of deficiencies of the existing Kougarok Road in 2024 and made recommendations for improvements. Negotiations between ADOT&PF and Graphite One are on-going and would determine the funding mechanism and responsible parties for improvements and maintenance to milepost 30 of the Kougarok Road. ADOT&PF will determine whether these improvements would require fill in Waters of the United States.

All work would be performed in accordance with the enclosed plan (Sheets 1-11), dated August 2025.

Mine Closure and Reclamation

After mining operations conclude, the site would transition into final reclamation and closure activities. All facilities and foundations at the mine site would be demolished and removed. The debris would be disposed in the final pit and covered in accordance with Alaska mining regulations. The last phase of the WMF would also be regraded and fully closed. The haul roads, access roads, and facility pads would be dismantled and

regraded to approximate original contours. Topsoil material that was salvaged during operations would be spread on the regraded areas where suitable and reseeded according to permit requirements. The Graphite Creek diversion structure would remain in perpetuity and would require intermittent maintenance.

Due to the site's remote location, all reclamation activities would be self-performed using the equipment fleet that supported the mining operation. Given the relatively small size of the operation and reclamation activities of the WMF that would occur during the life of the mine, it is assumed that the demolition and most reclamation activities would be completed in approximately one year. WMF reclamation during the life of the mine would include closing sections of the WMF once they are no longer needed, draining down surface water, backfilling the basin with brines and mine waste up to final grade, and installing a cover liner. The cover liner would be covered with growth media and revegetated.