**STATE OF MINNESOTA**
**ENVIRONMENTAL QUALITY BOARD**

**Petition of WaterLegacy, Tamarack Water Alliance, and Minnesota Residents/Property Owners for Environmental Assessment Worksheet for Talon Nickel March 13, 2025 Exploratory Drilling Plan**

## INTRODUCTION

Pursuant to Minn. Stat. § 116D.04 and Minn. R. ch. 4410, WaterLegacy, along with the Tamarack Water Alliance and more than 100 individual Minnesota residents and property owners (collectively, "Petitioners"), petition for the preparation of an Environmental Assessment Worksheet ("EAW") for the exploratory drilling plan submitted by Talon Nickel (USA) LLC, a subsidiary of Talon Metals Corp. (collectively "Talon"), on March 13, 2025, related to a nickel-copper sulfide ore mine proposed by Talon and Rio Tinto. This exploratory drilling plan covers "an area extending from 6.5 miles north to 8 miles southeast of Tamarack, MN" at "up to twenty-three (23) drill sites.[1] The depth of borings would be from 500 to 6,000 feet.[2] An EAW is required because the nature and location of borings proposed, including their cumulative potential effects, may have the potential for significant environmental effects. Minn. R. 4410.1100, subp. 2(E).

Material evidence provided by Petitioners herein demonstrates that Talon's exploratory borings have and will entail drilling in wetlands; in areas of open water; near drinking water wells; in and near wild rice waters; at extreme depths; without identifying artesian water conditions that may result in contamination of surface water; with unlined

[1] DNR, Summary of Talon March 2025 Exploration Plan, Exhibit 1 at 1.
[2] Talon, Letter to DNR re Exploration Plan and Notification, Mar. 13, 2025, Exhibit 2 at 2.

sumps; without testing the water quality of sumps, cuttings, wastewater, sediments, surface waters, groundwater, or residential wells; without proper sealing of borings; and potentially under other conditions inconsistent with Minnesota regulations adopted to protect surface water and groundwater. The cumulative potential effects of the exploratory drilling plan may result in significant adverse environmental effects to wetlands, surface waters, aquatic life, groundwater, drinking wells, wild rice and other culturally significant plants, biodiversity, wildlife, and human health.

Talon's March 2025 exploratory drilling plan is part of a cumulative and ongoing exploratory drilling program of the Tamarack Intrusive Complex in Aitkin County and Carlton County watersheds. No environmental review has been conducted for Talon's exploratory borings in this environmentally salient area, and such review is sorely needed and required. Governmental decisions on Talon's exploratory drilling are ongoing, and environmental review would influence and mitigate effects of drilling as well as providing information needed by the public. Pending decision on this matter, government approvals and Talon exploratory drilling activities should be discontinued. Minn. Stat. § 116D.04, subd. 2b; Minn. R. 4410.3100, subp. 1.

## STATEMENT OF MATERIAL EVIDENCE

### A. Past and Ongoing Tamarack Intrusive Complex Exploratory Borings.

Talon currently controls approximately 31,000 acres of state mineral leases in Aitkin and Carlton Counties. The Tamarack Intrusive Complex for which these leases were acquired is approximately two miles wide and 12 miles long. It contains nickel, copper,

and platinum group elements in rock with as much as 95% sulfide in some areas of mineralization.[3] The first Tamarack area exploratory drilling was done in 1990 by Kennecott Exploration Company ("Kennecott"), a wholly-owned subsidiary of Rio Tinto, with more significant drilling starting in 1999.[4] From 1990 through 2018, Kennecott drilled 299 exploratory borings in Aitkin and Carlton Counties, including some "wedged" or "branch" holes, which are drilled by deflecting a drill bit out the side of a previously drilled "parent" hole. *Id*. Talon began exploratory drilling for copper, nickel, and platinum group metals in conjunction with Rio Tinto in 2020. *Id*. From 2020 through 2023, Talon drilled 255 exploratory borings, resulting in a total of 554 drill borings in Aitkin County in the Tamarack Intrusive Complex area where Talon and Rio Tinto are proposing to mine.[5]

Talon reported that they drilled more than 25,000 meters (82,000 feet) of Tamarack deposit borings in 2023 alone and planned further drilling "pushing the limitations of exploration" with "potential game-changing targets."[6] This increased drilling is due to Talon's finding a potential pooling of massive sulfides (and associated minerals) "with a lack of drilling" below and south of the known massive sulfide mineralization. Exhibit 3 at 2. Talon claims that this pooling has similarities with the world's "most prolific high-grade nickel producer" in Russia's Norilsk extensive mining district. *Id*. at 3.

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[3] Talon News Release, Talon Metals Makes Exceptional Massive Sulphide Discovery at Tamarack During Feasibility Study Drilling, March 26, 2025, Exhibit 3 at 2.

[4] DNR, Exploratory Borings: Exploration by Year ("Exploratory Borings Site") https://www.dnr.state.mn.us/lands_minerals/exploration.html.

[5] Data on borings in 2024 is not posted yet by DNR. A chart of Kennecott and Talon exploratory borings completed from 1990 to 2023 is attached as Exhibit 4.

[6] Talon News Release, More Nickel in America: Talon Metals 2024 Exploration Plan, Apr. 3, 2024, Exhibit 5 at 4-5.

## B. Talon March 2025 Plan and Other Recent Talon Exploratory Plans.

Talon submitted its exploratory drilling plan to DNR on March 13, 2025.[7] DNR posted a brief summary on its Exploratory Borings Site on March 20, 2025. Maccabee Decl. ¶ 4. DNR's summary did not disclose the number or depth of new drill holes, that wedged borings would be drilled at existing holes, or the location of sensitive features or resources near proposed drilling. Exhibit 1.

Talon's March 13, 2025 plan revealed that multiple holes may be drilled on up to 23 drill pads and that "Talon is planning to continue exploration" using "down-hole geophysical surveys" on any leases "included in this exploration plan." Exhibit 2 at 1-2. Talon stated that boreholes "will be drilled from surface or constructed from wedging out of parent holes to depths anticipated to range between 500 to 6,000-ft." *Id*. at 2. An unspecified number of drill holes and down-hole surveys would be conducted on "new and historic drill sites." *Id*. at 3. Cuttings will be disposed of in "permanent sumps" dug on sites not designated as "wetland" on private surface lands. *Id*. Talon represented that drilling and geophysics would commence on or after April 30, 2025. *Id*. at 4.

DNR's March 2025 summary admitted that the broad drilling plan lease locations were "nearly identical" to those listed in March 2023 and 2024. Exhibit 1.[8] In addition, the sensitive lease areas identified in Talon's September 8, 2023 plan, adjacent to the West

[7] WaterLegacy secured a copy of Talon's March 13, 2025 Plan on April 8, 2025. Declaration of Paula Maccabee ("Maccabee Decl.") ¶ 5.

[8] Compare Exhibit 1 with Exhibit 6, DNR Summary of Talon March 24, 2023 Exploration Plan, which DNR cited for both its April 12, 2023 and April 12, 2024 approvals of Talon drilling. Maccabee Decl. ¶ 6.

Branch Kettle River in Carlton County, are listed for exploratory drilling in Talon's March 2025 plan.[9] Similarly, the sensitive lease area identified in Talon's November 29, 2023 plan, adjacent to and potentially encroaching on Tamarack River wild rice waters, is repeated in Talon's March 2025 plan.[10] Any of these previously listed locations may be used for wedged borings and additional deep drilling.

Talon's ongoing exploratory drilling program has multiple governmental approvals affecting the same salient and sensitive resources. And Talon's 2025 plan proposes to extend drilling on existing drill sites. As Talon explained to Aitkin County in applying for a permit in June 2024, "This work constitutes part of Talon's joint exploration activities with partner Kennecott Exploration within the Carlton-Aitkin County area since 2001."[11]

### C. Risk of Significant Environmental Effects to Water, Wild Rice, Aquatic Life, and Human Health from Exploratory Drilling.

Even without mining, exploratory drilling in sulfide ores poses significant risks to water quality and the living organisms dependent on clean water. "Drilling through sulfide material can pose environmental risks. Mineralized surface rock with sulfides naturally oxidize and undergo abiotic and microbiologic processes that produce sulfuric acid, which in turn dissolves mineral complexes, releasing metals."[12] Although Alaska's Pebble deposit

[9] DNR Summary of Talon's September 8, 2023 Exploration Plan, Exhibit 7, lists leases MM-9808, MM-9809, MM-9810, MM-9811, MM-9852-N, MM-9853-N, MM-9854-N, and MM-9855-N. They are highlighted pink in DNR's March 2025 Exploration Plan Summary, Exhibit 1.

[10] DNR Summary of Talon's November 29, 2023 Exploration Plan, Exhibit 8, listed lease MM-10378-N. This lease is highlighted yellow in Exhibit 1.

[11] Talon, Application for Aitkin County Interim Use Permit, June 17, 2024, Exhibit 9, at 3.

[12] Zamzow, K. and Chambers, D. M. (2019). Potential Impacts to Wetlands and Water Bodies Due to Mineral Exploration, Pebble Copper-Gold Prospect, Southwest Alaska,

has not been mined, analysis of drill sites at this sulfide ore deposit found that one out of eight drill sites studied "had confirmed impacts due to un-reclaimed drill-holes or drill waste disposal practices." *Id*. at 1. Artesian (upwelling) waters at seven drill sites resulted in surface water or sediment with elevated copper, aluminum, arsenic, manganese and/or zinc. *Id*. at 1, 6, 12. Wetland sediment at one drill site had very high copper levels (1,892 mg/kg), compared to natural conditions. *Id*. at 6. At the one sump with historical data, copper increased six-fold at a downgradient wetland spring over five years. *Id*. at 1. The authors advised that "some risks could be long-term," particularly from copper "sequestered in wetland and pond sediment" and at artesian sites where copper concentrations were highest. *Id*. at 13.

Recent research on heavy metal pollution at oil drilling operations has determined that the "main source of heavy metal pollution" is the "type of elements in the lithology [rock formations] of the well column formations" and the "type and additives of the drilling fluid used in the well."[13] These factors apply similarly to exploratory drilling for sulfide ore minerals, where drilling fluid and cuttings of drilled formations also contain "a vast range of contaminants" which may "enter the environment as waste" during drilling operations. *Id*. at 43. "When these wastes are disposed of in the environment, they may mix with the soil and cause soil contamination, or they may penetrate the surface or underground water and cause contamination and threaten the lives of organisms." *Id*. at 42.

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*Environments*, 6, 84, Exhibit 10 at 2.

[13] Bakhtiari, H.; Amanipoor, H.; Sedigheh, B-L. (2024) Analysis of heavy metal accumulation and environmental indicators in fluids and drilling cuttings, *Journal of Petroleum Exploration and Production Technology*, 14:41-58, Exhibit 11 at 41.

The release of this waste and especially drill cuttings on the ground surface "can lead to extensive environmental pollution." *Id*. at 57.

The Tamarack deposit contains high levels of sulfide and metals due to the Midcontinental Rift 1.1 billion years ago, when convection currents in the earth's mantle created a rising plume of molten material that created a rift in the earth's crust.[14] Minnesota rules limit sulfate (released when sulfide contacts air and water) in surface water to protect wild rice; limit metals and non-metallic parameters, including aluminum, chloride, copper (to which fish are particularly sensitive), nickel, cobalt, arsenic, and lead to protect aquatic life; limit methylmercury in fish tissue to protect wildlife and human health; and limit arsenic, lead, manganese, nickel, copper, sulfate, chloride and other chemicals to protect groundwater and drinking water.[15] Robust science demonstrates the effects of sulfate on wild rice, release of nutrients and mercury from sediments, mercury methylation, and the effects of chemical parameters on aquatic life and human health. Exhibit 12 at 4. Sulfate pollution in the Tamarack area may "damage or extirpate wild rice populations" and may affect "the health of ecosystems and humans" due to increased mercury release and methylation.[16]

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[14] Campbell, F., Johnson, B., Johnson M., Maccabee, P. (2024) Need for a Tamarack Region Sulfide Ore Study, Exhibit 12 at 3; *see also* Exhibit 3.

[15] Rules limiting sulfate, chloride, and metals in wetlands and surface waters include Minn. R. 7050.0186 and Minn. R. 7050.0220-.0270; rules limiting mercury in fish tissue include Minn. R. 7050.0222; rules protecting groundwater include Minn. R. 7050.0221, Minn. R. 7060.0100-.0900, and health risk limits at Minn. R. 4717.7500-.7900.

[16] Myrbo, A. (2023) Analysis of Potential Impacts on Water Quality and the Health of Ecosystems and Humans Due to the Proposed Talon Metals Corporation Tamarack North Mine, Exhibit 13 at 2.

## D. Tamarack Area Exploratory Drilling Locations May Result in Potential Significant Environmental Effects.

### 1. Location of Borings in Tamarack Bogs and Other Wetlands.

The majority of the Tamarack Intrusive Complex area where exploratory borings have occurred in the past and were proposed by Talon for 2025, are located in wetlands, particularly in tamarack bogs as shown on the map below.

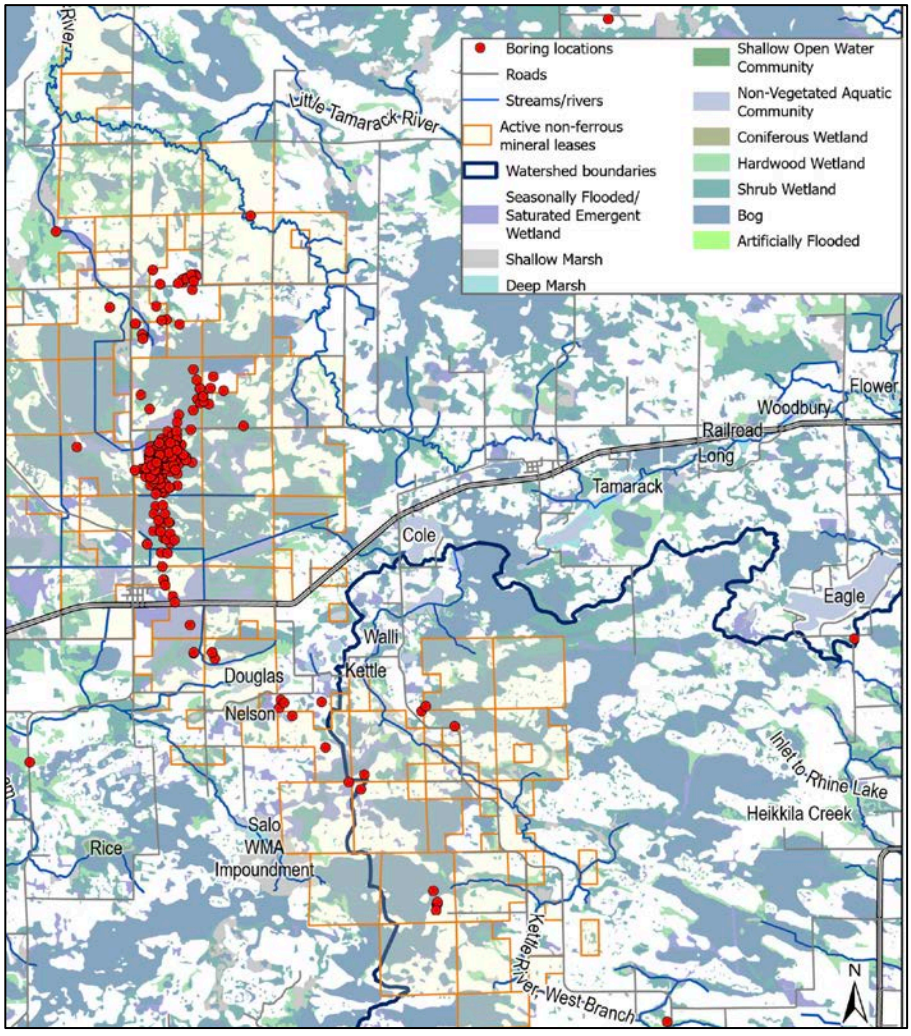



***Figure 1****. Tamarack area borings and wetlands. University of Minnesota, Regional Sustainable Development Partnership, Climate Corps ("UMN RSDP CC") map, L. Scott.*

DNR's Inspections Spreadsheet notes "floating bog here" and excavated "peat" at

several drill sites.[17] As shown in DNR inspection photographs, many borings are in open water, tamarack bogs, and wet areas, where containment of pollutants is difficult. Talon's huge composite mats for drilling equipment in bogs and swamps can impair wetlands.


*Talon drilling locations in wet and open water areas (Source: DNR 2021-04-22) (left and right, arrow for "borings" provided by Petitioners)*

*Extensive composite mats in unfrozen winter and spring open water bog conditions (Source: DNR 2021-12-14 left, and 2021-04-22 right)*

[17] DNR, Exploration Drill Site Inspection Selection Kennecott Talon ("DNR Inspections Spreadsheet"), Exhibit 14, *e.g.*, Rows 21, 30, 31.

DNR inspections repeatedly found they "could not locate borings," "could not locate boring, very muddy site," or "did not see cement, very muddy with adjacent drilling." Exhibit 14, *see, e.g.*, Rows 92, 93, 134, 141-43, 150-51, 168. Such sites violate rules to protect water quality that require temporarily sealed borings to be at least one foot above ground surface and five feet above flood levels. Minn. R. 4727.0950, subp. 10.

*Borings difficult to locate (Source: DNR 23-11-08 left, 23-05-09 center, 24-09-23 right)*

DNR noted one borehole was "producing water now, collecting in tank." Exhibit 14, Row 18. Potential artesian conditions create greater risks of pollution. *Supra* 6.

*Water pooling, unfrozen ground in winter (Source: DNR 2024-05-01 left, 2021-02-25 right)*

## 2. Location of Exploratory Borings Near Residential Wells.

Neither Talon's exploration plans nor DNR's inspections describe the proximity of Tamarack project drilling to residential drinking water wells or consider potential measures to protect drinking water quality. However, mapping data shows that exploratory borings are very near residential wells. Hollow blue markers for wells are used since map layers for borings and residential wells overlap in several locations.

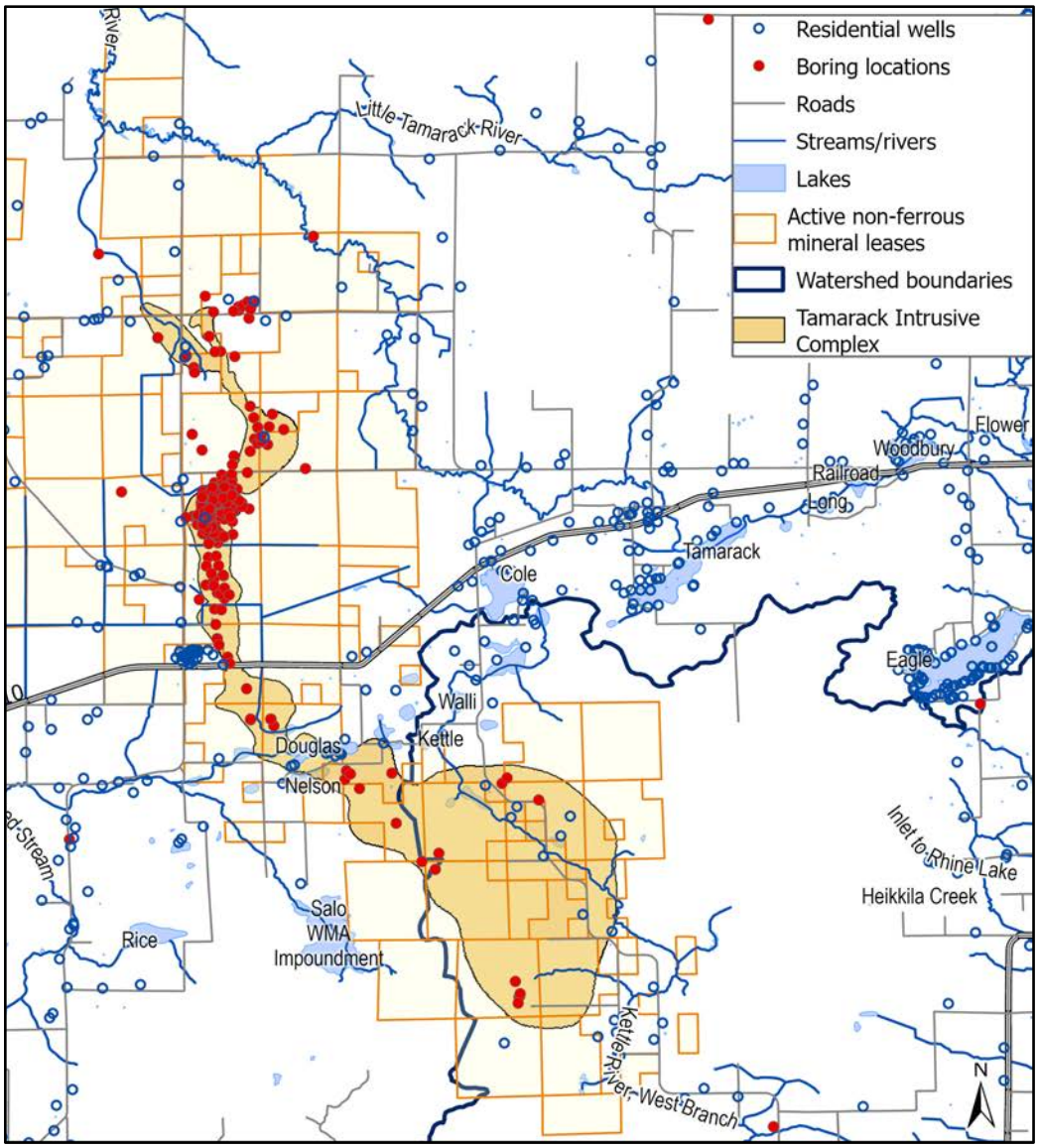



**Figure 2:** *Tamarack area borings and residential wells, UMN RSDP CC map, L. Scott.*

### 3. Location of Borings in and Near Areas of High Cultural and Ecological Importance, including Wild Rice Waters, Wildlife Management Areas ("WMA"), and Sites of High Biodiversity Significance.

Neither Talon's exploration plans nor DNR's summaries discuss wild rice.[18] Talon drilling has encroached on the Salo Marsh WMA, which is a wild rice conservation area, and on Tamarack River wild rice waters.[19] Since the 2025 Exploration Plan includes "wedge" borings, *supra* 4, these locations affecting wild rice waters could be drilled again.

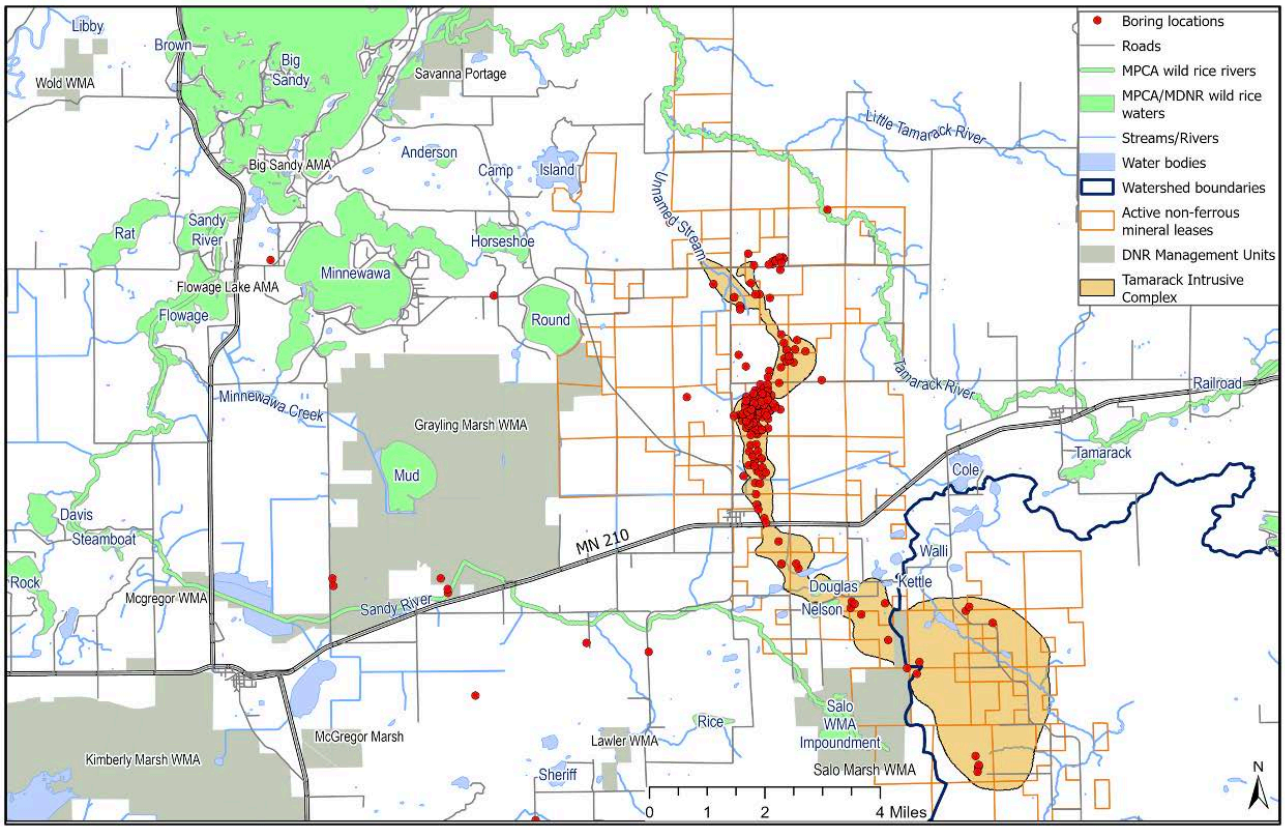
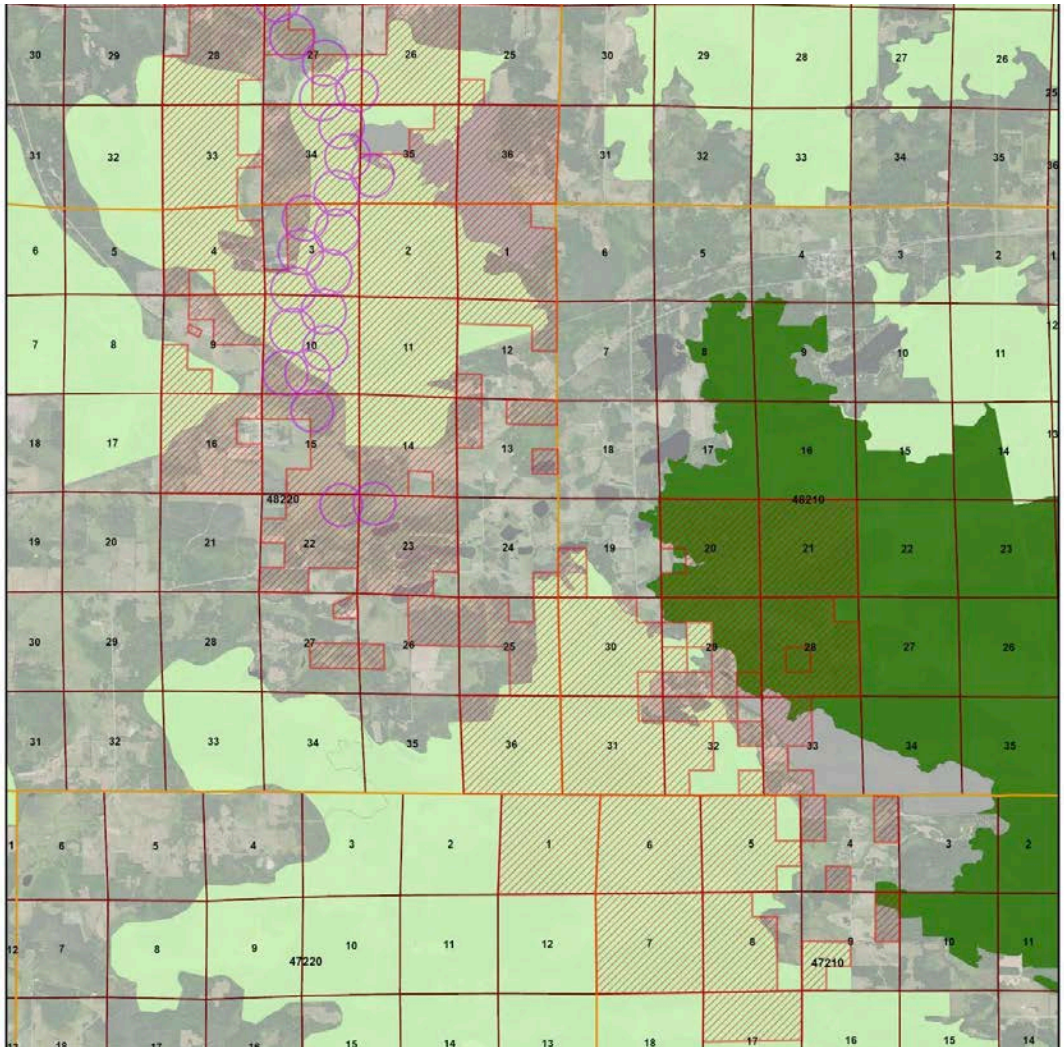



**Figure 3:** *Tamarack area borings, wild rice waters (green) and DNR Wildlife Management Areas (taupe), UMN RSDP CC map, L. Scott.*

DNR's summaries of Talon's exploration plans in March 2023, 2024 and 2025 included a rough map of MBS Sites of High Biodiversity Significance, without sites of

[18] *See* Exhibits 1, 2, 6, 7, and 8.
[19] *See* Exhibits 7, 8.

Moderate Diversity or explanation. Exhibits 1, 6. DNR's letters responding to Talon's exploratory drilling plans, which are not readily available to the public,[20] show proposed drill locations (diagonal red lines as well as purple circles) in both Sites of Moderate (light green) and High (dark green) Biodiversity Significance.




*DNR Exhibit 16, Figure 1.*

[20] Maccabee Decl. ¶ 5; DNR Apr. 12, 2024 Letter re Talon Exploration Plan, Exhibit 15; DNR Apr. 2, 2025 Letter re Talon Exploration Plan, Exhibit 16. Sites of High Biodiversity Significance "contain very good quality occurrences of the rarest species, high quality examples of the rare native plant communities, and/or important functional landscapes." Sites of Moderate Biodiversity Significance contain "rare species and/or moderately disturbed native plant communities . . . that have a strong potential for recovery." *Id*., Fig. 1.

DNR's Inspections Spreadsheet notes numerous appearances of invasive species, including "heavy reed canary along access and along upland side of drill pad," "occasional tansy and thistle at drill site," "reed canary adjacent to drill pad," suggesting that drilling activities have spread invasive species. *See e.g.*, Exhibit 9, Rows 78, 111, 118. Although no invasive species were observed at some other sites, far more sites lack observations regarding invasive species or impacts of drilling on biodiversity.

## E. Nature of Exploratory Drilling Practices that May Result in Potential Significant Environmental Effects.

### 1. Unlined Sumps Dug into the Groundwater Unsaturated Zone.

Talon's June 2024 application to Aitkin County for an Interim Use Permit stated that its drilling generates "between 1.5 to 2.2 cubic feet of waste cuttings per 100ft of drilling." Exhibit 9 at 5. Applying this metric, a 5,000 foot borehole could generate 11,000 cubic feet of waste cuttings alone (more than 82,000 gallons, or four times the volume of a backyard swimming pool) without considering drilling fluid or wastewater. Minnesota rules prohibit discharge of wastes into the unsaturated zone of groundwater—above the water table. Minn. R. 7060.0600, subp. 2; *In re Denial of Contested Case Hearing Requests and Issuance of NPDES/SDS Permit No. MN0071013 for the Proposed NorthMet Project*, 993 N.W.2d 627, 663 (Minn. 2023) ("[P]ollution cannot be discharged to the unsaturated zone in a way that may result in pollution to the underground waters.")

News media and local residents photographed large sumps in the Tamarack area that appear to have adversely impacted trees—which turned brown—particularly as shown on the right.

*Talon drilling sumps near Tamarack, MN (Source: Ben Hovland, MPR/AP via Minnesota Star Tribune in 2023 left); additional images of sumps near Tamarack (Source: Wildflower group media in 2023 right).*

Local researchers relate that these particular sumps appear to have been filled in. Petitioners have not been able to determine if sumps, soils, or groundwater were tested for salts and heavy metals, if the cuttings and wastewater in these sumps was pumped and removed, or if the sumps were simply filled by earthmoving equipment. Maccabee Decl. ¶ 8. DNR inspections document the presence of a deer in one sump, with potential wildlife exposure to drill cutting contaminants, and whitish spills at another.

*Talon drilling fluid sump with deer (Source: DNR 2021, left); Talon sump with whitish release (Source: DNR 2022-07-13, right).*

Through 2024, Talon continued to locate unlined sumps adjacent to wetlands, as shown by the presence of mats, and in areas with a high water table where cuttings and wastewater are deposited in the unsaturated zone of groundwater.

*Talon sump in wet, rutted area (Source: DNR 2024-05-01 left); Talon sump adjacent to mats over wetlands (Source: DNR 2024-08-07 right)).*

**2. Huge Areas of Wetland Impacts and Rutting.**

Talon's operations in wetlands with huge mats do not "minimize disturbances," as suggested by DNR in Exhibit 1. They result in significant rutting and wetland impacts.

*Wetlands flattened by drilling "mats"(Source: DNR 2022-08-18 left; Deep ruts from drilling equipment (Source: DNR 2023-04-07 right).*

### 3. Unsealed and Improperly Sealed Borings.

DNR inspections found dozens of unsealed or improperly sealed boreholes, noting: "Large gap at casing," "gap at seal," "gap at seam," "boring is open," "casing is loose," "casing loose and depression," "casing torn at seal," and "open no cap." Exhibit 14, *see e.g.* Rows 161-62, 210-12, 342-43, 348-49, 382, 437, 439. These conditions violate Minnesota Rule requirements and are likely to pollute surface water and groundwater.

*Sealing damage and open pipe photos with discolored ground (Source: DNR 2023-11-08 left, 2024-05-01 center, 2023-05-09 right)*.

### 4. Pollution of Groundwater and Surface Water.

Minnesota Rules cited by DNR require that drilling process lubricants and additives meet the requirements of NSF Standard 60-1988. *See* Exhibit 15 at 11; Minn. R. 4727.0935, subp. 2. NSF 60-1988 does not address PFAS toxics, although more recent NSF/ANSI 61 and NSF/ANSI 600 standards have been updated to cover PFAS.[21] Environmental risks of

[21] *See e.g.,* ASDWA, NSF/ANSI 61/600 Updated for PFAS Regulations, March 5, 2025, Exhibit 17.

PFAS in groundwater are particularly salient due to proximate residential wells and Talon's proposal to drill borings at depth with wider casings and wedge borings.

DNR's Inspections Spreadsheet, Exhibit 14, does not record apparent spills, and Petitioners have found no evidence of sampling or testing at drill sites. However, photographs include drilling sites that raise concerns about water pollution.

*Exposed and buried borings and cracked mats raising pollution concerns (Source: DNR 2022-05-27 left, 2023-05-09 right).*

**5. Borings at Extreme Depths with Potential Injection into Borehole.**

DNR's Inspections Spreadsheet includes drilling at extreme depths in 2024. A 3,727-foot deep boring was drilled with the use of an "oil rig" on March 31, 2024. Exhibit 14, Row 393. Other borings completed at extreme depths in 2024 were drilled as deep as 5,281 and 5,206 feet, and the deepest hole was drilled as a wedge boring. *Id.*, Rows 365, 400. More specific information is available for the 3,727 foot exploratory boring, where Talon was proposing a 7,000 foot boring "located in the southern portion of the Talon project,

'the bowl'" to "drill to the bottom of the formation in proposed location area and . . . confirm copper nickel content at that location and depth."[22] Rio Tinto's Robert Rush explained to Minnesota Department of Health ("MDH") supervisors that in addition to "looking for sulfides and copper nickel" they "will be sending formation samples to two universities for carbon sequestration evaluation." *Id.* Talon/Rio Tinto proposed to apply for a variance in order to inject potable water for packer testing and to use a larger casing (20-inch at 20-30 feet below grade). *Id*. at 1-2. A DNR geologist informed Petitioners' researcher that she reached out to MDH "and their records do not indicate any variances for this boring."[23]

**F. Insufficient Data, Testing, Controls, or Mitigation Measures.**

A supervisor in the MDH Well Management Section explained some of the gaps in information and analysis related to exploratory borings. "The online database in the Minnesota Well Index is not completely up to date with permanent sealing records. Some exploratory borings that have been permanently sealed do not show on this online information as permanently sealed."[24] Despite this information deficit, MDH granted several variances to Talon in 2023 and 2024 extending the time before permanent sealing of borings is required, and additional time extension variances are pending.[25]

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[22] M. Malmanger, MDH, Email to T. Purrington, MDH and C. Dusek and M. Liljegren, DNR on November 17, 2023, Exhibit 18 at 1.
[23] C. Dusek, DNR, Email to Researcher S.M., March 25, 2025, Exhibit 19. Documents provided by the MDH under the Data Practices Act included no variance for this boring, and it is not known if an injection method was used. Maccabee Decl. ¶ 10.
[24] M. Malmanger, MDH, Email to Researcher S.M., January 15, 2025, Exhibit 20, at 4.
[25] Maccabee Decl. ¶ 10. Petitioners know of no other types of borings variances sought.

In addition, although there are rules requiring control of groundwater flowing conditions at Minn. R. 4727.0985, "MDH does not track which exploratory borings are artesian/flowing." *Id*. Although Minnesota Rules require that drilling additives meet NSF Standard 60 for exploratory borings, "MDH does not test water from an exploratory boring for contaminants or chemicals associated with drilling lubricants." *Id*. In addition, as noted *supra* 17, NSF Standard 60 does not address PFAS. Finally, although MDH Rules 4727.0940 "requires that drilling mud, cuttings, treatment chemicals, and discharged water must be disposed of according to applicable federal, state, and local requirements . . . MDH is not monitoring nor approving closures of drilling fluid sumps" and recommended that researchers contact the Minnesota Pollution Control Agency ("MPCA") for disposal requirements for exploratory boring. Exhibit 20. Petitioners lack information as to whether MPCA has regulated releases from Talon drilling sites or sumps. Maccabee Decl. ¶ 9.

*Large partially filled sumps at 47558 Kestrel (left) and former Tamarack drill site with appearance of chemical release (right) (Source: Wildflower group media, June 2024).*

DNR's exploratory drilling inspection records are incomplete. Based on DNR's data, Kennecott and Talon completed 554 exploratory borings from 1990 through 2023. *Supra* 3. Yet, only 439 borings are listed in DNR's Inspections Spreadsheet. Exhibit 14. Thus, no inspection is documented for more than one-fourth of the 554 completed borings. *Id.* Over two dozen listed borings have had no inspections in the past 10 years. *Id*. As noted previously, the Spreadsheet has many blank data cells and certain topics—such as locations on and near open water, artesian conditions, or proximity to sensitive features—are not recorded. *Id*.

In many respects DNR's letters responding to Talon's exploratory plans lack specific or sufficient conditions to protect wetlands, surface water, groundwater, wild rice, or biodiversity. DNR has not required Talon to identify drill sites near residential wells or open water, to avoid drilling within a specified distance of either, or to test surface or drinking water quality. Exhibits 15, 16. DNR has allowed drilling in the Salo Marsh Wildlife Management Area during most of the year and has imposed no conditions to protect wild rice and other culturally significant plants other than that "Talon should be aware of the potential presence of these species." Exhibits 15 and 16 at 2, 6.

Although DNR does "recommend Talon take actions to minimize disturbance" of wetlands and streams and states that Talon should "utilize best practices" so that the risk of "substantial disturbance to the wetland is negligible," DNR sets no limits on the scale or duration of Talon's constructed mats in wetlands and neither evaluates nor controls the cumulative effects of this exploration on ecosystems, biodiversity, wildlife, or water quality. Exhibits 15 and 16 at 4-5. Similarly DNR does not require, but merely asks that

Talon "consider" the need for light and sound attenuation and "[c]onsider avoiding or minimizing vehicle travel on trails when soils are saturated and soft to reduce the risk of rutting" and "the risk of spreading invasive plants." Exhibits 15 and 16 at 5.

Although there has been extensive publicity regarding Talon excavated sumps since 2023, DNR still permits unlined "[d]ug recirculation pits (sumps)" if they are not in "wetlands." Exhibit 15 at 2, Exhibit 16 at 3. DNR specifies that water tanks and hoses can only be emptied on uplands "where those waters do not drain into wetlands, waterbodies or water-filled ditches," but neither identifies any such "uplands" nor considers seepage discharging to groundwater from unlined excavated sumps and recharging wetlands and waterbodies. *See* Exhibit 15 at 2, Exhibit 16 at 3. DNR's "conditions" applicable to hundreds of Talon exploratory drilling at depths ranging from 61 to more than 5,200 feet, Exhibit 14, are insufficient to avoid, minimize, or mitigate significant cumulative potential environmental effects to wetlands, surface water, aquatic life, groundwater, drinking water, wild rice, biodiversity, wildlife, and human health due to the location and nature of Kennecott and Talon's drilling activities.

## ARGUMENT

### I. Petitioners have Satisfied Minnesota Rule 4410.1100 Requirements to Petition for an EAW.

Petitioners meet Minnesota Rule 4410.1100 requirements to petition for an EAW.

**Petition** (Subpart 1):

> Petitioners have provided in Attachment A copies of emails in support of the Petition with the signatures and mailing addresses of 323 individuals who reside or own property in the State of Minnesota.

**Content** (Subpart 2):

**A. Proposed Project:**

The proposed project is the plan for exploratory drilling submitted by Talon Nickel (USA) LLC, a subsidiary of Talon Metals Corp. (collectively "Talon"), on March 13, 2025, covering an area extending from 6.5 miles north to 8 miles southeast of Tamarack, MN at up to 23 drill sites and an unspecified number of existing parent holes, with drilling depths ranging from 500 to 6,000 feet.

**B. Project Proposer:**

Brian Goldner, Chief Exploration and Operations Officer
Talon Nickel USA, LLC
Offices at:
165 Warren Street, Tamarack, MN 55787 or
1209 Orange Street, Wilmington, DE 19801

**C. Petitioners' Representative**

Paula G. Maccabee
WaterLegacy Executive Director and Counsel
1961 Selby Avenue, Saint Paul, MN 55104
651-646-8890

**D. Brief Description of Potential Environmental Effects Which May Result from the Project.**

The proposed plan for exploratory drilling submitted by Talon on March 13, 2025, along with cumulative potential effects, may result in the following significant environmental effects:

- Impairment of wetlands and peatlands;
- Pollution of surface water;
- Pollution of groundwater;
- Contamination of drinking water wells;
- Impairment of wild rice ("Manoomin") and other cultural resources;
- Spreading non-native invasive plant species in areas of Moderate and High Biodiversity; and
- Adverse effects on aquatic life, wildlife, and human health.

**E. Material Evidence that Because of the Location and Nature of the Proposed Project there May be Potential for Significant Environmental Effects**.

Material evidence that the location and nature of the proposed project may have the potential for significant environmental effects accompanies this Petition. It is detailed in the Statement of Material Facts, which includes text, figures, and photographs on pages 2 through 22 of this Petition and in the attached Declaration and Exhibits 1-20. This material evidence is briefly summarized here:

- Talon's March 13, 2025 exploratory drilling plan proposed new borings and "wedge" drilling of existing borings from 500 to 6,000 feet deep in an area extending from 6.5 miles north to 8 miles southeast of Tamarack, MN to prospect for nickel, copper, and platinum group metals in sulfide-bearing rock. (*Supra* 1, 4; Exhibits 1, 2).

- Talon's plan is a continuation of drilling from 1990 through 2024, by Kennecott Exploration Company and Talon of more than 554 boreholes, from 61 to 5,291 feet deep, in the same Tamarack region. (*Supra* 2-4, 22, Exhibits 4, 9, 14).

- Talon recently discovered additional pooling of massive sulfides below and south of the known massive sulfide mineralization and intends to push the limits of exploration in an area they consider to be an extensive mining district. (*Supra* 3; Exhibit 3, 5).

- Exploratory drilling in sulfide-bearing rock, even without mining, poses significant environmental risks for release of sulfuric acid and heavy metals, particularly in areas with artesian conditions, incompletely reclaimed drill-holes, or drill waste in contact with soil, wetlands, and underground water. Pollution results from the elements in the rock drilled (cuttings) as well as drilling fluids. (*Supra* 5-7, Exhibits 10, 11).

- The Tamarack deposit contains high levels of sulfide and metals, and Minnesota rules regulate sulfate and heavy metals to protect water quality, wild rice, aquatic life, drinking water, and human health. (*Supra* 7, Exhibits 3, 5, 12, 13).

- Talon's exploratory drilling plan will take place in wetlands, peat bogs, wet and open water conditions where containment of pollutants is difficult using large composite mats for drilling equipment. Drilling operations and huge mats on wetlands result in significant rutting and wetland impacts. (*Supra* 8-9, 16).

- Many existing Kennecott/Talon drill borings located in wet and muddy areas are partially or completely buried, violating Minnesota Rules that protect water. Borings in artesian conditions also create greater pollution risks. (*Supra* 10).

- Talon's exploratory drilling sites overlap locations of residential drinking wells, although no Talon or DNR plans or inspections consider measures to protect drinking water near exploratory borings. (*Supra* 11, Exhibits 1, 2, 14, 15, 16).

- Talon's exploratory drilling plan covers leases near or encroaching on the West Branch Kettle River, the Salo Marsh WMA wild rice conservation area, and Tamarack River wild rice waters. Neither Talon's exploration plans not DNR's summaries discuss protecting wild rice. (*Supra* 4-5, 12; Exhibits 1, 2, 6, 7, 8).

- Talon's exploratory drilling plan covers Sites of Moderate and High Biodiversity Significance, and existing drilling has already resulted in spread of non-native invasive species to these areas. (*Supra* 12-14; Exhibits 14, 15, 16).

- Talon's exploratory drilling plan includes continued use of unlined sumps dug into the unsaturated zone of groundwater adjacent to wetlands that may result in pollution of groundwater and surface water, danger to wildlife, and violations of Minnesota Rules. (*Supra* 14-16, 20).

- Talon's exploratory drilling plan does not address the numerous unsealed and improperly sealed borings in the existing Tamarack drilling program, which violate Minnesota Rules and potentially result in significant pollution of surface water and groundwater. (*Supra* 17, Exhibit 2).

- Talon's exploratory drilling plan does not address spills, testing of drill sites, or protection of groundwater from PFAS toxic forever chemicals in drilling fluids. (*Supra* 17-18, Exhibits 2, 16, 17).

- Talon's exploratory drilling plan includes drilling at extreme depths, and past exploration at depth has used an oil rig for deep drilling and proposed huge casings and injection of water into deep groundwater, inconsistent with Minnesota Rules and protection of groundwater. (*Supra* 18-19, Exhibits, 14, 18).

- Talon's exploratory drilling plan, the conduct of the DNR, and the practices of

the MDH and MPCA have provided insufficient data, testing, controls, mitigation measures, or conditions to protect Minnesota natural resources from significant cumulative potential environmental effects of Talon's proposed and cumulative exploratory drilling on wetlands, surface water, aquatic life, groundwater, drinking water, wild rice, biodiversity, wildlife, and human health. (*Supra* 15, 19-22, Exhibits 14, 15, 16, 19, 20).

**Filing of Petition** (Subpart 3):

This Petition and supporting Petition Signatures in Attachment A, Declaration of Paula Maccabee, and Exhibits 1-20 have been filed with the Environmental Quality Board ("EQB") on April 22, 2025.

**Notice to Proposer** (Subpart 4):

Petitioners have notified the project proposer by U.S. Mail, on April 22, 2205, of the filing of this Petition with the EQB.

## II. Talon's 2025 Exploratory Drilling Plan Requires an EAW because the Locations and Nature of Drilling may have Cumulative Potential Significant Environmental Effects.

On a petition for EAW, the responsible governmental unit ("RGU") "must" prepare an EAW whenever material evidence "demonstrates that, because of the nature or location of a proposed action, there *may* be potential for significant environmental effects." Minn. Stat. §116D.04, subd. 2a(e) (emphasis added); Minn. R. 4410.1100, subd. 6 (such material evidence includes "evidence presented by the petitioners, proposers, and other persons or otherwise known to the RGU"). The EAW petitioner's burden is a "minimal standard." *Carl Bolander & Sons Co. v. City of Minneapolis*, 488 N.W.2d 804, 810 (Minn. App. 1992); *see also In re Lorentz & Sons Construction, Inc.,* No. A22-0818, 2023 WL 1955159 at *6 (Minn. Ct. App. Feb. 13, 2023) (standard for allowing an EAW is "minimal").

An RGU must consider "cumulative potential effects" to determine whether a project meets this minimal standard. Minn. R. 4410.1100, subp. 6; 4410.1700, subp. 7(B). The "point of the 'cumulative potential effects' criterion is to put the proposed project into context" and "determine whether the project, which may not individually have the potential to cause significant environmental effects, could have a significant effect when other local projects already in existence or planned for the future are considered." *Citizens Advocating Responsible Dev. v. Kandiyohi Cnty. Bd. of Comm'rs,* 713 N.W.2d 817, 829 (Minn. 2006). "If a governmental body is allowed to strategically ignore pertinent local activities when conducting environmental review, the legislature's and EQB's intentions will not be fulfilled." *Id.* at 831.

In response to a petition for a mineral leasing EAW, the Minnesota Court of Appeals specifically held that an EAW may be required for metallic minerals exploratory drilling in Aitkin County, and that "individuals may submit a new petition if they become aware of exploration plans." *In re Environmental Assessment Worksheet for the 33rd Sale of State Metallic Leases in Aitkin, Lake, and Saint Louis Counties, Minnesota ("In re Metallic Leases EAW")*, 838 N.W.2d 212, 218 (Minn. App. 2013). Further, "as the DNR acknowledges, environmental review in the form of an EAW or an EIS may be required . . . in relation to exploration plans, depending on the nature and extent of them." *Id*.

Talon's 2025 exploratory boring plan requires an EAW because incremental and cumulative effects of numerous new boreholes on up to 23 drilling pad sites and wedge drilling of existing boreholes to potential depths of 6,000 feet may have the potential for significant environmental effects "in addition to other projects in the environmentally

relevant area that might reasonably be expected to affect the same environmental resources" in the Tamarack area. Minn. R. 4410.0200, subp. 11a. The cumulative potential effects of Talon's 2025 exploratory drilling plan, the borings drilled by Kennecott and Talon over a quarter of a century, and the location and nature of the current project and past drilling in wetlands, open water, in and near sensitive features, using sumps, casings, and sealings that conflict with Minnesota Rules and have the potential to contaminate water resources, *supra* at 1-22, clearly demonstrate that the project may have the potential for significant environmental effects requiring an EAW.

## III. DNR Failed to Consider or Determine whether Environmental Review of Talon's Exploration Plans was Required.

"The Minnesota Environmental Policy Act (MEPA) requires that governmental agencies contemplating taking action (e.g., issuing a conditional use permit) on a proposed project must first consider the project's environmental consequences." *CARD*, 713 N.W.2d at 823; *State by Smart Growth Minneapolis v. City of Minneapolis*, 954 N.W.2d 584, 590 (Minn. 2021). Environmental Quality Board ("EQB") guidance explains that a key purpose of environmental review "is to provide information about potential environmental effects and how to avoid or minimize those effects to each of the governmental units which will approve or conduct the project."[26] However, "[f]or this information to have utility, the governmental units must have the information in mind when they take their actions about

[26] EQB, Guide to Minnesota Environmental Review Rules, May 2010, at 13, https://www.eqb.state.mn.us/sites/eqb/files/Guide%20to%20MN%20ER%20Rules-May%202010.pdf.

the project. To issue permits or approvals before the information is available undermines the very purpose of the review." *Id.*

The Minnesota Court of Appeals has specifically weighed in on DNR's obligation to determine whether an EAW is needed before approving metallic mineral exploration plans in Aitkin County. "DNR has a duty to determine whether environmental review is required before approving exploration plans." *In re Metallic Leases EAW*, 838 N.W.2d at 218. DNR failed this obligation. Neither DNR's April 2024 or April 2025 letter to Talon considered whether environmental review was required or whether Talon's 2025 proposed exploratory drillings may have the potential for significant environmental effects. Exhibits 15, 16. The April 2, 2025 letter did not state that DNR's letter was a final decision in stating the plan was also subject to "applicable laws and rules." *Id*. at 1. Under applicable rules in Minnesota Rules ch. 4727, the MDH is responsible for regulating exploratory borings. The MPCA is responsible for regulating pollution of surface water and groundwater under Minnesota Rules chapters 7050, 7053 and 7060. DNR's letter to Talon failed to mention either agency and contained no determination whether issues within their jurisdiction require additional decisions or may have the potential for significant environmental effects. Exhibit 16.

In addition, DNR's conduct impeded the ability of members of the public to petition for an EAW. Although Talon submitted its exploration plan on March 13, 2025, DNR did not inform persons signed up for such notifications until March 20, 2025, and DNR's summary lacked detail regarding Talon's exploration plan. Exhibit 1; Maccabee Decl. ¶ 4. Petitioners were unable to secure Talon's actual exploration plan until April 8, 2025, after

DNR had already sent its April 2, 2025 letter to Talon. *Id*. at ¶ 5.

For decades, despite the Court of Appeals' direction and the damage and non-compliance with rules documented in DNR's own photographs and inspections, DNR has avoided any level of environmental review of Talon's exploratory drilling program in the Tamarack area. DNR's conduct in failing to consider or require environmental review to support avoidance, minimization, and mitigation of adverse effects has resulted in and is likely to result in pollution and impairment of natural resources. *See* Minn. Stat. §§ 116B.03, subd. 1; 116D.04, subd. 6; *White Bear Lake Restoration Ass'n v. Minn. Dep't of Natural Res*., 946 N.W.2d 373, 380-81 (Minn. 2020). Requiring an EAW for Talon's 2025 exploratory drilling plan is fitting and necessary to achieve consistency with Minnesota environmental laws.

## IV. Environmental Review of the Talon 2025 Exploratory Drilling Plan would Serve the Public Interest in Avoidance, Minimization, and Mitigation of Environmental Harm.

As with the proposed Pebble mine, it is not known whether a Tamarack nickel-copper-platinum group metals mine project will be constructed or, if a mine is developed, when and how extensive that mine will be. However, it is known that 554 borings were drilled through 2023, additional borings drilled in 2024, and more proposed for 2025 to explore the boundaries of the Tamarack Intrusive Complex. This exploratory drilling program has covered and will cover a vast area of sensitive environmental and cultural resources across two counties affecting wetlands, drinking water, groundwater and surface water in the Mississippi River and St. Croix River watersheds. Exploratory borings have

environmental consequences, even if a mine is not constructed. The authors who researched Pebble area drilling sites recommended for "state regulators to conduct water, soil, or sediment sampling during inspections to monitor environmental changes where drill holes are not fully and permanently reclaimed," document sites with artesian conditions, and use that information to determine whether to restrict disposal options for drill cuttings from "rock containing metal sulfides." Exhibit 10 at 13.

Environmental review of Talon's 2025 exploratory drilling plan and cumulative potential effects of past and ongoing drilling in the Tamarack area is needed to provide: 1) complete and adequate records of artesian conditions, location and spread of invasive species, sealing and reclamation of borings, and all site inspections; 2) coordinated state agency action[27] to sample, test chemistry, and prevent impacts of drill fluids and cuttings, wastewater, and upwelling contact water with sediments, surface water, groundwater, and proximate wells; 3) conditions prohibiting exploratory borings in open bog waters, near residential drinking wells, in or near wild rice waters and prohibiting unlined sumps for drill fluids, cuttings, contact water, or wastewater; 4) conditions effectively minimizing drilling impacts, including review of the unique effects of drilling at extreme depths, limits on the size, density, and number of roads/trails and composite mats in wetlands, and specific protocols for sites with artesian conditions to protect surface and groundwater from

[27] In addition to agency action, when an EAW is required on a project, "the proposer of the project and any other person shall supply any data reasonably requested by the RGU which the proposer has in his or her possession or to which the proposer has reasonable access." Minn. R. 4410.0400, subp. 3.

pollution; 5) a schedule that assesses wetland, peatland, forest, and biodiversity conditions and requires recovery as well as reclamation before additional drilling is authorized; and 6) online accessible real-time disclosure of all public information related to exploratory borings in this sensitive region.

## CONCLUSION

For the reasons stated in this Petition, and on the basis of the material evidence contained in this Petition, its Declaration and Exhibits 1-20, Petitioners ask the EQB to:

(1) designate DNR as the RGU and send this Petition to DNR for the preparation of an EAW for Talon's 2025 exploratory drilling project, because Petitioners have met the requirements of Minn. R. 4410.1100 and Minn. Stat. § 116D.04, subd. 2a.

(2) direct DNR to coordinate preparation of that EAW with the MDH and MPCA, which also have jurisdiction to protect wetlands, surface water, groundwater and other natural resources affected by Talon's exploratory drilling.

Dated: April 22, 2025

Respectfully submitted,

JUST CHANGE LAW OFFICES

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