

# Greenstone Mine

## Annual Report for the Environmental Impact Statement, Condition 2.10

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## List of Acronyms

2023 Reporting Period	October 1, 2022 to September 30, 2023
AFN	Aroland First Nation
AQMMP	Air Quality Management and Monitoring Plan
AZA	Animbiigoo Zaagi'igan Anishinaabek
BMMP	Biodiversity Management and Monitoring Plan
CEAA	Canadian Environmental Assessment Agency
DFO	Fisheries and Oceans Canada
DO	dissolved oxygen
EAS	Environmental Advisory Sub-committee
ECCC	Environment and Climate Change Canada
EIS	Environmental Impact Statement
ESC	Erosion and Sediment Control
ETP	Effluent Treatment Plant
GFC	Goldfield Creek
GFN	Ginoogaming First Nation
GGM	Greenstone Gold Mines
IAAC	Impact Assessment Agency Canada
LLFN	Long Lake #58 First Nation
MDMER	Metal and Diamond Mining Effluent Regulations
MECP	Ontario Ministry of the Environment, Conservation and Parks
the MINE	Greenstone Mine

MNO	Métis Nation of Ontario
MNRF	Ontario Ministry of Natural Resources and Forestry
MTO	Ontario Ministry of Transportation
PDA	Project Development Area
the Project	Hardrock Project, now Greenstone Mine
RSMIN	Red Sky Métis Independent Nation
SMP	Soil management Plan
SWAT	Southwest Arm Tributary
WRSA	Waste Rock Storage Area

## Executive Summary – English

Greenstone Gold Mines (GGM) is currently constructing and plans to operate and ultimately decommission/close a new open pit gold mine, process plant, and associated ancillary facilities, collectively known as the Greenstone Mine (the Mine), formerly known as the Hardrock Project (the Project). The Mine site is located just south of Geraldton, Ontario, within the municipality of Greenstone, at the intersection of Highway 11 and Highway 584.

The Minister of the Environment and Climate Change issued a Decision Statement under Section 54 of the Canadian Environmental Assessment Act, 2012 (Decision Statement, dated December 10, 2018) for the Project's Environmental Impact Statement (EIS) (Stantec 2017), which included a series of conditions to be met for GGM to proceed with the Project. This report is submitted to meet the Annual Report requirements described under Condition 2.9 of the Decision Statement and describes activities undertaken by GGM to comply with each of the conditions in the Decision Statement during the reporting period of October 1, 2022 to September 30, 2023 (2023 reporting period).

Significant milestones in construction were achieved in preparation for operations in 2024. The full-scale effluent treatment plant began discharging treated water to the environment, the tailings management facility (TMF) was fully enclosed, the truck maintenance shop was commissioned and the plant site, including the conveyor and crusher, saw significant completion.

During the 2023 reporting period, the following follow-up monitoring plans were implemented and the results are shared in this report:

- Fish and Fish Habitat Federal EIS Follow-Up Monitoring Plan (GGM 2021a)
- Biodiversity Monitoring and Management Plan (GGM 2022a)
- Greenstone Mine Current Use of Lands and Resources for Traditional Purposes – Follow-Up Plan (GGM 2020a)
- Indigenous Peoples Health Risk Assessment Follow-up Plan (GGM 2020b)
- Federal Condition 2.10 Annual Report (this report)

This follow-up program describes the results of the October 1, 2022 through September 30, 2023 reporting period (referred to as the 2023 reporting period).

GGM has established environmental advisory sub-committees (EASs) with the local Indigenous groups, which meet regularly. These committees have agreed upon methods of communication, types of information to be provided, review timelines, and discussion of views/information.

A Fish and Fish Habitat Follow-up Monitoring Plan (GGM 2021a) was prepared to address seven specific federal Conditions of Approval related to monitoring potential effects of the Project on fish and fish habitat (conditions 3.14, 3.15, 3.16, 3.17, 3.2, 5.4, and 5.5.1). The results of the 2023 Fish and Fish Habitat Federal EIS Follow-Up Monitoring Report are summarized below.

As per the requirements of federal condition 3.14, GGM has developed and implemented measures to control erosion and sedimentation. An Erosion and Sediment Control (ESC) Plan (GGM 2020d) was implemented to mitigate potential effects of erosion and sedimentation on fish and fish habitat. Erosion and sediment control measures were regularly inspected to verify the effectiveness. Management practices were implemented to protect the environment, and to determine whether new management strategies and/or mitigation measures were required.

The Noise and Vibration Monitoring and Management Plan (NVMMP) (GGM 2020c) identifies an overpressure threshold of 50 kPa in water and a vibration threshold of 13mm/sec (in substrate). Throughout the 2023 monitoring period, a total of 102 blasts were conducted. A total of four vibration exceedances and no pressure exceedances were identified during this reporting period. One of the exceedances was during the spawning period and the other three vibration exceedances were outside the spawning period.

Vibration levels monitored during the current reporting period were below the threshold of 13mm/sec except for those exceedances identified above. Pressure recorded for all blast events were well below the 50 kPa threshold with the highest pressure recorded being 1.1 kPa.

The Fish and Fish Habitat Follow-up Monitoring Plan identifies methods for monitoring water quality in Kenogamisis Lake, Mosher Lake, and the Southwest Arm Tributary (SWAT). During routine monthly sampling, surface water samples were collected as grab samples and were submitted to an accredited laboratory for analysis. Additionally, in-situ temperature, pH, conductivity, turbidity, and dissolved oxygen (DO) were measured at the water surface during sample collection using a multi parameter water quality meter. Temperature and DO water column profile sampling was also completed quarterly (February, June, August, October) at eight surface water monitoring locations. Nine (9) surface water quality Trigger Threshold 2 investigations were undertaken in the 2023 reporting period to evaluate identified surface water quality trends and identify potential sources.

In summary:

- Trigger Threshold 2 investigation for iron at station 8 suggested that the iron spikes at the end of 2022 could be attributed to inconsistent lab results. GGM subsequently switched laboratories. The concentration of iron at station 8 has been less than Trigger Threshold 1 and 2 for the remainder of the 2023 monitoring period.
- Trigger Threshold 2 investigation for arsenic at station 25 and concluded that the source of elevated arsenic was likely related to SWAT in-water works that may have resulted from the use of ESC measures implemented during construction.
- Trigger Threshold 2 investigation for iron at station 25 concluded that iron exceedances were likely caused by the diversion of flow from the GFC, the release of sediments, the inundation of land along the SWAT.

- Trigger Threshold 2 investigation for uranium iron at station 39 concluded that exceedances are attributed to construction of the diversion and associated sediment disturbance and the failure of the Goldfield Creek diversion channel, which occurred in May 2023. The construction and subsequent failure of the diversion channel exposed and subsequently mobilized local sediment from the bed and banks of the diversion channel. The continuing elevation of uranium through the summer to October 2023 is thought to be the result of seasonal natural patterns, and continued exposure of uranium-containing sediments mobilized during the GFC failure. The concentrations of uranium (the highest being 0.26 µg/L in September) were well below the Provincial Water Quality Objective (5 µg/L).
- Trigger Threshold 2 investigations for iron at stations 24, 26,49 and 53, suggested that elevated concentrations of iron may be related to either natural variability or issues related to laboratory analyses.

The Fish and Fish Habitat Follow-up Monitoring Plan identifies the following main groundwater monitoring components 1) Pumped Volume Monitoring, 2) Water Level Monitoring, and 3) Water Quality Monitoring

The Goldfield Creek realignment and Goldfield Diversion Pond were completed in November 2022 and flow was diverted into the realigned Goldfield Creek channel in January 2023. Increased spring flow identified design failures in the diversion which led to erosion and bank instability. GGM is currently working with the appropriate Federal and Provincial governments to obtain permitting for re-designed portions of the channel and coordinating engagement and consultation with Indigenous communities. It is anticipated that an amendment to the Fisheries Act Authorization will be required to address the failed offsetting works, and additional and/or alternative offsetting will be created.

The management and monitoring requirements of condition 5.5.1 deal specifically with potential effects related to changes in mercury and methylmercury in Walleye from Kenogamisis Lake.

Fish tissue monitoring is required within 24 months from when the Mine first began discharging effluent via the temporary ETP, which occurred on September 15, 2021. Therefore, fish tissue monitoring activities were required by the Plan for Kenogamisis Lake during the 2023 monitoring period. The fish tissue monitoring cycle is scheduled to occur every two years for the first six years of operation, after which time the need for additional monitoring will be evaluated.

Walleye tissue sampling occurred in late September and October of 2023, in keeping with the requirements of the Monitoring Plan. At the time of report production, Walleye fish tissue data was not received by the laboratory. A separate memo will be appended to this report following the receipt of the laboratory data. Barn swallow (*Hirundo rustica*), a threatened species (ESA 2007, SARO 2011), were present in two buildings requiring removal by GGM in the Ministry of Transportation of Ontario (MTO) Patrol Yard. Removal occurred in spring 2023 and was completed by early May 2023. A Barn Swallow habitat compensation structure was monitored four times during the 2023 nesting seasons. The habitat compensation structure was in good condition during the 2023 nesting season, including the overall structure, nest cups, and predator controls. There was no evidence of use of the structure by Barn Swallows or other bird or bat species in 2023.

To facilitate anticipated construction activities planned for 2023 for development of the Greenstone Mine, a drone survey of bald eagle nests was conducted by GGM staff in May and June 2023. The survey targeted previously identified eagle nests from an MNR survey in February 2023 as well as new nests identified near the Project. The MNR identified one nest within 1 km of the Project Development Area (PDA) (nest E-487) and the loss of one nest (nest E-535) when a tree was felled. The drone survey targeted the nest identified by the MNR, an additional nest on the north side of Kenogamisis Lake (nest WP-008), and a new nest (nest GGM-001) identified by GGM on a peninsula in the Southwest Arm of Kenogamisis Lake within the Project PDA. Nest GGM-001 was found to be active. As a result, mitigation was applied with access and activities restricted from May 1 through August 31. Nest E-487 is just under 800 m from the PDA, and was not determined to be active, as a result no mitigation was applied. Nest WP-008 is greater than 800 m from the Project and does not require mitigation measures during construction activities.

The purpose of the Indigenous Peoples Health Risk Assessment Follow-up Program is to verify the accuracy of the assumptions relied on in the EIS as it pertains to the potential for adverse environmental effects of the Mine on the health of Indigenous People. For the 2023 monitoring period, the data collected relevant to this program included air quality, surface water, and fish tissue monitoring. An evaluation of these data is provided in the 2023 Indigenous Peoples Health Risk Assessment Follow-up Report. For air quality and surface water monitoring, the data collected during the 2023 monitoring period were compared to applicable guidelines and trigger levels and it was concluded that the assumptions relied on in the HHRA remain applicable. Further evaluation of the potential for the Mine-related changes to air quality or surface water quality to affect the health of Indigenous Peoples is not required based on the data collected during the 2023 monitoring period. These assumptions will be re-evaluated based on updated monitoring data in next year's Indigenous Peoples Health Risk Assessment Follow Up Report. Fish tissue data, although collected during the 2023 monitoring period, were not yet available for interpretation at the time of report production. Therefore, these data will be evaluated and interpreted separately and appended to the 2023 Indigenous Peoples Health Risk Assessment Follow-up Report when the data becomes available.

Condition 6.1 of the federal Decision Statement requires GGM to establish an alternate unrestricted access to the Southwest Arm of Kenogamisis Lake and to maintain that alternate access during all phases of the Designated Project, to the extent that such access is safe. GGM has included a public access road from Highway 11 along the east side of the PDA to maintain access to the Southwest Arm of Kenogamisis Lake. For the Goldfield Creek diversion channel access, the main access point of Lahtis Road is closed during construction and operation due to safety reasons (EIS/EA, Chapter 16). Lahtis Road was closed during the reporting period.

Implementation of the follow-up programs will remain generally unchanged in the upcoming monitoring year, with the exception of proposed changes to the Groundwater sampling program (part of the Multimedia Management and Monitoring Plan), as described in section 2.6.

## Executive Summary – French

Greenstone Gold Mines (GGM) construit actuellement et prévoit d'exploiter et ensuite de déclasser/fermer une nouvelle mine d'or à ciel ouvert, une usine de traitement et des installations auxiliaires associées, collectivement connues sous le nom de mine Greenstone (la Mine), anciennement connue sous le nom de projet Hardrock (le Projet). Le site minier est situé juste au sud de Geraldton, en Ontario, dans la municipalité de Greenstone, à l'intersection des routes 11 et 584.

Le ministère de l'Environnement et du Changement climatique du Canada a émis une déclaration de décision en vertu de l'article 54 de la *Loi canadienne sur l'évaluation environnementale (2012)* (déclaration de décision datée du 10 décembre 2018) pour l'étude d'impact environnemental (EIE) du projet (Stantec 2017), qui comprenait une série de conditions à remplir pour que GGM poursuive le projet. Ce rapport est soumis pour répondre aux exigences de production de rapports annuels décrites à la condition 2.9 de la déclaration de décision et décrit les activités entreprises par GGM pour se conformer à chacune des conditions de la déclaration de décision au cours de la période du rapport, soit du 1<sup>er</sup> octobre 2022 au 30 septembre 2023 (période du rapport 2023).

Des étapes importantes de la construction ont été franchies en vue de l'exploitation en 2024. La station de traitement des effluents a commencé à déverser de l'eau traitée dans l'environnement, les installations de confinement des résidus sont terminées, l'atelier d'entretien des camions a été mis en service et la construction de l'usine, dont celle du convoyeur et du concasseur, a progressé de manière importante.

Au cours de la période de rapport 2023, les plans de surveillance et de suivi suivants ont été mis en œuvre et les résultats sont fournis dans le présent rapport :

- Plan de surveillance du poisson et de son habitat relativement à l'EIE fédérale (GGM 2021a)
- Plan de surveillance et de gestion de la biodiversité (GGM 2022a)
- Utilisation actuelle des terres et des ressources de la mine Greenstone à des fins traditionnelles – Plan de suivi (GGM 2020a)
- Plan de suivi de l'évaluation des risques pour la santé des peuples autochtones (GGM 2020b)
- Rapport annuel relatif aux conditions fédérales 2.10 (le présent rapport)

Le présent document de suivi décrit les résultats correspondants à la période de rapport, soit du 1<sup>er</sup> octobre 2022 au 30 septembre 2023 (période de rapport 2023).

GGM a mis sur pied des comités consultatifs environnementaux avec les groupes autochtones locaux, qui se réunissent régulièrement. Ces comités ont convenu des méthodes de communication, des types d'informations à fournir, des délais d'examen et de la discussion des points de vue/informations.

Un Plan de surveillance et de suivi du poisson et de son habitat (GGM 2021) a été préparé pour répondre à sept conditions d’approbation fédérales liées à la surveillance des effets potentiels du Projet sur le poisson et son habitat (3.14, 3.15, 3.16, 3.17, 3.2, 5.4 et 5.5.1). Les résultats du rapport de surveillance et de suivi de l’EIE du poisson et de son habitat de 2022 sont résumés ci-dessous.

Conformément aux exigences de la condition fédérale 3.14, GGM a élaboré et mis en œuvre des mesures pour contrôler l’érosion et la sédimentation. Un plan de contrôle de l’érosion et de la sédimentation (ESCP) (GGM 2020d) a été mis en œuvre pour atténuer les effets potentiels de l’érosion et de la sédimentation sur le poisson et son habitat. L’efficacité des mesures de contrôle de l’érosion et de la sédimentation a été régulièrement évaluée. Des pratiques de gestion ont été mises en œuvre pour protéger l’environnement et pour déterminer si de nouvelles stratégies de gestion mesures d’atténuation sont nécessaires.

Le plan de surveillance et de gestion du bruit et des vibrations (NVMMP) (GGM 2020c) fixe un seuil de surpression de 50 kPa dans l’eau et un seuil de vibration de 13 mm/sec (dans le substrat). Au cours de la période de surveillance 2023, un total de 102 dynamitages ont été effectués. Quatre dépassements du seuil de vibration ont été constatés et aucun dépassement du seuil de surpression n’a été relevé au cours de cette période de déclaration. L’un des cas de dépassement s’est produit pendant la période de frai et les trois autres cas de dépassement des vibrations se sont produits en dehors de la période de frai.

Les niveaux de vibration mesurés au cours de la période couverte par le présent rapport étaient inférieurs au seuil de 13 mm/s, à l’exception des dépassements mentionnés ci-dessus. La pression enregistrée pour toutes les explosions était de beaucoup inférieure au seuil de 50 kPa, la pression la plus élevée enregistrée étant de 1,1 kPa.

Le plan de surveillance et de suivi du poisson et de son habitat indique les méthodes de surveillance de la qualité de l’eau mises en place pour le lac Kenogamisis, le lac Mosher et l’affluent du bras sud-ouest. Au cours de l’échantillonnage mensuel, des échantillons d’eau de surface ont été prélevés au hasard et ont été soumis à un laboratoire agréé pour analyse. De plus, la température, le pH, la conductivité, la turbidité et l’oxygène dissous (OD) de l’eau de surface ont été mesurés in situ à l’aide d’une sonde multi-paramètres. La mesure de la température et de l’OD de la colonne d’eau a également été effectuée tous les trimestres (février, juin, août, octobre) à huit emplacements de surveillance des eaux de surface. Neuf (9) enquêtes du seuil de déclenchement 2 de la qualité des eaux de surface ont été entreprises au cours de la période de rapport 2023 pour évaluer les tendances de la qualité des eaux de surface.

En résumé :

- L’enquête du seuil de déclenchement 2 pour le fer à la station 8 a suggéré que les pics de fer à la fin de 2022 pouvaient être attribués à des résultats de laboratoire incohérents. GGM a donc changé de laboratoire. La concentration de fer à la station 8 a été inférieure aux seuils de déclenchement 1 et 2 pour le reste de la période de surveillance 2023.

- L'enquête du seuil de déclenchement 2 pour l'arsenic à la station 25 a permis de conclure que la concentration élevée d'arsenic était probablement due aux travaux réalisés dans l'eau de l'affluent du bras sud-ouest, et aux mesures de contrôle de l'érosion et de la sédimentation mises en œuvre pendant la construction.
- L'enquête sur le seuil de déclenchement 2 pour le fer à la station 25 a permis de conclure que les dépassements étaient probablement dus à la dérivation du débit du ruisseau Goldfield, à la libération de sédiments et à l'inondation de terres le long de l'affluent du bras sud-ouest.
- L'enquête sur le seuil de déclenchement 2 pour l'uranium à la station 39 a permis de conclure que les dépassements sont attribués à la construction du canal de dérivation du ruisseau Goldfield et à la perturbation des sédiments qui en a découlé, ainsi qu'à la rupture du canal qui s'est produite en mai 2023. La construction du canal de dérivation et sa rupture ont exposé et mobilisé les sédiments locaux du lit et des berges du canal. L'élévation continue de la concentration d'uranium au cours de l'été et jusqu'en octobre 2023 est probablement le résultat de schémas naturels saisonniers et de l'exposition continue de sédiments contenant de l'uranium mobilisés lors de la rupture du canal de dérivation du ruisseau Goldfield. Les concentrations d'uranium (la plus élevée étant de 0,26 µg/L en septembre) étaient de beaucoup inférieures à l'objectif provincial de qualité de l'eau (5 µg/L).
- Les enquêtes sur le seuil de déclenchement 2 pour le fer aux stations 24, 26, 49 et 53 ont suggéré que des concentrations élevées de fer pourraient être liées à la variabilité naturelle ou à des problèmes liés aux analyses en laboratoire.

Le plan de surveillance et de suivi du poisson et de son habitat indique les principales composantes de surveillance des eaux souterraines suivantes : 1) surveillance du volume pompé, 2) surveillance du niveau d'eau et 3) surveillance de la qualité de l'eau.

Le nouveau canal du ruisseau Goldfield et le bassin de dérivation Goldfield ont été achevés en novembre 2022, et le débit du ruisseau y a été détourné en janvier 2023. L'augmentation du débit au printemps a mis en évidence des défaillances de conception du canal de dérivation, ce qui a entraîné l'érosion et l'instabilité des berges. GGM travaille actuellement avec les gouvernements fédéral et provincial pour obtenir des permis pour les portions redessinées du canal et pour coordonner la participation et la consultation des communautés autochtones. Il est prévu qu'un amendement à l'autorisation obtenue en vertu de la Loi sur les pêches soit nécessaire pour remédier à la défaillance des travaux de compensation, et que des mesures de compensation supplémentaires ou de rechange soient mises en place.

Les exigences de gestion et de surveillance de la condition 5.5.1 traitent des effets potentiels liés aux changements de concentration de mercure et de méthylmercure dans le doré jaune du lac Kenogamisis.

Une surveillance des tissus de poissons est requise dans les 24 mois suivant le moment où la station temporaire de traitement des effluents de la Mine a commencé à rejeter des effluents, c'est-à-dire le 15 septembre 2021. Des activités de surveillance des tissus de poissons ont donc été réalisées selon le plan de surveillance dans le lac Kenogamisis au cours de la période de surveillance de 2023. La surveillance des tissus de poissons doit avoir lieu tous les deux ans pendant les six premières années d'exploitation, après quoi la nécessité d'une surveillance supplémentaire sera évaluée.

Un prélèvement de tissus de doré a été effectué à la fin du mois de septembre et en octobre 2023, conformément aux exigences du plan de surveillance. Au moment de la préparation du rapport, le laboratoire n'avait pas encore transmis les données sur les tissus du doré jaune. Une note distincte sera annexée au présent rapport après réception des données du laboratoire. Des hirondelles rustiques (*Hirundo rustica*), une espèce menacée (ESA 2007, SARO 2011) étaient présentes dans deux bâtiments devant être démolis par GGM sur le site du ministère des Transports de l'Ontario (MTO). La démolition a eu lieu au printemps 2023 et s'est achevée au début du mois de mai 2023. Une structure de compensation de l'habitat de l'Hirondelle rustique a fait l'objet d'une surveillance à quatre reprises au cours de la saison de nidification 2023. La structure de compensation de l'habitat était en bon état pendant la saison de nidification de 2023, y compris les nids et les dispositifs de contrôle des prédateurs. Il n'y a eu aucune preuve d'utilisation de la structure par les hirondelles rustiques ou d'autres espèces d'oiseaux ou de chauves-souris en 2023.

Pour faciliter les activités de construction prévues en 2023 de la mine Greenstone, un relevé par drone des nids d'aigles à tête blanche a été effectué par le personnel de GGM en mai et juin 2023. Le relevé ciblait les nids d'aigle déjà repérés lors d'un relevé du ministère des Richesses naturelles et des forêts (MRNF) en février 2023, ainsi que les nouveaux nids repérés à proximité du projet. Le MRNF a repéré un nid dans un rayon de 1 km de la zone de développement du projet (nid E-487) et a constaté la perte d'un nid (nid E-535) à la suite de l'abattage d'un arbre. L'étude par drone ciblait le nid identifié par le MRNF, un autre nid sur la rive nord du lac Kenogamisis (nid WP-008) et un nouveau nid (nid GGM-001) repéré par GGM sur une péninsule dans le bras sud-ouest du lac Kenogamisis à l'intérieur de la zone d'étude du projet. Le nid GGM-001 s'est avéré actif. Conséquemment, des mesures d'atténuation ont été mises en œuvre, puis les activités et l'accès ont été restreints du 1<sup>er</sup> mai au 31 août. Le nid E-487 se trouve à un peu moins de 800 m de la zone d'étude du projet et n'a pas été jugé actif, de sorte qu'aucune mesure d'atténuation n'a été prise. Le nid WP-008 se trouve à plus de 800 m du projet et ne nécessite pas de mesures d'atténuation pendant les activités de construction.

L'objectif du Programme d'évaluation des risques pour la santé des peuples autochtones est de vérifier la validité des hypothèses sur lesquelles s'appuie l'énoncé des impacts environnementaux en ce qui concerne le potentiel d'effets environnementaux négatifs de la mine sur la santé de ces populations. Dans le cadre du Programme, pour la période de surveillance de 2023, des données ont été recueillies sur la qualité de l'air, les eaux de surface et la surveillance des tissus des poissons. Une évaluation de ces données est fournie dans le rapport de suivi de l'évaluation des risques pour la santé des peuples autochtones de 2023. En ce qui concerne la surveillance de la qualité de l'air et des eaux de surface, les données recueillies au cours de la période de surveillance de 2023 ont été comparées aux lignes directrices et aux seuils de déclenchement applicables, et il a été conclu que les hypothèses sur lesquelles s'appuie l'évaluation des risques pour la santé humaine restent valables. Les données recueillies au cours de la période de surveillance de 2023 ne nécessitent pas d'évaluation plus poussée quant au risque pour les populations autochtones d'être affectées par les modifications de la qualité de l'air ou de l'eau de surface liées à la mine. Ces hypothèses seront réévaluées en fonction des données de surveillance actualisées dans le rapport de suivi de l'évaluation des risques pour la santé des peuples autochtones de l'année prochaine. Les données sur les tissus des poissons, bien que collectées au cours de la période de surveillance 2023, n'étaient pas encore disponibles pour interprétation au moment de la production du rapport. Ces données seront donc évaluées et interprétées séparément et annexées au rapport de suivi de l'évaluation des risques pour la santé des populations autochtones de 2023 lorsqu'elles seront disponibles.

La condition 6.1 de la déclaration de la décision fédérale exige que GGM établisse un accès de rechange sans restriction au bras sud-ouest du lac Kenogamisis, et qu'elle maintienne cet accès pendant toutes les étapes du projet désigné, dans la mesure où cet accès est sûr. GGM a prévu une route publique à partir de l'autoroute 11 le long du côté est de la zone d'étude du projet pour maintenir l'accès au bras sud-ouest du Kenogamisis Lake. Le chemin Lahtis, principal accès au canal de dérivation du ruisseau Goldfield, est fermé pendant la construction et l'exploitation pour des raisons de sécurité (EIS/EA, Chapitre 16). Le chemin Lahtis a été fermé au cours de la période considérée.

La mise en œuvre des programmes de suivi demeurera généralement inchangée au cours de la prochaine année, à l'exception des modifications proposées au programme d'échantillonnage des eaux souterraines (qui fait partie du plan de gestion et de surveillance des différents milieux [Multimedia Management and Monitoring Plan]), comme décrit à la section 2.6.

## 1 Introduction

Greenstone Gold Mines (GGM) is constructing, planning to operate, and ultimately decommission/close a new open pit gold mine, process plant, and associated ancillary facilities, collectively known as the Greenstone Mine (the Mine).

The Minister of the Environment and Climate Change issued a Decision Statement under Section 54 of the Canadian Environmental Assessment Act, 2012 (Decision Statement, dated December 10, 2018 and as amended on February 10, 2021) for the Project's Environmental Impact Statement (EIS), which included a series of conditions to be met for GGM to proceed with the Project. Note that the EIS was completed under the oversight of the Canadian Environmental Assessment Agency (CEAA), now known as the Impact Assessment Agency of Canada (IAAC).

This report has been prepared to meet the Annual Report requirements described under condition 2.9 of the Decision Statement and describes activities undertaken by GGM to comply with each of the conditions in the Decision Statement during the reporting period of October 1, 2022 to September 30, 2023. As specified in condition 2.10, the Annual Report is required to be submitted no later than December 31 following the reporting year to which the annual report applies.

Construction commenced on March 1, 2021, and continued through 2022 and 2023. During the 2023 reporting period, critical mine infrastructure was completed in preparation for mine operations to commence in 2024. These infrastructure components include:

- A. Completion of the highway realignment
- B. Completion of the Tailings Management Facility starter dams (Phase 1) and seepage collection systems
- C. Completion and commissioning of Water Collection Ponds M1, B1
- D. Commissioning of Goldfield Creek (GFC) diversion and construction of grade control structures along the Southwest Arm Tributary (SWAT)
- E. Stockpiling of material in Waste Rock Storage Area (WRSA) C
- F. Starter pit advanced and mill grade ore stockpiled for operations
- G. Completion of mechanics shop and truck wash facility
- H. Completion of the exterior of the mill and conveyor system
- I. Demolition and relocation of Ontario Ministry of Transportation (MTO) Patrol Yard
- J. Construction of the construction and demolition landfill
- K. Commissioning of the effluent treatment plant and associated discharge line and diffuser with discharge to the Southwest Arm of Kenogamisis Lake
- L. Aggregate extraction from the S4 and T2 pits for use in construction.

GGM has established EASs with the local Indigenous groups, which meet regularly. These committees have agreed upon methods of communication, types of information to be provided, review timelines, and discussion of views/information.

## 2 Annual Report Requirements

Condition 2.9, of the Decision Statement outlines the requirements for the Annual Report as follows:

*2.9 The Proponent shall, commencing in the reporting year during which the Proponent begins the implementation of the conditions set out in this Decision Statement, prepare an annual report that sets out:*

- 2.9.1 the activities undertaken by the Proponent in the reporting year to comply with each of the conditions set out in this Decision Statement;*
- 2.9.2 how the Proponent complied with condition 2.1;*
- 2.9.3 for conditions set out in this Decision Statement for which consultation is a requirement, how the Proponent considered any views and information that the Proponent received during or as a result of the consultation;*
- 2.9.4 the information referred to in conditions 2.4 and 2.5 for each follow-up program;*
- 2.9.5 the results of the follow-up program requirements identified in conditions 3.15, 3.16, 3.17, 4.6, 4.7, 5.3, 5.4, 5.5 and 6.9; and*
- 2.9.6 any modified or additional mitigation measures implemented or proposed to be implemented by the Proponent, as determined under condition 2.7.*

These requirements are addressed in Sections 2.1 through 2.6.

### 2.1 Activities Undertaken between October 1, 2022 to September 30, 2023 to Comply with Conditions (Condition 2.9.1)

Table 2-1 presents a list of the conditions included in the EIS Decision Statement for the Project and describes the activities that GGM carried out during the reporting period to comply with the conditions.

**Table 2-1: List of Conditions and Activities Undertaken during Reporting Period to Comply with EIS Decision Statement Conditions**

Condition Number	Description	Activities Undertaken
2.1	<p>GGM shall ensure that its actions in meeting the conditions set out in the CEAA Decision Statement during all phases of the Designated Project are considered in a careful and precautionary manner, promote sustainable development, are informed by the best information and knowledge available at the time the Proponent takes action, including community and Indigenous traditional knowledge, are based on methods and models that are recognized by standard-setting bodies, are undertaken by qualified individuals, and have applied the best available economically and technically feasible technologies.</p>	<p>Refer to Section 2.2 of this Annual Report.</p>
2.2	<p>Where consultation is a requirement of a condition set out in the CEAA Decision Statement:</p> <p>2.2.1 provide a written notice of the opportunity for the party or parties being consulted to present their views and information on the subject of the consultation;</p> <p>2.2.2 provide all information relevant and applicable on the scope and the subject matter of the consultation and a period of time agreed upon with the party or parties being consulted, not to be less than 15 days, to prepare their views and information;</p> <p>2.2.3 undertake an impartial consideration of all views and information presented by the party or parties being consulted on the subject matter of the consultation; and</p> <p>2.2.4 advise in a timely manner the party or parties being consulted on how the views and information received have been considered by the Proponent.</p>	<p>Where consultation is a requirement, GGM provided draft documents, received written comments, which were responded to and discussed in meetings where necessary. Refer to Section 2.3 of this report for further information.</p>

Condition Number	Description	Activities Undertaken
2.3	<p>Where consultation with Indigenous groups is a requirement of a condition set out in the CEAA Decision Statement, communicate with each Indigenous group with respect to the manner to satisfy the consultation requirements referred to in condition 2.2, including methods of notification, the type of information and the period of time to be provided when seeking input, the process to be used by the Proponent to undertake impartial consideration of all views and information presented on the subject of the consultation, and the period of time and the means to advise Indigenous groups of how their views and information were considered by the Proponent.</p>	<p>GGM has established environmental advisory sub-committees (EASs) with Indigenous groups. Methods of communication, types of information to be provided, review timelines and discussion of views/information have been agreed upon.</p>
2.4	<p>Where a follow-up program is a requirement of a condition set out in the CEAA Decision Statement, determine, as part of the development of each follow-up program and in consultation with the party or parties being consulted during the development, the following information:</p> <p>2.4.1 the methodology, location, frequency, timing and duration of monitoring associated with the follow-up program;</p> <p>2.4.2 the scope, content and frequency of reporting of the results of the follow-up program;</p> <p>2.4.3 the levels of environmental change relative to baseline conditions that would require the Proponent to implement modified or additional mitigation measure(s), including instances where the Proponent may require Designated Project activities to be stopped; and</p> <p>2.4.4 the technically and economically feasible mitigation measures to be implemented by the Proponent if monitoring conducted as part of the follow-up program shows that the levels of environmental change referred to in condition 2.4.3 have been reached or exceeded.</p>	<p>Refer to conditions 3.15, 3.16, 3.17, 4.6, 4.7, 5.3, 5.4, 5.5 and 6.9 below.</p>

Condition Number	Description	Activities Undertaken
2.5	Maintain the information referred to in condition 2.4 during the implementation of each follow-up program in consultation with the party or parties being consulted during the development of each follow-up program.	Refer to conditions 3.15, 3.16, 3.17, 4.6, 4.7, 5.3, 5.4, 5.5 and 6.9 below.
2.6	Provide the follow-up programs referred to in conditions 3.15, 3.16, 3.17, 4.6, 4.7, 5.3, 5.4, 5.5 and 6.9 to CEAA and to the party or parties being consulted during the development of each follow-up program prior to the implementation of each follow-up program. The Proponent shall also provide any update(s) made pursuant to condition 2.5 to the Agency and to the party or parties being consulted during the development of each follow-up program within 30 days of the follow-up program being updated.	Refer to conditions 3.15, 3.16, 3.17, 4.6, 4.7, 5.3, 5.4, 5.5 and 6.9 below.
2.7	<p>Where a follow-up program is a requirement of a condition set out in the CEAA Decision Statement:</p> <p>2.7.1 conduct the follow-up program according to the information determined pursuant to condition 2.4;</p> <p>2.7.2 undertake monitoring and analysis to verify the accuracy of the environmental assessment as it pertains to the particular condition and/or to determine the effectiveness of any mitigation measure(s);</p> <p>2.7.3 determine whether modified or additional mitigation measures are required based on the monitoring and analysis undertaken pursuant to condition 2.7.2; and</p> <p>2.7.4 if modified or additional mitigation measures are required pursuant to condition 2.7.3, develop and implement these mitigation measures in a timely manner and monitor them pursuant to condition 2.7.2.</p>	Follow-up programs that were implemented during the reporting period are discussed in Section 2.5 of this report.

Condition Number	Description	Activities Undertaken
2.8	Where consultation with Indigenous groups is a requirement of a follow-up program, GGM shall discuss with each Indigenous group opportunities for their participation in the implementation of the follow-up program, including the analysis of the follow-up results and whether modified or additional mitigation measures are required, as set out in condition 2.7.	GGM has funded Environmental Technician positions employed by each of the five Indigenous groups identified in the Decision Statement, who are involved in the implementation of the follow-up programs, including the analysis of the follow-up results and whether modified or additional mitigation measures are required. These Environmental Technicians also participate in EAS meetings and correspondence.
2.9	Commencing in the reporting year during which GGM begins the implementation of the conditions set out in the CEAA Decision Statement, prepare an annual report that sets out: 2.9.1 the activities undertaken by the Proponent in the reporting year to comply with each of the conditions set out in the CEAA Decision Statement; 2.9.2 how the Proponent complied with condition 2.1; 2.9.3 for conditions set out in the CEAA Decision Statement for which consultation is a requirement, how the Proponent considered any views and information that the Proponent received during or as a result of the consultation; 2.9.4 the information referred to in conditions 2.4 and 2.5 for each follow-up program; 2.9.5 the results of the follow-up program requirements identified in conditions 3.15, 3.16, 3.17, 4.6, 4.7, 5.3, 5.4, 5.5 and 6.9; and 2.9.6 any modified or additional mitigation measures implemented or proposed to be implemented by the Proponent, as determined under condition 2.7.	Submission of this annual report.
2.10	Submit an annual report to CEAA, referred to in condition 2.9, including an executive summary in both official languages, no later than December 31 following the reporting year to which the annual report applies.	Submission of this annual report.

Condition Number	Description	Activities Undertaken
2.11	Publish on the Internet, or any medium which is publicly available, the annual reports and the executive summaries referred to in conditions 2.9 and 2.10, the information submitted to CEAA pursuant to condition 2.15, the offsetting plan(s) referred to in condition 3.12, the Community Relations Management Plan referred to in condition 5.7, the Community Relations Management Plan referred to in condition 6.4, the concerns raised pursuant to condition 6.5 and measures taken by the Proponent to address these concerns, the bald eagle ( <i>Haliaeetus leucocephalus</i> ) protection plan referred to in condition 7.1, the reports related to accidents and malfunctions referred to in conditions 9.4.2 and 9.4.3, the Community Relations Management Plan referred to in condition 9.5, the schedules referred to in conditions 10.1, and 10.2, and any update(s) or revision(s) to the above documents, upon submission of these documents to the parties referenced in the respective conditions. The Proponent shall keep these documents publicly available for 25 years following the end of operation, or until the end of decommissioning of the Designated Project, whichever comes first. The Proponent shall notify the CEAA and Indigenous groups of the availability of these documents within 48 hours of their publication.	This report and other finalized documents are published on the GGM website. <a href="https://www.greenstonegoldmines.com/">https://www.greenstonegoldmines.com/</a>
2.12	When the development of any plan is a requirement of a condition set out in the CEAA Decision Statement, GGM shall submit the plan to CEAA prior to construction, unless otherwise required through the condition.	Refer to conditions 3.15, 3.16, 3.17, 4.6, 4.7, 5.3, 5.4, 5.5 and 6.9 below.
2.13	GGM must notify CEAA and Indigenous groups in writing no later than 30 days after the day on which there is any transfer of ownership, care, control or management of the Designated Project in whole or in part.	N/A: no transfer of ownership, care, control or management of the Designated Project in whole or in part occurred during reporting period.

Condition Number	Description	Activities Undertaken
2.14	Consult with Indigenous groups and relevant authorities prior to initiating any changes to the Designated Project that may result in adverse environmental effects, and shall notify the CEAA in writing no later than 60 days prior to initiating the change(s).	Design Optimization Report sent to Indigenous groups, Ontario Ministry of the Environment, Conservation and Parks (MECP) and IAAC for review/comment in October 2019. A Project update was deemed filed and no amendment required by IAAC on April 14, 2021 regarding the clearing of additional trees in the temporary camp location.
2.15	In notifying CEAA pursuant to condition 2.14, GGM shall provide a description of the potential adverse environmental effects of the change(s) to the Designated Project, the proposed mitigation measures and follow-up requirements to be implemented by GGM and the results of the consultation with Indigenous groups and relevant authorities.	Design Optimization Report and Addendum provided to Indigenous groups, Ontario Ministry of the Environment, Conservation and Parks (MECP) and Impact Assessment Agency in October 2019 and April 2020. A project update was deemed filed and no amendment required by IAAC on April 14, 2021 regarding the clearing of additional trees in the temporary camp location.
3.1	<p>Salvage and relocate fish prior to conducting any Designated Project activity requiring removal of fish habitat in a manner consistent with any authorization issued under the Fisheries Act and its regulations. The Proponent shall salvage and relocate fish in consultation with Indigenous groups and to the satisfaction of Fisheries and Oceans Canada and other relevant authorities.</p> <p>3.1.1 GGM shall discuss, prior to the start of fish salvaging and relocating activities, with each Indigenous group, opportunities for their participation in these activities.</p>	<p>In accordance with condition 3.1, fish salvages were completed in the following water bodies during the 2023 monitoring period.</p> <ul style="list-style-type: none"> <li>• Goldfield Creek</li> <li>• Goldfield Creek Diversion Channel</li> <li>• Southwest Pond 1</li> <li>• Southwest Pond 2</li> <li>• Watercourse L</li> <li>• Golf Course Pond 3 (GCP3)</li> <li>• Watercourse C (WC-C)</li> </ul> <p>GGM communicated fish salvage plans with Indigenous groups and Environmental Technicians from interested Indigenous groups participated in fish salvage activities.</p>

Condition Number	Description	Activities Undertaken
3.2	<p>Develop, prior to the start of blasting activities in or near water, and implement, during blasting activities in or near water, mitigation measures to avoid or prevent adverse effect to fish and fish habitat from the use of explosives in a manner consistent with the Fisheries Act and its regulations. When developing these measures, the Proponent shall take into account Fisheries and Oceans Canada's Measures to avoid causing harm to fish and fish habitat including aquatic species at risk as it pertains to the use of explosives in or near water. The Proponent shall submit these measures to CEAA before implementing them.</p>	<p>In accordance with condition 3.1, a Noise and Vibration Management and Monitoring Plan (NVMMP) (GGM 2020c) was developed and submitted to IAAC in July 2020. The plan identifies measures to mitigate potential adverse effect to fish and fish habitat from the use of explosives.</p>
3.3	<p>Design, install and operate the water intake structures in Kenogamisis Lake in a manner which reduces the incidental capture of fish by entrainment and impingement through the use of an appropriately sized fish screen, taking into account Fisheries and Oceans Canada's Freshwater Intake End-of-Pipe Fish Screen Guideline and in a manner consistent with the Fisheries Act and its regulations.</p>	<p>One surface water intake was installed in the Southwest Arm of Kenogamisis Lake. The intake is located north of the confluence of the Southwest Arm Tributary with the lake. Design of the water intake structure was in a manner consistent with the Fisheries Act and its regulations completed during reporting period.</p> <p>The pump was installed on a flotation module that is anchored to the bottom of the lake and the pipeline floats on the lake surface using buoys. The pump was submerged in a mesh cage under the floating module with a maximum opening mesh size of 2.54 mm to meet the Freshwater Intake End-of-Pipe Fish Screen Guidelines (DFO 1995).</p>
3.4	<p>Comply with the Metal and Diamond Mining Effluent Regulations and the pollution prevention provisions of the Fisheries Act.</p>	<p>GGM began sampling TETP effluent as per the effluent monitoring requirements of the Metal and Diamond Mining Effluent Regulations (MDMER, DIVISION 2 Effluent Monitoring Conditions) in September 2021, when the Temporary ETP began discharging. The Environmental Effects Monitoring (EEM) Study Design was submitted to Environment and Climate Change Canada (ECCC) on September 15, 2022, to meet the requirements of the MDMER, Schedule 5 (EEM Studies), Part 2 (Biological Monitoring Studies), Section 10 (First Study Design).</p> <p>The biological sampling requirements of MDMER were not required in 2022/2023, but took place in October and November 2023.</p>

Condition Number	Description	Activities Undertaken
3.5	Collect and direct contact water from the waste rock storage areas (including any temporary storage location of excavated historical tailings), overburden storage area and ore stockpile to contact water collection ditches for reuse in Designated Project activities, and treat excess water that cannot be reused.	Excess soil was stored in Waste Rock Storage Area (WRSA) C. Contact water from WRSA C was collected via Pond B1 where it was sent to Pond M1 and then to the Full Scale ETP for treatment prior to discharge. Overburden storage stockpiles were used during the construction of the TMF which had sedimentation controls prior to discharge to the environment. No other WRSAs or the overburden storage area and ore stockpile were operational during the reporting period.
3.6	Collect and direct, during operation, contact water from the tailings management facility, including the final location of the excavated historical tailings, to the collection ponds associated with the tailings management facility.	N/A: Project is not yet in operation phase.
3.7	Install, prior to operation, and use a cyanide destruction circuit to reduce cyanide concentrations in tailings before the tailings are directed to the tailings management facility during operation.	N/A: Project is not yet in operation phase.
3.8	Maintain the contact water collection ditches around the waste rock storage areas, overburden storage area, ore stockpile and the tailings management facility after operation and as necessary to comply with the Metal and Diamond Mining Effluent Regulations and the pollution prevention provisions of the Fisheries Act.	Excess soil was stored in WRSA C. Contact water from WRSA C was collected via Pond B1 where it was sent to Pond M1 and then to the Full Scale ETP treatment prior to discharge. No other WRSAs or the overburden storage area and ore stockpile were operational during the reporting period.
3.9	GGM shall not connect the pit lake to Kenogamisis Lake until such time that water in the pit lake complies with the pollution prevention provisions of the Fisheries Act.	N/A: Project is not yet in operation phase.
3.10	GGM shall treat contact water taking into account the Canadian Council of Minister of the Environment's Canadian Water Quality Guidelines for Protection of Aquatic Life.	GGM began operation of the Full Scale ETP in January of 2023, taking into account the Canadian Council of Minister of the Environment's Canadian Water Quality Guidelines for Protection of Aquatic Life.

Condition Number	Description	Activities Undertaken
3.11	<p>GGM shall mitigate, in consultation with Indigenous groups and relevant authorities, the adverse environmental effects on water quality, including in the Southwest Arm, Central Basin and Barton Bay of Kenogamisis Lake, Goldfield Creek Tributary, Mosher Lake and the Southwest Arm Tributary, caused by the presence of unexcavated historical tailings. In doing so, the Proponent shall promote runoff and reduce infiltration by:</p> <p>3.11.1 covering the exposed portions of the in situ historical tailings. The Proponent shall complete the covering of the in situ historical tailings as soon after tailings have been excavated as technically feasible; and</p> <p>3.11.2 managing contaminated soils near the historical Hardrock and Macleod-Mosher plant sites and the unexcavated historical tailings.</p>	<p>No historical tailings were moved during the reporting period. Soil in the area of the historical Hardrock and MacLeod Mosher plant sites was managed in accordance with the Soil Management Plan (SMP) as amended (GGM 2020g; Stantec 2021; Stantec 2023a). Soil characterization was completed prior to excavation and then soil was managed in accordance with the requirements of the SMP and either placed in the overburden storage area, WRSA C, and/or disposed of off site at a licensed facility.</p>
3.12	<p>GGM shall develop, to the satisfaction of Fisheries and Oceans Canada and Environment and Climate Change Canada and in consultation with Indigenous groups, any offsetting plan(s) related to any residual serious harm to fish associated with the carrying out of the Designated Project. The Proponent shall implement the plan. The Proponent shall submit any approved offsetting plan(s) to the Agency prior to implementation.</p>	<p>An offsetting plan was developed in consultation with Indigenous groups, DFO and ECCC and approved by DFO in April 2020.</p>
3.13	<p>GGM shall, for any fish habitat offsetting measure(s) proposed in any offsetting plan(s) referred to in condition 3.12 that may cause adverse environmental effects not considered in the environmental assessment, develop and implement, following consultation with Indigenous groups, Fisheries and Oceans Canada and Environment and Climate Change Canada, measures to mitigate those effects. The Proponent shall submit these measures to the Agency before implementing them.</p>	<p>An offsetting plan was developed in consultation with Indigenous groups, DFO and ECCC and approved in April 2020.</p> <p>It is anticipated that an amendment to the Fisheries Act Authorization will be required in the next reporting period to address the failed offsetting works, and additional and/or alternative offsetting will be created.</p> <p>Regular meetings are held with Indigenous groups, DFO, MNRF, and IAAC to provide updates on channel redesign and rehabilitation, seek input and align expectations. GGM will continue to provide IAAC with updates on planned methods to mitigate potential effect on fish and fish habitat.</p>

Condition Number	Description	Activities Undertaken
3.14	<p>GGM shall develop, prior to construction, and implement, during all phases of the Designated Project and in a manner consistent with the Fisheries Act and its regulations, measures to control erosion and sedimentation in the project development area. The Proponent shall submit these measures to the Agency before implementing them. Among other measures, the Proponent shall maintain stream bank stability using ditches and diversion berms.</p>	<p>As per the requirements of condition 3.14, GGM has developed and implemented measures to control erosion and sedimentation for the Mine (GGM 2020d). Erosion and sediment control monitoring results related to potential effects on fish and fish habitat are presented in a Greenstone Mine 2023 Fish and Fish Habitat Federal EIS Follow-Up Monitoring Report that will be submitted on or before December 31, 2023.</p>
3.15	<p>GGM shall develop, prior to the start of blasting activities in or near water and in consultation with relevant authorities, a follow-up program to determine the effectiveness of the mitigation measures as it pertains to the adverse environmental effects of blasting on fish and fish habitat, including aquatic listed species at risk. The Proponent shall implement the follow-up program during blasting activities. As part of the implementation of the follow-up program, the Proponent shall:</p> <p>3.15.1 monitor instantaneous pressure and peak particle velocity during the first blasting event;</p> <p>3.15.2 if the results of the monitoring referred to in conditions 3.15.1 demonstrate that modified or additional mitigation measures are required to protect fish and fish habitat, including aquatic listed species at risk, from blasting, develop, prior to the next blasting event and in consultation with relevant authorities, modified or additional mitigation measures pursuant to condition 2.7; and</p> <p>3.15.3 implement the modified or additional mitigation measures referred to in condition 3.15.2 during all subsequent blasting events. The Proponent shall submit these measures to the Agency before implementing them.</p>	<p>A Fish and Fish Habitat Federal EIS Follow-Up Monitoring Plan was completed in March 2021, which included a follow-up program to validate the EIS and the effectiveness of the mitigation measures as it pertains to the potential effects of blasting on fish and fish habitat.</p> <p>Results of the follow up program are presented in a Greenstone Mine 2023 Fish and Fish Habitat Federal EIS Follow-Up Monitoring Report that will be submitted on or before December 31, 2023.</p>

Condition Number	Description	Activities Undertaken
3.16	<p>GGM shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and to determine the effectiveness of the mitigation measures as it pertains to adverse environmental effects on fish and fish habitat caused by changes in water quality in Kenogamisis Lake, Mosher Lake and the Southwest Arm Tributary. The Proponent shall implement the follow-up program during all phases of the Designated Project, including the environmental effects monitoring requirements set out in Schedule 5 of the Metal and Diamond Mining Effluent Regulations. As part of the implementation of the follow-up program, the Proponent shall:</p> <p>3.16.1 monitor, at least quarterly during all phases of the Designated Project, nutrient levels, algae abundance, and dissolved oxygen levels in Kenogamisis Lake, Mosher Lake and the Southwest Arm Tributary;</p> <p>3.16.2 monitor, at least quarterly during the time that effluent is discharged in Kenogamisis Lake, concentrations of arsenic, unionized ammonia and total phosphorus in Kenogamisis Lake;</p> <p>3.16.3 monitor, at least quarterly during all phases of the Designated Project, concentrations of arsenic in Mosher Lake, Barton Bay and the Southwest Arm Tributary; and</p> <p>3.16.4 if the results of the monitoring referred to in conditions 3.16.1, 3.16.2 or 3.16.3 demonstrate that modified or additional mitigation measures are required to protect fish and fish habitat from changes to water quality, develop and implement modified or additional mitigation measures pursuant to condition 2.7. The Proponent shall submit these measures to the Agency before implementing them.</p>	<p>The Fish and Fish Habitat Federal EIS Follow-Up Monitoring Plan (GGM 2021a) was completed in February 2021 and addresses seven specific conditions of the Decision Statement for the Project (3.14, 3.15, 3.16, 3.17, 3.2, 5.4, and 5.5.1). The first monitoring report was completed in December 2021 (GGM 2021b) and was provided to IAAC. The second and third monitoring reports were provided to IAAC in December 2022 and 2023, respectively.</p>

Condition Number	Description	Activities Undertaken
3.17	<p>GGM shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and to determine the effectiveness of the mitigation measures as it pertains to the adverse environmental effects on fish and fish habitat of from changes in groundwater quality caused by the Designated Project. The Proponent shall implement the follow-up program during all phases of the Designated Project. As part of the implementation of the follow-up program, the Proponent shall:</p> <p>3.17.1 monitor groundwater seepage flows, levels and quality at sites located upgradient, downgradient and cross-gradient of the tailings management facility, waste rock storage areas, overburden storage area, ore stockpile and historical Macleod and Hardrock tailings, using as benchmarks the concentrations predicted by the Proponent in Table 9-20 of the Environmental Impact Statement; and</p> <p>3.17.2 if the results of the monitoring referred to in condition 3.17.1 demonstrate that modified or additional mitigation measures are required to mitigate adverse environmental effects on fish and fish habitat of changes in groundwater quality caused by the Designated Project, develop and implement modified or additional mitigation measures pursuant to condition 2.7. The Proponent shall submit these measures to the Agency before implementing them.</p>	<p>The Fish and Fish Habitat Federal EIS Follow-Up Monitoring Plan was completed in February 2021 and addresses seven specific conditions of the Decision Statement for the Project (3.14, 3.15, 3.16, 3.17, 3.2, 5.4, and 5.5.1). The first monitoring report that addressed condition 3.17 and others was completed in December 2021 (GGM 2021b) and was provided to IAAC. The second and third monitoring reports were provided to IAAC in December 2022 and 2023, respectively.</p>

Condition Number	Description	Activities Undertaken
4.1	Carry out the Designated Project in a manner that protects migratory birds and avoids harming, killing or disturbing migratory birds or destroying, disturbing or taking their nests or eggs. In this regard, the Proponent shall take into account Environment and Climate Change Canada's Avoidance Guidelines and the risk of incidental take. The Proponent's actions when carrying out the Designated Project shall be in compliance with the Migratory Birds Convention Act, 1994, the Migratory Birds Regulations and the Species at Risk Act.	<p>Tree clearing occurred within the appropriate timing window for the protection of migratory birds. Limited tree clearing also occurred in spring and summer, within the restrictive timing window. During this period, nest sweeps were conducted prior to tree clearing, as required. Results are presented in the Environmental Impact Statement Conditions of Approval 4 and 7, Annual Report.</p> <p>In 2023, GGM notified appropriate Provincial and Federal agencies of the removal of a tree that contained an active eagle nest. This was an act of vandalism, and an investigation was conducted. GGM shared investigation findings with government agencies and Indigenous Communities. GGM installed Do Not Enter signs and a trail camera near the remaining active nest within 800m of the Project's development area and completed education and awareness programs with employees to prevent future vandalism.</p>
4.2	Undertake, in consultation with Indigenous groups and relevant authorities, progressive reclamation of the project development area. The Proponent shall identify, prior to the start of progressive reclamation and in consultation with Indigenous groups and relevant authorities, plant species native to the area of the Designated Project to use for revegetation as part of the progressive reclamation, including species suitable to create habitat for migratory birds.	<p>Final Closure Plan filed January 9, 2020.</p> <p>Draft Revegetation Plan and draft Goldfield Creek Realignment Biodiversity Monitoring Plan (Appendices K and L, respectively of the Biodiversity Management and Monitoring Plan (BMMP) were developed and sent to Indigenous groups and MNRF for review/comment in October 2019. The BMMP was finalized in 2020 and updated in 2022 (GGM 2022a).</p>
4.3	Compensate, in consultation with relevant authorities, the loss of barn swallow ( <i>Hirundo rustica</i> ) nesting sites as a result of the Designated Project, taking into account Ontario's Recovery Strategy for Barn Swallow ( <i>Hirundo rustica</i> ). In doing so, the Proponent shall install, prior to construction, and maintain, during three years, artificial barn swallow ( <i>Hirundo rustica</i> ) nesting structures.	<p>N/A: removal of barn swallow nesting sites did not occur during the active nesting season . Artificial barn swallow nesting structures were installed in fall 2021 and were in place during the 2023 monitoring period.</p>

Condition Number	Description	Activities Undertaken
4.4	Establish, during construction, a speed limit of no more than 65 kilometres per hour on all roads within the project development area, including the portion of Highway 11 to be realigned by the Proponent located within the project development area, and shall require employees and contractors associated with the Designated Project to abide by this limit.	Within the PDA, construction of East Access Road occurred during the 2021 reporting period. The assigned speed limit to this road is 30 km/hr, which is less than the required 65 km/hr and remained in effect during the 2023 reporting period Construction of Highway 11 was completed during the reporting period and therefore, there was a reduction in the speed limit of Highway 11 during the reporting period.
4.5	Establish, during operation and decommissioning, a speed limit of no more than 65 kilometres per hour on all roads within the project development area, excepting the portion of Highway 11 located within the project development area, and shall require employees and contractors associated with the Designated Project to abide by this limit.	N/A: the mine was not in the operation or decommissioning stage during the reporting period. However, GGM has implemented speed limits for the Project that are at or below 65km/hr, installed speed limit signs and outlined these requirements during employee orientation.

Condition Number	Description	Activities Undertaken
4.6	<p>Develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment as it pertains to the use by migratory birds of surface water facilities in the project development area. As a part of the implementation of the follow-up program, the Proponent shall:</p> <p>4.6.1 monitor, at times migratory birds may be present in the project development area, the use by migratory birds of the tailings management facility, contact water collection ditches and collection ponds during all phases of the Designated Project until such time that water quality in these structures meet legislative requirements and water quality objectives. The water quality objectives are to be established using an ecological risk based approach, developed in consultation with Indigenous groups and relevant authorities;</p> <p>4.6.2 monitor, at times migratory birds may be present in the project development area, the use by migratory birds of the pit lake from the start of filling of the pit lake and until the end of decommissioning; and</p> <p>4.6.3 if results of the monitoring referred to in conditions 4.6.1 or 4.6.2 indicate that migratory birds use the tailing management facility, the contact water collection ditches, the collection ponds or the pit lake, develop and implement deterrent measures pursuant to condition 2.7. The Proponent shall submit these measures to the Agency before implementing them.</p>	<p>The plan to address condition 4.6 is presented in Appendix E of the BMMP (GGM 2022a), which has been developed based on consultation with Indigenous groups.</p>
4.7	<p>Develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and to determine the effectiveness of all mitigation measures to avoid harm to migratory birds, their eggs and nests, including the mitigation measures used to comply with conditions 4.1 to 4.5. As part of the development of the follow-up program, the Proponent shall identify performance indicators that shall be</p>	<p>The plan to address condition 4.7 is presented in the BMMP (GGM 2022a), which has been developed based on consultation with Indigenous groups.</p> <ul style="list-style-type: none"> <li>• Condition 4.7.1: N/A - migratory birds surveys will be conducted post construction as required</li> <li>• Condition 4.7.2: N/A progressive rehabilitation will be conducted during operation and closure as required</li> <li>• Condition 4.7.3: Monitoring took place in 2023</li> <li>• Condition 4.7.2: Monitoring took place in 2022</li> </ul>

Condition Number	Description	Activities Undertaken
	<p>used by the Proponent to evaluate the effectiveness of the progressive reclamation referred to in condition 4.2. The Proponent shall implement the follow-up program during all phases of the Designated Project. As part of the implementation of the follow-up program, the Proponent shall:</p> <p>4.7.1 conduct migratory bird surveys annually for the first five years following completion of construction to assess migratory bird use of the project development area. The Proponent shall determine the methodology for the migratory bird surveys in consultation with Indigenous groups and relevant authorities. The Proponent shall determine, in consultation with Indigenous groups and relevant authorities and based on the results of the initial surveys, if additional surveys within the project development area are required after the first five years following completion of construction and at what frequency and in which locations these additional surveys shall occur;</p> <p>4.7.2 monitor the effectiveness of the progressive reclamation referred to in condition 4.2, including the establishment of native plant species to create habitat for migratory birds, annually during operation and during the first five years of decommissioning and every five years thereafter until the proponent has determined, in consultation with Indigenous groups and relevant authorities, that the performance indicators have been met;</p> <p>4.7.3 monitor barn swallow (<i>Hirundo rustica</i>) nesting activity and use of the artificial nesting structures referred to in condition 4.3 annually during the first three years following the installation of the nesting structures and at times barn swallow (<i>Hirundo rustica</i>) may be present in the project development area; and</p> <p>4.7.4 monitor collisions between vehicles associated with the Designated Project and migratory birds within the project development area during all phases of the Designated Project.</p>	<ul style="list-style-type: none"> <li>• The plan to address condition 4.7.2 is presented in Appendix I of the BMMP</li> <li>• The plan to address condition 4.7.3 is presented in Appendix D of the BMMP</li> </ul>

Condition Number	Description	Activities Undertaken
5.1	<p>Develop, prior to construction and in consultation with Indigenous groups, measures to mitigate emissions of dust generated by the Designated Project, including dust from vehicles associated with the Designated Project on roads located within the project development area and dust generated during the transport of historical tailings, that take into account the standards and criteria set out in the Canadian Council of Ministers of the Environment's Canadian Ambient Air Quality Standards and Ontario's Ambient Air Quality Criteria. The Proponent shall submit these measures to the Agency before implementing them. The Proponent shall implement these measures during construction, operation and the first five years of decommissioning.</p>	<p>Measures to mitigate emissions of dust developed as part of the Air Quality Management and Monitoring Plan (AQMMP)(GGM 2020e) were sent to Indigenous groups for review/comment in October 2019 and ECCC in July 2020. The measures have been implemented (or are in the process of being implemented) during construction activities occurring over the reporting period.</p>
5.2	<p>Proponent shall install prior to operation, and use during ore crushing and transfer, crushers with dust collection systems.</p>	<p>N/A: ore crushers were not used during the reporting period.</p>
5.3	<p>Develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and to determine the effectiveness of the mitigation measures as it pertains to the adverse environmental effects on the health of Indigenous Peoples of changes to air quality. As part of the follow-up program, the Proponent shall:</p> <p>5.3.1 identify, as part of the development of the follow-up program, monitoring locations for air contaminants within areas used by Indigenous groups for traditional purposes or within areas representative of air quality in areas used by Indigenous groups for traditional purposes;</p> <p>5.3.2 monitor, during construction, operation and the first five years of decommissioning, total suspended particulates, particulate matter (PM10 ), fine particulate matter (PM2.5 ) and nitrogen dioxide at the monitoring locations identified pursuant to condition 5.3.1, using as benchmarks the standards and criteria set out in the Canadian Council of Ministers of the</p>	<p>The AQMMP (GGM 2020e) was developed to validate the EIS and effectiveness of the mitigation measures as it pertains to the potential for adverse environmental effects on the health of Indigenous Peoples of changes to air quality (EIS condition 5.3.1, 5.3.2, 5.3.3 and 5.3.4).</p>

Condition Number	Description	Activities Undertaken
	<p>Environment's Canadian Ambient Air Quality Standards and Ontario's Ambient Air Quality Criteria. The Proponent shall monitor total suspended particulates, fine particulate matter (PM2.5) and nitrogen dioxide at least monthly and shall monitor particulate matter (PM10) in real-time;</p> <p>5.3.3 monitor, at least annually during construction and for the first two years of operation, airborne benzene and benzo(a)pyrene at the monitoring locations identified pursuant to condition 5.3.1. The Proponent shall determine, in consultation with Indigenous groups and relevant authorities and based on the results of the monitoring, if additional monitoring is required after the first two years of operation and at what frequency this additional monitoring shall occur; and</p> <p>5.3.4 monitor, during construction and for the first two years of operation, silt content on roads within the project development area. The Proponent shall determine, in consultation with Indigenous groups and relevant authorities and based on the results of the monitoring, if additional monitoring is required after the first two years of operation and at what frequency this additional monitoring shall occur.</p>	

Condition Number	Description	Activities Undertaken
5.4	<p>Develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment as it pertains to the adverse environmental effects on the health of Indigenous Peoples of changes in concentrations of contaminants in water and fish. As part of the implementation of the follow-up program, the Proponent shall:</p> <p>5.4.1 monitor, at least quarterly during construction and the first five years of operation, mercury in the Southwest Arm Tributary, using as a benchmark a concentration of 0.04 micrograms per litre. The Proponent shall determine, in consultation with Indigenous groups and relevant authorities and based on the results of the monitoring, if additional monitoring is required after the first five years of operation and at what frequency this additional monitoring shall occur; and</p> <p>5.4.2 monitor, at least quarterly during construction and the first five years of operation, methylmercury in the Southwest Arm Tributary, using as a benchmark a concentration of 0.0001 micrograms per litre. The Proponent shall determine, in consultation with Indigenous groups and relevant authorities and based on the results of the monitoring, if additional monitoring is required after the first five years of operation and at what frequency this additional monitoring shall occur.</p>	<p>The Fish and Fish Habitat Federal EIS Follow-Up Monitoring Plan was completed in February 2021 and addresses condition 5.4. The information presented in Fish and Fish Habitat Federal EIS Follow-Up Monitoring Reports will be carried forward, where necessary, and assessed in the subsequent Health of Indigenous Peoples Follow-up Reports.</p> <p>In accordance with this condition, surface water quality in 2023 was monitored according to the sampling locations, sampling frequency, and analytical methods described in the Fish and Fish Habitat Federal EIS Follow-Up Monitoring Plan (GGM 2021a).</p>
5.5	<p>Develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and to determine the effectiveness of the mitigation measures as it pertains to the adverse environmental effects on the health of Indigenous Peoples of changes in concentrations of contaminants in country foods caused by the Designated Project. The Proponent shall implement the follow-up program during all phases of the Designated Project. As part of the development of the follow-up program, the Proponent shall identify, in</p>	<p>The Health of Indigenous Peoples Follow Up Program was finalized on January 3, 2020. The draft Program was sent to Indigenous groups for review/comment in 2019.</p> <p>Monitoring required by condition 5.5 is required during the Mine operation phase and operation did not commence during the reporting period.</p>

Condition Number	Description	Activities Undertaken
	<p>consultation with Indigenous groups and relevant authorities, species of vegetation, fish and wildlife that shall be monitored and shall determine, in consultation with Indigenous groups and relevant authorities, the sampling and analytical methodology that shall be applied for the monitoring of each species, including how samples will be collected. As part of the implementation of the follow-up program, the Proponent shall:</p> <p>5.5.1 monitor, at least every two years, during the first six years of operation, mercury, methylmercury and arsenic concentrations in walleye {Sander vitreus} tissue according to the methodology determined pursuant to condition 5.5. The Proponent shall determine, in consultation with Indigenous groups and relevant authorities and based on the results of the monitoring, if additional monitoring is required after the first six years of operation and at what frequency this additional monitoring shall occur; and</p> <p>5.5.2 monitor, at least every two years, during the first six years of operation, concentrations of metals, including mercury and arsenic, in small mammals according to the methodology determined pursuant to condition 5.5. The Proponent shall determine, in consultation with Indigenous groups and relevant authorities and based on the results of the monitoring, if additional monitoring is required after the first six years of operation and at what frequency this additional monitoring shall occur.</p>	
5.6	<p>Participate in any regional initiative that is established for the analysis of contaminants in moose (Alces alces) tissue in the region, should there be any such initiative(s) during construction or operation of the Designated Project.</p>	<p>N/A: There was no initiative that established for the analysis of contaminants in moose tissue in the region during the reporting period.</p>

Condition Number	Description	Activities Undertaken
5.7	Develop, in consultation with Indigenous groups and relevant authorities, a Community Relations Management Plan to share the results of the follow-up programs referred to in conditions 5.3, 5.4 and 5.5 with Indigenous groups and relevant authorities, including any potential health risks, in plain language, and the modified or additional mitigation measures developed and implemented by the Proponent pursuant to condition 2.7. The Proponent shall develop the Community Relations Management Plan prior to construction and shall implement and maintain it up to date during the periods of time that the follow-up programs referred to in conditions 5.3, 5.4 and 5.5 are implemented.	Draft Communications Plan developed and sent to Indigenous groups and MECP for review/comment in October 2019. Finalized and submitted to IAAC in September 2020. An updated version was produced on May 19, 2022. This latest version was subject to review by Indigenous groups.
6.1	Establish, in consultation with Indigenous groups and prior to undertaking construction activities that will restrict access to the Southwest Arm of Kenogamisis Lake, alternate unrestricted access to the Southwest Arm of Kenogamisis Lake and shall maintain that alternate access during all phases of the Designated Project, to the extent that such access is safe.	The East Access Road, was identified on the site plan and consulted on with Indigenous groups in 2019. This alternate road was constructed (in June – August 2022) and is currently open to public access.
6.2	Maintain unrestricted access along Goldfield Road during all phases of the Designated Project and to the Goldfield Creek diversion channel starting when the Proponent has completed the progressive reclamation referred to in condition 4.2 and until the end of decommissioning, to the extent that such access is safe.	Access to Goldfield Road was unrestricted during the reporting period. Construction of the Goldfield Creek diversion channel was completed during the reporting period. The diversion experienced erosion during times of higher flow. Mitigation, redesign and construction to address this will start in 2024.

Condition Number	Description	Activities Undertaken
6.3	<p>Only conduct blasting activities between 10:00 am and 4:00 pm and shall not conduct blasting on statutory holidays and on days of cultural importance that the Proponent shall identify in consultation with Indigenous groups, unless required for safety reasons or unless the Proponent has advised Indigenous groups pursuant to condition 6.4.2 of any update to the blasting schedule.</p>	<p>Blasting occurred during the reporting period. Adherence to requirements of condition 6.3 was maintained with the exception of the following: Blasting at the end of day (5-7 pm) occurred in the reporting period as the highway was within the blast exclusion zone at the time, and explosives were not left in the ground overnight due to risk of lightning overnight setting off explosives &amp; potential for overnight highway closures. Going forward GGM expects to be able to maintain the 10-4pm blasting window as the highway is outside of the blast exclusion zone and explosives are able to be left in the ground overnight.</p>

Condition Number	Description	Activities Undertaken
6.4	<p>Develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a Community Relations Management Plan to share information related to Designated Project activities and about the adverse environmental effects of the Designated Project with Indigenous groups. The Proponent shall implement and maintain the Community Relations Management Plan up-to date during all phases of the Designated Project. The Community Relations Management Plan shall include procedures, including timing and methods, for sharing information on the following:</p> <p>6.4.1 the location and timing of Designated Project activities that may permanently or temporarily affect navigation within the project development area and in the Southwest Arm of Kenogamisis lake, including the locations of the effluent discharge location and the freshwater intakes in Kenogamisis lake; and</p> <p>6.4.2 the dates and times of all regularly-scheduled blasting events to be conducted by the Proponent and how the Proponent will notify Indigenous groups of any update to the blasting schedule on a daily basis if the Proponent must conduct blasting activities before 10:00 am or after 4:00 pm or on a statutory holiday or day of cultural importance for Indigenous groups.</p>	<p>Draft Communications Plan developed and sent to Indigenous groups and MECP for review/comment in October 2019. Finalized and submitted to IAAC in September 2020.</p>

Condition Number	Description	Activities Undertaken
6.5	<p>Develop, as part of the Community Relations Management Plan referred to in condition in 6.4 and in consultation with Indigenous groups, procedures for Indigenous groups to communicate to the Proponent their concerns about adverse environmental effects caused by the Designated Project related to access to and use of lands for traditional purposes, including navigation and consumption of country foods, and procedures for the Proponent to document and respond in a timely manner to the concerns received and demonstrate how issues have been addressed, including through the implementation of additional or modified mitigation measures. The Proponent shall implement these procedures during all phases of the Designated Project.</p>	<p>Draft Communications Plan developed and sent to Indigenous groups and MECP for review/comment in October 2019. Finalized and submitted to IAAC in September 2020.</p>
6.6	<p>As part of the progressive reclamation referred to in condition 4.2, GGM shall:</p> <p>6.6.1 identify, prior to the start of progressive reclamation and in consultation with Indigenous groups and relevant authorities, species of importance to Indigenous Peoples (including medicinal, edible and ceremonial plants) to use for revegetation as part of the progressive reclamation to create harvesting opportunities; and</p> <p>6.6.2 develop, prior to the start of progressive reclamation and in consultation with Indigenous groups and relevant authorities, and implement, during all phases of the Designated Project, measures to manage the spread of invasive species. The Proponent shall submit these measures to the Agency before implementing them.</p>	<p>Draft Revegetation Plan and draft Invasive Species Management Plans were developed and sent to Indigenous groups and the MNRF for review/comment in October 2019 and were finalized and sent to IAAC in December 2020. The Invasive Plants Management Plan is presented in Appendix B of the BMMP.</p>

Condition Number	Description	Activities Undertaken
6.7	<p>Develop, prior to construction and in consultation with Indigenous groups, a protocol for receiving complaints related to the exposure to noise from the Designated Project. The Proponent shall submit the protocol to the Agency prior to construction and shall implement it during all phases of the Designated Project. The Proponent shall respond to any noise complaint(s) within 48 hours of the complaint being received and shall implement corrective actions, if required to reduce exposure to noise, in a timely manner.</p>	<p>Draft Complaint Protocol developed and sent to Indigenous groups for review/comment in October 2019. Finalized and submitted to IAAC in September 2020.</p>
6.8	<p>Provide access to the project development area to Indigenous groups prior to construction, to the extent that such access is safe, to harvest traditional plants. In doing so, the Proponent shall:</p> <p>6.8.1 notify Indigenous groups at least 120 days in advance of vegetation clearing to allow Indigenous groups to harvest traditional plants within the project development area; and</p> <p>6.8.2 notify Indigenous groups and the Agency if the Proponent must prohibit access to the project development area to harvest traditional plants for safety reasons. The Proponent shall notify Indigenous groups at least 48 hours before access must be prohibited, unless access must be prohibited for emergency purposes.</p>	<p>Opportunity to harvest was provided to Indigenous groups on September 5, 2019. Indigenous groups continue to be able to request to harvest traditional plants within the PDA at any time . No access prohibitions occurred during reporting period.</p>
6.9	<p>Develop, prior to construction and in consultation with Indigenous groups, a follow-up program to verify the accuracy of the environmental assessment and determine the effectiveness of mitigation measures as it pertains to the adverse environmental effects of the Designated Project on the current use of lands and resources for traditional purposes, including access to the Southwest Arm of Kenogamisis Lake referred to in condition 6.1 and access along Goldfield Road and to the Goldfield Creek diversion channel referred to in condition 6.2. The Proponent shall implement the follow-up program during all phases of the Designated Project.</p>	<p>Current Use of Lands and Resources for Traditional Purposes Follow-Up Plan finalized in consultation with Indigenous groups in September 2020.</p>

Condition Number	Description	Activities Undertaken
7.1	<p>Develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a bald eagle (<i>Haliaeetus leucocephalus</i>) protection plan that takes into account Ontario's Management Plan for the Bald Eagle (<i>Haliaeetus leucocephalus</i>) in Ontario and Ontario's Bald Eagle Habitat Management Guidelines. The Proponent shall implement the protection plan during construction and operation. As part of the implementation of the protection plan, the Proponent shall:</p> <p>7.1.1 conduct, once prior to construction and annually until vegetation clearing is completed within the project development area, surveys of active bald eagle (<i>Haliaeetus leucocephalus</i>) nests within the project development area and within 800 meters of the project development area, and provide the results of the surveys to Indigenous groups, relevant authorities and the Agency no later than 60 days after the end of each survey; and</p> <p>7.1.2 develop, in consultation with Indigenous groups and relevant authorities, and implement measures to protect active nest(s) found pursuant to the surveys referred to in condition 7.1.1. At a minimum, these measures shall include restrictions on access and on Designated Project activities, including site preparation and vegetation clearing, that the Proponent may undertake from March 1 to August 31 within 400 metres of any active nest. The Proponent shall submit these measures to the Agency prior to implementing them, including the period(s) of time during which these measures will apply.</p>	<p>Draft Bald Eagle Protection Plan was developed and sent to Indigenous groups and the MNR for review/comment in October 2019 and IAAC in October 2020. The Bald Eagle Protection Plan is presented in Appendix G of the BMMP. A bald eagle aerial survey was completed by GGM during the reporting period. Nest-E-535, active in 2022, was lost due to the tree it was in having been felled. A new eagle nest (GGM-001) was identified by GGM in February 2023 on a peninsula near the shoreline of Kenogamisis Lake. Nest GGM-001 was observed by GGM to be actively used by bald eagle(s) in the spring of 2023. As the nest is within the PDA and within 200 m of some project activities, access to the road to the peninsula was restricted from May to August 31, 2023. During this time no vegetation clearing or large vehicle traffic was permitted, with access limited to non-disturbing activities (e.g., monthly surface water sampling).</p>
8.1	<p>Close mine shaft openings prior to any drawdown works to reduce the likelihood of little brown myotis (<i>Myotis lucifugus</i>) and northern myotis (<i>Myotis septentrionalis</i>) establishing bat hibernacula in underground workings.</p>	<p>Pumping occurred in Mosher #1 Shaft and MacLeod#1 Shaft and openings were confirmed to be closed prior to drawdown.</p>

Condition Number	Description	Activities Undertaken
9.1	Take all reasonable measures to prevent accidents and malfunctions that may result in adverse environmental effects.	Several management plans have been developed to prevent accidents and malfunctions (i.e., Spill Prevention and Contingency Plan, Erosion and Sediment Control Plan, Construction Environmental Management Plan, Site Emergency Response Plan, etc.) In 2023, GGM implemented training related to the Erosion and Sediment Control Plan, Soil Management Plan and made modifications to the communication protocol related to spills to the environment.
9.2	Prior to construction, consult with Indigenous groups and relevant authorities on the measures to be implemented to prevent accidents and malfunctions.	An Emergency Response Plan for Construction was updated in December 2023 (GGM 2023).
9.3	Prior to construction and in consultation with Indigenous groups and relevant authorities, develop an accident and malfunction response plan in relation to the Designated Project. The accident and malfunction plan shall include: 9.3.1 the types of accident and malfunction that may cause adverse environmental effects; and 9.3.2 the measures to be implemented in response to each type of accident and malfunction referred to in condition 9.3.1 to mitigate any adverse environmental effect(s) caused by the accident or malfunction.	Emergency Response Plan for Construction was updated in December 2023 (GGM 2023).
9.4	In the event of an accident or malfunction with the potential to cause adverse environmental effects, the Proponent shall immediately implement the measures appropriate to the accident or malfunction referred to in condition 9.3.2 and shall: 9.4.1 notify, as soon as possible, Indigenous groups and relevant authorities of the accident or malfunction, and notify CEAA in writing no later than 24 hours following the accident or	In January 2023 Goldfield Creek Diversion began to convey flow and GGM implemented a sediment and erosion control monitoring program that included in stream turbidity monitors. In May 2023, GGM reported a sediment release to the MECP, DFO, MNRF, ECCC and Indigenous groups as required under condition 9.4.1. To satisfy conditions 9.4.1.1 to 9.4.2.5 GGM submitted a report to the Agency on June 29, 2023. As per condition 9.4.3, a written report within 90 days was submitted to the Agency on

Condition Number	Description	Activities Undertaken
	<p>malfunction. For the notification to Indigenous groups and the Agency, the Proponent shall specify:</p> <p>9.4.1.1 the date the accident or malfunction occurred;</p> <p>9.4.1.2 a summary description of the accident or malfunction;</p> <p>9.4.1.3 a list of any substances potentially released into the environment as a result of the accident or malfunction.</p> <p>9.4.2 submit a written report to the Agency no later than 30 days after the day on which the accident or malfunction occurred. The written report shall include:</p> <p>9.4.2.1 a detailed description of the accident or malfunction and of its adverse environmental effects and any associated potential health risks;</p> <p>9.4.2.2 a description of the measures that were taken by the Proponent to mitigate the adverse environmental effects caused by the accident or malfunction;</p> <p>9.4.2.3 any view(s) from Indigenous groups and advice from relevant authorities received with respect to the accident or malfunction, its adverse environmental effects, the associated potential health risks and the measures taken by the Proponent to mitigate these adverse environmental effects;</p> <p>9.4.2.4 a description of any residual adverse environmental effects and any modified or additional measures required by the Proponent to mitigate residual adverse environmental effects; and</p> <p>9.4.2.5 details concerning the implementation of the accident or malfunction response plan referred to in condition 9.3.</p> <p>9.4.3 submit a written report to the Agency no later than 90 days after the day on which the accident or malfunction occurred that includes a description of changes made to avoid a subsequent occurrence of the accident or malfunction and of the modified or additional measure(s) implemented by the Proponent to mitigate and monitor residual adverse environmental effects and to carry out any required progressive reclamation, taking into</p>	<p>August 25, 2023.</p>

Condition Number	Description	Activities Undertaken
	account the information submitted in the written report pursuant to condition 9.4.2. The report shall include all additional views from Indigenous groups and advice from relevant authorities received by the Proponent since the views and advice referred to in condition.	
9.5	<p>The Proponent shall develop a communication plan in consultation with Indigenous groups. The Proponent shall develop the communication plan prior to construction and shall implement and keep it up to date during all phases of the Designated Project. The plan shall include:</p> <p>9.5.1 the types of accident and malfunction requiring the Proponent to notify the respective Indigenous groups;</p> <p>9.5.2 the manner by which Indigenous groups shall be notified by the Proponent of an accident or malfunction and of any opportunities for the Indigenous groups to assist in the response to the accident or malfunction; and</p> <p>9.5.3 the contact information of the representatives of the Proponent that the Indigenous groups may contact and of the representatives of the respective Indigenous groups to which the Proponent provides notification.</p>	Draft Communications Plan developed and sent to Indigenous groups and MECP for review/comment in October 2019. Finalized and submitted to IAAC in September 2020.
10.1	Submit a schedule to CEAA for all conditions set out in the CEAA Decision Statement no later than 60 days prior to the start of construction. This schedule shall detail all activities planned to fulfill each condition set out in the Decision Statement and the commencement and estimated completion month(s) and year(s) for each of these activities.	Submitted to IAAC January 22, 2021.
10.2	Submit a schedule to CEAA outlining all activities required to carry out all phases of the Designated Project no later than 60 days prior to the start of construction. The schedule shall indicate the commencement and estimated completion month(s) and year(s) and duration of each of these activities.	Submitted to IAAC January 22, 2021.

Condition Number	Description	Activities Undertaken
10.3	Submit to CEAA, in writing, an update to schedules referred to in conditions 10.1 and 10.2 every year no later than December 31, until completion of all activities referred to in each schedule.	Submitted to IAAC January 22, 2021. At the time of preparation of this report, there have been no updates to the schedule submitted in 2021.
10.4	Provide revised schedules to CEAA if any change is made to the initial schedules referred to in conditions 10.1 and 10.2 or to any subsequent update(s) referred to in condition 10.3, upon revision of the schedules.	Submitted to IAAC January 22, 2021. At the time of preparation of this report, there have been no updates to the schedule submitted in 2021.
10.5	Proponent shall provide Indigenous groups with the schedules referred to in conditions 10.1 and 10.2 and the updates or revisions to the initial schedules pursuant to condition 10.3 and 10.4 at the same time the Proponent provides these documents to CEAA.	GGM provides Indigenous groups progress updates on the construction schedule referenced in 10.1 and 10.2 during each regularly scheduled EAS meeting.
11.1	Proponent shall maintain all records required to demonstrate compliance with the conditions set out in the CEAA Decision Statement. The Proponent shall retain the records and make them available to the Agency throughout construction and operation and for 25 years following the end of operation or until the end of decommissioning of the Designated Project, whichever comes first. The Proponent shall provide the aforementioned records to the Agency upon demand within a timeframe specified by the Agency.	Records required to demonstrate compliance with the conditions are maintained in GGM's document control system and can be made available upon request.
11.2	GGM shall retain all records referred to in condition 11.1 at a facility in Canada and shall provide the address of the facility to CEAA. The Proponent shall notify the Agency at least 30 days prior to any change to the physical location of the facility where the records are retained and shall provide to the Agency the address of the new location.	GGM has maintained records relevant to the December 10, 2018 Decision Statement. In 2019, these records were retained in GGM's electronic document control system and at:  Greenstone Mine 8000 Highway 11 P.O. Bag 10 Geraldton, ON POT 1M0

Condition Number	Description	Activities Undertaken
11.3	GGM shall notify CEAA of any change to the contact information of the Proponent included in the CEAA Decision Statement.	IAAC was updated on the following GGM contact information: <b>Eric Lamontagne</b> General Manager Mobile: 416-321-7877  <b>Greenstone Mine</b> 8000 Highway 11 P.O. Bag 10 Geraldton, ON POT 1M0

## 2.2 Compliance with Condition 2.1 General Conditions (Condition 2.9.2)

### **Condition 2.1 (General Conditions) is:**

*2.1 The Proponent shall ensure that its actions in meeting the conditions set out in this Decision Statement during all phases of the Designated Project are considered in a careful and precautionary manner, promote sustainable development, are informed by the best information and knowledge available at the time the Proponent takes action, including community and Indigenous traditional knowledge, are based on methods and models that are recognized by standard-setting bodies, are undertaken by qualified individuals, and have applied the best available economically and technically feasible technologies.*

GGM has complied with Condition 2.1 by continuing to engage the services of several qualified consultants and engineering firms to implement activities during the reporting period. GGM established EASs with Indigenous groups and their consultants to review and discuss permit applications, environmental management and monitoring plans, and other topics of interest to the Indigenous groups.

## 2.3 Influence of Consultation (Condition 2.9.3)

The conditions that require consultation are listed in Table 2-2 along with how views and information received during consultation have been considered in implementing the conditions.

**Table 2-2: Summary of Influence of Consultation**

Condition Requiring Consultation	Communities and Agencies Consulted With	How GGM considered Views and Information Received During or as a Result of the Consultation
<p>2.14 The Proponent shall consult with Indigenous groups and relevant authorities prior to initiating any changes to the Designated Project that may result in adverse environmental effects, and shall notify the Agency in writing no later than 60 days prior to initiating the change(s).</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• RSMIN</li> </ul>	<p>Design optimization report reviewed by EASs, however no changes to the Project were identified that may result in adverse environmental effects.</p>
<p>3.1 The Proponent shall salvage and relocate fish prior to conducting any Designated Project activity requiring removal of fish habitat in a manner consistent with any authorization issued under the <i>Fisheries Act</i> and its regulations. The Proponent shall salvage and relocate fish in consultation with Indigenous groups and to the satisfaction of Fisheries and Oceans Canada and other relevant authorities.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• RSMIN</li> <li>• MNRF</li> </ul>	<p>GGM undertook fish salvage during the reporting window. The required Licence to Collect Fish for Scientific Purposes was obtained from MNRF and distributed through the EASs.</p>
<p>3.11 The Proponent shall mitigate, in consultation with Indigenous groups and relevant authorities, the adverse environmental effects on water quality, including in the Southwest Arm, Central Basin and Barton Bay of Kenogamisis Lake, Goldfield Creek Tributary, Mosher Lake and the Southwest Arm Tributary, caused by the presence of unexcavated historical tailings.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• RSMIN</li> </ul>	<p>GGM is implementing measures to mitigate potential effects on water quality primarily through the collection, containment, and treatment of water from the mine site. Environmental Technicians that sit on the EASs are involved with the routine effluent and water quality monitoring program. GGM regularly consults with Indigenous groups through the EASs and the Technicians that sit on the committees.</p>

Condition Requiring Consultation	Communities and Agencies Consulted With	How GGM considered Views and Information Received During or as a Result of the Consultation
<p>3.12 The Proponent shall develop, to the satisfaction of Fisheries and Oceans Canada and Environment and Climate Change Canada and in consultation with Indigenous groups, any offsetting plan(s) related to any residual serious harm to fish associated with the carrying out of the Designated Project. The Proponent shall implement the plan. The Proponent shall submit any approved offsetting plan(s) to the Agency prior to implementation.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• DFO</li> <li>• ECCC</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• MNRF</li> <li>• RSMIN</li> </ul>	<p>The Goldfield Creek diversion and, proposed compensatory measures have been discussed as a Project component throughout the Federal EIS and Provincial EA process. Early consultation of the offsetting concept helped shape additional field work carried out in 2016 to further evaluate flows and informed a revised approach with respect to flow management through the Southwest Arm Tributary. Additional consultation helped to inform the detailed design and the final version of the plan with a focus on habitat design features within the Goldfield Creek diversion. The comments and discussion points received from consultation, have been incorporated into the plan.</p>

Condition Requiring Consultation	Communities and Agencies Consulted With	How GGM considered Views and Information Received During or as a Result of the Consultation
<p>3.13 The Proponent shall, for any fish habitat offsetting measure(s) proposed in any offsetting plan(s) referred to in condition 3.12 that may cause adverse environmental effects not considered in the environmental assessment, develop and implement, following consultation with Indigenous groups, Fisheries and Oceans Canada and Environment and Climate Change Canada, measures to mitigate those effects. The Proponent shall submit these measures to the Agency before implementing them.</p>	<p>An offsetting plan was developed in consultation with Indigenous groups, DFO and ECCC and approved in April 2020. It is anticipated that an amendment to the Fisheries Act Authorization will be required in the next reporting period to address failed offsetting works, and additional and/or alternative offsetting will be created.</p>	<p>Regular meetings are held with Indigenous groups, DFO, MNRF and IAAC to provide updates on channel redesign and rehabilitation, seek input, and align expectations. GGM will continue to provide IAAC with updates on planned methods to mitigate potential effect on fish and fish habitat. IAAC has also been provided copies of documents that were prepared in response to DFO Orders.</p>
<p>3.15 The Proponent shall develop, prior to the start of blasting activities in or near water and in consultation with relevant authorities, a follow-up program to determine the effectiveness of the mitigation measures as it pertains to the adverse environmental effects of blasting on fish and fish habitat, including aquatic listed species at risk. The Proponent shall implement the follow-up program during blasting activities.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MECP</li> <li>• MNO</li> <li>• RSMIN</li> </ul>	<p>Draft follow-up program for monitoring of blasting developed as part of the Noise &amp; Vibration Management and Monitoring Plan (NVMMP) and sent to Indigenous groups and the MECP for review/comment in October 2019. Comments received were responded to and discussed in meetings. Any required revisions based on the consultation were made in final version (July 2020) of the NVMMP.</p>

Condition Requiring Consultation	Communities and Agencies Consulted With	How GGM considered Views and Information Received During or as a Result of the Consultation
<p>3.16 The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and to determine the effectiveness of the mitigation measures as it pertains to adverse environmental effects on fish and fish habitat caused by changes in water quality in Kenogamisis Lake, Mosher Lake and the Southwest Arm Tributary. The Proponent shall implement the follow-up program during all phases of the Designated Project, including the environmental effects monitoring requirements set out in Schedule 5 of the <i>Metal and Diamond Mining Effluent Regulations</i>.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• MNRF</li> <li>• RSMIN</li> </ul>	<p>Consultation on proposed mitigation measures and methods as they pertain to adverse environmental effects on fish and fish habitat caused by changes in water quality in Kenogamisis Lake, Mosher Lake and the Southwest Arm Tributary took place prior to the current monitoring period. Comments were incorporated into the Fish and Fish Habitat Federal EIS Follow-up Monitoring Plan, which was finalized on February 16, 2021. The plan was implemented during the reporting period. It is anticipated that an amendment to the Fisheries Act Authorization will be required to address the failed offsetting works, and additional and/or alternative offsetting will be created in the 2024 reporting period.</p>
<p>3.17 The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and to determine the effectiveness of the mitigation measures as it pertains to the adverse environmental effects on fish and fish habitat of from changes in groundwater quality caused by the Designated Project. The Proponent shall implement the follow-up program during all phases of the Designated Project.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• MNRF</li> <li>• RSMIN</li> </ul>	<p>Consultation on proposed mitigation measures and methods as they pertain to adverse environmental effects on fish and fish habitat caused by changes in groundwater quality took place prior to the current monitoring period. Comments were incorporated into the Fish and Fish Habitat Federal EIS Follow-up Monitoring Plan, which was finalized on February 16, 2021. The plan was implemented in 2021 as required during the monitoring period.</p>

Condition Requiring Consultation	Communities and Agencies Consulted With	How GGM considered Views and Information Received During or as a Result of the Consultation
<p>4.2 The Proponent shall undertake, in consultation with Indigenous groups and relevant authorities, progressive reclamation of the project development area. The Proponent shall identify, prior to the start of progressive reclamation and in consultation with Indigenous groups and relevant authorities, plant species native to the area of the Designated Project to use for revegetation as part of the progressive reclamation, including species suitable to create habitat for migratory birds.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MECP</li> <li>• MNO</li> <li>• MNRF</li> <li>• MTO</li> <li>• RSMIN</li> </ul>	<p>Through the Closure Plan approval process, the Closure Plan was consulted on through written comments and responses, meetings and community open houses with Indigenous groups and provincial government agencies. Any required revisions were made in the filed Closure Plan.</p> <p>The draft Revegetation Plan and draft Goldfield Creek Realignment Biodiversity Monitoring Plan were developed and sent to Indigenous groups and MNRF for review/comment in October 2019. Comments received were responded to and discussed in meetings. Revisions based on the consultation are included in the BMMP (GGM 2022a).</p>
<p>4.3 The Proponent shall compensate, in consultation with relevant authorities, the loss of barn swallow (<i>Hirundo rustica</i>) nesting sites as a result of the Designated Project, taking into account Ontario's <i>Recovery Strategy for Barn Swallow (Hirundo rustica)</i>. In doing so, the Proponent shall install, prior to construction, and maintain, during three years, artificial barn swallow (<i>Hirundo rustica</i>) nesting structures.</p>	<p>N/A: removal of barn swallow nesting sites or installation of replacement habitat did not occur during the reporting period.</p>	<p>N/A</p>
<p>4.6 The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment as it pertains to the use by migratory birds of surface water facilities in the project development area.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• ECCC</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• MNRF</li> <li>• RSMIN</li> </ul>	<p>A draft Wildlife-Water Follow-Up Plan was sent to Indigenous groups and the MNRF for review/comment in October 2019 and ECCC in July 2020. Comments received were responded to and discussed in meetings. Revisions based on the consultation are included in Appendix E of the BMMP (GGM 2022a).</p>

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<p>4.7 The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and to determine the effectiveness of all mitigation measures to avoid harm to migratory birds, their eggs and nests, including the mitigation measures used to comply with conditions 4.1 to 4.5.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• ECCC</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• MNRF</li> <li>• RSMIN</li> </ul>	<p>A draft Migratory Birds Follow-Up Plan was sent to Indigenous groups and the MNRF for review/comment in October 2019 and ECCC in July 2020. Comments received were responded to and discussed in meetings. Revisions based on the consultation are included in Appendix J of the BMMP (GGM 2022a).</p>
<p>4.7.1 conduct migratory bird surveys annually for the first five years following completion of construction to assess migratory bird use of the project development area. The Proponent shall determine the methodology for the migratory bird surveys in consultation with Indigenous groups and relevant authorities. The Proponent shall determine, in consultation with Indigenous groups and relevant authorities and based on the results of the initial surveys, if additional surveys within the project development area are required after the first five years following completion of construction and at what frequency and in which locations these additional surveys shall occur;</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• ECCC</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• MNRF</li> <li>• RSMIN</li> </ul>	<p>A draft Migratory Birds Follow-Up Plan was sent to Indigenous groups and the MNRF for review/comment in October 2019 and ECCC in July 2020. Comments received were responded to and discussed in meetings. Revisions based on the consultation are included in Appendix H of the BMMP (GGM 2022a).</p>
<p>4.7.2 monitor the effectiveness of the progressive reclamation referred to in condition 4.2, including the establishment of native plant species to create habitat for migratory birds, annually during operation and during the first five years of decommissioning and every five years thereafter until the Proponent has determined, in consultation with Indigenous groups and relevant authorities, that the performance indicators have been met;</p>	<p>N/A: not required during construction phase.</p>	<p>N/A</p>

Condition Requiring Consultation	Communities and Agencies Consulted With	How GGM considered Views and Information Received During or as a Result of the Consultation
<p>5.1 The Proponent shall develop, prior to construction and in consultation with Indigenous groups, measures to mitigate emissions of dust generated by the Designated Project, including dust from vehicles associated with the Designated Project on roads located within the project development area and dust generated during the transport of historical tailings, that take into account the standards and criteria set out in the Canadian Council of Ministers of the Environment's <i>Canadian Ambient Air Quality Standards</i> and Ontario's <i>Ambient Air Quality Criteria</i>. The Proponent shall submit these measures to the Agency before implementing them. The Proponent shall implement these measures during construction, operation and the first five years of decommissioning.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• ECCC</li> <li>• GFN</li> <li>• LLFN</li> <li>• MECP</li> <li>• MNO</li> <li>• RSMIN</li> </ul>	<p>A draft AQMMP was sent to Indigenous groups and the MECP for review/comment in October 2019 and ECCC in July 2020. Comments received were responded to and discussed during EAS meetings. Revisions based on the consultation are included in the updated AQMMP (GGM 2020e).</p>
<p>5.3 The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and to determine the effectiveness of the mitigation measures as it pertains to the adverse environmental effects on the health of Indigenous Peoples of changes to air quality.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• ECCC</li> <li>• GFN</li> <li>• LLFN</li> <li>• MECP</li> <li>• MNO</li> <li>• RSMIN</li> </ul>	<p>A draft AQMMP was sent to Indigenous groups and the MECP for review/comment in October 2019 and ECCC in July 2020. Indigenous Peoples Health Risk Assessment Follow-up Plan sent to Indigenous groups for review/comment in January 2020. Comments received were responded to and discussed in meetings. Revisions based on the consultation were made in final version of the AQMMP (GGM 2020e) and the Indigenous Peoples Health Risk Assessment Follow-up Plan (GGM 2020b).</p>
<p>5.3.3 monitor, at least annually during construction and for the first two years of operation, airborne benzene and benzo(a)pyrene at the monitoring locations identified pursuant to condition 5.3.1. The Proponent shall determine, in consultation with Indigenous groups and relevant authorities and based on the results of the monitoring, if additional monitoring is required after the first two years of operation and at what frequency this additional monitoring shall occur;</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• RSMIN</li> <li>• MECP</li> <li>• ECCC</li> </ul>	<p>Monthly sampling for B(a)P commenced in March 2022. Benzene monitoring commenced in July 2022. Consultation with Indigenous groups and relevant authorities to determine whether additional monitoring is required will occur after the first two years of operation.</p>

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<p>5.4 The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment as it pertains to the adverse environmental effects on the health of Indigenous Peoples of changes in concentrations of contaminants in water and fish.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• RSMIN</li> </ul>	<p>A Fish and Fish Habitat Federal EIS Follow-Up Monitoring Plan was completed in March 2021, which included a follow-up program to assess the predictions of the EIS and the effectiveness of mitigation measures that pertain to potential effects on the health of Indigenous Peoples of changes in concentrations of contaminants in water and fish.</p>
<p>5.4.1. monitor, at least quarterly during construction and the first five years of operation, mercury in the Southwest Arm Tributary, using as a benchmark a concentration of 0.04 micrograms per litre. The Proponent shall determine, in consultation with Indigenous groups and relevant authorities and based on the results of the monitoring, if additional monitoring is required after the first five years of operation and at what frequency this additional monitoring shall occur; and</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• RSMIN</li> <li>• MECP</li> </ul>	<p>Baseline water quality data to support this Follow-up plan (Health of Indigenous Peoples Follow-Up Plan) were collected in 2023 with the Indigenous Technicians and reported to the EASs.</p>
<p>5.4.2 monitor, at least quarterly during construction and the first five years of operation, methylmercury in the Southwest Arm Tributary, using as a benchmark a concentration of 0.0001 micrograms per litre. The Proponent shall determine, in consultation with Indigenous groups and relevant authorities and based on the results of the monitoring, if additional monitoring is required after the first five years of operation and at what frequency this additional monitoring shall occur.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• RSMIN</li> <li>• MECP</li> </ul>	<p>Baseline water quality data to support the Health of Indigenous Peoples Follow-up plan were collected in 2023 with the Indigenous Technicians and reported to the EASs.</p>

Condition Requiring Consultation	Communities and Agencies Consulted With	How GGM considered Views and Information Received During or as a Result of the Consultation
<p>5.5 The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and to determine the effectiveness of the mitigation measures as it pertains to the adverse environmental effects on the health of Indigenous Peoples of changes in concentrations of contaminants in country foods caused by the Designated Project. The Proponent shall implement the follow-up program during all phases of the Designated Project. As part of the development of the follow-up program, the Proponent shall identify, in consultation with Indigenous groups and relevant authorities, species of vegetation, fish and wildlife that shall be monitored and shall determine, in consultation with Indigenous groups and relevant authorities, the sampling and analytical methodology that shall be applied for the monitoring of each species, including how samples will be collected. As part of the implementation of the follow-up program, the Proponent shall:</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• RSMIN</li> </ul>	<p>Indigenous Peoples Health Risk Assessment Follow-up Plan sent to Indigenous groups for review/comment in January 2020. Comments received were responded to and discussed in meetings. The plan was finalized on November 2, 2020.</p>
<p>5.5.1 monitor, at least every two years, during the first six years of operation, mercury, methylmercury and arsenic concentrations in walleye (<i>Sander vitreus</i>) tissue according to the methodology determined pursuant to condition 5.5. The Proponent shall determine, in consultation with Indigenous groups and relevant authorities and based on the results of the monitoring, if additional monitoring is required after the first six years of operation and at what frequency this additional monitoring shall occur; and</p>	<p>N/A: no operation activities occurred in 2022/2023.</p>	<p>N/A</p>

Condition Requiring Consultation	Communities and Agencies Consulted With	How GGM considered Views and Information Received During or as a Result of the Consultation
<p>5.5.2 monitor, at least every two years, during the first six years of operation, concentrations of metals, including mercury and arsenic, in small mammals according to the methodology determined pursuant to condition 5.5. The Proponent shall determine, in consultation with Indigenous groups and relevant authorities and based on the results of the monitoring, if additional monitoring is required after the first six years of operation and at what frequency this additional monitoring shall occur.</p>	<p>N/A: no operation activities occurred in 2022/2023.</p>	<p>N/A</p>
<p>5.7 The Proponent shall develop, in consultation with Indigenous groups and relevant authorities, a communication plan to share the results of the follow-up programs referred to in conditions 5.3, 5.4 and 5.5 with Indigenous groups and relevant authorities, including any potential health risks, in plain language, and the modified or additional mitigation measures developed and implemented by the Proponent pursuant to condition 2.7. The Proponent shall develop the communication plan prior to construction and shall implement and maintain it up to date during the periods of time that the follow-up programs referred to in conditions 5.3, 5.4 and 5.5 are implemented.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MECP</li> <li>• MNO</li> <li>• RSMIN</li> </ul>	<p>A draft Communications Plan was sent to Indigenous groups and MECP for review/comment in October 2019. Comments received were responded to and discussed in meetings. Any required revisions based on the consultation were made in final version of the Communications Plan submitted to IAAC in September 2020. An updated version was produced on May 19, 2022. This latest version was subject to review by Indigenous groups.</p>
<p>6.1 The Proponent shall establish, in consultation with Indigenous groups and prior to undertaking construction activities that will restrict access to the Southwest Arm of Kenogamisis Lake, alternate unrestricted access to the Southwest Arm of Kenogamisis Lake and shall maintain that alternate access during all phases of the Designated Project, to the extent that such access is safe.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• RSMIN</li> </ul>	<p>The East Access Road, was identified on the site plan and consulted on with Indigenous groups in 2019. This alternate road was constructed in 2021 and is currently open to public access.</p>

Condition Requiring Consultation	Communities and Agencies Consulted With	How GGM considered Views and Information Received During or as a Result of the Consultation
<p>6.4 The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a communication plan to share information related to Designated Project activities and about the adverse environmental effects of the Designated Project with Indigenous groups. The Proponent shall implement and maintain the communication plan up-to-date during all phases of the Designated Project.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MECP</li> <li>• MNO</li> <li>• RSMIN</li> </ul>	<p>A draft Communications Plan was sent to Indigenous groups and MECP for review/comment in October 2019. Comments received were responded to and discussed in meetings. Any required revisions based on the consultation were made in final version of the Communications Plan submitted to IAAC in September 2020.</p>
<p>6.5 The Proponent shall develop, as part of the communication plan referred to in condition in 6.4 and in consultation with Indigenous groups, procedures for Indigenous groups to communicate to the Proponent their concerns about adverse environmental effects caused by the Designated Project related to access to and use of lands for traditional purposes, including navigation and consumption of country foods, and procedures for the Proponent to document and respond in a timely manner to the concerns received and demonstrate how issues have been addressed, including through the implementation of additional or modified mitigation measures. The Proponent shall implement these procedures during all phases of the Designated Project.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MECP</li> <li>• MNO</li> <li>• RSMIN</li> </ul>	<p>A draft Communications Plan was sent to Indigenous groups and MECP for review/comment in October 2019. Comments received were responded to and discussed in meetings. Any required revisions based on the consultation were made in final version of the Communications Plan submitted to IAAC in September 2020.</p>
<p>6.6.1 identify, prior to the start of progressive reclamation and in consultation with Indigenous groups and relevant authorities, species of importance to Indigenous Peoples (including medicinal, edible and ceremonial plants) to use for revegetation as part of the progressive reclamation to create harvesting opportunities; and</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• MNRF</li> <li>• RSMIN</li> </ul>	<p>A draft Revegetation Plan was sent to Indigenous groups and the MNRF for review/comment in October 2019. Comments received were responded to and discussed in meetings. Revisions to the Revegetation Plan, if required, will be made in light of discussions with Indigenous groups.</p>

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<p>6.6.2 develop, prior to the start of progressive reclamation and in consultation with Indigenous groups and relevant authorities, and implement, during all phases of the Designated Project, measures to manage the spread of invasive species. The Proponent shall submit these measures to the Agency before implementing them.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• MNRF</li> <li>• RSMIN</li> </ul>	<p>A draft Invasive Species Management Plan was sent to Indigenous groups and the MNRF for review/comment in October 2019. Comments received were responded to and discussed in meetings. Any required revisions based on consultation will be made in the final version of the Invasive Species Management Plan.</p>
<p>6.7 The Proponent shall develop, prior to construction and in consultation with Indigenous groups, a protocol for receiving complaints related to the exposure to noise from the Designated Project. The Proponent shall submit the protocol to the Agency prior to construction and shall implement it during all phases of the Designated Project. The Proponent shall respond to any noise complaint(s) within 48 hours of the complaint being received and shall implement corrective actions, if required to reduce exposure to noise, in a timely manner.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MECP</li> <li>• MNO</li> <li>• RSMIN</li> </ul>	<p>A draft Complaint Protocol was sent to Indigenous groups and the MECP for review/comment in October 2019. Comments received were responded to and discussed in meetings. Any required revisions based on the consultation were made and it was finalized and submitted to IAAC in September 2020.</p>
<p>6.9 The Proponent shall develop, prior to construction and in consultation with Indigenous groups, a follow-up program to verify the accuracy of the environmental assessment and determine the effectiveness of mitigation measures as it pertains to the adverse environmental effects of the Designated Project on the current use of lands and resources for traditional purposes, including access to the Southwest Arm of Kenogamisis Lake referred to in condition 6.1 and access along Goldfield Road and to the Goldfield Creek diversion channel referred to in condition 6.2. The Proponent shall implement the follow-up program during all phases of the Designated Project.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• RSMIN</li> </ul>	<p>A follow up program was developed in August 2020 and was sent to Indigenous groups for review/comment. Revisions based on the consultation were incorporated into the final version (GGM 2020a).</p>

Condition Requiring Consultation	Communities and Agencies Consulted With	How GGM considered Views and Information Received During or as a Result of the Consultation
<p>7.1 The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a bald eagle (<i>Haliaeetus leucocephalus</i>) protection plan that takes into account Ontario's <i>Management Plan for the Bald Eagle (Haliaeetus leucocephalus) in Ontario</i> and Ontario's <i>Bald Eagle Habitat Management Guidelines</i>. The Proponent shall implement the protection plan during construction and operation.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• ECCC</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• MNRF</li> <li>• RSMIN</li> </ul>	<p>A draft Bald Eagle Protection Plan was sent to Indigenous groups and the MNRF for review/comment in October 2019 and ECCC in July 2020. Comments received were responded to and discussed in meetings. Revisions based on the consultation were incorporated into the final version, which is presented in Appendix G of the BMMP (GGM 2022a).</p>
<p>7.1.2 develop, in consultation with Indigenous groups and relevant authorities, and implement measures to protect active nest(s) found pursuant to the surveys referred to in condition 7.1.1. At a minimum, these measures shall include restrictions on access and on Designated Project activities, including site preparation and vegetation clearing, that the Proponent may undertake from March 1 to August 31 within 400 metres of any active nest. The Proponent shall submit these measures to the Agency prior to implementing them, including the period(s) of time during which these measures will apply.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• ECCC</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• MNRF</li> <li>• RSMIN</li> </ul>	<p>A draft Bald Eagle Protection Plan was sent to Indigenous groups and the MNRF for review/comment in October 2019 and ECCC in July 2020. Comments received were responded to and discussed in meetings. Revisions based on the consultation were incorporated into the final version, which is presented in Appendix G of the BMMP (GGM 2022a).</p>
<p>9.2 The Proponent shall, prior to construction, consult with Indigenous groups and relevant authorities on the measures to be implemented to prevent accidents and malfunctions.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• RSMIN</li> </ul>	<p>A draft Emergency Preparedness and Response Plan for Construction developed and sent to Indigenous groups for review/comment in October 2019. Comments received were responded to and discussed in meetings. Revisions based on the consultation were made in the final version of the Emergency Preparedness and Response Plan (GGM 2023).</p>
<p>9.3 The Proponent shall, prior to construction and in consultation with Indigenous groups and relevant authorities, develop an accident and malfunction response plan in relation to the Designated Project.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MNO</li> <li>• RSMIN</li> </ul>	<p>A draft Emergency Preparedness and Response Plan for Construction developed and sent to Indigenous groups for review/comment in October 2019. Comments received were responded to and discussed in meetings. Revisions based on the consultation were made in the final version of the Emergency Preparedness and Response Plan (GGM 2023).</p>

Condition Requiring Consultation	Communities and Agencies Consulted With	How GGM considered Views and Information Received During or as a Result of the Consultation
<p>9.5 The Proponent shall develop a communication plan in consultation with Indigenous groups. The Proponent shall develop the communication plan prior to construction and shall implement and keep it up to date during all phases of the Designated Project.</p>	<ul style="list-style-type: none"> <li>• AFN</li> <li>• AZA</li> <li>• GFN</li> <li>• LLFN</li> <li>• MECP</li> <li>• MNO</li> <li>• RSMIN</li> </ul>	<p>A draft Communications Plan was sent to Indigenous groups and MECP for review/comment in October 2019. Comments received were responded to and discussed in meetings. Any required revisions based on the consultation were made in the final version of the Communications Plan submitted to IAAC in September 2020.</p>

## 2.4 Follow-up Programs (Condition 2.9.4)

Condition 2.9.4 states that the annual report must include the information referred to in Conditions 2.4 and 2.5 for each follow-up program. Condition 2.4 and 2.5 are:

*2.4 The Proponent shall, where a follow-up program is a requirement of a condition set out in this Decision Statement, determine, as part of the development of each follow-up program and in consultation with the party or parties being consulted during the development, the following information:*

*2.4.1 the methodology, location, frequency, timing and duration of monitoring associated with the follow-up program;*

*2.4.2 the scope, content and frequency of reporting of the results of the follow-up program;*

*2.4.3 the levels of environmental change relative to baseline conditions that would require the Proponent to implement modified or additional mitigation measure(s), including instances where the Proponent may require Designated Project activities to be stopped; and*

*2.4.4 the technically and economically feasible mitigation measures to be implemented by the Proponent if monitoring conducted as part of the follow-up program shows that the levels of environmental change referred to in condition 2.4.3 have been reached or exceeded.*

*2.5 The Proponent shall maintain the information referred to in condition 2.4 during the implementation of each follow-up program in consultation with the party or parties being consulted during the development of each follow-up program.*

Table 2-3 presents a list of the required follow-up programs and references how GGM has included the information required by Conditions 2.4 and 2.5.

**Table 2-3: Follow-up Program Requirements**

Condition Requiring a Follow-up Program	Reference to Information Required as Per Condition 2.4 and 2.5
<p>3.15 The Proponent shall develop, prior to the start of blasting activities in or near water and in consultation with relevant authorities, a follow-up program to determine the effectiveness of the mitigation measures as it pertains to the adverse environmental effects of blasting on fish and fish habitat, including aquatic listed species at risk. The Proponent shall implement the follow-up program during blasting activities.</p>	<p>Follow-up program for monitoring of blasting was developed as part of NVMMP and was finalized in July 2020. The NVMMP includes the methodology, location, frequency, timing, and duration of monitoring; the scope, content and frequency of reporting of the results of the follow-up program; when adaptive management is required; and the mitigation measures to be implemented as part of adaptive management.</p> <p>The NVMMP was implemented beginning in September 2021 when blasting commenced, and through the 2023 reporting period.</p>

Condition Requiring a Follow-up Program	Reference to Information Required as Per Condition 2.4 and 2.5
<p>3.16 The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and to determine the effectiveness of the mitigation measures as it pertains to adverse environmental effects on fish and fish habitat caused by changes in water quality in Kenogamisis Lake, Mosher Lake and the Southwest Arm Tributary. The Proponent shall implement the follow-up program during all phases of the Designated Project, including the environmental effects monitoring requirements set out in Schedule 5 of the <i>Metal and Diamond Mining Effluent Regulations</i>.</p>	<p>The Fish and Fish Habitat Federal EIS Follow-Up Monitoring Plan (GGM 2021a) includes the methodology, location, frequency, timing, and duration of monitoring; the scope, content and frequency of reporting of the results of the follow-up program; when adaptive management is required; and the mitigation measures to be implemented as adaptive management.</p> <p>This Plan includes a water quantity and quality monitoring components. The Fish and Fish Habitat Federal EIS Follow-Up Monitoring Report was completed in December 2023. The sampling requirements identified in the Federal Fish and Fish Habitat Federal EIS Follow-Up Monitoring Plan differ from the requirements of the Environmental Effects Monitoring (EEM) requirements set out in Schedule 5 of the <i>Metal and Diamond Mining Effluent Regulations (MDMER)</i>. Both monitoring programs will be implemented, as required.</p>
<p>3.17 The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and to determine the effectiveness of the mitigation measures as it pertains to the adverse environmental effects on fish and fish habitat of from changes in groundwater quality caused by the Designated Project. The Proponent shall implement the follow-up program during all phases of the Designated Project</p>	<p>The Fish and Fish Habitat Federal EIS Follow-Up Monitoring Plan (GGM 2021a) includes the methodology, location, frequency, timing and duration of monitoring; the scope, content and frequency of reporting of the results of the follow-up program; when adaptive management is required; and the mitigation measures to be implemented as adaptive management.</p> <p>The Fish and Fish Habitat Federal EIS Follow-Up Monitoring Plan includes a groundwater quantity and quality monitoring component. The Fish and Fish Habitat Federal EIS Follow-Up Monitoring Plan was implemented in March 2021.</p>
<p>4.6 The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment as it pertains to the use by migratory birds of surface water facilities in the project development area.</p>	<p>Regarding the use by migratory birds of surface water facilities in the project development area, Appendix E of the BMMP (GGM, 2020) includes the methodology, location, frequency, timing, and duration of monitoring; the scope, content and frequency of reporting of the results of the follow-up program; when adaptive management is required; and the mitigation measures to be implemented as adaptive management.</p>

Condition Requiring a Follow-up Program	Reference to Information Required as Per Condition 2.4 and 2.5
<p>4.7 The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and to determine the effectiveness of all mitigation measures to avoid harm to migratory birds, their eggs and nests, including the mitigation measures used to comply with conditions 4.1 to 4.5. As part of the development of the follow-up program, the Proponent shall identify performance indicators that shall be used by the Proponent to evaluate the effectiveness of the progressive reclamation referred to in condition 4.2. The Proponent shall implement the follow-up program during all phases of the Designated Project.</p>	<p>Measures to avoid harm to migratory birds, their eggs and nests are included in Appendix J of the BMMP (GGM 2022a), which includes the methodology, location, frequency, timing, and duration of monitoring; the scope, content and frequency of reporting of the results of the follow-up program; when adaptive management is required, and the mitigation measures to be implemented as adaptive management.</p> <p>Implementation of the BMMP, with respect to condition 4.7, commenced in spring 2021, and continues, in association with tree clearing and site preparation.</p>
<p>5.3 The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and to determine the effectiveness of the mitigation measures as it pertains to the adverse environmental effects on the health of Indigenous Peoples of changes to air quality.</p>	<p>The AQMMP (GGM 2020e) includes the methodology, location, frequency, timing and duration of monitoring; the scope, content and frequency of reporting of the results of the follow-up program, when adaptive management is required, and the mitigation measures to be implemented as adaptive management. The Indigenous Peoples Health Risk Assessment Follow-up Plan explains how monitoring results will be compared to predictions in the EIS.</p>
<p>5.4 The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment as it pertains to the adverse environmental effects on the health of Indigenous Peoples of changes in concentrations of contaminants in water and fish.</p>	<p>The Indigenous Peoples Health Risk Assessment and Follow-up Plan (November 2, 2020) explains how monitoring results will be compared to predictions in the EA and includes the methodology, location, frequency, timing, and duration of monitoring; the scope, content and frequency of reporting of the results of the follow-up program, when adaptive management is required, and the mitigation measures to be implemented as adaptive management. The Indigenous Peoples Health Risk Assessment Follow-up Plan (GGM 2020b) provides a data evaluation approach applicable to reviewing and evaluating collected environmental data with respect to monitoring the potential for the Mine to affect the health of Indigenous Peoples. Details regarding sampling locations, sampling frequency, and analytical methods for monitoring surface water and fish tissue in accordance with condition 5.4 are provided in the Fish and Fish Habitat Federal EIS Follow-Up Monitoring Plan (GGM 2021a).</p>

Condition Requiring a Follow-up Program	Reference to Information Required as Per Condition 2.4 and 2.5
<p>5.5 The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and to determine the effectiveness of the mitigation measures as it pertains to the adverse environmental effects on the health of Indigenous Peoples of changes in concentrations of contaminants in country foods caused by the Designated Project. The Proponent shall implement the follow-up program during all phases of the Designated Project. As part of the development of the follow-up program, the Proponent shall identify, in consultation with Indigenous groups and relevant authorities, species of vegetation, fish and wildlife that shall be monitored and shall determine, in consultation with Indigenous groups and relevant authorities, the sampling and analytical methodology that shall be applied for the monitoring of each species, including how samples will be collected.</p>	<p>The Indigenous Peoples Health Risk Assessment Follow-up Plan (GGM 2020b) includes the methodology, location, frequency, timing, and duration of monitoring; the scope, content and frequency of reporting of the results of the follow-up program; when adaptive management is required; and the mitigation measures to be implemented as adaptive management.</p> <p>The Indigenous Peoples Health Risk Assessment Follow-up Plan (GGM 2020b) provides a data evaluation approach applicable to reviewing and evaluating collected environmental data with respect to monitoring the potential for the Mine to affect the health of Indigenous Peoples. This plan did not provide specific details with respect to how environmental data would be collected. Rather, details regarding environmental monitoring were deferred to applicable environmental monitoring plans. Details regarding sampling locations, sampling frequency, and analytical methods for monitoring fish tissue in accordance with Condition 5.5 are provided in the Fish and Fish Habitat Federal EIS Follow-Up Monitoring Plan (GGM 2021a).</p> <p>With respect to monitoring of vegetation and wildlife per Condition 5.5 of the Decision Statement, the Indigenous Peoples Health Risk Assessment Follow-up Plan (GGM 2020b) deferred to the Biodiversity Management and Monitoring Plan. However, the most recent version of the Biodiversity Management and Monitoring Plan (GGM 2022a) does not currently include a sampling plan to collect small mammals and terrestrial vegetation. Therefore, an update to the Biodiversity Management and Monitoring Plan is required to be completed in 2024 to describe this country food sampling. Finalization of the country food sampling plan in 2024 will allow for sampling to be completed in 2025, which would meet the requirement for the first sampling event under the targeted schedule of ‘at least every two years, during the first six years of operation’ described in Conditions 5.5.1 and 5.5.2 of the Decision Statement.</p>

Condition Requiring a Follow-up Program	Reference to Information Required as Per Condition 2.4 and 2.5
<p>6.9 The Proponent shall develop, prior to construction and in consultation with Indigenous groups, a follow-up program to verify the accuracy of the environmental assessment and determine the effectiveness of mitigation measures as it pertains to the adverse environmental effects of the Designated Project on the current use of lands and resources for traditional purposes, including access to the Southwest Arm of Kenogamisis Lake referred to in condition 6.1 and access along Goldfield Road and to the Goldfield Creek diversion channel referred to in condition 6.2. The Proponent shall implement the follow-up program during all phases of the Designated Project.</p>	<p>Current Use of Lands and Resources for Traditional Purposes Follow-up Plan developed (August 18, 2020). Current Use of Lands and Resources for Traditional Purposes Follow-up Plan includes the methodology and location of monitoring and the scope, content and frequency of reporting of the results of the follow-up program.</p>

## 2.5 Results of Follow-up Programs (Condition 2.9.5)

Follow-up programs that were undertaken during the reporting period are:

- Fish and Fish Habitat Follow-up Plan (federal conditions 3.14, 3.15, 3.16, 3.17)
- Biodiversity Management and Monitoring Plan (federal conditions 4.6 and 4.7)
- Indigenous Peoples Health Risk Assessment Follow-up Plan (federal condition 5.3, 5.4, 5.5)
- Current Use of Lands and Resources for Traditional Purposes Follow-up Plan (federal condition 6.9)
- AQMMP (federal condition 5.3).

The following paragraphs provide a summary of monitoring results for various follow-up monitoring plans. Further details are provided in the respective reports that are referenced.

### 2.5.1 Fish and Fish Habitat Follow-up Plan Results Summary

A Fish and Fish Habitat Follow-up Monitoring Plan (GGM 2021a) was prepared to address seven specific federal Conditions of Approval related to monitoring potential effects of the Project on fish and fish habitat (conditions 3.14, 3.15, 3.16, 3.17, 3.2, 5.4, and 5.5.1). The results of the 2023 Fish and Fish Habitat Federal EIS Follow-Up Monitoring Report are summarized below.

### **Condition 3.14 – Erosion and Sediment Control**

As per the requirements of federal condition 3.14, GGM has developed and implemented measures to control erosion and sedimentation in the Project Development Area (PDA) (GGM 2020b). Work that occurred in and around water during the 2023 monitoring period included the construction of the:

- Highway realignment
- Grade Control Structures in the SWAT
- Roads and culverts on site
- Newly realigned section of GFC
- Full scale effluent discharge pipeline

The ESC Plan (GGM 2020b) was implemented to mitigate potential effects of erosion and sedimentation on fish and fish habitat. ESC measures are presented in the ESC Plan and include the following main components:

- Completing work in and around fish habitat during the appropriate timing window (no in-water work April 1 to June 20) to avoid spawning times and times when eggs and juvenile fish may be more susceptible to potential effects of increased turbidity and sedimentation
- Limiting the area of ground disturbance and vegetation clearing
- Reducing the duration of in-water work
- Use of silt fencing, straw bales, fiber mats, filter bags, silt curtains and other ESC tools to reduce erosion and sedimentation
- Revegetation of disturbed areas.

Erosion and sediment controls were regularly inspected to verify the effectiveness of the mitigation measures. Management practices were implemented to protect the environment, and to determine whether new management strategies and/or mitigation measures were required. The following activities were undertaken as part of the regular erosion and sediment control monitoring:

- Work sites were inspected and monitored periodically for compliance with the ESC Plan (GGM 2020b).
- Earthworks were inspected to look for evidence of erosion and sedimentation and corrective measures were taken as necessary.
- Where required, work activities were stopped, and potential erosion and sediment control issues were addressed.

- Silt fence barriers were inspected routinely and following rainfall events.
- Silt fence was repaired or replaced if it was not functioning as intended.
- Stand-by material of prefabricated silt fence barrier was maintained on the construction site and was available for rapid deployment.
- Erosion control structures were reinforced when significant rainfall events were forecasted.
- Sediment erosion control monitoring program was implemented for the realigned GFC post-commissioning which included visual inspections, collection of turbidity data, and surface water quality monitoring.
- ESC training was introduced in 2023 for construction and mine workers, and designated environmental staff completed ESC training.
- Following the channel failure, silt curtains were installed downstream of the realigned GFC channel with guidance from Department of Fisheries and Oceans Canada (DFO).

### **Condition 3.16 – Surface Water Quality**

The following section describes the measures carried out to satisfy federal condition 3.16 of the EIS approval by presenting surface water quality monitoring completed by GGM to support the identified mitigation measures to reduce adverse effects on fish and fish habitat. This follow-up program describes the results of the October 2022 through September 2023 water quality in Kenogamisis Lake, Mosher Lake, and the SWAT (condition 3.16).

Twenty-six (26) surface water quality monitoring stations were sampled during 2023. Twenty-five of the stations were established in previous monitoring years. Station 56 is located along the Hardrock Creek channel, which discharges into Barton Bay (East). Monitoring at station 56 began in March 2023. The surface water quality monitoring locations were monitored monthly, when it was safe to do so, to assess seasonal fluctuations in water quality. Data from monthly monitoring was used to monitor potential trends in surface water quality and to evaluate whether fluctuations in quality were due to natural variability or from a Mine related effect.

During the routine monthly sampling, surface water samples were completed as grab samples and were submitted to an accredited laboratory for analysis. Additionally, in-situ temperature, pH, conductivity, turbidity, and dissolved oxygen (DO) were measured at the water surface during sample collection using a multi parameter water quality meter. Temperature and DO water column profile sampling was also completed quarterly (February, June, August, October) at eight surface water monitoring locations.

Surface water quality data was collected for the required parameters monthly at the 26 monitoring stations from October 2022 to September 2023 with some exceptions. In December 2022, none of the 26 monitoring stations were sampled as sampling sites could not be accessed due to unsafe ice conditions. Sampling at station 38 was not completed in January, February, March, and April 2023 and sampling at station 20 was not completed in February due to unsafe access. In April 2023, stations 2, 4, 11, 21, 26, 28, 47, and 53 were also not sampled due to unsafe conditions. For the October 2022 sampling period, the field parameter of oxidation-reduction potential (ORP) was not collected at some stations as the ORP probe on the handheld water quality sonde was malfunctioning. Additionally, sampling was not conducted at station 26 in May due to access issues.

Since monitoring occurred after the start of discharge from the temporary ETP on September 15, 2021, the data in the 2023 reporting period are considered to be representative of the construction period. Surface water quality data collected in the 2023 reporting period for 10 stations and parameters were compared to the seasonal surface water quality trigger thresholds calculated using available baseline data up to September 8, 2021, prior to the start of the temporary ETP discharge. The four seasonal periods were defined as winter (January – March), spring (April – June), summer (July-September), and fall (October – December).

As written in the Fish and Fish Habitat Follow-up Monitoring Plan (GGM 2021a), two trigger thresholds for surface water quality were defined, each with a varying level of sensitivity and associated level of response.

- Surface water quality Trigger Threshold 1 is defined as three consecutive monthly parameter concentration exceedances above the seasonal 95<sup>th</sup> percentile baseline concentration AND five times the detection limit. For stations and indicator parameters where the 95<sup>th</sup> percentile is less than the predicted surface water quality concentrations from the EIS/EA, Trigger Threshold 1 is defined as 10% above the predicted surface water quality concentration from the EIS/EA for the surface water feature at a given monitoring station AND five times the detection limit.
- Surface water quality Trigger Threshold 2 is defined as a confirmed exceedance of Trigger Threshold 1 and a statistically significant upward trend for a given indicator parameter, or for stations that have a statistically significant upward trend for baseline data, an increase in the magnitude of the trend compared to baseline.

Prior to January 2022, the baseline surface water quality samples were analyzed by ALS. In January 2022, GGM contracted Testmark Laboratories to complete the water analyses for the Mine. Given the number of elevated concentrations of parameters observed since January 2022 compared to baseline concentrations, GGM undertook an investigation into the results of the laboratory analyses. In October 2022, the investigation involved collecting triplicate samples for analyses by Testmark Laboratories, ALS, and Bureau Veritas (BV). Preliminary analytical results showed a difference in concentrations between laboratories, particularly in iron which was consistently elevated in the results from Testmark Laboratories versus ALS and BV. The reported results of the other parameters appeared similar across the three labs. As a result of this investigation, GGM has secured an analytical contract with BV to undertake the laboratory analysis of water samples associated with the Mine. The transition in laboratories commenced in the March 2023 sampling period, such that samples collected in the month of March and subsequent months were analyzed by BV.

Data from monthly monitoring was used to monitor potential trends in surface water quality and to evaluate whether fluctuations in quality were due to natural variability or from a Project related effect. In summary, surface water quality Trigger 1 and Trigger 2 exceedances were documented in the 2023 monitoring period, and the triggers were assessed as per the Adaptive Management Plan. Nine (9) Trigger Threshold 2 investigations were undertaken in the 2023 reporting period to evaluate identified surface water quality trends and identify potential sources. Further details on the results of the 2023 surface water quality program are provided in the 2023 Fish and Fish Habitat Federal EIS Follow-Up Monitoring Report (GGM, 2021a). In summary:

- Trigger Threshold 2 investigation for iron at station 8 suggested that the iron spikes at the end of 2022 could be attributed to inconsistent lab results. The concentration of iron at station 8 has been less than Trigger Threshold 1 and 2 for the remainder of the 2023 monitoring period.
- Trigger Threshold 2 investigations for iron at station 24 suggested that the iron exceedances can be related to either natural variability or laboratory analyses affecting the results for iron. The concentrations of iron at station 24 were notably below the PWQO. The concentration of iron at station 24 has been less than Trigger Threshold 1 and 2 for the remainder of the 2023 monitoring period.
- Trigger Threshold 2 investigation for arsenic at station 25 and concluded that the source of elevated arsenic was likely related to SWAT in-water works that may have resulted from the use of ESC measures implemented during construction.
- Trigger Threshold 2 investigation for iron at station 25 concluded that iron exceedances were likely caused by the diversion of flow from the GFC, the release of sediments, the inundation of land along the SWAT.
- Trigger Threshold 2 investigation for iron at station 26 concluded that that iron exceedances at station 26 were not mine related but can be attributed to natural variability and inconsistent lab results for iron in 2022.

- Trigger Threshold 2 investigation for iron at station 39 concluded that that iron exceedances at station 39 were not mine related but can be attributed to natural variability and inconsistent lab results for iron in 2022.
- Trigger Threshold 2 investigation for uranium at station 39 concluded that exceedances are attributed to construction of the diversion and associated sediment disturbance and the failure of the Goldfield Creek diversion channel, which occurred in May 2023. The construction and subsequent failure of the diversion channel exposed and subsequently mobilized local sediment from the bed and banks of the diversion channel. The continuing elevation of uranium through the summer to October 2023 is thought to be the result of seasonal natural patterns, and continued exposure of uranium-containing sediments mobilized during the GFC failure. The concentrations of uranium (the highest being 0.26 µg/L in September) were well below the Provincial Water Quality Objective (5 µg/L).
- Trigger Threshold 2 investigation for iron at station 49 concluded that that iron exceedances at station 49 can be related to either natural variability or laboratory analyses affecting the results for iron. The concentrations of iron at station 24 were notably below the PWQO.
- Trigger Threshold 2 investigation for iron at station 53 concluded that that iron exceedances at station 53 can be related to either natural variability or laboratory analyses affecting the results for iron. The concentrations of iron at station 24 were notably below the PWQO.

Based on the review of the 2023 surface water quality data, no changes to the existing monthly water quality monitoring stations/locations have been recommended. Therefore, existing monitoring program (stations, locations, frequency) will be continued for the 2024 reporting year. Following an investigation that involved collecting triplicate samples for analysis by Testmark Laboratories, ALS, and Bureau Veritas (BV), GGM has switched its analytical laboratory to BV. Starting in March 2023, BV handles the laboratory analysis of water samples under a new contract with GGM. Consequently, this should be kept in mind when interpreting water analytical data analyzed between January 2021 and January 2023.

### **Condition 3.17 - Groundwater**

A summary of monitoring during the 2023 reporting period that was undertaken to address federal condition 3.17 of the federal EIS approval, which relates to mitigating and monitoring potential adverse effects on fish and fish habitat with respect to groundwater, is provided in the following paragraphs. The groundwater monitoring summary presented below includes the spring and summer 2023 monitoring events. The fall 2022 event was included in a previous report to avoid splitting seasonal groundwater sampling events over multiple reports. The fall 2023 monitoring event did not begin until after the 2023 monitoring period. There were three main groundwater monitoring components:

- 1) Pumped Volume Monitoring

- 2) Water Level Monitoring
- 3) Water Quality Monitoring

#### *Pumped Volume Monitoring*

The following list provides a summary of the pumped volume monitoring locations for the 2023 monitoring period:

- Historical Shafts – MacLeod No.1 Shaft pumping consistently,
- Open Pit – No pumping occurred,
- Aggregate Pit T2 - Aggregate extraction from the T2 till borrow area is ongoing but did not require dewatering as the extraction was above the water table,
- Process Plant Construction Dewatering – No construction dewatering of groundwater or surface water occurred in the area of the process plant,
- MHT seepage collection system – Collection occurred consistently.

During this reporting period, only the historical shaft pumping required groundwater trigger threshold review. Pumping from the historical underground workings began on August 5, 2022. The original Plan indicated pumping of the historical underground workings would be via Hardrock No. 2 Shaft and Mosher No. 1 Shaft. Based on detailed design, pumping from MacLeod No. 1. Shaft instead of Hardrock No. 2 Shaft was predicted to be more efficient at limiting groundwater inflow to the starter pit. Therefore, pumping of the historical underground workings in the 2023 monitoring period was completed via MacLeod No. 1 Shaft.

Pumping from MacLeod No. 1 Shaft occurred consistently throughout the monitoring period. Quarterly average pumped volumes from MacLeod No. 1 Shaft were below the trigger threshold of 14,860 m<sup>3</sup>/day. There was no exceedance of groundwater quantity trigger threshold during this monitoring period.

#### *Groundwater Level Monitoring*

Of the five trigger thresholds for groundwater quantity described in the Plan, one trigger threshold is related to groundwater level and three trigger thresholds are related to horizontal hydraulic gradients. The thresholds are related to dewatering of mine features (open pit, aggregate pits, historical underground workings) and/or infrastructure such as the MHT seepage collection system and GFC diversion. During the reporting period, there were no exceedances of the groundwater level and horizontal hydraulic gradient trigger thresholds for groundwater quantity as defined in the Federal Fish and Fish Habitat Federal EIS Follow-Up Monitoring Plan (GGM 2021a).

#### *Groundwater Quality Monitoring*

Groundwater quality monitoring is to be completed in the spring, summer and fall at select locations. This reporting period covers water quality sampling results from spring 2023 and summer 2023.

During this reporting period, only WRSA C required groundwater quality trigger threshold review. Table 2-4 presents a summary of the groundwater quality trigger threshold locations that required review. Trigger Threshold 1 is defined as a statistically significant upward trend for a given indicator parameter or for stations that have a statistically significant upward trend in the baseline data, an increase in the magnitude of the trend compared to baseline.

Groundwater quality trigger threshold parameters at WRSA C monitoring locations showed a downward or neutral trend in indicator parameter concentrations, except for arsenic and iron at MW6-OB-13. Groundwater quality trigger threshold parameters with a downward or neutral trend do not require further review. Arsenic and iron concentrations at MW6-OB-13 show upward trends in both baseline dataset and the full dataset. A review for the full dataset and baseline dataset for both arsenic and iron concentrations indicate similar order of magnitude trendlines, therefore, trigger threshold 1 is not exceeded. No groundwater quality trigger thresholds were exceeded in this reporting period.

**Table 2-4: Groundwater Quality Trigger Threshold Summary**

<b>WRSA C</b>				
<b>Monitoring Location</b>	<b>Trigger Threshold Parameter</b>	<b>Mann-Kendall Analysis Result: Baseline Data</b>	<b>Mann-Kendall Analysis Result: All Data</b>	<b>Groundwater Quality Trigger Threshold 1 Exceedance</b>
MW6-OB-13	Sulfate	Downward trend	Downward trend	No
	Antimony	Downward trend	Decreasing trend	No
	Arsenic	Upward trend	Upward trend - similar magnitude to baseline data	No
	Cobalt	Downward trend	Downward trend	No
	Iron	Upward trend	Upward trend - similar magnitude to baseline data	No
	Uranium	Neutral trend	Neutral trend	No
MW18-BR-21	Sulfate	Insufficient baseline data to complete analysis. Monitoring location installed 24-Jun-21	Downward trend	No
	Antimony		Downward trend	No
	Arsenic		Downward trend	No
	Cobalt		Downward trend	No
	Iron		Downward trend	No
	Uranium		Downward trend	No

### **Condition 3.2 and 3.15 - Use of Explosives in or Near-Water**

This section describes measures implemented in the 2023 monitoring period to mitigate potential adverse effects on fish and fish habitat from the use of explosives near water and to satisfy federal condition 3.2 and 3.15 of the EIS. The Noise and Vibration Monitoring and Management Plan (NVMMP) (GGM 2020c) identifies an overpressure threshold of 50 kPa in water and a vibration threshold of 13mm/sec (in substrate).

The following observations are made on the 2023 monitoring period:

- Throughout the 2023 monitoring period, a total of 102 blasts were conducted. A total of four vibration exceedances and no pressure exceedances were identified during this reporting period. One of the exceedances was during the spawning period and the other three vibration exceedances were outside the spawning period.
- Vibration levels monitored during the current reporting period were below the threshold of 13mm/sec except for those exceedances identified above. Pressure recorded for all blast events was well below the 50 kPa threshold with the highest pressure recorded being 1.1 kPa.
- There were some periods the monitor was not operating and did not record vibration levels in substrate or pressure levels in water. Vibration and pressure levels were assessed through calculations, as per the DFO guidelines (Wright and Hopky 1998), that took into account the charge size and distance between the blast and monitoring locations for that period.
- The maximum charge size per delay identified for the period of missing data was 398 kg for pit blast and the shortest distance from the waterbody to the nearest blast location for the pit was 450 m which is greater than the minimum required setback distance to meet the vibration limit of 13 mm/s and pressure limit of 50 Kpa for fish habitat. The minimum setback distance calculated for vibration and pressure compliance for pit blasts are calculated to be 301 m and 155 m respectively.

Similarly, the maximum charge size per delay identified for the water management pond construction was 51 kg and the shortest distance from the waterbody to the nearest blast location was 60 m which is greater than the minimum required setback distances calculated for vibration and pressure compliance for water management pond construction (56 m and 36 m respectively). Based on the calculations, vibration, and pressure levels on fish habitat are expected to be within the limits during blasting for construction and development of the pit and water management ponds for the periods when the data was not recorded in the monitor.

As required by the NVMMP's blasting monitoring plan, vibration monitoring (PPV) is to be conducted during the restrictive timing window for work in and around fish habitat (i.e., between April 1 to June 20). Vibration threshold criteria were exceeded once during the spawning period (between April 1 and June 20) for the 2023 reporting period. Charge size (per delay) will be reduced to mitigate potential future exceedances. GGM will carefully monitor the charge size, especially when blasting conducted closer to any waterbody.

The existing blast monitoring requirements identified in the Federal Fish and Fish Habitat Federal EIS Follow-Up Monitoring Plan will continue throughout the following reporting year.

#### **Condition 5.4 (water) - Concentration of Mercury and Methylmercury in Water**

The realignment of Goldfield Creek facilitates siting of the TMF and to offset for potential effects on fish and fish habitat. Goldfield Creek was diverted into the existing SWAT, which increased flow in the SWAT and result in an increase of the permanently inundated area by approximately 15 ha. The management and monitoring requirements of condition 5.4 deal specifically with potential effects related to changes in mercury and methylmercury concentrations in the realigned section of Goldfield Creek.

Surface water quality at Stations 25, 39, 52, and 55 was monitored monthly in 2022/2023 and was assessed for potential changes to mercury and methylmercury as a result of construction, the GFC diversion and associated inundated areas. Data from monthly monitoring was also used to evaluate whether fluctuations in quality were due to natural variability or from a Project related effect. Methylmercury and mercury was noted to have exceeded Trigger Threshold 1 at Station 25, as described below.

#### **Station 25:**

- Trigger Threshold 1 exceedance of methylmercury in January 2023. Resampling was completed as part of the February 2023 monitoring event. Methylmercury did not exceed the seasonal 95<sup>th</sup> percentile baseline concentration in the confirmatory resampling event (February 2023), and therefore Trigger Threshold 1 was not confirmed, and no further action was required.
- Trigger Threshold 1 exceedance of mercury in May 2023. Resampling of mercury occurred in June 2023, which also exceeded the seasonal 95<sup>th</sup> percentile baseline concentration and five times the analytical detection limit. Therefore, the exceedance of Trigger Threshold 1 for mercury was confirmed in June 2023. Trigger Threshold 2 evaluation was completed and concluded that there was a statistically significant upward trend for mercury at station 25 and therefore Trigger Threshold 2 was exceeded. An investigation report was completed in August 2023. The investigation concluded that mercury exceedances may be related to the use of grade control structures and the diversion of flow from the GFC through the SWAT. The concentrations of mercury at Station 25 are consistent with those predicted for the SWAT in the EIS/EA Amendment after the diversion of the GFC. Consistent with the EIS/EA Amendment predictions for the SWAT, it is expected that mercury concentrations will decrease as flow through the GFC diversion stabilizes, the diversion is remediated, and after spring flooding has abated. No modifications to the monitoring plan were recommended.

#### **Condition 5.4 (fish) - Fish Tissue Monitoring in the SWAT**

The management and monitoring requirements of condition 5.4 deal specifically with potential effects related to changes in mercury and methylmercury concentrations in the realigned section of Goldfield Creek. The realignment of Goldfield Creek was completed to facilitate siting of the TMF and offset potential effects on fish and fish habitat. During 2021 and 2022, the new channel and diversion pond was constructed, and flow was diverted from the old Goldfield Creek channel into the newly constructed Goldfield Diversion Pond (GFDP) in November 2022. Flow entered the new channel from the GFDP outlet in mid-January 2023. At that time, water flowed into the new Goldfield Creek channel and then through what was previously referred to as the SWAT. The increased flow into the SWAT has resulted in the permanent inundation of approximately 15 ha of wetland habitat that was occasionally inundated under baseline conditions. During spring freshet in 2023, portions of the new channel destabilized and eroded, resulting in the transport of sediment downstream. The sediment was observed as a turbidity plume that extended from the realigned channel downstream through five downstream ponds (Southwest Pond 1 (SWP1) through Southwest Pond 5 (SWP5) and into the Southwest Arm of Kenogamisis Lake. Sediment deposition from this event is documented in a report prepared by Stantec entitled *Greenstone Gold Mines Diversion Channel Corrective Measures Report: An Assessment of Sediment Deposition Downstream of Failed Offsetting Works in Goldfield Creek* (Stantec 2023b). Turbidity and sedimentation in the study area has potential to influence the results of this monitoring program and is considered in the interpretation of results. Redesign, reconstruction, and rehabilitation of the failed channel and areas of sediment deposition is currently underway, in consultation with regulatory agencies and Indigenous partners.

The purpose of the fish tissue sampling was to monitor the potential changes in the concentration of total mercury and methylmercury in fish tissue, and if changes were observed, to determine whether there was an adverse effect on fish health or an increased risk to human and wildlife consumers. A before-after-control-impact (BACI) study design was initiated using age 1 Yellow Perch collected from exposure (Area 3, Area 5, and Southwest Arm) and reference areas (Gamsby Lake, Area 1B, and South Magnet Lake) between 2018 and 2023.

After the stream realignment, total mercury and methylmercury concentrations in 2023 in exposure area fish tissue were higher than in reference area fish tissue, which was consistent with patterns observed in previous years. Mercury and methylmercury concentration increases in exposure areas post stream realignment were observed. These observed increases in mercury and methylmercury concentrations in fish tissue from the inundated areas was anticipated. It is also expected that these increases will be temporary and eventually return to concentrations similar to those observed in baseline fish tissue studies.

There are no recommended changes to the existing plan for monitoring mercury and methylmercury concentrations in fish tissue in the SWAT. GGM will continue to implement the fish tissue monitoring program as planned with sampling for age 1 Yellow Perch tissue in 2024 and 2025. After the first three years of post-construction monitoring (2023, 2024, and 2025), the need for continued fish tissue monitoring as outlined in the plan will be reassessed.

#### **Condition 5.5.1 - Fish Tissue Monitoring in Kenogamisis Lake**

The management and monitoring requirements of Condition 5.5.1 deal specifically with potential effects related to changes in mercury and methylmercury in Walleye from Kenogamisis Lake.

Fish tissue monitoring is required within 24 months from when the Mine first began discharging effluent via the temporary ETP, which occurred on September 15, 2021. Therefore, fish tissue monitoring activities were required by the Plan for Kenogamisis Lake during the 2023 monitoring period. The fish tissue monitoring cycle is scheduled to occur every two years for the first six years of operation, after which time the need for additional monitoring will be evaluated.

Walleye tissue sampling occurred in late September and October of 2023, in keeping with the requirements of the monitoring Plan. At the time of report production, Walleye fish tissue data were not received by the laboratory. A separate memo will be appended to this report following the receipt of the laboratory data.

#### 2.5.2 Environmental Impact Statement Conditions of Approval 4 and 7 (Migratory Birds and Bald Eagle) Management and Monitoring Results Summary

Three specific Conditions of Approval related to monitoring potential effects of the Project on biodiversity are addressed including:

- Condition 4.1, avoidance of incidental take of migratory birds through nest sweeps of areas to be cleared during the breeding season.
- Condition 4.3, barn swallow habitat compensation.
- Condition 7.1, (including subsections 7.1.1, and 7.1.2), monitoring of bald eagle nests within 800 m of the PDA and implementation of a mitigation plan to avoid disturbance of bald eagle nests from Project activities during the breeding season.

Management plans for these conditions have been developed as part of the BMMP (GGM 2022a) and a report was submitted to IAAC under separate cover to address conditions 4.1, 4.3 and 7.1, collectively. That report confirms compliance and also the performance and/or effectiveness of the conditions to maintain the function of the valued ecosystem components (VECs).

#### **Condition 4.1**

All vegetation clearing in the PDA in 2023 was conducted outside the nesting season for Zone C5. As a result, no nest sweeps for migratory bird nests were necessary.

### **Condition 4.3**

Barn swallows (*Hirundo rustica*), a threatened species (ESA 2007, SARO 2011), were present in two buildings requiring removal by GGM in the Ministry of Transportation of Ontario (MTO) Patrol Yard. Removal occurred in spring 2023 and was completed by May 5, 2023. The buildings housing the nests were removed before the end of April 2023, prior to the start of nesting season.

#### 2.5.2.1 Monitoring of Habitat Compensation

In preparation for removal of barn swallow habitat, and in accordance with federal EIS condition 4.3 habitat compensation was provided in 2021 through installation of a nesting structure with artificial nesting cups following nesting habitat guidelines provided by the Ontario Ministry of Natural Resources (MNR 2016). The structure is located approximately 500 m east of the MTO Patrol Yard, immediately outside the PDA, near suitable foraging habitat over Kenogamisis Lake (GGM 2022a). The Barn Swallow habitat compensation structure was monitored four times during the 2023 nesting season (Table 2-5). The habitat compensation structure was in good condition during the 2023 nesting season, including the overall structure, nest cups, and predator controls. There was no evidence of use of the structure by Barn Swallows or other bird or bat species in 2023.

**Table 2-5: Barn Swallow Habitat Compensation Structure Monitoring**

Survey Date	Is the Barn Swallow structure in good condition? (Y/N)	Are nest cups in good condition? (Y/N)	Evidence of Barn Swallow nesting? (Y/N)	Are predator controls in good condition? (Y/N)	Other Birds/Bats Using Structure? (Y/N)
May 18, 2023	Y	Y	N	Y	N
June 29, 2023	Y	Y	N	Y	N
August 16, 2023	Y	Y	N	Y	N

### **Condition 7.1.1 and 7.1.2**

To facilitate anticipated construction activities planned for 2023 for development of the Greenstone Mine, a drone survey of bald eagle nests was conducted by GGM staff in May and June 2023. The survey targeted previously identified eagle nests from an MNR survey in February 2023 as well as new nests identified near the Project. The MNR identified one nest within 1 km of the Project Development Area (PDA) (nest E-487) and the loss of one nest (nest E-535) when a tree was felled. The drone survey targeted the nest identified by the MNR, an additional nest on the north side of Kenogamisis Lake (nest WP-008), and a new nest (nest GGM-001) identified by GGM on a peninsula in the Southwest Arm of Kenogamisis Lake within the Project PDA. Nest GGM-001 was found to be active. As a result, mitigation was applied with access and activities restricted from May 1 through August 31. Nest E-487 is just under 800 m from the PDA, and was not determined to

be active, as a result no mitigation was applied. Nest WP-008 is greater than 800 m from the Project and does not require mitigation measures during construction activities.

The Bald Eagle Habitat Management Guidelines (MNR 1987) identify three buffer zones that should be applied to Bald Eagle nests. Varying levels of activity restrictions apply to each buffer zone:

- Primary zone: the first 100 m around the nest and carries the highest level of restriction.
- Secondary zone: extends from 100 to 200 m around the nest and activities significantly altering the landscape are prohibited within this zone.
- Tertiary zone: extends from 200 to 800 m around the nest; this is the least restrictive zone and allows some activities except during the most critical life cycle period for nesting eagles.

Mitigation measures during construction are as follows:

- No vegetation removal or Project activities will occur within 200 m (i.e., the primary and secondary zones, as defined by MNR, 1987) of an active nest.
- The limits of the vegetation removal and construction area within 800 m of an active nest will be staked in the field. Activities will occur inside the marked limit of work.
- A 120 m vegetated buffer zone will be retained along the shoreline of the lake; and vegetation that is present between each nest and the lakeshore will be retained.
- Large and mature trees will be retained between each nest and the closest Project components to maintain a visibility barrier to Project activities to the extent possible
- Vegetation clearing activities and site preparation activities between 400 m and 800 m of active nests will not occur from March 1 to June 30 (the incubation and nestling period for bald eagle [MNR 1987; MNR 2010]).
- If vegetation clearing or site preparation activities are required within 200- 400 m of the nest, they should occur outside of the incubation, nestling, and fledging period (March 1 to August 31 [MNR 2010]).

These mitigation measures are specific to construction activities. Operations mitigation for raptor nests will be implemented when Operations activity commences.

Of the four eagle nests identified in 2023, three eagle nests (E-487, WP-008, and GGM-001) remain. Nest GGM-001 was confirmed active in February through June 2023. Nest E-487 is 650 m from the south cell of the tailing management facility (**Error! Reference source not found.**). Nest WP-008 is greater than 800 m from project infrastructure.

Based on result of the 2023 Bald Eagle monitoring, the following recommendations are made to reduce the likelihood of impacts of GGM Project activity on Bald Eagle nests in the PDA:

1. It is recommended that all known Bald Eagle nests in the PDA be visited annually to visually confirm the presence of eagle nests and their activity status in the PDA. Assessing status of nests may require use of a larger drone to better assess eagle activity.
2. Nest GGM-001 should be monitored regularly for nesting activity from the ground beginning in April each year.

Construction mitigation measures be adhered to, and anticipated non-compliance be communicated to regulators (ECCC and MNRF).

### 2.5.3 Indigenous Peoples Health Risk Assessment Follow-up Plan Results Summary

To satisfy EIS conditions 5.3, 5.4 and 5.5, The Indigenous Peoples Health Risk Assessment Follow-up Plan was developed (November 2, 2020), reviewed by Indigenous communities, submitted to IAAC and was accepted by IAAC.

The purpose of the Indigenous Peoples Health Risk Assessment Follow-up Plan is to verify the accuracy of the assumptions relied on in the EIS as it pertains to the potential for adverse environmental effects of the Mine on the health of Indigenous People. As such, this program involves a comparison of measured concentrations of contaminants of potential concern (COPCs) in environmental media (e.g., air, surface water, and country foods) collected during various phases of the Mine to the COPC concentrations in those media that were relied on to predict exposure (and risk) in the human health risk assessment (HHRA) submitted as a component of the EIS. The purpose of this comparison is to determine whether the conclusions of the HHRA remain applicable or if further evaluation of potential for adverse environmental effects on the health of Indigenous People is required. For the 2023 monitoring period, the data collected relevant to this program included air quality, surface water, and fish tissue monitoring.

For air quality and surface water monitoring, the data collected during the 2023 monitoring period were compared to applicable guidelines and trigger levels and it was concluded that the assumptions relied on in the HHRA remain applicable. Further evaluation of the potential for the Mine-related changes to air quality or surface water quality to affect the health of Indigenous peoples is not required based on the data collected during the 2023 monitoring period. These assumptions will be re-evaluated based on updated monitoring data in next year's Indigenous Peoples Health Risk Assessment Follow Up Report.

Fish tissue data, although collected during the 2023 monitoring period, were not yet available for interpretation at the time of report production. Therefore, these data will be evaluated and interpreted separately and appended to the 2023 Indigenous Peoples Health Risk Assessment Follow-up Report when the data become available.

## 2.5.4 Current Use of Lands and Resources for Traditional Purposes Follow-up Plan Results Summary

As specified in condition 6.1 of the federal Decision Statement:

“The Proponent shall establish, in consultation with Indigenous groups and prior to undertaking construction activities that will restrict access to the Southwest Arm of Kenogamisis Lake, alternate unrestricted access to the Southwest Arm of Kenogamisis Lake and shall maintain that alternate access during all phases of the Designated Project, to the extent that such access is safe”.

In follow up to a commitment made in the EIS/EA, GGM has included a public access road from Highway 11 along the east side of the PDA to maintain access to the Southwest Arm of Kenogamisis Lake. This EA commitment outcome was documented in the Outcome of Detailed Engineering Design Optimization Report (April 30, 2019). The Optimization Report was circulated to Indigenous groups and no concerns were identified.

As specified in condition 6.2 of the federal Decision Statement:

“The Proponent shall maintain unrestricted access along Goldfield Road during all phases of the Designated Project and to the Goldfield Creek diversion channel starting when the Proponent has completed progressive reclamation referred to in condition 4.2 and until the end of decommissioning, to the extent that such access is safe”.

Goldfield Road is located outside of the PDA and no effects on Goldfield Road access have occurred as a result of the Project.

For the Goldfield Creek diversion channel, the main access point of Lahtis Road is closed during construction and operation due to safety reasons (EIS/EA, Chapter 16). Lahtis Road was closed during the reporting period. Signage was posted by GGM around the perimeter of the PDA, including the shoreline of Kenogamisis Lake, to alert local land and resource users of the presence of the Project. At Closure, Lahtis Road is planned to be re-opened to public traffic up to the point of the Goldfield Creek diversion (Closure Plan, Section 9.7 and 11.1). GGM will work with the Indigenous groups via their respective EASs to determine more precisely when Lahtis Road will be re-opened. During construction and operations, GGM will facilitate site tours for representatives of the Indigenous groups to access the Goldfield Creek diversion channel to observe its establishment and progress.

## 2.6 Adaptive Management (Condition 2.9.6)

Implementation of the follow-up programs will remain generally unchanged in the upcoming monitoring year, with exception of proposed changes to the groundwater monitoring program as follows:

### **Groundwater Level Monitoring**

The following changes to the groundwater level monitoring program are recommended:

- Evaluation of monitoring well network associated with groundwater quantity trigger threshold 4 and the maintenance of an inward horizontal hydraulic gradient to the MHT seepage collection drain. The need to replace 96-12B and/or 96-14B with respect to groundwater quantity trigger threshold 4 should be part of the evaluation. Up to four new monitoring wells (MW-H, MW-I, MW-J, and MW-K) will be installed once construction of the north berm and Highway 11 realignment is complete due to issues with access and risk of new monitoring wells being damaged during construction.
- Installation of replacement monitoring wells for BH14-01, 96-03, and MW7-BR-13 with monitoring to be continued according to the Plan.
- Removal of BH14-01A, BH14-18, MAC-3, MAC-4, MAC-6, MAC-8, MAC-9, and MW-18 from monitoring program. As indicated in the Plan, these monitoring wells were overprinted by mine infrastructure and are no longer required by the Plan.

### **Groundwater Quality Monitoring**

The following changes to the groundwater quality monitoring program are recommended:

- Installation of a replacement monitoring well for MW5-OB2-13 with monitoring to be continued according to the Plan.
- Removal of overprinted seep 1, seep 7, and seep 8 from the monitoring program and seep 6 sampling location be moved 30 m west of the original location.
- Headers and notes on Table C-1-1 in Appendix C of the Fish and Fish Habitat Federal EIS Follow-Up Monitoring Plan will be updated to remove VOC water quality sampling to align with report text which requires only BTEX and PHC sampling at select locations.
- Groundwater level trigger thresholds will be updated once the baseline data collection period ends for a given mine feature. Baseline data collection period will end for monitoring wells associated with monitoring effects of the open pit and/or aggregate pits when dewatering of these features commences. For monitoring wells associated with monitoring groundwater level effects associated with the TMF and GFC diversion, the baseline data collection period will end when tailings are placed within the TMF and the GFC diversion is diverted, respectively.

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