

APPENDIX A

**Comments on the 2019 Wildlife
Monitoring Report**



GOLDER

DIAVIK DIAMOND MINES (2012) INC.

TECHNICAL MEMORANDUM

DATE 17 August 2020

GOLDER REFERENCE No.20136424-1950-TM-Rev0-2000

DIAVIK WORK PLAN No. 652 Rev.1

DIAVIK PO No. 3104086439

TO Sean Sinclair
Diavik Diamond Mines (2012) Inc.

FROM Dan Coulton and John Virgl

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RESPONSE TO EMAB COMMENTS ON THE 2019 WMP REPORT

On 26 June 2020, the Environmental Monitoring Advisory Board (EMAB) issued comments on the 2019 Wildlife Monitoring Program (WMP) report (Golder 2020) to Diavik Diamond Mines (2012) Inc (DDMI or Diavik). The comments provided by EMAB included the review by Management and Solutions in Environmental Science (MSES). EMAB provided direction that DDMI responses were only required for recommendations DDMI-WMP-5 to DDMI-WMP-17. As per your request and in review of the comments by EMAB and MSES, Golder Associates Ltd. (Golder) has prepared the following responses for your consideration in Table 1.

The comments and recommendations are provided in Table 1 were enumerated by EMAB. All recommendations with no response required are assumed complete and require no further response by DDMI. Direction by EMAB was for DDMI to respond in their provided excel file, which will match the responses in Table 1. A copy of these response in the excel file has also been prepared.

Table 1: Recommended Issues by MSES (2019) Directed to EMAB

2020 Comment Identifier	Category	Comment	Recommendation	Response by DDMI
DDMI-WMP-5	Caribou Movement	The top two models in DDMI's analysis were the full model (i.e., the one with all the explanatory variables, called M2) and the full model plus the distance*preferred habitat interaction (called M1). Model selection results are in Table 7 from the WMR, pg. 29 reprinted below. Model selection results showed that the two top models were within <2 AIC units. DDMI points out that models less <2 AIC units apart indicates the presence of a non-informative parameter, in this case the interaction term, which they interpret as "a measurable ZOI was not detected or supported by the aerial survey data" (WMR, pg. 29) because the 95% confidence interval for the interaction term includes zero (DDMI, 2019, pg. 30).	We recommend examining coefficients with 85% confidence intervals as well, which will allow for interpretation of potentially informative variables that may be discarded with 95% confidence intervals (Arnold, 2010; Conkling et al. 2015).	The 85% confidence intervals for the distance-preferred habitat interaction term are -0.12 to 0.03, and still overlap zero. The 85% confidence interval values support the conclusion that the interaction term is a non-informative parameter. Of note is that had this parameter been deemed informative the negative direction of the estimate (-0.05) in combination with positive effects of distance and preferred habitat predicts a pattern of caribou attraction to the mines based on habitat selection theory and not avoidance. This would be an interesting result and in direct contrast to the belief that during the last 15 years caribou avoided mines and that mines have reduced the carrying capacity of their seasonal ranges.
DDMI-WMP-6	Caribou Movement	Although caribou density increasing with distance from the Mines is an underlying assumption of the analysis provided by DDMI, they do not present any evidence in the 2019 WMR showing that caribou density does indeed increase with distance. Summary graphs are provided showing the mean number of caribou observed across years and months, but not by distance from the mine data. DDMI developed such a graph, and associated statistical analysis, for their presentation to EMAB on May 19, 2020, but this graph was not included in the 2019 WMR.	We recommend DDMI include a graph of caribou density by distance, and a statistical analysis of the relationship, in an addendum to the WMR to support their assertion that caribou density increases with distance from the mine. We also recommend DDMI include a discussion of the ecological significance of the findings and not just the statistical significance of the caribou by distance relationship. We recommend discussing effect sizes and the ecological significance of all modelling results presented in this section.	The requested graph is included in Attachment 1 as Figure 1. Based on a negative binomial regression, there is a significant relationship between caribou abundance and distance from mines ($\beta = 0.01$, SE: <0.01, Z-value = 3.56, P<0.01, AIC=55,491). Note that the regression line appears flat because the magnitude of the slope is very small relative to the observed values. A separate negative binomial regression was also completed on preferred habitat (as defined in the 2019 WMP report), which also has a significant relationship with distance from mines ($\beta = 2.07$, SE: 0.09, Z-value = 20.93, P<0.01, AIC=55,251). The Δ AIC for the distance variable is 240 AIC units higher than for preferred habitat, which indicates that preferred habitat provides a better fit between these two variables (lower AIC indicates better fit to the data). Ecological context for statistical results was provided in the conclusions (Section 4.2) of the 2019 WMP report. For example, the entire analysis was discussed in context of habitat selection theory, which is a fundamental concept in ecology. The effect size of the distance variable was placed in the context of demographic consequences of caribou, which is a component of population ecology. Also discussed was how patterns in the results showed the importance of the Lac de Gras area to caribou.

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DDMI-WMP-7	Caribou Movement	DDMI's preliminary analysis showed no relationship between caribou abundance and insect severity and so they replaced it with month as a number in their candidate models. Since there was no relationship between insect severity and caribou abundance, and no discussion of how the pattern of caribou abundance was expected to vary by month we are confused as to why this variable was included in the candidate models. Is there variation in the pattern of caribou abundance with distance to the mine by month?	We recommend DDMI provide additional discussion of the ecological reasoning for including month as a covariate in the models, because although the total abundance of caribou in the study area varies by month, it is unclear how that relates to the pattern caribou abundance with distance to the mine, which is the focus of this analysis.	In a previous meeting with MSES and ENR, ENR recommended that insect harassment be considered because insect activity can cause caribou to aggregate and discontinue feeding and migrating (i.e., an ecological effect). An insect harassment severity index from the scientific literature was initially considered. While the insect harassment severity index was correlated with caribou observations in July and August, it became decoupled when weather conditions no longer were favourable to biting insects during October and November. This was explained in the 2019 WMP report. Month was used instead, which allowed model predictions to account for aggregating caribou in July, when insect harassment would be most severe due to high temperatures and low wind speeds (i.e., captures the period of a potential maximum effect). This is corroborated by observed patterns in Figures 15 and 16 of the 2019 WMP report.
DDMI-WMP-8	Caribou Movement	Reviewing the results of the model selection analysis raised questions about the relative importance of preferred habitat as a predictor of caribou density/abundance. Based on the model selection results, we questioned the strength of the relationship between caribou abundance and preferred habitat. The table below (WMP, Table 7, pg. 29) shows the results of the model selection analysis. The model(s) with the lowest ΔAIC score(s) are considered to do the best job explaining caribou abundance. We discussed the performance of model M1 (i.e., the model with the interaction) above. The top-ranked model was M2, this was the model with both distance and preferred habitat. The results demonstrate that model M3, with a ΔAIC score > 48 units higher than the top-ranked model (i.e., M2) does a poor job explaining the data on caribou density. Model M3 includes preferred habitat, but not distance. Model M3 indicates that preferred habitat is a poor predictor of caribou density. Given that model M2 was top-ranked and included distance, this suggests that distance may be more important in predicting the density of caribou than preferred habitat. We did note that a model with distance and excluding preferred habitat only was not among the set of candidate models used in the model selection analysis, meaning there is no way to see how distance, in the absence of preferred habitat, predicted the density of caribou.	We recommend DDMI include another candidate model with all covariables except preferred habitat and the interaction of distance*habitat in order to see how distance performs in predicting caribou abundance.	The requested model including distance and excluding preferred habitat was run and the results with the candidate set of models are provided in Attachment 1 (Table 1). The model recommended by EMAB has a ΔAIC value that is 280 AIC units larger than the model M2 and 231 AIC units larger than M3. There is considerably less support for the distance variable than for the preferred habitat variable.

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DDMI-WMP-9	Caribou Movement	<p>We interpreted DDMIs use of transect segments 1 km in length x 1.2 km wide as an attempt to standardize per unit area to address the geometric issues in the original sampling design. But then in the discussion of this analysis DDMI states that “[t]he application and pattern of random points demonstrated that a positive correlation with distance can be explained by increasing sampled area from the mines. Standardizing variables to be in per unit area is a way to adjust for such geometric phenomena” (DDMI, 2019, pg.33). This statement suggests the sampling units were not in fact standardized per unit area even though this was repeatedly cited as an issue in the interpretation of the distance variable.</p>	<p>We recommend DDMI provide additional discussion to clarify whether or not the variables included in the candidate models were standardized per unit area. If not, can DDMI explain why they did not standardize variables per unit area. And if they did, can they please provide further discussion about what distance means in the context of their mixed-model analysis since they controlled for the increasing amount of sampling area with distance from the mine.</p>	<p>There are 124,893 (97.4%) of survey segments (of 128,182) that have an area of 1.2 km². Of the 3,289 survey segments that were not 1.2 km², 3,188 (96.9%) had observed caribou values of zero. Standardizing zero value observations to 1.2 km² will still result in a zero value. For the most part, observations and covariables were functionally standardized because a large proportion of the segment areas were 1.2 km². Because a high proportion of alternate segment areas had no caribou observed, standardizing to account for this small fraction (i.e., 0.08% of all survey segments) of non-1.2 km² segments is unlikely to influence the results and conclusions.</p> <p>The study areas have changed over time since aerial survey monitoring for caribou began in 1998. The changes have included monitoring of different areas, mostly as a function of increasing study area size. Changes in study area sizes were presented in Table 5 of the 2019 WMP report and shown in Figures 4 and 5. Increasing study area size through time means that areas further away from the mines surveyed for caribou during later years were not monitored for caribou in earlier years and therefore monitored distances varied over time. Accounting for changes in study area size avoids confounding space and time. Failure to acknowledge these differences by pooling across time means that a detected shift in caribou distribution away from mines (i.e., inferred pattern of avoidance) could be simply due to greater distances being sampled in later years than in earlier years when caribou could not be observed at further distances because these further distances were not included in the survey design.</p>

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DDMI-WMP-10	Caribou Movement	We think analyzing selection ratios of satellite collared caribou within different distance zones may be a viable method to address the ZOI predictions. If caribou select preferred habitat less than it is available on the landscape, this would be a signal of avoidance. It is also unclear how the size (i.e., distance on the ground (km)) of any potential ZOI could be estimated using the interaction term alone, while the use of selection ratios based on satellite collar data may allow for the size of the ZOI to be monitored over time. DDMI has indicated a willingness to explore such an analysis for the 2022 WMR. It is our understanding there is existing satellite collar data that can be analyzed and that there has been no aerial survey data collected since 2012	We recommend DDMI utilize the existing satellite collar data for a ZOI analysis based on spatial variation of selection ratios for inclusion in the 2020 monitoring report (or an addendum to the report).	ZOI monitoring using collared caribou data is included in the Diavik's Wildlife Management and Monitoring Plan (WMMP; DDMI 2020). According to the WMMP, analysis of caribou collar data will be completed in 2022, which is consistent with schedule of previous wildlife comprehensive analyses. The selection ratio approach of White and Gegrovich (2017) uses categories of distance and therefore is an analysis of variance (ANOVA) or analysis of covariance (ANCOVA) design depending on the type of other covariables used. This is a completely different statistical design than the multiple regression approached used in the 2019 WMP report. It is well recognized that when categorical variables are used detail is often lost because of pooling information. For example, if distances are grouped into categories of 5 km, then any change detected will be associated with that group level even though a smaller change may be present and measurable. Pooling data into categories is also typically subjective. Categorical data result in separate regression coefficients for each category level making model structure more complex, particularly when interaction terms are needed to test for a ZOI. Multiple regression does not have these constraints. Our philosophy is that the use of available detail strengthens inferences. The principle of parsimony posits that the simplest explanation is more likely to be best (Burnham and Anderson 2002) and the multiple regression approach used is considerably less complex than an ANOVA design that uses the same covariables.
DDMI-WMP-11	Caribou Behaviour	In 2019, between January 11 and April 18, observations were collected on 33 caribou groups from 0 to 15 km from the Mine and observations were collected from 3 caribou group > 15 km from the Mine. Overall, fewer caribou groups were observed in 2019 compared to 2018. DDMI indicated that there remains insufficient data (# caribou groups) to detect a 15% change in behaviour (55 unique groups of caribou in two distance groups are required). Based on a qualitative comparison of activity data it appears as though caribou behaviour varies across years and by distance category. Changes in feeding time varies annually, but not in a systematic way with distance from the mine.	We recommend that DDMI continue their efforts to collect caribou behaviour data annually (see also DDMI-WMP-16).	Continued collection of caribou behaviour data is included in Diavik's WMMP (DDMI 2020).

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DDMI-WMP-12	Wolverine	DDMI also tested the effects of caribou, year and FTE on the probability that an occupied transect becomes unoccupied (i.e., extinction). This analysis showed that FTE had a positive effect on the probability of extinction, or that an occupied transect is unoccupied the following year. Wolverines appear to lower their use of the study area as Mine activity increases. DDMI will continue their monitoring efforts. We commend DDMI for their continued efforts to monitor wolverines and understand the impacts of the Mines on wolverine use of the study area.	We recommend the continuation of the snow tracking program to monitor impacts of the mine on wolverine detectability, occupancy, colonization and extinction.	Wolverine snow tracking is included in Diavik's WMMP (DDMI 2020).
DDMI-WMP-13	Wolverine	No wolverine hair snagging was undertaken in 2019. This program was last completed in 2014. DDMI is awaiting the completion of a data summary analysis report from ENR before engaging in discussions to determine the schedule for future monitoring programs.	We recommend that a schedule for future hair snagging be determined in collaboration with GNWT-ENR. Given the findings of the MSOM which shows distance to the Mines effects wolverine occupancy, ongoing monitoring of population size and stability would be prudent to ensure negative impacts of the Mines on wolverines does not lead to population extinction.	<p>Continuation of Diavik's wolverine hair snagging program will be determined with program partners as indicated in the WMMP (DDMI 2020).</p> <p>It is important to note that the "extinction" parameter in the multi-season occupancy models (MSOM) does not infer population extinction or extirpation but relates to the probability that a sampling unit (e.g., a survey transect) may become unoccupied (i.e., no longer used). It is also important to note that the distance variable on its own does not explain wolverine distribution. In other words, it describes how wolverine are distributed and not the underlying process (i.e., why) that results in the observed distribution.</p> <p>There is no evidence that impacts by Diavik or other NWT mines are leading wolverines toward population extinction (more correctly, extirpation). In contrast, the available different lines of evidence indicate that Diavik's mortality impacts have been less than predicted in the EER (DDMI 1998), that monitored wolverine population(s) are stable (Efford and Boulanger 2018), and that wolverine are doing well enough to no longer be considered a species at risk in the NWT (NWT-SARC 2014).</p> <p>An apparent correlation between abundance estimates from wolverine hair snagging and occupancy estimates from snow tracking indicate that snow tracking may be a more cost-effective approach to monitoring trends in wolverine populations (Attachment 1, Figure 2).</p>

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DDMI-WMP-14	Vegetation and Wildlife Habitat	DDMI confirmed that reclamation activities will be applied to areas directly disturbed by Mine infrastructure. Many indirect effects (e.g., sensory disturbances) will be functionally reclaimed once operations stop. This simply means that some indirect effects to vegetation will not be further mitigated, nor reclaimed, and we just hope that vegetation recovers (species richness returned to baseline levels and dust is no longer a concern) and is not a major mechanism for caribou avoidance.	In order to alleviate any remaining concerns about dust impacts, we recommend that DDMI continue to monitor indirectly impacted vegetation plots outside of reclaimed areas to evaluate how quickly the residual effects of dust are resolved after reclamation activities/post-operations.	When mining activities that result in indirect effects to vegetation are discontinued then the sources of indirect effects are no longer present to continue to affect vegetation. For example, during post-closure there will be no haul trucks producing fugitive dust and mitigation such as watering of roads will not be required. Vegetation indirectly affected by past mining activities will require time to progress to a natural state and the amount of time is unknown because there is no historical information for the area. Vegetation monitoring post-closure will be determined through review and approval of the ICRP. It is important to note that affected vegetation may not return to baseline levels as the environment generally continues to change through time.
DDMI-WMP-15	Caribou Movement	ZOI monitoring, in accordance with the ZOI Guidance Document, in 2019” (EMAB 2019b). A letter from GNWT-ENR states that “GNWT-ENR recommends that draft guidance document be used by mine operators to guide their decisions related to meeting the intent of their WEMP and reinstating ZOI monitoring.” (GNWT, March 9th, 2020). This statement appears to place the decision to re-commence formal ZOI monitoring with mine operators. DDMI has committed to determine and discuss appropriate ZOI monitoring with EMAB, when required. However, given the lack of anticipated guidance from ENR, it is unclear when this discussion and decision might occur.	We recommend DDMI provide additional information on their intentions for reinstating ZOI monitoring and potential methods. Also see DDMI-WMP-5 to DDMI-WMP-10.	Please see the response to DDMI-WMP-10.

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DDMI-WMP-16	Caribou Behaviour	<p>DDMI provided a summary of caribou behaviour data in Appendix B that meets this request. DDMI provided a summary of the data for different caribou behavior activities in Appendix D.</p> <p>The purpose of the request was to understand behavioural data availability and whether there are enough data to conduct analyses by specific categories or by pooling data from different categories (e.g., season, time period, etc.). Previously, DDMI has stated: “Based on these conditions, feeding activity of 55 different caribou groups are required for each of the two distance strata to statistically detect a change in feeding activity of at least 15%.” (Golder 2017)”. Regarding other caribou activities, while DDMI assures that running or trotting is one for very short periods of time, a demonstrated lack of statistical difference would provide more relevant information. The combination of walking with running and trotting in the 2011 behavioural analysis may be diluting the effect of trotting and running (higher energy activities). Komers et al. (1999) found that although running made up a very small percentage of the total activity, a small increase in the behaviour resulted in measurable weight lost (i.e., higher energy expenditure).</p> <p>Diavik has indicated that caribou are now most common in the study area during winter when the ability to implement far field data collection is constrained by extreme environmental conditions. A letter communication from DDMI explains the challenges of collecting these data (DDMI January 2020). We acknowledge these challenges and encourage DDMI to continue their efforts to collect caribou behaviour data in a way that attempts to balance near-mine and far-field samples. Regarding other caribou activities, while DDMI assures that running or trotting is one for very short periods of time, a demonstrated lack of statistical difference would provide more relevant information. Diavik has indicated that caribou are now most common in the study area during winter when the ability to implement far field data collection is constrained by extreme environmental conditions. A letter communication from DDMI explains the challenges of collecting these data (DDMI January 2020). We acknowledge these challenges and encourage DDMI to continue their efforts to collect caribou behaviour data in a way that attempts to balance near-mine and far-field samples.</p>	<p>If possible, please clarify why there is no behaviour data from the Ekati mine for the years 2017 –2019 (e.g., are they not collecting data during the winter season or are they not seeing caribou?). We recommend DDMI evaluate whether the data can be pooled and analyzed while considering covariates such as year, gender, and distance to the Mine. We recommend DDMI compare caribou running bouts as a function of distance. Please also consider grouping or separating running and trotting activities for the analysis.</p>	<p>DDMI cannot comment on the monitoring program at the Ekati mine and suggests that EMAB to inquire with the Ekati mine about their caribou behaviour data.</p> <p>Appendix D of the 2019 WMP report includes a table of estimates and standard errors of different caribou behaviour activities, stratified within 15 km and greater than 15 km. The table shows that most differences are within two standard errors and in many years data were not available in both categories. Pooling of annual data may confound effects associated with categorical year and the distance categories because in some years there are data gaps for one of the two distance strata.</p> <p>In addition to the Appendix D, Table 2 in Attachment 1 includes behaviour activity estimates with standard errors stratified by smaller distance intervals as in Golder (2011). Similar to the assessment of Appendix D results, there is no discernable spatial pattern (trend) for either trotting or running. Estimates are within two standard errors or the high rates occur at further distances. Group scan data confirm that a small percent of caribou groups observed are trotting or running and that most animals are feeding, walking or resting (bedded).</p>

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DDMI-WMP-17	Caribou Distribution	<p>DDMI's adaptive management regarding changes in the southern migration is to remove deflection monitoring from the wildlife program because there is little value to continue evaluating this prediction when the measured change does not correspond to a measurable ecological effect (cows still reach seasonal ranges from year to year). DDMI explained elsewhere that migration predictions were based on a least-cost path (friction) analysis. Movement (energetic) cost was calculated for 10 simulated paths for baseline for fall migration (5 paths moved east, 5 paths moved west, and 1 path traversed Lac de gras via East Island). Thus, more paths were expected east of Lac de Gras than west during fall migration.</p> <p>Overall, the departure from predictions for the southern migration is small; however, more recent years show a trend toward a more consistent departure from predictions. It may be too early to conclude no effect of the mine and remove monitoring.</p> <p>From the 2019 WMR: Figure 21 (WMR, pg. 38) shows the proportion of east deflections in relation to Full-Time-Equivalents (FTEs), a proxy measure for mine activity. DDMI states there is no correlation between east movement and mean annual FTEs during the fall migration. There does not appear to be a clear pattern between the proportion of east deflections and FTEs, although it does appear that in recent years (2011, 2012, 2013, 2014, 2015, 2018), as herd size is declining, only a small proportion of caribou are moving east of Lac de Gras during the fall migration. Is this a reflection of chronic effect of the mine? Further data collection and analysis is required to understand clearly why the impact prediction in the EER was incorrect regarding the southern (fall) migration.</p>	<p>We recommend Diavik answer the following questions: If predictions calculated paths of least resistance in terms of energetics, why doesn't the monitoring program evaluate the energetic cost of migration? This would be more informative than counting East/West deflections. Do changes in migration have a consequence for caribou energetics: Can we compare the predicted development scenario ("cost-of-movement index") with what is there now? Is the cost of movement as predicted? Do current pathways used by caribou have higher, same, or lower energetic cost ("cost of movement index") than baseline and predicted scenarios? Regarding the potential influence of the mine specifically (i.e., mechanisms): -Did the southern migration change at a time of new infrastructure (e.g., new pit)? -Did important corridors become dysfunctional? -Does dust deposition increase energetic costs of migration? (Is dust higher on one side of the mine? What is the prevalent wind direction? Is foraging better going west for fall migration?)</p>	<p>The key reasons for monitoring are to test impact predictions, determine mitigation effectiveness, reduce uncertainty of effects and mitigation, and/or provide feedback for adaptive management. The impact prediction in the WMP regarding caribou movement during the southern migration (and northern migration) was initially generated from baseline observations and the effects analysis using a friction model to estimate the energetic cost of movement. Baseline data collected during two years observed that most caribou coming onto East Island from the north retreat northward and move around the east end of Lac de Gras rather than swimming across to the eastern or southern shores (Penner and Associates 1998). Baseline data also indicated that during the southern migration, caribou would typically move back off the East Island onto the mainland and then travel either west or east around Lac de Gras.</p> <p>The friction model assessed the energetic cost of caribou using different migration routes through the Lac de Gras area, including the known route from the mainland to the East Island to the mainland (i.e., East Island crossing). Under the Diavik mine full development scenario the pathway of least resistance shifted from the East Island crossing to routes at the narrows between Lac du Sauvage and Lac de Gras, which is east of Lac de Gras (DDMI 1998). The increase in cost of movement was calculated to be 3.9% relative to baseline conditions, but was likely overestimated because caribou rarely use the East Island crossing. In other words, the frequency of caribou shifting from the East Island crossing to routes at the narrows east of Lac de Gras was purposefully inflated (a precautionary approach was applied). Furthermore, it was anticipated that if movements onto East Island are deterred by Mine-related activities, caribou would select the most common movement corridors (west and east) around the lake. Deflections during the ice-free season would have little influence on regional patterns of movement, and may benefit caribou by limiting risks of interacting with Mine-related hazards (page 6-15: DDMI 1998).</p> <p>In retrospect, the prediction in the WMP regarding the movement of caribou during the southern migration is not well developed and likely incorrect (and perhaps was not warranted) because the change associated with the loss of the East Island route was overstated to maximize energetic cost and not be reflective of both west and east movements observed during baseline. Baseline data observations and the results of the friction model and assumptions do not strongly indicate that the Mine would cause caribou to be consistently deflected east of Lac de Gras during the southern migration. In contrast, the</p>

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				<p>information predicts that if the Mine prevents caribou from selecting the rarely used East Island crossing, then movement would be largely around the west and/or east side of Lac de Gras. The analysis of Bathurst collar data in the 2019 WMP report (and previous reports) supports this prediction. Collared caribou have travelled east and/or west around Lac de Gras from 1996 to 2018 with no strong difference in direction. The results from the EER (DDMI 1998) and long-term monitoring data indicate that any changes in caribou migration around Lac de Gras from the Mine during the southern migration would likely have no measurable effect on the population.</p> <p>Similarly, the prediction for caribou movement around East Island during the northern migration was premised on baseline data and the friction model. Briefly, baseline observations suggested that caribou spring migration movement paths were widely distributed across and around Lac de Gras (DDMI 1998). One predevelopment travel route skirted the east side of East Island and this pathway was used to examine effects on spring movement costs. At the full development scenario, disturbance from the Mine was predicted to cause caribou to divert from this path around the west side of East Island (DDMI 1998). The increased movement cost relative to baseline conditions was 2% (or 0.12% relative to the total cost of spring migration). However, the spring migration corridor is wide relative to the East Island and the number of individuals influenced by the Mine would be small. Long-term monitoring data has shown that caribou movement around East Island is highly consistent with the prediction in the EER. Importantly, the data also indicate that northern movement on either side of East Island is correlated with the location of the winter range (Golder 2017), which has largely been west of Diavik since the decline of the Bathurst herd. Support for the prediction during the northern migration may be largely spurious and more related to the location of the collared caribou on the winter range than the influence of the Mine.</p> <p>In conclusion, a retrospective evaluation of the development and strength of the predictions concerning caribou movement, and analysis of long-term collar data supports removing this component from the WMP. The predictions, particularly during the southern migration, were not well developed and perhaps incorrect, and likely included as a precautionary approach to manage uncertainty in effects predictions in the EER. Since 2002 when the WMP was implemented, the analysis of 23 years of collar data has provided confidence that caribou movement around Lac de Gras during the southern migration has not deviated from baseline observations. However, the monitoring</p>

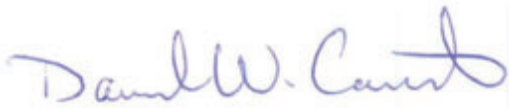
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				<p>data are not consistent with an assumption of the friction model concerning removal of the East Island crossing route and a shift to a least resistant route east of Lac de Gras. This does not imply that there is an effect on caribou, particularly as the friction model was stated to overestimate effects because caribou rarely use the East Island crossing and typically migrate west or east around Lac de Gras. Although the prediction for the northern migration has been more strongly supported by the monitoring data, which also provides confidence in the predicted effects, the result is more likely related to location of caribou on the winter range than the potential influence of the Mine. Overall, the Diavik mine has likely had little influence on the variation in caribou northern and southern migration movements through the Lac de Gras region. The analysis above demonstrates unequivocally that the precautionary approach applied to the WMP because of uncertainty in effects predictions for caribou migration movements is no longer required and this component can be removed from the monitoring program.</p>

CLOSURE

We trust the above meets your present requirements. If you have any questions or requirements, please contact the undersigned.

Golder Associates Ltd.



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[https://golderassociates.sharepoint.com/sites/120632/project files/6 deliverables/issued/1950-tm-rev0-2000-response_to_emab_comments_on_2019_wmp/20136424-1950-tm-rev0-2000-response_to_emab_comments_on_2019_wmp_report_17aug_20.docx](https://golderassociates.sharepoint.com/sites/120632/project%20files/6%20deliverables/issued/1950-tm-rev0-2000-response_to_emab_comments_on_2019_wmp/20136424-1950-tm-rev0-2000-response_to_emab_comments_on_2019_wmp_report_17aug_20.docx)

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ATTACHMENT 1

**Supporting Information for DDMI
Responses to Recommendations by
EMAB**

Table 1: Model Selection Results from Golder (2020) and A Model Recommended by EMAB

Model Code	Model Structure	K	AIC	ΔAIC	Model Likelihood	AIC Weight	-Log Likelihood
M2	design survey area + distance + preferred habitat + month + autumn range	8	54898.60	0.00	1.00	0.64	-27441.30
M1	design survey area + distance + preferred habitat + distance*habitat + month + autumn range	9	54899.72	1.12	0.57	0.36	-27440.86
M3	design survey area + preferred habitat + month + autumn range	7	54948.03	49.43	0.00	0.00	-27467.02
EMAB	design survey area + distance + month + autumn range	7	55179.24	280.64	0.00	0.00	-27582.60
Null	y-intercept only	3	55264.71	366.11	0.00	0.00	-27629.35

Table 2: Caribou Behaviour Activities (percent ± 1 SE) Recorded from Group Scans, 1998 to 2019

Distance from Mines	N	Bedded	Feeding	Standing	Alert	Walking	Trotting	Running
<0.5 km	326	23.1 ± 2.3	46.1 ± 2.8	9.3 ± 1.6	1.9 ± 0.8	16.7 ± 2.1	2.2 ± 0.8	0.6 ± 0.4
0.5-1 km	33	13.8 ± 6.0	45.8 ± 8.7	8.3 ± 4.8	1.7 ± 2.2	29.3 ± 7.9	0.8 ± 1.5	0.3 ± 1.0
1-3 km	42	11.3 ± 4.9	39.1 ± 7.5	6.5 ± 3.8	0.9 ± 1.5	39.7 ± 7.6	1.6 ± 1.9	0.8 ± 1.4
3-5 km	36	15.4 ± 6.0	43.2 ± 8.3	13.7 ± 5.7	0.8 ± 1.5	26.2 ± 7.3	0.7 ± 1.3	0.0
5-7 km	33	14.2 ± 6.1	46.6 ± 8.7	9.0 ± 5.0	1.5 ± 2.1	27.0 ± 7.7	1.0 ± 1.8	0.6 ± 1.4
7-9 km	51	22.5 ± 5.8	47.4 ± 7.0	7.4 ± 3.7	0.9 ± 1.3	20.2 ± 5.6	0.8 ± 1.2	0.8 ± 1.2
9-11 km	43	24.8 ± 6.6	46.6 ± 7.6	4.0 ± 3.0	1.8 ± 2.0	20.4 ± 6.1	2.2 ± 2.2	0.3 ± 0.8
11-13 km	30	10.2 ± 5.5	65.6 ± 8.7	4.3 ± 3.7	2.8 ± 3.0	15.8 ± 6.7	0.2 ± 0.9	1.1 ± 1.9
13-15 km	44	11.6 ± 4.8	56.4 ± 7.5	7.1 ± 3.9	1.3 ± 1.7	18.6 ± 5.9	1.9 ± 2.1	3.1 ± 2.6
>15 km	136	23.1 ± 3.6	45.9 ± 4.3	6.0 ± 2.0	1.1 ± 0.9	22.5 ± 3.6	1.1 ± 0.9	0.3 ± 0.5

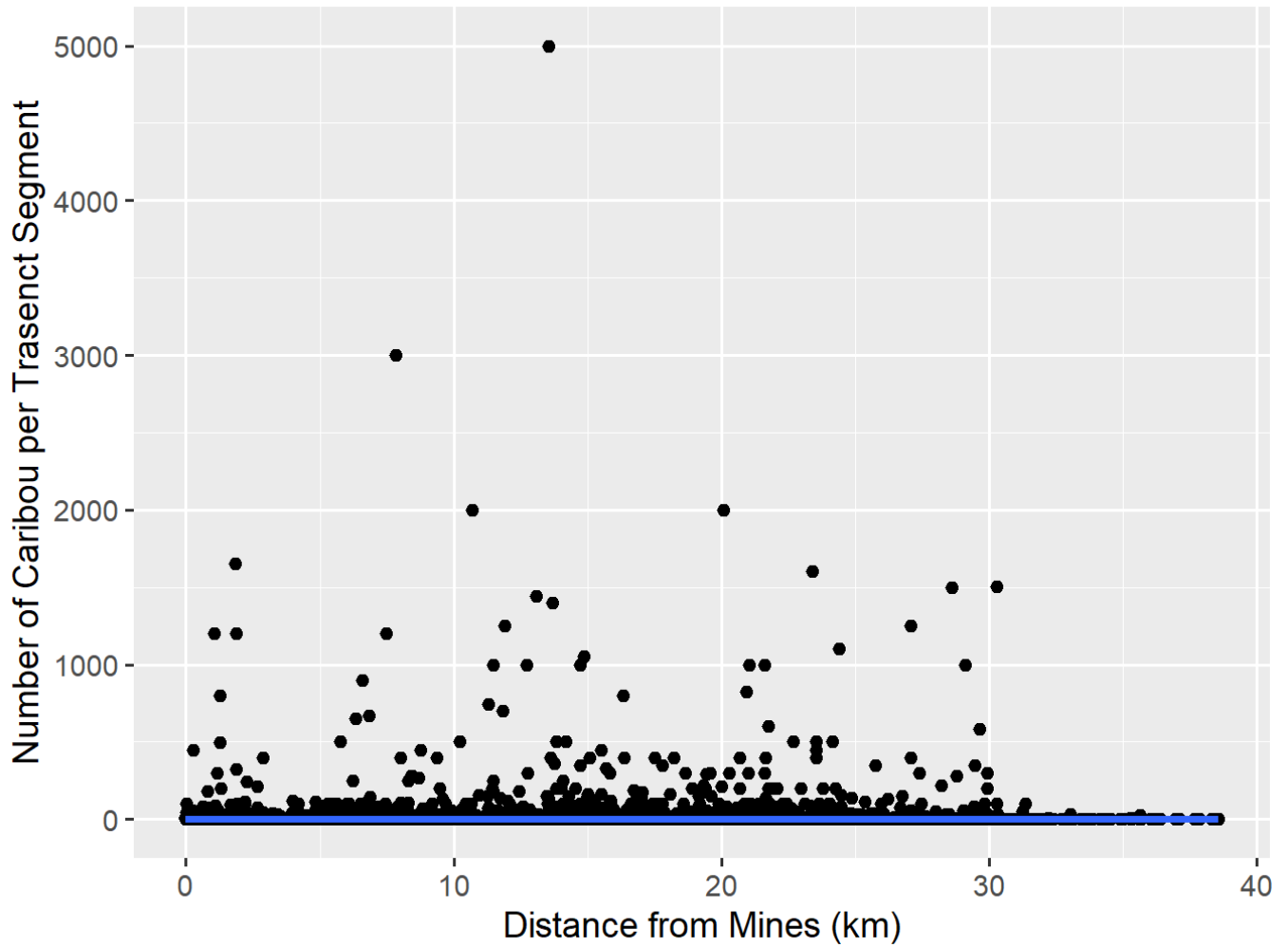


Figure 1: Caribou Abundance by Distance (km) from the Diavik and Ekati Mines, 1998 to 2009, and 2012



Figure 2: Wolverine Occupancy from Inuit Qaujimagatuqangit (IQ) and Stratified Random Sampling (SRS) Snow Tracking and Abundance from Hair Snagging (DNA) Monitoring at Diavik Mine

APPENDIX B

**Government of the Northwest
Territories Comments on the 2019
Wildlife Monitoring Report**

TECHNICAL MEMORANDUM**DATE** 8 February 2021**GOLDER REFERENCE No.** 20136424-2020-TM-Rev0-2000**DIAVIK WORK PLAN No.** 652 Rev.1**DIAVIK PO No.** 3104086439**TO** Kofi Boa-Antwi
Diavik Diamond Mines (2012) Inc.**CC** Rainie Sharpe (Golder)**FROM** Dan Coulton and John Virgl**EMAIL** Dan_Coulton@golder.com;
John_Virgl@golder.com**GNWT COMMENTS ON DIAVIK 2019 WILDLIFE MONITORING PROGRAM REPORT**

On 26 August 2020, Diavik Diamond Mines (2012) Inc. (DDMI) received comments from the Government of the Northwest Territories, Department of Environment and Natural Resources' (ENR) on the 2019 Wildlife Monitoring Program (WMP) report. The comments provided by ENR included a review by ENR (Attachment 1) and a separate review by Boulanger and Poole (2020) as Attachment 2. There were seven comments by ENR on the 2019 WMP report. Golder Associates Ltd. (Golder) has prepared responses to the GNWT comments in Table 1 for your consideration.

The review by Boulanger and Poole (2020) is exclusively on Section 4.2 and the zone of influence analysis of caribou aerial survey data. Golder does not agree with the comments provided by Boulanger and Poole (2020) and the review does not provide any lines of evidence supporting the comments. As well, in their cover letter the GNWT recommends that the caribou aerial survey data be re-analyzed using established methods that can test for a zone of influence. The approach used in the 2019 WMP caribou zone of influence analysis tests predictions based in habitat selection theory, which is well established in ecology (Fretwell and Lucas 1970) and underpins predictions about caribou behaviour in response to sensory disturbance from human development/disturbance. The statistical approach applied is consistent with White and Gregovich (2017), which also applied a regression interaction between distance and habitat to test for a zone of influence. The WMP results are consistent with an independent study completed by Environmental Resources Management and presented at the 2021 Slave Geological Province Wildlife Workshop hosted by the GNWT. The WMP analysis is well founded in ecology and scientifically defensible; therefore, we do not believe a re-analysis of the aerial survey data is warranted.

Table 1: DDMI Responses to 2019 WMP comments by the GNWT

Comment ID	Comment	Recommendation	DDMI Response
GNWT-20-WMP-1	<p>“Based on the principles of adaptive management, DDMI no longer completes an independent comprehensive analysis report for wildlife. Instead all comprehensive statistical analyses related to active monitoring programs are included every three years in the annual WMP report, and began in 2020, if applicable.”</p> <p>Should this read “will begin”?</p> <p>In the subsequent paragraph it states that comprehensive analyses for aerial caribou survey data and wolverine snow track data are included in the 2019 report. Will the comprehensive analyses for the other programs be included in the 2020 annual report?</p>	<p>Please confirm if further comprehensive analyses will be presented in the 2020 annual report, and which monitoring programs will be subject to comprehensive analyses in that report.</p>	<p>Historical stand-alone reporting of more formal and comprehensive statistical analysis of off-Mine site monitoring programs (e.g., caribou behaviour monitoring, wolverine snow track surveys, etc.) were completed at the request of EMAB in 2004 (EMAB 2004) when there were multi-year data available for more than two components (e.g., valued ecosystem components) of the Wildlife Monitoring Program (WMP) report. Following reviews of monitoring results at wildlife workshops hosted by the GNWT (e.g., Handley 2010) the number of components in the WMP report requiring comprehensive effects analyses has decreased. With a lower number of comprehensive analyses it is more efficient to incorporate them into a single report. The 2019 WMP report (Golder 2020) is the first time since 2016 that comprehensive analyses were integrated into the annual WMP report instead of as a stand-alone report.</p> <p>Analyses of other monitoring components (e.g., habitat loss, incidental observations) are evaluated and adaptively managed annually because they are linked to mitigation effectiveness. The results of these analyses are reported annually and reflected in the Adaptive Management and Recommendations sections of the WMP report.</p>
GNWT-20-WMP-2	<p>The last sentence on this page states that “Diavik is in compliance with recommended mitigation described in the Bathurst Caribou Range Plan.”</p>	<p>Please provide more details to support this statement and demonstrate how Diavik is in compliance with the range plan.</p>	<p>According to the Bathurst Caribou Range Plan, Mobile Caribou Conservation Measures increase in intensity as caribou approach active areas and are required because the Diavik Mine occurs in the centre of habituation (GNWT 2019). Caribou Mobile Conservation Measures at Diavik include the caribou advisory, which posts (communicates) different cautionary levels as caribou approach Mine site. Caribou presence is also regularly communicated to different Mine departments. Both forms of communication raise the vigilance of site staff and minimize Mine-caribou conflicts.</p> <p>The Bathurst Caribou Range Plan (GNWT 2019) also suggests that financial and in-kind contributions to science and Traditional Knowledge research and monitoring (guardianship programs) are a form of offsetting even though this form of compensation cannot be demonstrated to result in no net loss or a net gain. Diavik has a history of contributions that can</p>

Table 1: DDMI Responses to 2019 WMP comments by the GNWT

Comment ID	Comment	Recommendation	DDMI Response
			be considered compensatory measures. Diavik has made financial contributions to the GNWT's caribou collaring program, which has supported increases in the number of collars deployed and deployment of high resolution geo-fenced collars that will inform management and the ecology of caribou. Diavik has contributed to DNA hair snagging studies for grizzly bear and wolverine that provide demographic information on these species and have informed species at risk assessments by the NWT Species at Risk Committee (NWT SARC 2014, 2017) and cumulative effects assessments and management by the GNWT. Diavik has completed zone of influence (ZOI) monitoring and analysis, which contributes to understanding cumulative effects to caribou (e.g., Golder 2011; 2020). Diavik has also analyzed collar data to describe several Bathurst caribou range attributes (e.g., autumn range size and fidelity), which informs on the broad-scale ecology of the herd (Golder 2020). Diavik will include these as examples of compliance with the Bathurst Caribou Range Plan in future WMP reports.
GNWT-20-WMP-3	<p>Please see the attached review of this section by Boulanger and Poole (July 2020).</p> <p>ENR agrees with the conclusions of this review that the analytical approach used by Golder does not support the conclusions made in Section 4.2 of the 2019 annual report. ENR supports the recommendations made by Boulanger and Poole (July 2020).</p>	Please consider re-analyzing the aerial survey data using established methods to estimate ZOI.	The approach used in the 2019 WMP caribou ZOI analysis tests predictions based in habitat selection theory, which is well established in ecology (Fretwell and Lucas 1970) and underpins predictions about caribou behaviour in response to sensory disturbance from human developments. The statistical approach applied is consistent with White and Gregovich (2017), which also applied a regression interaction between distance to disturbance and habitat to test for a ZOI. The analysis is well founded and scientifically defensible; therefore, we do not believe a re-analysis of the aerial survey data is warranted.
GNWT-20-WMP-4	<p>"The revised impact prediction from Handley (2010) is:</p> <ul style="list-style-type: none"> To determine if caribou behaviour changes with distance from the mines." <p>This is not an impact prediction, it is a monitoring objective.</p>	Clarify what the impact prediction is for changes to caribou behavior either from the EER (DDMI 1998b) or Handley (2010).	DDMI agrees these are objectives based on Handley (2010). An explicit prediction for caribou behaviour (activity budgets) was not presented in the EER (DDMI 1998). These data have been collected to fill an information gap about response by caribou to human-caused disturbances (Golder 2010). Future WMP reports will identify this as a monitoring objective per Handley (2010).

Table 1: DDMI Responses to 2019 WMP comments by the GNWT

Comment ID	Comment	Recommendation	DDMI Response
GNWT-20-WMP-5	Distance*habitat interaction: "Wolverine occurrence in response to habitat quality is mediated by the distance to the Mine. This interaction explicitly tests for a zone of influence (see Section 4.2)."	See the comments on Section 4.2 from Boulanger and Poole (July 2020) about why this approach does not actually test for a zone of influence.	<p>The review by Boulanger and Poole (2020) did not provide any lines of evidence to support their comments. We refer ENR to White and Gregovich (2017), which also applied an interaction between distance to development and habitat to test for a ZOI. Habitat selection theory (Fretwell and Lucas 1970) predicts that animals should distribute themselves in accordance to the distribution of quality habitats (i.e., higher animal abundance where there is more quality habitat). To understand the spatial pattern of animal distribution makes it necessary to determine the spatial distribution of quality habitats surrounding a human development. The spatial pattern of habitat quality can be linear, non-linear or some other distribution. Understanding this is necessary to know if animal distribution (e.g., occurrence or abundance) is consistent with the prediction of habitat selection theory or if habitat selection behaviour has changed due to habitat proximity to human disturbance/development.</p> <p>A change in habitat selection behaviour is detected by measuring the change in animal distribution (response variable) with habitat proximity to the development (i.e., the same quality of habitat is selected differently near development than further away). This is because adjacent habitat is not directly, physically altered but the perceived quality of habitat near the disturbance has increased (positive ZOI) or decreased (negative ZOI) because of some mechanism associated with human activity or sensory disturbance (e.g., lights, noise, smells). Importantly, the interaction between distance to development and distribution of habitat tests whether the change in animal distribution is the same across habitat and distance from development (i.e., additive response = no interaction) or varies substantially between the two independent variables (i.e., non-additive response = significant interaction). Failure to detect a significant interaction indicates that animal distribution does not depend on habitat proximity to the development and is consistent with the distribution of quality habitats (i.e., habitat selection theory). Furthermore, failure to test for an interaction between distance to development and habitat assumes the change in animal distribution is similar across the two independent variables and both habitat distribution and distance to development can explain the predicted response of animal because the dependency on habitat proximity has not been evaluated.</p>

Table 1: DDMI Responses to 2019 WMP comments by the GNWT

Comment ID	Comment	Recommendation	DDMI Response
GNWT-20-WMP-6	The “revised impact predictions presented in Handley (2010)” are monitoring objectives, not impact predictions.	Revise text in future annual reports to clarify that these are monitoring objectives, not impact predictions.	DDMI agrees these are objectives based on Handley (2010) and not EER predictions and will revise future WMP reports to identify them as the monitoring objective.
GNWT-20-WMP-7	<p>One of the objectives of the raptor monitoring program is to “Determine nest success in areas of development and document effectiveness of deterrent efforts that may be employed for nest relocations.”</p> <p>Table 25 reports that an occupied Peregrine Falcon nest was confirmed on 15 June 2020 at the Process Plant, but there is no indication of whether further monitoring took place after 15 June to determine if the nest was successful. Nest success was also not recorded for the raven nest at Pit A418.</p> <p>Based on Appendix N it appears that further visits to the Processing Plant occurred after 15 June, but there is no mention of the Peregrine nest again after that date.</p>	<p>It does not appear as though the monitoring program is fulfilling the objective of determining nest success in areas of development.</p> <p>In future years of this program, efforts should be made to better document the fate (successful, unsuccessful) of active nests that are detected in areas of development.</p>	<p>Section 7.1.2 indicates that nests observed were considered active if they were known to have eggs or young. Once a nest was confirmed to no longer be active, no further inspections were undertaken. The notes provided in Appendix N on 15 June at the processing plant (for the peregrine nest) indicate that no eggs were observed. Regular subsequent visits to the processing plant through 13 September did not indicate that nesting activity ever progressed (i.e., eggs or young observed or the continued presence of adults). The original observation should not have been considered an active nest because it did not meet the definition as having eggs or young.</p> <p>It is acknowledged that the raven nest should have continued to be monitored to determine whether it was successful or not.</p>

CLOSURE

We trust the above meets your present requirements. If you have any questions or comments, please contact the undersigned.

Golder Associates Ltd.



Dan Coulton, Ph.D., RPBio
Senior Wildlife Biologist

DWC/JAV/et/jc



John Virgl, Ph.D.
Principal, Senior Ecologist

Attachments: Attachment 1: GNWT-ENR – Wildlife and Fish Division – comments on DDMI 2019 Wildlife
Monitoring Program Report
Attachment 2: Boulanger and Poole 2020 Review

[https://golderassociates.sharepoint.com/sites/120632/project files/6 deliverables/issued/2020-tm-rev0-2000-gnwt comments on diavik 2019 wmp report/20136424-2020-tm-rev0-2000-gnwt comments on diavik 2019 wmp report 08feb_21.docx](https://golderassociates.sharepoint.com/sites/120632/project%20files/6%20deliverables/issued/2020-tm-rev0-2000-gnwt%20comments%20on%20diavik%202019%20wmp%20report/20136424-2020-tm-rev0-2000-gnwt%20comments%20on%20diavik%202019%20wmp%20report%2008feb_21.docx)

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ATTACHMENT 1

**GNWT-ENR – Wildlife and Fish
Division – comments on DDMI 2019
Wildlife Monitoring Program Report**

**Attachment 1 - GNWT-ENR – Wildlife and Fish Division – comments on DDMI 2019
Wildlife Monitoring Program Report**

Section / Page Number	Comment	Recommendation
Section 1 - Introduction, Page 2	<p>“Based on the principles of adaptive management, DDMI no longer completes an independent comprehensive analysis report for wildlife. Instead all comprehensive statistical analyses related to active monitoring programs are included every three years in the annual WMP report, <u>and began</u> in 2020, if applicable.”</p> <p>Should this read “will begin”?</p> <p>In the subsequent paragraph it states that comprehensive analyses for aerial caribou survey data and wolverine snow track data are included in the 2019 report. Will the comprehensive analyses for the other programs be included in the 2020 annual report?</p>	Please confirm if further comprehensive analyses will be presented in the 2020 annual report, and which monitoring programs will be subject to comprehensive analyses in that report.
Section 4 – Barren-ground Caribou, page 11	The last sentence on this page states that “Diavik is in compliance with recommended mitigation described in the Bathurst Caribou Range Plan.”	Please provide more details to support this statement and demonstrate how Diavik is in compliance with the range plan.
Section 4.2 – Barren-ground Caribou – Changes to	Please see the attached review of this section by	Please consider re-analyzing the aerial survey data using

<p>Movement</p>	<p>Boulanger and Poole (July 2020).</p> <p>ENR agrees with the conclusions of this review that the analytical approach used by Golder does not support the conclusions made in Section 4.2 of the 2019 annual report. ENR supports the recommendations made by Boulanger and Poole (July 2020).</p>	<p>established methods to estimate ZOI.</p>
<p>Section 4.3 – Barren-ground Caribou – Changes to Behaviour, page 34</p>	<p>“The revised impact prediction from Handley (2010) is:</p> <ul style="list-style-type: none"> • To determine if caribou behaviour changes with distance from the mines.” <p>This is not an impact prediction, it is a monitoring objective.</p>	<p>Clarify what the impact prediction is for changes to caribou behavior either from the EER (DDMI 1998b) or Handley (2010).</p>
<p>Section 6.3.2 – Wolverine – Snow Track Survey Methods - Table 15</p>	<p>Distance*habitat interaction: “Wolverine occurrence in response to habitat quality is mediated by the distance to the Mine. This interaction explicitly tests for a zone of influence (see Section 4.2).”</p> <p>See the comments on Section 4.2 from Boulanger and Poole (July 2020) about why this approach does not actually test for a zone of influence.</p>	<p>Consider revising this statement in future annual reports.</p>
<p>Section 7.0 - Raptors, page 68</p>	<p>The “revised impact predictions presented in Handley (2010)” are</p>	<p>Revise text in future annual reports to clarify that these are monitoring objectives,</p>

	monitoring objectives, not impact predictions.	not impact predictions.
Section 7.1.2 – Raptors – Table 25	<p>One of the objectives of the raptor monitoring program is to “Determine nest success in areas of development and document effectiveness of deterrent efforts that may be employed for nest relocations.”</p> <p>Table 25 reports that an occupied Peregrine Falcon nest was confirmed on 15 June 2020 at the Process Plant, but there is no indication of whether further monitoring took place after June 15 to determine if the nest was successful. Nest success was also not recorded for the raven nest at Pit A418.</p> <p>Based on Appendix N it appears that further visits to the Processing Plant occurred after June 15, but there is no mention of the Peregrine nest again after that date.</p>	<p>It does not appear as though the monitoring program is fulfilling the objective of determining nest success in areas of development.</p> <p>In future years of this program, efforts should be made to better document the fate (successful, unsuccessful) of active nests that are detected in areas of development.</p>

ATTACHMENT 2

Boulanger and Poole 2020 Review

Review of Zone of Influence Analysis in “Analysis of Environmental Effects from the Diavik Diamond Mine on Wildlife in the Lac de Gras Region: 2020 (3 April 2020)”

July 17, 2020

John Boulanger, Integrated Ecological Research, 924 Innes, Nelson, BC, boulange@ecological.bc.ca

Kim Poole, Aurora Wildlife Research, 1918 Shannon Point Road, Nelson, BC, kpoole@aurorawildlife.com

Introduction

Here we provide a review of “Section 4.2 Changes to Movement, in the Diavik Diamond Mine Analysis of Environmental Effects from the Diavik Diamond Mine on Wildlife in the Lac de Gras Region: 2020 (Golder 2020: p 13–34)”. This review is in response to a request from the Government of the Northwest Territories, Department of Environmental and Natural Resources as part of ongoing environmental monitoring of the Diavik mine. This is the second review we have done on this type of analysis (Golder 2017) and some of the revisions to the analyses were based on our previous review (Boulanger et al. 2017). As before, the main objective of the Golder (2020) analysis was to assess the zone of influence (ZOI) of the Diavik mine area on caribou using data from aerial surveys. The ZOI is an area surrounding a source of disturbance (diamond mines in this case) where the distribution and abundance of caribou are less than what would be expected given the available habitat if that disturbance was not present (Nellemann and Cameron 1996, Boulanger et al. 2012). The specific wording of the objective for this component of the Wildlife Monitoring Program was “*to determine if the area around the Mine where caribou distribution is altered (the zone of influence [ZOI]) due to mining activities is greater or less than predicted*” (p 13), which implies that a ZOI exists and that the size/magnitude of the ZOI changes with mine activities. The objective of the Golder (2020) analysis was “*to evaluate whether the caribou distribution interacts spatially with habitat and distance from mines, after accounting for other natural factors such as insect harassment and autumn range distribution of the Bathurst caribou herd*” (p 14). As with previous analyses counts of caribou observed on transect were summarized by 1 km segments. The data from these segments were then used to assess if a ZOI existed around the mine site areas.

Details are provided in technical comments below, but our main concerns with the Golder (2020) analyses are:

1. The statistical methods employed do not test for or estimate an actual ZOI;
2. Confusion between habitat use and selection as defined by the data collected in the study and modelling methods employed;
3. The effect of distribution of habitat relative to the mine is accounted for by the analysis;
4. Issues with interpreting model results;
5. The contention that a ZOI only exists when there is an interaction between habitat and distance from mine;
6. Use of caribou density as opposed to presence/absence;

7. No consideration of mine phase of operation in the analysis; and
8. Pooling of all habitat types into a single subjective “preferred habitat” term.

We now discuss each point in detail.

Technical comments

1. The analysis does not test or estimate a zone of influence.

Our main concern is that the methods employed do not test for or estimate an actual ZOI. A ZOI can be defined as the distance from infrastructure where the effect of disturbance on habitat selection diminishes to background levels (Nellemann and Cameron 1996, Boulanger et al. 2012). Conceptually it can be viewed as a line that indicates increasing selection that plateaus at the ZOI (Figure 1).

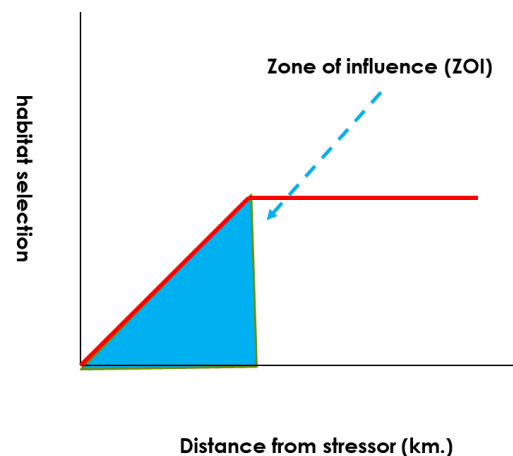


Figure 1: A conceptual diagram defining a zone of influence based on the response of habitat selection to distance from mine with habitat selection modelled using a base habitat model (Boulanger et al. 2012).

In the previous and the current Golder analyses, a single linear term is used to model the effect of distance from mine on density (Golder 2020: Table 8). This linear regression model assumes that the **mine will affect density/abundance for the entire range of distances considered** (approximately 30 km as shown in Golder 2020: Figure 18). The analysis conducted in Golder (2020) can be conceptualized as if the red line in Figure 1 continues for the entire range of distance rather than changing. Therefore, the conclusion of no ZOI in the analysis is a foregone conclusion **since no ZOI was tested for** given that the linear regression line is constrained to not change across the range of distances. The fundamental assumption of ZOI is that density (caribou counted in segments of constant area) or selection changes at an estimated distance from the mine and therefore the analysis needs to allow for this change using approaches such as segmented regression (Boulanger et al. 2012, Johnson and Russell 2014), binned distance intervals (Plante et al. 2018, Johnson et al. 2019), generalized additive models (Fortin et al. 2013), or polynomial regression (Johnson et al. 2005, Golder 2008). A simulation paper concluded that segmented regression or generalized additive modelling were best for detecting thresholds compared to logistic regression (Ficetola and Denoel 2009). Basically, the use of linear regression to detect a ZOI goes against the fundamental approach of ZOI estimation including previous analyses by Golder (2008).

We contend that it is impossible to determine a ZOI using the linear regression approach in this analysis, which is one of the primary objectives of the analysis (as detailed on p 13 of Golder 2020). We note a previous analysis of Golder (2008) that used polynomial regression to model and estimate ZOI as shown in Figure 2.5-9 from the analysis (Figure 2 below) concluding a mean ZOI of 22.8 km (Table 2.5-6 in Golder 2008). We question why this approach, or an approach using segmented regression or distance binned into successive intervals, was not used in the analysis.

Figure 2.5-9 Model Predictions for the Probability of Caribou Occurrence in Relation to Distance to the Mine, During the Post-calving Period, After Accounting for the Influence of Major Lakes, 1988 to 2007

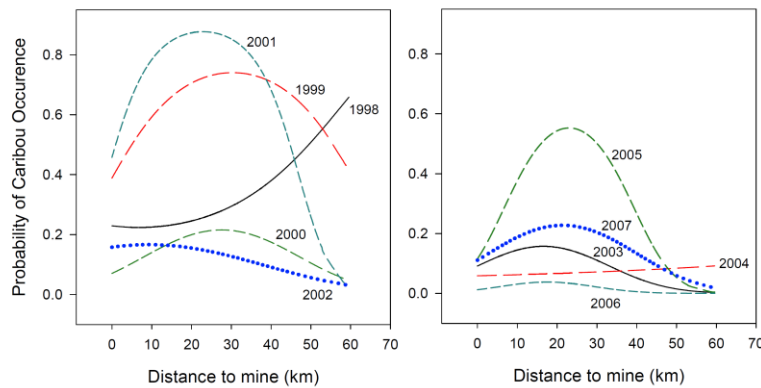


Figure 2: Zone of influence estimation using polynomial regression from a previous analysis conducted by Golder (Golder 2008).

2. Habitat selection not use is measured in the study

A point of confusion in the analysis is the difference between modelling of habitat use and selection as illustrated in the passage below (Golder 2020: p 18).

Theoretically, geometric principles (e.g., πr^2) predict that caribou use of habitat should be positively correlated with the area associated with increasing distance from development (Figure 6A). This is because the area available for use increases with distance from disturbance. Thus, evaluating caribou abundance (or caribou use) as a function of proximity to development alone is inherently biased due to the increasing availability of space. In a setting with

We note that when segments with 0 counts are included in the analysis then we are effectively modelling selection not use. The model uses information from a systematic sample of segments and therefore uses a sample of available habitat including habitat used/selected and not used/detected (0 count segments). It then uses information from presence/counts in segments to discern selection in segments where caribou were observed. In doing this any change in availability of habitat relative to distance from mine is considered and accounted for therefore minimizing any “*bias due to increasing availability of space*” (Golder 2020:p 18).

We do agree that the number of segments surveyed will increase relative to distance from mine. This issue is taken into account by the regression model as indicated by larger confidence interval widths of

predictions at closer distances to mine (due to lower sample sizes of segments). We also note that non-independence of adjacent segments can bias estimates which is one reason why Boulanger et al. (2012) developed generalized estimating equation methods to account for non-independence of adjacent segments.

3. The effect of distribution of habitat relative to the mine is accounted for by the analysis

The authors contend that the abundance of caribou in segments should increase at further distance from mine due to an increase in “preferred habitat” as illustrated in Golder 2020:Figure 6 (Figure 3, below), “because the area available for use increases with distance from disturbance” (p 18)..

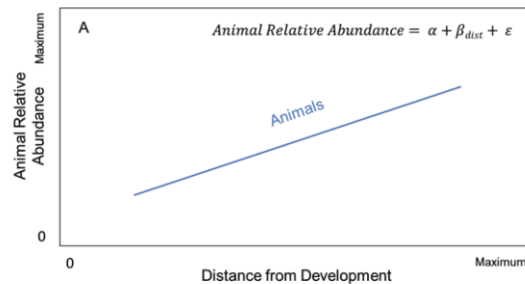


Figure 3: Figure 6 from the Golder (2020) analysis

We agree that if density is constant then the number of total number of animals will increase with distance from mine since the overall area of habitat increases (by a factor of πr^2 where r is distance from mine). We assume that Golder (2020) is referring to density rather than overall abundance in this figure given that it more directly corresponds to counts of caribou within the defined segment area that was used in the analysis. We note that if the proportional amount of preferred habitat in each aerial survey segment increases relative to distance from mine then perhaps density might increase also but using a habitat term in the regression model would account for this increase. A weak increase in preferred habitat relative to distance from mine might be suggested in Figure 13 of the Golder report, however, a full range of preferred habitat values exist across the range of distances from mine and therefore this variation should be accounted for in the base habitat model by inclusion of the preferred habitat term. As discussed later, a correlation analysis of distance from mine and preferred habitat is more appropriate than regression analysis for this comparison (on p. 24 of Golder (2000)). Regardless, it would be expected that if a habitat term is included in the regression model, predicted density (at a fixed habitat value) would plateau at some point relative to distance from mine if the mine had an effect. Unfortunately, linear regression as used in the Golder (2020) analysis (and in Golder 2020: Figure 6) will not detect any threshold changes in density relative to distance from mine.

The general methods used in this analysis are similar to a mine impact study (Weir et al. 2007) that observed change in caribou abundance summarized in concentric circles of equal area around a mine site. They then used linear regression to assess if the slope of abundance changed relative to distance from mine as a function of mine phase (pre-disturbance, construction, and operation phases). Significance of the slope of the regression line indicated an impact of the mine. Weir et al. (2007) found

that the slope of the regression line became significant once the mine was established and concluded that the mine was influencing abundance of caribou. There are some key differences between the study of Weir et al. (2007) and Golder (2020). First, Weir et al. (2007) did not statistically estimate ZOI, instead observing patterns of low abundance relative to the mine during different phases to indicate an approximate ZOI. Second, Weir et al. (2007) considered mine phase in their analyses as a means of assessing mine impact whereas Golder (2020) pooled all the data for all phases of mine development (as discussed later). Importantly, we note that using the criteria of Weir et al. (2007), a mine impact (statistically significant distance from mine term in the linear regression) is suggested by the results of the Golder (2020) study.

4. Issues with interpretation of model results

Golder (2020) compared the fit of various models that predict counts of caribou per segment with and without distance from mine terms and found model M2 with both distance from mine and preferred habitat as covariates most supported. We note that the linear term for this model (Golder 2020:Table 8) still is significant and more supported than a model without a distance term suggesting some sort of mine effect (as further discussed in Weir et al. 2007), however, as noted above, it is impossible to determine a ZOI given the way the analysis was conducted.

Golder (2020) then estimate caribou density at 0 and 16 km with the model predicting higher abundance per transect at further intervals (Table 9). The authors suggest that higher abundance of caribou at further distance from mine is due to increased amounts of preferred habitat rather than any effect of the mine and state *“these predictions reflect the increase of preferred habitat with increasing distance from mines”* (Golder 2020:p 32). This conclusion makes no sense given that preferred habitat was a term in model M2 which was used to generate the estimates of density. This term should account for differences in preferred habitat given that *“All Other Covariables Fixed at Their Mean Value”* (Golder 2020: Table 9 heading) for predictions. Basically, the analysis ignores that by fixing preferred habitat at mean values they are accounting for any directional trends in habitat with distance from mine (as also discussed in point 3).

5. The contention that ZOI only occurs if there is an interaction between habitat and distance from mine covariates

The authors contend that if a ZOI exists then the interaction between distance from mine and habitat should be significant as illustrated in Golder (2020) Figure 6C and as stated in the following passage in the conclusion (Golder 2020:p 33).

The habitat selection framework used in this study to detect a ZOI can be broadly applied for use with other statistical designs such as piece-wise (e.g., Boulanger et al. 2012) and conditional logistic regression used in resource selection functions (Manly et al. 2002; Johnson et al. 2005). This is because the interaction term functions in the same manner by testing for dependency between distance and habitat variables. Failure to test for an interaction results in a model that assumes animals are distributed in accordance to habitat quality, which is equivalent to assuming no ZOI. As well, not testing for an interaction only describes how animals are distributed across the landscape and provides no information on the underlying process for the observed distribution beyond the availability of habitat.

We suggest this is not the case. It is perfectly reasonable, as assumed in the majority of ZOI studies (Johnson et al. 2005, Johnson and Russell 2014, Plante et al. 2018, Flydal et al. 2019, Johnson et al. 2019) that variation in habitat quality/selection and the effect of disturbance (as modelled using a threshold-based ZOI approach) is additive and not interactive. The general approach taken in all these studies is to develop a base model that accounts for variation in habitat quality. Disturbance terms are then added to this base model to assess if habitat selection changes relative to distance from mine (at the estimated ZOI) with natural habitat selection accounted for in the base habitat model. If habitat selection and distribution with and without the mine are identical then the additive threshold ZOI terms **will not be significant**. Therefore the *“failure to test for an interaction term ... assumes no ZOI”* (Golder 2020: p 33) goes against all published ZOI studies. The critical difference between these published studies and the approach used in Golder (2020) is that a statistical method that estimates a ZOI is used rather than linear regression which does not estimate a ZOI.

Another way to consider ZOI models is that a statistical regression model essentially attempts to explain an observed pattern in the data with the least number of parameters. A ZOI pattern (Figure 1), of reduced selection near a mine area can be explained using an additive model with habitat and ZOI terms that estimates a threshold change in selection relative to distance from mine. An interaction model might be useful to explore nuances of ZOI, such as whether certain habitats are more likely to exhibit ZOI patterns, however, we suspect this approach would require independent and discrete habitat types (as opposed to a single habitat type in the Golder 2020 study). Given this, an interaction model would have reduced power to detect ZOI's, and the absence of an interaction term once again does not indicate absence of a ZOI.

6. Use of caribou density as a response variable

As stated above we also suggest that caribou density as opposed to presence/not detected as the response (y-axis) variable is problematic in that more factors than just habitat selection (or the effect of the mines) will affect density. Caribou are gregarious and caribou in a given group are not likely independent of each other as discussed in Boulanger et al. (2012). In other words, a larger group size might not really reflect higher habitat quality or greater selection for a given habitat patch/aerial survey segment. Probability of occurrence is likely more related to distribution and is not intended to link to changes in herd size. The amount of variation caused by using group size per segment is shown in Golder (2020) Figure 18 with group sizes up to 5,000 caribou observed per segment. From a statistical perspective, the model has to account for this large range of abundance (0 to 5,000 caribou) using just

habitat, distance from mine, and other terms. It is likely that the large groups are outliers therefore muddying any relationships between abundance and mine effects.

7. No consideration of mine phase of operation in the analysis

Previous analyses of ZOI have suggested that ZOI will vary yearly (Figure 2 from Golder (2008) and with mine phase (Boulanger et al. 2012). Boulanger et al. (2012) found that prior to 2003 when both mines were in full operation ZOIs were reduced or not detected compared to later years when both mines were in operation. From our understanding all the years of aerial survey (1998-2012) were pooled into the same analysis with one distance from mine term estimated for the entire range of data (Table 8 in Golder (2020)) and therefore the analysis is combining a large range of caribou distributions relative to mine activity including earlier years when mine impacts were likely reduced. Since one of the impact predictions guiding the Golder (2020) analyses was to determine whether the ZOI changes in relation to mine activity (Handley 2010), analyses considering development phase of both mines combined would have been beneficial. A factor term could be used to assess if year (or mine operation phase) does affect caribou distribution therefore accounting for this source of variation.

8. Pooling of all habitat types into a single subjective “preferred habitat” term.

We also question the summation of different Ecological Land Classification (ELC) classes into “preferred habitat”. As stated on Golder (2020) page 21 a number of different habitat types were summed together to define this category. Previous studies (Boulanger et al. 2012) have shown different relationships (as indicated in the slope terms of the regression) between esker, shrub, tundra, and other categories with some habitat classes varying seasonally (as indicated by interactions with NDVI). Therefore, we suggest that this classification only crudely describes actual caribou habitat selection and may be biasing the analyses.

9. Additional comments

Other comments are in point form:

1. We suggest the authors should use density rather than abundance when describing caribou counted in a segment. If density is used, then express density as caribou/km² or a similar unit. It is confusing to use abundance (which implies an unbounded count) if counts were based on a defined segment area which we assume they were. We also note that strip width did change from 500 to 600 m after 1998. If this was not addressed, higher counts in latter years would be influenced by changes in strip width.
2. We suggest the authors use a correlation rather than regression analysis to assess the relationship between distance from mine and preferred habitat (Golder 2020: Figure 13 and p. 24). A correlation analysis provides a test of association between distance from mine and preferred habitat in the context and the resulting correlation coefficient can be related to the amount of variance explained by the relationship between the two covariates. The use of regression, which is used to derive a numerical relationship between two covariates, is less relevant to the question being asked. We also suggest that only one segment is included per

survey in the analysis rather than all the data used (replicate transects conducted each year) if this has not already been done.

3. The authors contend that abundance will be more directly linked with demography of the herd. We suggest this connection will be very weak if evident at all given the variability in distribution of caribou relative to the mine. We suggest that any linkage of demography with counts is overshadowed by the challenge of using count as a response metric as discussed previously.
4. Replacing insect harassment with month number for models (Golder 2020: p 27) assumes similar insect harassment for all years surveyed as well as a linear relationship between caribou abundance and month which may not be related to insect harassment. This is questionable given variability in weather across different summers as well as variability in caribou abundance with month. It is not clear why this was done. In addition, insect harassment would presumably affect caribou aggregation and movements, but not necessarily caribou distribution at larger scales.
5. Predictions of abundance and the data should be given on a log scale (or link scale used in the negative binomial regression model) in Golder 2020: Figure 18 with confidence limits on predictions. As it stands it is impossible for readers to assess model predictions given that the prediction line is close to 0.
6. More details on model coefficients including standard errors and statistical tests of significance would help readers evaluate model results. Tests for influence of outlier data points (leverage scores) would help readers assess how well the model is accounting for the occasional large group sizes observed during surveys.
7. We suggest that the relationship of area of preferred habitat with distance from mine preferred habitat area (Golder 2020:Figure 9), and number of random points with distance from mine (Figure 10) are not directly applicable to the analysis since all measurement were standardized by transect segment area.
8. We note that there are potential issues with analysis of segment counts due to non-independence of segments. There are methods to deal with this issue using random effects modelling or generalized estimating equations (Boulanger et al. 2012).

Conclusion

Our overall conclusion is that this study is flawed in that the authors appear to be testing for a ZOI but do not use a method that can provide an estimate of the ZOI. Golder (2020) appears to ignore the significant distance from mine term in their regression analysis that indicates a mine effect as suggested by a similar study (Weir et al. 2007). The report as written does not clearly differentiate habitat selection and use, as well as abundance versus density, which further makes it difficult to interpret model results. We suggest that authors consider the use of established methods to estimate ZOI, some of which they used in previous analyses (Golder 2008) rather than relying on methods that do not provide answers to the stated analysis objectives.

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APPENDIX C

Caribou Behavioural Summary

Date	Time	Distance to Mine Component (km)	UTM Easting	UTM Northing	Group Size	Sample Composition
2020-02-06	14:30	0.07	535870	7151670	1	Unknown
2020-03-16	12:23	0.86	532076	7149067	150	Males / Females
2020-03-16	12:23	1.26	532253	7147912	50	Males / Females
2020-04-05	15:45	0.04	534754	7153229	1	Males
2020-04-06	13:40	0.01	534431	7153168	1	Females
2020-04-06	15:37	0.10	534670	7150394	6	Males / Females
2020-04-11	9:58	0.17	534960	7151390	6	Males / Females
2020-04-12	14:35	4.43	541917	7153316	10	Males / Females
2020-04-12	13:48	6.53	542533	7157449	10	Males / Females
2020-04-13	9:17	0.13	534326	7149779	6	Males / Females
2020-04-13	14:37	10.30	533308	7138495	10	Males / Females
2020-04-15	8:55	9.18	542717	7144807	15	Males / Females
2020-04-15	8:58	1.12	537251	7150742	31	Males / Females
2020-04-18	10:02	5.86	542807	7150414	7	Males / Females
2020-04-19	7:47	1.01	535873	7150616	5	Males
2020-04-22	16:58	0.10	535887	7151586	13	Males / Females
2020-04-25	14:35	0.49	537400	7151927	16	Males / Females
2020-04-26	14:18	0.06	535895	7151643	15	Males / Females
2020-04-27	13:13	0.10	535667	7151714	16	Males / Females
2020-05-03	9:25	0.00	533800	7150381	5	Males / Females
2020-05-04	17:05	0.88	536259	7150703	17	Males / Females
2020-05-08	8:12	0.11	534444	7150326	22	Males / Females
2020-05-09	6:00	0.04	533255	7149855	23	Males / Females
2020-05-14	14:45	0.02	532582	7151286	16	Males / Females
2020-05-21	11:22	0.06	532367	7151213	4	Males / Females
2020-05-25	11:13	0.02	531915	7150873	7	Males / Females
2020-05-29	9:10	0.00	532604	7150735	4	Males / Females
2020-06-04	10:39	0.06	532658	7151139	17	Males / Females
2020-06-07	12:48	0.18	535740	7151610	8	Males / Females
2020-06-08	11:05	0.32	535273	7151424	8	Males / Females
2020-06-20	8:35	0.00	532440	7152792	5	Males / Females
2020-07-13	10:10	0.04	532407	7151219	1	Males
2020-11-13	15:14	0.76	536030	7150837	3	Females

APPENDIX D

**Wildlife Mortality Incident Reports
2020**

Wildlife Report - 2020

2020-06-17 E21 Sump near SCRP

Complete

Score	100%	Failed items	0	Actions	0
-------	------	--------------	---	---------	---

Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) 2020-06-17 E21 Sump near SCRP

Document No. WildlifeReport000054

Completed On

17th Jun, 2020

Audit

100%

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Mortality

Wildlife Mortality

Enter Initial Time of Report

17th Jun, 2020 10:30 AM MDT

Department/Individual Who Reported Mortality:

Pit Dewatering

Environment On Scene

Environment at Call-out Location

17th Jun, 2020 11:00 AM MDT

Location

E21 sump well shack

Animal Type

Other

Description of Animal/Scene

Arctic Hare fell into covered well and drowned. Animal was fished out by dewatering and placed in bag for Environment to remove.

Photo of Scene



Photo 1



Photo 2



Photo 3



Photo 4

Estimated Time of Death

Days

Environment Off Scene

End of Environment Call-out

17th Jun, 2020 12:00 PM MDT

Final Location of Carcass

placed on tundra near the Pond 7 dam.

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

Gord Cumming

17th Jun, 2020 4:16 PM MDT

Appendix



Photo 1



Photo 2



Photo 3



Photo 4

Wildlife Report - 2020

Arctice Hare 2020-08-02 Truck Shop

Complete

Score	100%	Failed items	0	Actions	0
-------	------	--------------	---	---------	---

Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Arctice Hare 2020-08-02 Truck Shop

Document No.

WildlifeReport000067

Completed On

2nd Aug, 2020

Audit

100%

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Mortality

Wildlife Mortality

Enter Initial Time of Report

2nd Aug, 2020 1:00 PM MDT

Department/Individual Who Reported Mortality:

Truck Shop

Environment On Scene

Environment at Call-out Location

2nd Aug, 2020 1:00 PM MDT

Location

At base of arctic corridor foundations near corner of truck shop

Animal Type

Other

Description of Animal/Scene

Arctic hare passed away in hollow between arctic corridor support pillars. no visible method of injury. Likely natural causes.

Photo of Scene

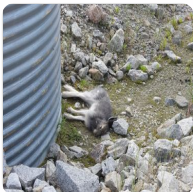


Photo 1



Photo 2

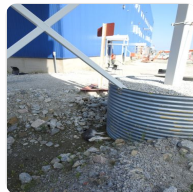


Photo 3



Photo 4

Estimated Time of Death

Hours

Environment Off Scene

End of Environment Call-out

2nd Aug, 2020 1:00 PM MDT

Final Location of Carcass

On Tundra to the South of South Country Rock Pile.

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

3rd Aug, 2020 11:19 PM MDT

Appendix



Photo 1



Photo 2



Photo 3



Photo 4

Wildlife Report - 2020

Caribou - 2020-04-11

Complete

Score	100%	Failed items	0	Actions	0
-------	------	--------------	---	---------	---

Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Caribou - 2020-04-11

Document No. WildlifeReport000100

Completed On

11th Apr, 2020

Audit

100%

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Mortality

Wildlife Mortality

Enter Initial Time of Report

11th Apr, 2020 8:30 AM MDT

Department/Individual Who Reported Mortality:

Environment.

Environment On Scene

Environment at Call-out Location

11th Apr, 2020 10:30 AM MDT

Location

South side of North Inlet

Animal Type

Caribou

Description of Animal/Scene

The injured caribou that has been on site over the past week euthanized by ENR wildlife officers.

08:30 Environment and Natural Resources (ENR) officer Lee Mandeville contacted DDMI environment to notify them of intent to come to site to euthanize the injured caribou.

10:30 ENR arrives in Great Slave Helicopter, touches down in North Inlet and euthanizes, then processes caribou carcass and removes remains.

Photo of Scene

Estimated Time of Death

Hours

Environment Off Scene

End of Environment Call-out

11th Apr, 2020 12:00 PM MDT

Final Location of Carcass

removed by ENR

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

2nd Jan, 2021 4:22 PM MST

Wildlife Report - 2020



Fox - 2020-05-02

Complete

Inspection score	Failed items	Created actions
100%	0	0
Audit Title (Animal - yyyy-mm-dd - Location) Fox - 2020-05-02		
Document No. WildlifeReport000045		
📅 3rd May, 2020		

Type of Wildlife Report	General sighting / Other
Report Type	Mortality

Wildlife Mortality

Enter Initial Time of Report 📅 2nd May, 2020 ⌚ 3:50 PM MDT	
Department/Individual Who Reported Mortality: Site Services	
Environment at Call-out Location 📅 1st May, 2020 ⌚ 4:00 PM MDT	
Location In seacan 18 between South Camp trailers and H dorm.	
Animal Type	Fox
Description of Animal/Scene Animal appeared to have laid down and died on a bed of material at the back end of an open seacan. No obvious signs of damage, no visible feces inside the seacan, not likely trapped. Carcass still intact, though solid.	
Photo of Scene	
- Photos	
	
Photo 1	Photo 2
Estimated Time of Death	Days
End of Environment Call-out 📅 5th Feb, 2020 ⌚ 4:15 PM MST	
Final Location of Carcass Stored double bagged in Environment freezer awaiting autopsy	

Closure & Sign-off

Wildlife Report Complete	On
--------------------------	----

Signature

Gordon Cumming

3rd May, 2020 6:20 PM MDT

Media summary

2 Media



Photo 1



Photo 2

Wildlife Report - 2020

Grizzly - 2020-09-14 - MAC

Complete

Score	0%	Failed items	0	Actions	0
-------	----	--------------	---	---------	---

Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly - 2020-09-14 - MAC

Document No.

WildlifeReport000076

Completed On

15th Sep, 2020

Audit

0%

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Mortality

Wildlife Mortality

Enter Initial Time of Report

14th Sep, 2020 4:30 PM MDT

Department/Individual Who Reported Mortality:

Environment

Environment On Scene

Environment at Call-out Location

14th Sep, 2020 3:00 PM MDT

Location

Tundra near Raw Water Uptake

Animal Type

Grizzly Bear

Description of Animal/Scene

Sow that had learned how to open doors and entered MAC two days in a row. Also its yearling cub. Approval obtained from ENR prior to operation.

Photo of Scene



Photo 1

Estimated Time of Death

Hours

Environment Off Scene

End of Environment Call-out

15th Sep, 2020 3:30 PM MDT

Final Location of Carcass

Shipped to ENR for necropsy

Closure & Sign-off

0%

Wildlife Report Complete

Appendix



Photo 1

Wildlife Report - 2020

Raven 2020-06-12 Pond 3

Complete

Score	100%	Failed items	0	Actions	0
-------	------	--------------	---	---------	---

Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Raven 2020-06-12 Pond 3

Document No.

WildlifeReport000053

Completed On

12th Jun, 2020

Audit

100%

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Mortality

Wildlife Mortality

Enter Initial Time of Report

6th Dec, 2020 3:27 PM MST

Department/Individual Who Reported Mortality:

"Mouse" - Electrician @ powerhouse

Environment On Scene

Environment at Call-out Location

6th Dec, 2020 4:30 PM MST

Location

At base of power pole near Pond 3

Animal Type

Other

Description of Animal/Scene

2 Dead Ravens at base of power pole. Death caused by electrocution.

Photo of Scene

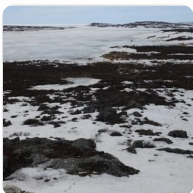


Photo 1



Photo 2



Photo 3

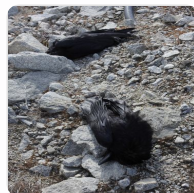


Photo 4



Photo 5

Estimated Time of Death

Hours

Environment Off Scene

End of Environment Call-out

6th Dec, 2020 4:45 PM MST

Final Location of Carcass

Placed on tundra West of Pond 2.

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

Gordon Cumming

12th Jun, 2020 6:11 PM MDT

Appendix



Photo 1



Photo 2



Photo 3

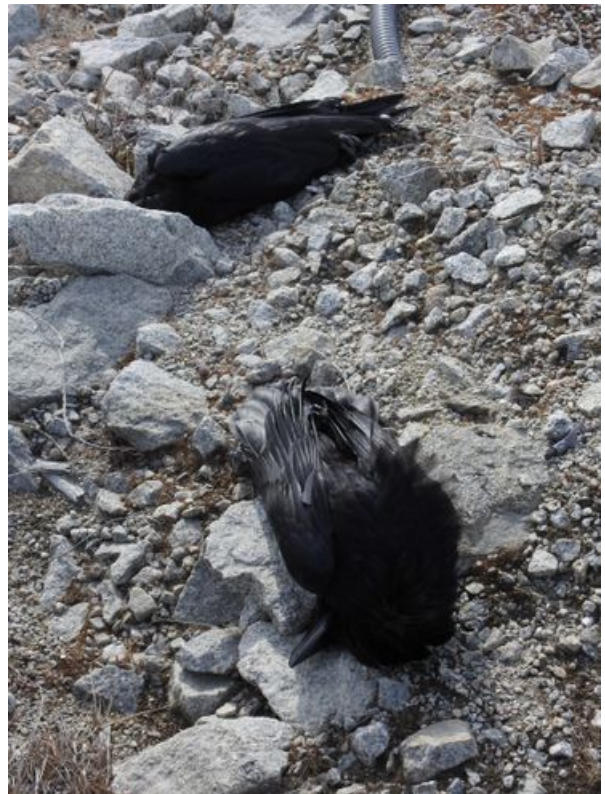


Photo 4



Photo 5

Wildlife Report - 2020

Rough-legged Hawk - 2020-09-17 - Lakeshore Blvd

Complete

Score	100%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Rough-legged Hawk - 2020-09-17 -
Lakeshore Blvd

Document No.

WildlifeReport000077

Completed On

20th Sep, 2020

Audit

100%

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Mortality

Wildlife Mortality

Enter Initial Time of Report

17th Sep, 2020 5:00 AM MDT

Department/Individual Who Reported Mortality:

Jimmy Larkin - Surface Mining Operations

Environment On Scene

Environment at Call-out Location

17th Sep, 2020 5:30 AM MDT

Location

Jimmy Larkin's office

Animal Type

Other

Description of Animal/Scene

Rough legged hawk was found at night on Lakeshore Blvd by Jimmy Larkin. RLH was barely responsive. It was brought back to the office in the hopes that it would recover in the warmth. It died en route.

Photo of Scene



Photo 1

Estimated Time of Death

Hours

Environment Off Scene

End of Environment Call-out

17th Sep, 2020 5:30 AM MDT

Final Location of Carcass

Freezer in Environment Sulphur Lab

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

Mark Nelson

20th Sep, 2020 5:19 PM MDT

Appendix



Photo 1

Wildlife Report - 2020

Sparrow-2020-09-06-ERT Hall

Complete

Score	100%	Failed items	0	Actions	0
-------	------	--------------	---	---------	---

Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Sparrow-2020-09-06-ERT Hall

Document No. WildlifeReport000074

Completed On

6th Sep, 2020

Audit

100%

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Mortality

Wildlife Mortality

Enter Initial Time of Report

6th Sep, 2020 9:00 AM MDT

Department/Individual Who Reported Mortality:

Dave Arthur - ERT

Environment On Scene

Environment at Call-out Location

6th Sep, 2020 9:10 AM MDT

Location

ERT Hall

Animal Type

Other

Description of Animal/Scene

Single sparrow flew into ERT hall through partly opened overhead door and was killed when it struck a working ceiling fan.

Photo of Scene

Estimated Time of Death

Hours

Environment Off Scene

End of Environment Call-out

6th Sep, 2020 9:15 AM MDT

Final Location of Carcass

Environment freezer

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

Brett Potter

6th Sep, 2020 9:43 AM MDT

APPENDIX E

General Wildlife Reports

Wildlife Report - 2020

Grizzly - 2020-05-06 - PKC Muster

Complete

Score	0.23%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-05-06 - PKC Muster

Document No. WildlifeReport000344

Completed On

6th May, 2020

Audit

0.23%

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0%

Enter Initial Time of Wildlife Sighting

6th May, 2020 12:21 PM MDT

Department/Individual Who Reported Wildlife:

Geotech

Environment On Scene

Environment at Call-out Location

6th May, 2020 1:00 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single grizzly

Photo (If Possible):

Chronological Events

12:20 Single grizzly spotted at PKC Muster, issued bear alert
13:00 single grizzly called in crossing North Haul Road
13:05 ENV at Pond 5, no visual of bear
13:15 ENV at PKC Muster, no visual of bear
13:30 ENV spots bear above Pond 5 grazing

Movement Map (Import NotePlus Site Map)

Deterrent Count

0%

Truck

0

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

0

From 0 to 40

C/F Pen Whistle

0

From 0 to 40

12GA Bear Banger

0

From 0 to 40

12GA Explosive

0

From 0 to 40

12GA B.B. Marker

0
From 0 to 40

12GA Rubber Bullet

0
From 0 to 40

12GA Slug

0
From 0 to 40

Helicopter

0
From 0 to 40

Other

0
From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out

6th May, 2020 2:30 PM MDT

Final Location of Wildlife

Between Pond 5 and 1

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature



Shelby Skinner

7th May, 2020 6:30 PM MDT

Wildlife Report - 2020

Grizzly - 2020-05-11 - Shallow Bays

Complete

Score	0.23%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-05-11 - Shallow Bays

Document No. WildlifeReport000347

Completed On

11th May, 2020

Audit

0.23%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0%

Enter Initial Time of Wildlife Sighting

11th May, 2020 9:41 AM MDT

Department/Individual Who Reported Wildlife:

Environment

Environment On Scene

Environment at Call-out Location

11th May, 2020 9:41 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Sow and 2 cubs

Photo (If Possible):

Chronological Events

0940 sow and 2 cubs spotted in shallow bays while bear monitoring for RTX

1010 bears cross south haul road towards pond 1

1015 bears resting on rock pile slope behind pond 1

1145 bears crawl up rock wall by Pond 1 up on North Haul Road.

Movement Map (Import NotePlus Site Map)

Deterrent Count

0%

Truck

0

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

0

From 0 to 40

C/F Pen Whistle

0

From 0 to 40

12GA Bear Banger

0

From 0 to 40

12GA Explosive	0
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	0
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	0
	From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out 11th May, 2020 4:07 PM MDT

Final Location of Wildlife

Airport

Closure & Sign-off 100%

Wildlife Report Complete On

Signature



Shelby Skinner
16th May, 2020 4:08 PM MDT

Wildlife Report - 2020

Grizzly - 2020-06-08 Resident by NWRA

Complete

Score	100%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly - 2020-06-08 Resident by
NWRA

Document No.

WildlifeReport000052

Completed On

11th Jun, 2020

Audit

100%

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Sighting

General Wildlife Sighting

Animal Type

Grizzly Bear

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

Resident blonde Grizzly

Photo (If Possible)

Enter Initial Time of Wildlife Sighting

8th Jun, 2020 4:14 PM MDT

Department/Individual Who Reported Wildlife:

Site Services

Environment On Scene

Environment at Call-out Location

8th Jun, 2020 4:28 PM MDT

Chronological Events

16:14 Bear called in at SCAP heading towards Underground mine dry

16:18 Bear called in at Underground Mine Dry

16:28 ENV arrives, Bear is in shallow bays East of North Winter Road Approach (NWRA), eventually lost visual on him.

22:00 Bear called in at NWRA, ENV mobilizes

23:30 Bear beds down on north side of shallow bays. ENV leaves

Movement Map (Import NotePlus Site Map)

Environment Off Scene

End of Environment Call-out

8th Jun, 2020 11:30 PM MDT

Final Location of Wildlife

North side of Shallow Bays

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

Gordon Cumming

12th Jun, 2020 6:27 AM MDT

Wildlife Report - 2020

Grizzly- 2020-07-20 - C Portal

Complete

Score	100%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly- 2020-07-20 - C Portal

Document No. WildlifeReport000362

Completed On

20th Jul, 2020

Audit

100%

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Sighting

General Wildlife Sighting

Animal Type

Grizzly Bear

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

Single blonde grizzly

Photo (If Possible)

Enter Initial Time of Wildlife Sighting

19th Jul, 2020 11:50 PM MDT

Department/Individual Who Reported Wildlife:

UG

Environment On Scene

Environment at Call-out Location

20th Jul, 2020 12:10 AM MDT

Chronological Events

2350 UG called in single grizzly near C Portal, issued bear alert.
0010 ENV looking along Veggie Plot road, no sign of grizzly.
0020 ENV at North Winter Road Approach, spot bear on tundra grazing.
0025 Waiting for bear to cross Winter Road towards A418 Pit.
0028 Bear crosses road and is marking its scent on tundra while grazing.
0037 Bear rubbing up against utilidor
1600 Bear called in at North Inlet.
1830 Bear called in chasing a caribou in North Inlet. ENV went to look and only caribou present.

Movement Map (Import NotePlus Site Map)

Environment Off Scene

End of Environment Call-out

20th Jul, 2020 12:40 AM MDT

Final Location of Wildlife

East Shallow Bay

Closure & Sign-off

100%

Signature



Shelby Skinner
21st Jul, 2020 5:56 PM MDT

Wildlife Report - 2020

Grizzly - 2020-08-12 - A21

Complete

Score	100%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly - 2020-08-12 - A21

Document No.

WildlifeReport000071

Completed On

12th Aug, 2020

Audit

100%

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Sighting

General Wildlife Sighting

Animal Type

Grizzly Bear

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

Probably the single blonde grizzly with the dark stripe on rump and dark patches. photo taken 2 days before in the north inlet.

Photo (If Possible)



Photo 1

Enter Initial Time of Wildlife Sighting

12th Aug, 2020 10:55 AM MDT

Department/Individual Who Reported Wildlife:

Surface Mining - seen on cameras

Environment On Scene

Environment at Call-out Location

12th Aug, 2020 12:15 PM MDT

Chronological Events

10:55 surface mining calls environment with sighting of bear sniffing drill DRP 003 in A21 zone 3 maintenance area. Environment makes announcement

11:30 Surface mining updated environment on position of bear. It was spotted at A21 old JJM Laydown.

12:15 Environment able to make it to A21, could not find bear in the area.

Movement Map (Import NotePlus Site Map)

Environment Off Scene

End of Environment Call-out

12th Aug, 2020 12:30 PM MDT

Final Location of Wildlife

Unknown

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

12th Aug, 2020 5:47 PM MDT

Appendix



Photo 1

Wildlife Report - 2020

Grizzly - 2020-08-16 - Shallow Bays

Complete

Score	100%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-08-16 - Shallow Bays

Document No. WildlifeReport000366

Completed On

16th Aug, 2020

Audit

100%

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Sighting

General Wildlife Sighting

Animal Type

Grizzly Bear

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

Blonde with dark stripe

Photo (If Possible)

Enter Initial Time of Wildlife Sighting

16th Aug, 2020 6:32 AM MDT

Department/Individual Who Reported Wildlife:

Site Services

Environment On Scene

Environment at Call-out Location

16th Aug, 2020 7:50 AM MDT

Chronological Events

06:32 single Grizzly called in at Shallow Bays near Pond 1

07:25 single Grizzly called in at Pond 1

07:50 ENV on scene. Single grizzly grazing in a Pond 1

8:05 bear crossed South Haul Road back to Shallow Bays

9:15 ENV leaves bear in Shallow Bays

9:50 Bear spotted walking SW near PKC Barge Road

9:54 Bear leaves PKC toward windfarm

Movement Map (Import NotePlus Site Map)

Environment Off Scene

End of Environment Call-out

16th Aug, 2020 9:15 AM MDT

Final Location of Wildlife

Windfarm

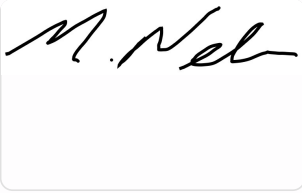
Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

A handwritten signature in black ink, appearing to read "M. Nel", enclosed in a thin black rectangular border.

16th Aug, 2020 12:19 PM MDT

Wildlife Report - 2020

Grizzly- 2020-09-11 - PKC

Complete

Score	0.25%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly- 2020-09-11 - PKC

Document No.

WildlifeReport000059

Completed On

11th Sep, 2020

Audit

0.25%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0%

Enter Initial Time of Wildlife Sighting

11th Sep, 2020 8:06 PM MDT

Department/Individual Who Reported Wildlife:

PKC

Environment On Scene

Environment at Call-out Location

11th Sep, 2020 8:30 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Photo (If Possible):

Chronological Events

2000 Single grizzly called in S PKC heading towards Windfarm, issued bear alert

2015 Single grizzly headed towards Test Piles, updated bear alert

2030 called in crossing Haul Road into Met Con yard, updated bear alert

2100 Bear spots leaving A21 Pit Shop headed for Lakeshore Boulevard

2105 ENV spots bear going over berm into Tundra off of Lakeshore. Too dark and lose sight of it.

2115 Bear spotted running down LAkeshore, goes over berm on Tundra side and swims across A21 bay, lose sight.

2130 ENV out, too dark to see

Movement Map (Import NotePlus Site Map)

Deterrent Count

0%

Truck

0

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

0

From 0 to 40

C/F Pen Whistle

0

From 0 to 40

12GA Explosive	0
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	0
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	0
	From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out 11th Sep, 2020 9:30 PM MDT

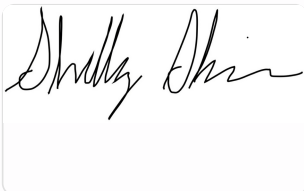
Final Location of Wildlife

Lakeshore Boulevard

Closure & Sign-off 100%

Wildlife Report Complete On

Signature



Shelby Skinner
13th Sep, 2020 9:30 AM MDT

Wildlife Report - 2020

Grizzly - 2020-09-22 - Airport

Complete

Score	100%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly - 2020-09-22 - Airport

Document No.

WildlifeReport000079

Completed On

24th Sep, 2020

Audit

100%

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Sighting

General Wildlife Sighting

Animal Type

Grizzly Bear

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

Darker Grizzly; large, dark brown - dibbed "Cocoa" by the ENV department

Photo (If Possible)



Photo 1

Enter Initial Time of Wildlife Sighting

22nd Sep, 2020 10:15 AM MDT

Department/Individual Who Reported Wildlife:

RTX

Environment On Scene

Environment at Call-out Location

22nd Sep, 2020 10:45 AM MDT

Chronological Events

10:15 - ENV receives call of bear at airport, wandering near helipad and apron - notifies personnel working in the area

10:45 - ENV arrives at airport and locates bear N of the Helipad, headed E toward the NIWTP

10:50 - ENV loses eyes on bear in fog, bear was headed in good area and away from personnel working in the area, ENV leaves

Movement Map (Import NotePlus Site Map)

Environment Off Scene

End of Environment Call-out

22nd Sep, 2020 10:50 AM MDT

Final Location of Wildlife

North Inlet

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

Atikin Hehn

24th Sep, 2020 9:39 AM MDT

Appendix



Photo 1

Wildlife Report - 2020

Grizzly- 2020-10-25 - ROM - South Tank Farm

Complete

Score	100%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly- 2020-10-25 - ROM - South
Tank Farm

Document No.

WildlifeReport000374

Completed On

26th Oct, 2020

Audit

100%

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Sighting

General Wildlife Sighting

Animal Type

Grizzly Bear

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

Single adult

Photo (If Possible)

Enter Initial Time of Wildlife Sighting

25th Oct, 2020 10:24 PM MDT

Department/Individual Who Reported Wildlife:

Surface Mining

Environment On Scene

Environment at Call-out Location

25th Oct, 2020 10:51 PM MDT

Chronological Events

1024 Environment receives report of a single grizzly near the south tanks farm; had previously been spotted on ROM hill

1051 Environment finds grizzly tracks leading from the south tank farm toward the steel yard. Tracks are somewhat degraded due to snow and wind

1055 Environment begins thorough scans of MAC, steel yard, winter road staging area and Pond 11

1127 Environment ends call; bear not spotted

Movement Map (Import NotePlus Site Map)

Environment Off Scene

End of Environment Call-out

25th Oct, 2020 11:27 PM MDT

Final Location of Wildlife

Unknown

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

Brett Potter

26th Oct, 2020 7:49 AM MDT

Wildlife Report - 2020

Caribou - 2020-03-31

Complete


Inspection score	Failed items	Created actions
100%	0	0
Audit Title (Animal - yyyy-mm-dd - Location) Caribou - 2020-03-31		
Document No. WildlifeReport000341		
📅 31st Mar, 2020		

Type of Wildlife Report	General sighting / Other
Report Type	Sighting

General Wildlife Sighting

Animal Type	Caribou
Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.) Single caribou with injured front leg	
Photo (If Possible) Unanswered	
Enter Initial Time of Wildlife Sighting 📅 31st Mar, 2020 ⌚ 10:26 AM MDT	
Department/Individual Who Reported Wildlife: Darcy - Electrical	
Environment at Call-out Location 📅 31st Mar, 2020 ⌚ 11:00 AM MDT	

Chronological Events

<p>10:26 Darcy called in injured caribou South of the airport runway 11:00 ENV at the airport with no visual of caribou. Drove along runway and saw where caribou came up from the tundra onto the runway. Left airport. 11:15 ENV has visual of caribou heading south from runway towards North Inlet. Caribou is limping and barely putting any weight on front left leg. 11:30 Caribou continues walking towards airport road, walks up along pipeline. ENV leaves.</p>
Movement Map (Import NotePlus Site Map)
<p>– Photos</p>  <p>Photo 1</p>
End of Environment Call-out 📅 31st Mar, 2020 ⌚ 12:00 PM MDT
Final Location of Wildlife North Inlet Pipeline

Closure & Sign-off

Wildlife Report Complete	On
--------------------------	----

Signature

A handwritten signature in black ink, reading "Shelby Skinner", enclosed in a rounded rectangular box.

Shelby Skinner

2nd Apr, 2020 5:51 PM MDT

Media summary

1 Photos



Photo 1

Wildlife Report - 2020


Caribou - 2020-04-05 - North Inlet

Complete

Inspection score	Failed items	Created actions
100%	0	0
Audit Title (Animal - yyyy-mm-dd - Location) Caribou - 2020-04-05 - North Inlet		
Document No. WildlifeReport000342		
📅 5th Apr, 2020		

Type of Wildlife Report	General sighting / Other
Report Type	Sighting

General Wildlife Sighting

Animal Type	Caribou
Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.) Single caribou with injured left leg	
Photo (If Possible)	
<p>– Photos</p>  <p>Photo 1</p>	
Enter Initial Time of Wildlife Sighting 📅 5th Apr, 2020 ⌚ 3:15 PM MDT	
Department/Individual Who Reported Wildlife: RTX	
Environment at Call-out Location 📅 5th Apr, 2020 ⌚ 3:45 PM MDT	

Chronological Events

<p>15:15 ENV received call of single caribou on the tundra in North Inlet 15:30 ENV on airport road but no visual of caribou 15:45 ENV has eyes on caribou lying down on tundra, unsure if this is the injured caribou. 16:00 Caribou gets up and is not putting any weight on front left leg, beds down agin but struggles getting down. 16:08 LV drove by, caribou did not react. 16:26 ENV out</p>
<p>Movement Map (Import NotePlus Site Map) Unanswered</p>
<p>End of Environment Call-out 📅 5th Apr, 2020 ⌚ 4:26 PM MDT</p>
<p>Final Location of Wildlife North Inlet</p>

Closure & Sign-off

Signature

A handwritten signature in black ink that reads "Shelby Skinner". The signature is written in a cursive style and is contained within a rounded rectangular box.

Shelby Skinner

5th Apr, 2020 4:27 PM MDT

Media summary

1 Media



Photo 1

Wildlife Report - 2020

Caribou - 2020-04-06 - North Inlet

Complete

Inspection score	Failed items	Created actions
100%	0	0
Audit Title (Animal - yyyy-mm-dd - Location) Caribou - 2020-04-06 - North Inlet		
Document No. WildlifeReport000343		
📅 6th Apr, 2020		

Type of Wildlife Report	General sighting / Other
Report Type	Sighting


General Wildlife Sighting

Animal Type	Caribou
Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.) Single injured caribou	
Photo (If Possible) Unanswered	
Enter Initial Time of Wildlife Sighting 📅 6th Apr, 2020 ⌚ 1:39 PM MDT	
Department/Individual Who Reported Wildlife: Environment	
Environment at Call-out Location 📅 6th Apr, 2020 ⌚ 1:41 PM MDT	

Chronological Events

13:40 ENV has eyes on caribou lying down on tundra in North Inlet 13:53 Bus drove by on airport road and there was no reaction from caribou 13:56 Caribou lifted its head.
Movement Map (Import NotePlus Site Map) Unanswered
End of Environment Call-out 📅 6th Apr, 2020 ⌚ 2:05 PM MDT
Final Location of Wildlife North Inlet

Closure & Sign-off

Wildlife Report Complete	On
Signature  Shelby Skinner 6th Apr, 2020 4:59 PM MDT	

Wildlife Report - 2020

Caribou - 2020-07-09 - South Haul Road

Complete

Score	100%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Caribou - 2020-07-09 - South Haul Road

Document No.

WildlifeReport000360

Completed On

10th Jul, 2020

Wildlife Report

Type of Wildlife Report	General sighting / Other
Report Type	Sighting

General Wildlife Sighting

Animal Type	Caribou
Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)	Single caribou
Photo (If Possible)	
Enter Initial Time of Wildlife Sighting	10th Jul, 2020 12:00 AM MDT
Department/Individual Who Reported Wildlife:	Edward - Surface Mining

Environment On Scene

Environment at Call-out Location	10th Jul, 2020 12:15 AM MDT
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Chronological Events

0030 Caribou reported on South Haul Road heading towards Backfill, issued wildlife alert.
 0045 ENV sees caribou and follows behind into Pond 1 and Backfill. Turn off head lights to make caribou walk past truck and out of Backfill Plant.
 0100 Caribou walks along South Haul Road towards Pond 5. ENV holds up traffic while Caribou finds a way down into Shallow Bays. Caribou grazing in Shallow Bays. ENV leaves.
 0130 Caribou called in at PKC Muster Station, update wildlife alert.
 0145 Caribou called in on East Dam PKC heading towards North Country Rock Pile Ramp. No visual and no more calls about caribou. ENV leaves

Movement Map (Import NotePlus Site Map)



Photo 1

Environment Off Scene

End of Environment Call-out

10th Jul, 2020 2:00 AM MDT

Final Location of Wildlife

PKC

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature



Shelby Skinner

10th Jul, 2020 11:58 PM MDT

Appendix



Photo 1

Wildlife Report - 2020

Caribou -2020-07-26 - PKC LV Road

Complete

Score	100%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Caribou -2020-07-26 - PKC LV Road

Document No. WildlifeReport000365

Completed On

26th Jul, 2020

Wildlife Report

Type of Wildlife Report	General sighting / Other
Report Type	Sighting

General Wildlife Sighting

Animal Type	Caribou
-------------	---------

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

2 Caribou, 1 male for sure

Photo (If Possible)



Photo 1



Photo 2

Enter Initial Time of Wildlife Sighting	26th Jul, 2020 8:36 PM MDT
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Department/Individual Who Reported Wildlife:

Shelby

Environment On Scene

Environment at Call-out Location	26th Jul, 2020 8:36 PM MDT
----------------------------------	----------------------------

Chronological Events

- 2036 ENV spot d caribou walking down PKC LV access road, issued alert.
- 2105 One Caribou called in walking up to HME Fueling area
- 2110 ENV spots Caribou in Fueling area, Caribou walks down towards Met Con. Other caribou called in walking up South Country Rock Pile
- 2115 Caribou walked to NE corner and stopped. Caribou itching and bothered by bugs but staying put
- 2139 Caribou still standing in the same area
- 2152 Caribou grazing in SE corner of Met Con
- 2230 Caribou called in back at refuelling bay. No visual when ENV arrived.

Movement Map (Import NotePlus Site Map)



Photo 3

Environment Off Scene

End of Environment Call-out

26th Jul, 2020 10:30 PM MDT

Final Location of Wildlife

Unknown

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

Shelby Skinner

27th Jul, 2020 1:40 PM MDT

Appendix



Photo 1



Photo 2



Photo 3

Wildlife Report - 2020

Caribou - 2020-07-30 - Emulsion Tundra

Complete

Score	100%	Failed items	0	Actions	0
-------	------	--------------	---	---------	---

Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Caribou - 2020-07-30 - Emulsion Tundra

Document No. WildlifeReport000095

Completed On

1st Aug, 2020

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Sighting

General Wildlife Sighting

Animal Type

Caribou

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

Dark brown coat, velveted antlers, patchy fur. Seen on and around site for several days

Photo (If Possible)



Photo 1

Enter Initial Time of Wildlife Sighting

30th Jul, 2020 6:30 AM MDT

Department/Individual Who Reported Wildlife:

Western Explosives

Environment On Scene

Environment at Call-out Location

1st Jan, 2021 7:30 AM MST

Chronological Events

06:30 Caribou reported on Ammonium Nitrate (AN) road, headed toward the Processed Kimberlite Containment (PKC) facility. Environment (ENV) engaged with Grizzly monitoring in preparation for relocation this day, could not move to locate caribou.

06:40 Caribou reported climbing South PKC wall. ENV moves to area but cannot locate caribou.

07:30 ENV monitoring bears on tundra between Emulsion Plant and South Country Rock Pile (SCRIP). Caribou enters the area, becomes aware of bears in area, alternates between running towards and away from bears. Seems confused about what to do.

07:40 Caribou disappears from area, ENV continues monitoring bears for relocation.

Movement Map (Import NotePlus Site Map)

Environment Off Scene

End of Environment Call-out

30th Jul, 2020 8:00 AM MDT

Final Location of Wildlife

Tundra near Emulsion Plant.

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

2nd Jan, 2021 6:56 AM MST

Appendix

Appendix



Photo 1

Wildlife Report - 2020

Caribou - 2020-08-02 - A21 Haul Road

Complete

Score	100%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Caribou - 2020-08-02 - A21 Haul Road

Document No.

WildlifeReport000096

Completed On

3rd Aug, 2020

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Sighting

General Wildlife Sighting

Animal Type

Caribou

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

Dark patchy fur, velvet covered antlers

Photo (If Possible)



Photo 1

Enter Initial Time of Wildlife Sighting

2nd Jan, 2021 1:30 PM MST

Department/Individual Who Reported Wildlife:

A21 Haul traffic

Environment On Scene

Environment at Call-out Location

Chronological Events

13:30 Caribou spotted trotting down A21 haul road, Environment made announcement to haul traffic to slow down and cede right of way to caribou

13:35 Caribou walks through A21 pit shop, headed south.

13:45 Environment personnel in area, no sign of caribou.

Movement Map (Import NotePlus Site Map)

Environment Off Scene

End of Environment Call-out

2nd Jan, 2021 2:00 PM MST

Final Location of Wildlife

Tundra near SCRP

Closure & Sign-off

100%

Wildlife Report Complete



On

Signature

Appendix

Appendix



Photo 1

Wildlife Report - 2020

Caribou - 2020-08-06 ROM hill

Complete

Score	100%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Caribou - 2020-08-06 ROM hill

Document No.

WildlifeReport000097

Completed On

2nd Jan, 2021

Wildlife Report

Type of Wildlife Report	General sighting / Other
Report Type	Sighting

General Wildlife Sighting

Animal Type	Caribou
-------------	---------

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

Dark brown fur, patchy, velvety antlers. same individual from last few days, no injuries.

Photo (If Possible)



Photo 1

Enter Initial Time of Wildlife Sighting	6th Jan, 2021 2:00 PM MST
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Department/Individual Who Reported Wildlife:

Surface Mining

Environment On Scene

Environment at Call-out Location	6th Aug, 2020 2:30 PM MDT
----------------------------------	---------------------------

Chronological Events

13:56 Surface mining department reported caribou at top of ROM hill. Caribou later moves to Processed Kimberlite Containment (PKC) facility. Environment currently in process of regulatory mandated water sampling. Announcement made to haul traffic to reduce speed in area and cede right of way to animal.

14:30 Environment locates caribou at light vehicle entrance to the South PKC, caribou is hovering near some culverts and seems to be panting heavily in the heat. Caribou beds down in the area. Environment notifies personnel in the area to proceed with extreme caution and allow the caribou the right of way.

Movement Map (Import NotePlus Site Map)

Environment Off Scene

End of Environment Call-out	6th Aug, 2020 3:30 PM MDT
-----------------------------	---------------------------

Final Location of Wildlife

Bedded down near light vehicle entrance to PKC

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

2nd Jan, 2021 3:25 PM MST

Appendix

Appendix



Photo 1

Wildlife Report - 2020

Caribou - 2020-08-09 - Diavik

Complete

Score	100%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Caribou - 2020-08-09 - Diavik

Document No. WildlifeReport000069

Completed On

9th Aug, 2020

Wildlife Report

Type of Wildlife Report	General sighting / Other
Report Type	Sighting

General Wildlife Sighting

Animal Type	Caribou
-------------	---------

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

Single dark brown caribou, patchy fur

Photo (If Possible)



Photo 1

Enter Initial Time of Wildlife Sighting	30th Jul, 2020 12:00 AM MDT
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Department/Individual Who Reported Wildlife:

August 2nd

13:30 Caribou spotted trotting down A21 haul road, ENV made announcement to haul traffic to slow down and cede right of way to caribou

13:35 Caribou walks through A21 pit shop, headed South

August 6th

Caribou at top of ROM hill, moved to SCRIP

August 10th

Caribou spotted lying down in mud for several hours beside E21 sump.

August 11th

Dark brown Caribou found at base of North Inlet dam on west side.

Environment On Scene

Environment at Call-out Location

Chronological Events

...2020-07-30...

06:30 - Caribou reported @ AN Road, headed toward the PKC; ENV currently on Bear monitor for relocation occurring later today

06:40 - Caribou reported climbing South PKC wall; ENV cannot locate caribou (same area as bear monitoring)

07:30 - Bears on tundra between Emulsion Plant and SCRCP; Caribou spotted by ENV - Caribou is aware of presence of bears in area, runs away and towards the bears - seems confused about what to do and where to run from the bears (see video)

07:40 - Caribou disappears from area; ENV continues monitoring bears for relocation

...2020-08-02...

Gord notes?

...2020-08-06...

13:56 - Caribou called in by Surface Mining at top of ROM hill, later moves to PKC; ENV is process of sampling and will check on caribou when finished

14:30 - ENV locates caribou at Light Vehicle entrance to the South PKC, caribou is hovering near some culverts and seems to be panting heavily in the heat (see video); Caribou beds down in the area; ENV notifies personnel in area to proceed with extreme caution and allow the caribou the right of way

...2020-08-10...

14:00 - Caribou reported bedded down in mud near the SCRCP Pond (behind the SCRCP); seems to want to keep cool

...2020-08-11

10:00 Dark brown Caribou found at base of North Inlet dam on west side. Lying down on gravel.

12:10 Was not there later on in the morning when Environment checked for the second time.

Movement Map (Import NotePlus Site Map)

Environment Off Scene

End of Environment Call-out

Final Location of Wildlife

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

Appendix



Photo 1

Wildlife Report - 2020

Caribou - 2020-08-10 SCRP

Complete

Score	0%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Caribou - 2020-08-10 SCRP

Document No.

WildlifeReport000098

Completed On

2nd Jan, 2021

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Sighting

General Wildlife Sighting

Animal Type

Caribou

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

Single dark brown caribou with velvety antlers.

Photo (If Possible)

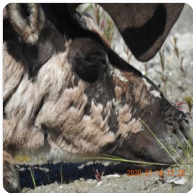


Photo 1

Enter Initial Time of Wildlife Sighting

10th Aug, 2020 2:00 PM MDT

Department/Individual Who Reported Wildlife:

Surface Mining

Environment On Scene

Environment at Call-out Location

10th Aug, 2020 2:30 PM MDT

Chronological Events

14:00 Caribou reported bedded down in the mud near the pond at the base of SCRP. Seems to be trying to keep cool.

Environment personnel busy deterring 2 grizzly bears from active work areas on other side of island, unable to check on caribou.

Movement Map (Import NotePlus Site Map)

Environment Off Scene

End of Environment Call-out

10th Aug, 2020 2:00 PM MDT

Final Location of Wildlife

Bedded in mud of pond near SCRP

Closure & Sign-off

0%

Wildlife Report Complete

Appendix



Photo 1

Wildlife Report - 2020

Caribou - 2020-08-11 - North Inlet

Complete

Score	100%	Failed items	0	Actions	0
-------	------	--------------	---	---------	---

Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Caribou - 2020-08-11 - North Inlet

Document No. WildlifeReport000099

Completed On

11th Aug, 2020

Wildlife Report

Type of Wildlife Report	General sighting / Other
Report Type	Sighting

General Wildlife Sighting

Animal Type	Caribou
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Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

Dark brown coat, patchy fur, velvety antlers, no visible injuries. Same individual from past week.

Photo (If Possible)



Photo 1

Enter Initial Time of Wildlife Sighting	11th Aug, 2020 10:00 AM MDT
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Department/Individual Who Reported Wildlife:

Environment

Environment On Scene

Environment at Call-out Location	11th Aug, 2020 10:00 AM MDT
----------------------------------	-----------------------------

Chronological Events

10:00 Environment found dark brown caribou at base of North Inlet dam on west side, lying on gravel with head up.
 12:10 Was not there later on in the morning when Environment checked for the second time.

Movement Map (Import NotePlus Site Map)

Environment Off Scene

End of Environment Call-out	11th Aug, 2020 10:00 AM MDT
-----------------------------	-----------------------------

Final Location of Wildlife

Left bedded at base of North Inlet dam.

Closure & Sign-off

Wildlife Report Complete

On

Signature

GC

2nd Jan, 2021 3:53 PM MST

Appendix



Photo 1

Wildlife Report - 2020

Wolf - 2020-11-15 - WTA

Complete

Score	100%	Failed items	0	Actions	0
-------	------	--------------	---	---------	---

Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Wolf - 2020-11-15 - WTA

Document No.

WildlifeReport000091

Completed On

15th Nov, 2020

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Sighting

General Wildlife Sighting

Animal Type

Wolf

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

2 wolves, young grey, travelling together

Photo (If Possible)



Photo 1

Enter Initial Time of Wildlife Sighting

12th Nov, 2020 11:00 AM MST

Department/Individual Who Reported Wildlife:

Delphis - Site Services

Environment On Scene

Environment at Call-out Location

13th Nov, 2020 12:30 PM MST

Chronological Events

November 12th wolf activity described in DDMI Wildlife report dated November 12th.

November 13, 0500am Wolves spotted near waste transfer area (WTA) did not gain entry overnight.

On November 13, Environment and Site Services had a meeting to identify the reason for the recent wolf persistence and to reduce WTA staff exposure.

November 14, 12:30 The 2 wolves were spotted inside the fence of WTA, but the wolves left the area before Environment (ENV) arrived to deter. Waste transfer staff identified a source of attraction and removed it to the incinerator building for disposal. The 2 wolves were spotted later that day on the Ammonium Nitrate Storage (AN) road, but not in WTA.

November 15, 13:15 Environment found a second attractant source during a routine waste inspection. ENV confirmed that WTA staff had already found it and made a plan to remove it.

15:50 2 wolves spotted outside fence of waste transfer, ENV mobilized to the area, but wolves had left before ENV arrived. WTA operators were busy removing the attractant at that time.

There is currently (evening of Sunday, November 15th) a thorough check of all potential sources of attractants at waste transfer being completed to ensure there are no more attractants left behind.

Movement Map (Import NotePlus Site Map)



Photo 2

Environment Off Scene

End of Environment Call-out

15th Nov, 2020 4:30 PM MST

Final Location of Wildlife

Heading down AN road towards Windfarm area.

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

15th Nov, 2020 5:38 PM MST

Appendix



Photo 1



Photo 2

Wildlife Report - 2020

Wolverine - 2020-09-29 - Waste Transfer

Complete

Score	100%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Wolverine - 2020-09-29 - Waste
Transfer

Document No.

WildlifeReport000081

Completed On

3rd Oct, 2020

Audit

100%

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Sighting

General Wildlife Sighting

Animal Type

Wolverine

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

No description, most likely same individual from previous day.

Photo (If Possible)

Enter Initial Time of Wildlife Sighting

29th Sep, 2020 1:00 AM MDT

Department/Individual Who Reported Wildlife:

Duane Lutz - Site Services

Environment On Scene

Environment at Call-out Location

Chronological Events

Wolverine called in at night to security. Security woke up Environment coordinator. Wolverine spotted inside Waste transfer area. Personnel were keeping a close eye on it. Environment made a wildlife announcement over site radio.

Movement Map (Import NotePlus Site Map)

Environment Off Scene

End of Environment Call-out

29th Sep, 2020 1:30 AM MDT

Final Location of Wildlife

Leaving waste transfer

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

3rd Oct, 2020 6:10 PM MDT

Wildlife Report - 2020

Wolverine - 2020-09-30 - Waste Transfer

Complete

Score	100%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Wolverine - 2020-09-30 - Waste Transfer

Document No.

WildlifeReport000082

Completed On

3rd Oct, 2020

Audit

100%

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Sighting

General Wildlife Sighting

Animal Type

Wolverine

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

Same individual from last couple days

Photo (If Possible)

Enter Initial Time of Wildlife Sighting

1st Oct, 2020 1:30 PM MDT

Department/Individual Who Reported Wildlife:

Walter at Waste Transfer

Environment On Scene

Environment at Call-out Location

Chronological Events

13:30 Wolverine called in at waste transfer hanging around a seacan with food waste in it. Env made announcement.

Movement Map (Import NotePlus Site Map)

Environment Off Scene

End of Environment Call-out

3rd Oct, 2020 1:30 PM MDT

Final Location of Wildlife

Waste Transfer

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

3rd Oct, 2020 6:25 PM MDT

Wildlife Report - 2020

Wolverine - 2020-10-05 Main Camp

Complete

Score	100%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Wolverine - 2020-10-05 Main Camp

Document No.

WildlifeReport000084

Completed On

6th Oct, 2020

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Sighting

General Wildlife Sighting

Animal Type

Wolverine

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

same light wolverine from past several days. light colouring on face and back.

Photo (If Possible)

Enter Initial Time of Wildlife Sighting

5th Oct, 2020 10:00 PM MDT

Department/Individual Who Reported Wildlife:

Pit Dispatcher and Security Control

Environment On Scene

Environment at Call-out Location

Chronological Events

21:50 Security called ENV room to notify of a wolverine spotted at PKC muster station right outside doors. Announcement was made to site.

Wolverine spotted going towards Metcon, then spotted again in steel laydown near South Camp. Security informed Environment, who requested they update when the animal is reported attempting to enter buildings or spotted causing damage.

Wolverine spotted between truck shop and process plant, Security had it on camera and monitored its movements. After updating Environment, they made sure it did not stick around, or cause damage. Environment did not receive another call that night.

Movement Map (Import NotePlus Site Map)



Photo 1

Environment Off Scene

End of Environment Call-out

5th Oct, 2020 11:00 PM MDT

Final Location of Wildlife

Leaving truck shop yard

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

7th Oct, 2020 7:35 AM MDT

Appendix



Photo 1

Wildlife Report - 2020

Wolverine - 2020-12-27 ROM hill

Complete

Score	100%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Wolverine - 2020-12-27 ROM hill

Document No.

WildlifeReport000092

Completed On

27th Dec, 2020

Audit

100%

Wildlife Report

Type of Wildlife Report

General sighting / Other

Report Type

Sighting

General Wildlife Sighting

Animal Type

Wolverine

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

Did not gain visual

Photo (If Possible)

Enter Initial Time of Wildlife Sighting

26th Dec, 2020 7:30 AM MST

Department/Individual Who Reported Wildlife:

Pit supervisor contacted Environment (ENV) regarding a wolverine spotted going down the Process ROM hill.

Environment On Scene

Environment at Call-out Location

26th Dec, 2020 8:30 AM MST

Chronological Events

7:30 Wolverine spotted by haul truck driver on Process ROM hill. Pit supervisor contacted ENV about animal.

8:30 ENV in area, no visual on animal.

15:20 ENV spots wolverine tracks on berm of A21 haul road, wolverine came from direction of Waste Transfer Area.

Movement Map (Import NotePlus Site Map)

Environment Off Scene

End of Environment Call-out

26th Dec, 2020 3:30 PM MST

Final Location of Wildlife

Unknown

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

27th Dec, 2020 1:46 PM MST

APPENDIX F

Site Wildlife Photos 2020



Photograph 1: Caribou (*Rangifer tarandus*)



Photograph 2: Grizzly bear (*Ursus arctos horribilis*) 7 June 2020.



Photograph 3: Grizzly sow and two cubs



Photograph 4: Grizzly Bear



Photograph 5: Arctic hare (*Lepus arcticus*)



Photograph 6: Rough-legged hawk (*Buteo lagopus*) 4 June 2020



Photograph 7: Juvenile rough-legged hawk at nest



Photograph 8: Peregrine falcon (*Falco peregrinus*) 5 June 2020



Photograph 9: Peregrine falcon



Photograph 10: Sandhill crane (*Grus canadensis*) 24 May 2020



Photograph 11: Wolves (*Canis lupus*)



Photograph 12: Wolves



Photograph 13: Wolf



Photograph 14: Arctic ground squirrel (*Urocitellus parryii*)

APPENDIX G

**Caribou Incidental Observations
Summary 2020**

Date	Number of Caribou	Description
2020-02-06	1	Single caribou called in at N Winter Road Approach, walked around dikes on lakeside and then headed north for Misery Pit
2020-02-25	100	West of PKC, GC went to observe and could not spot any caribou
2020-03-01	30	Spotted west of approach 10, moving rapidly west
2020-03-16	200	S of A21 Muster
2020-03-29	5	5 caribou off emulsion plant road
2020-03-31	1	One injured caribou S of runway walking towards NI and airport road
2020-04-01	1	One caribou walking up NCRP
2020-04-04	1	One caribou S of runway, bedded down
2020-04-05	1	One injured caribou on tundra s of North Inlet, bedded down but got up briefly
2020-04-06	1	One injured caribou on tundra s of North Inlet, bedded down but got up briefly
2020-04-06	6	6 caribou on islands south of South Winter Road Approach
2020-04-07	1	One injured caribou on tundra s of North Inlet, bedded down
2020-04-11	6	1 Male, 5 Females in Shallow Bays near N Winter Road Approach
2020-04-12	40	During Day 6 Wolverine track
2020-04-13	6	During Day 2 Wolverine Track
2020-04-13	300+	During Day 2 Wolverine Track
2020-04-15	15	Near A21
2020-04-15	70+	bedded, and travelling East along edge of Lake to east of Diavik
2020-04-18	50	During Day 5 Wolverine track
2020-04-19	5	Small group of caribou near North Winter Road Approach
2020-04-22	2	Caribou reported on island east of raw water inlet - could not be located by ENV personnel
2020-04-25	16	caribou reported off of junction between A154/418 dikes
2020-04-26	15	caribou reported off of junction between A154/418 dikes
2020-04-27	16	Caribou hanging out near North Winter Road Approach
2020-05-03	15	
2020-05-04	41	Did scan of group of 17 crossing ice from mainland towards shallow bays. One Caribou had a bum front right leg. A second group of 24 was near the North winter road approach, no scan of those.
2020-05-06	22	Caribou resting on lake near S Winter Road Approach
2020-05-08	22	Caribou resting on lake near S Winter Road Approach
2020-05-09	3	Caribou resting on ice east of A21 causeway
2020-05-09	5	Caribou stationary on rocks north of A21 Zone 3
2020-05-09	22	Caribou walking across bay near Lakeshore Blvd, grazing on tundra
2020-05-10	4	4 caribou spotted on tundra by A21 Muster
2020-05-11	10	10 caribou in shallow bays

Date	Number of Caribou	Description
2020-05-14	16	Small herd entered magazine storage area and fed on tundra between AN road and magazine storage laydown
2020-05-21	21	Feeding on tundra between windfarm 4 and magazine storage
2020-05-25	7	Bedded/feeding near emulsion plant
2020-05-27	1	Caribou on south end of runway
2020-05-29	17	Bedded/feeding between emulsion plant road and south country rock pile
2020-05-31	7	Feeding on tundra west of A21 muster
2020-06-04	16	Feeding/walking between Emulsion plant road and SCRCP
2020-06-05	2	Tower 4 near Emulsion plant
2020-06-07	8	Shallow Bays feeding and walking slowly east on lake shore
2020-06-08	8	Shallow Bays near north winter road approach
2020-06-08	7	Caribou south of runway
2020-06-18	4	grazing in NI
2020-06-19	4	grazing in NI
2020-06-20	5	
2020-07-08	1	South Haul Road, Pond 1, Shallow Bays, PKC Muster, PKC
2020-07-11	1	Called in on tundra patch near PKC muster, followed/gently herded to tundra near wind farm
2020-07-18	1	Wandering around test piles, appeared unhealthy with multiple bare patches of skin, sluggish movement and little fear of vehicles/people
2020-07-22	1	On tundra near road by Pond 4
2020-07-26	2	2 caribou reported on north haul road near till pile - could not find
2020-07-26	2	LV road to PKC, HE fueling area, Met Con, SCRCP, HE fueling area
2020-07-31	1	Single caribou called in on AN Road, headed to PKC
2020-08-02	1	Caribou reported travelling down A21 haul road, then through pit shop. Env made announcement to haul traffic
2020-08-06	1	Single Caribou at top of ROM hill, moved to SCRCP
2020-08-10	1	Single caribou at base on SCRCP laying in mud near E21 Sump
2020-08-11	1	Single dark brown caribou seen at base of North Inlet Dike, same one that has been on site a lot.
2020-08-16	1	Single caribou on AN Road
2020-08-19	2	Two caribou walking down SCRCP ramp
2020-08-25	1	One Caribou spotted near A21 South Ramp
2020-09-01	2	Walked across road near Pond 3
2020-09-10	3	3 caribou spotted near single grizzly
2020-11-13	3	3 caribou on ice walking east away from site across from shallow bays

APPENDIX H

**Grizzly Bear Incidental
Observations Summary 2020**

Date	Number of Animals	Characteristics of Animals	Location	Deterrents Used?
2020-04-28	1	Solitary grizzly, mature golden coat	SW corner PKC and slope toward AN Road	No
2020-04-29	1	Sow grizzly and 2 cubs, same group from last year	SW corner PKC and slope toward AN Road	No
2020-05-01	1	Ugly Butt	Valley between test piles, PKC attachment laydown	Yes
2020-05-02	3	-	Shallow bays	Yes
2020-05-03	3	-	Crusher ROM	Yes
2020-05-05	3	Sow grizzly and 2 cubs, same group from last year	Shallow bays	Yes
2020-05-05	1	Ugly Butt	PKC and South Country rock pile	No
2020-05-06	3	Sow Grizzly and 2 cubs	NCRP ramp, new landfill, and old landfill	Yes
2020-05-06	1	Single grizzly (Ugly Butt)	PKC Muster, Pond 5, and Pond 1	No
2020-05-07	3	Sow grizzly and 2 cubs, same group from last year	Till pile	No
2020-05-09	3	Sow grizzly and 2 cubs, same group from last year	North edge of Pond 1	No
2020-05-10	3	Sow and 2 cubs	South haul road	Yes
2020-05-13	1	Ugly butt	A418 haul road, OMD, and tundra patch near Batch Plant	Yes
2020-05-14	1	Ugly butt	Crusher loadout, Till Pile, A154 HT break pullout, and A154 Dike	Yes
2020-05-19	1	Single grizzly (Ugly Butt)	AN road tag in shack, SCRCP water tree, and A21 muster	No
2020-05-26	1	Single grizzly (Ugly Butt)	A418 dike, shallow bays, tundra between S Tank Farm and Lakeshore Blvd	Yes
2020-05-27	1	Single grizzly (Ugly Butt)	A21 portal, AN road, SCRCP, and Emulsion Plant	No
2020-05-27	3	sow and two cubs (2nd year)	Ice off of Lakeshore Blvd	No
2020-06-02	1	Single grizzly (Ugly Butt)	Glycol near A21 sprung	Yes
2020-06-04	1	Single grizzly, no description	A154 pit to North Inlet	No
2020-06-07	1	-	Shallow bays, walking from UG to raw water and then to Veg Plots	No
2020-06-07	3	-	A21 and shallow bays	Yes
2020-06-08	1	-	Underground mine dry to shallow bays.	No
2020-06-09	3	Males, females	Batch plant, moved to tundra near NWRA	No
2020-06-09	1	Resident, light blonde grizzly	Veg plots Road	Yes
2020-06-22	1	Solitary, very blonde	Metcon and Pond 5	Yes
2020-06-24	4	Sow and 2 cubs, and resident bear at different times	Intersection north haul road and south haul road	Yes
2020-06-25	4	-	SHR near Backfill	Yes
2020-06-26	4	-	-	Yes
2020-06-27	1	Single resident male, mostly blonde with brown paws. Evil, beady eyes.	-	Yes
2020-06-28	3	-	-	Yes
2020-06-29	4	-	-	Yes
2020-06-30	4	Sow and 2 cubs, resident male	-	Yes

Date	Number of Animals	Characteristics of Animals	Location	Deterrents Used?
2020-06-30	2	Single resident male, large dark brown	PKC, Pond 5, Pond 1, Till Pile, Water Tree, North Inlet, and Airport	Yes
2020-07-01	3	Sow and 2 cubs	UG Mine Dry totes, Batch Plant, SCAP yard, UG Mine Dry totes, C Portal, Pond 13, and shallow bays	Yes
2020-07-01	2	Single resident grizzly and larger dark brown grizzly	Airport road, tundra between N Country Rock Pile and airport road	No
2020-07-02	4	Same sow and 2 cubs, resident male joined in the evening	UG Mine Dry totes, Batch Plant, A418 laydown, and OMD	Yes
2020-07-03	5	Single resident grizzly, larger dark brown grizzly, sow and 2 cubs	mine dry, NIWTP, and NI/airport	Yes
2020-07-03	3	Sow and 2 cubs	UG, Batch Plant, Zone 1, D1 laydown, A154 haul road, Water Tree, NIWTP, and NI	Yes
2020-07-04	1	Single grizzly (did not see it)	Apron at airport	No
2020-07-05	1	Single grizzly (did not see it)	NMD	No
2020-07-06	1	Single resident grizzly	Pond 5	Yes
2020-07-07	3	Sow and 2 cubs	Batch Plant, Pond 13, Pond 5, WTA, Met Con, Pond 12, A21 Pit Shop, Main Accommodations, Boiler House, Powerhouse 2, ROM, Pond 5, and shallow bays	Yes
2020-07-08	3	Sow and 2 cubs	Batch Plant, D1, A154 ramp, Water Tree, and NIWTP	Yes
2020-07-08	1	Single resident bear	UG Mine Dry, Pond 13, Shallow Bays, Pond 1, North Haul Road/ East Dam PKC, and PKC	Yes
2020-07-09	1	Single resident bear	A21, moving onto tundra	Yes
2020-07-16	1	Single resident bear	D1 Laydown, core shack, A154 ramp, ERT grounds, and A154 fish habitat	Yes
2020-07-18	1	Single dark brown grizzly	Water Tree into A154 dike	No
2020-07-19	1	Resident male	tundra near Pond 3 and PKC wall	No
2020-07-20	1	Single resident bear	C Portal, Shallow Bays, N Winter Road Approach, shallow bays, and NI	No
2020-07-21	1	Single blond grizzly	Front door NI, ENV did not see bear when arrived, checked ERT training grounds, A154 Pit, and D1 laydown	No
2020-07-22	1	Single resident bear	D1 Laydown, backfill loadout, S haul road by C portal	Yes
2020-07-22	1	Single grizzly (do not think it is Ugly Butt), blonde, thin	south Haul Road, Shallow Bays, and PKC	No
2020-07-25	1	Single grizzly (not Ugly Butt)	North haul road toward backfill, Pond 1, OMD, Batch Plant, SCAP, Zone 1, A154 ramp, and ERT Grounds	Yes
2020-07-26	1	Single blonde grizzly	N dam A154	No
2020-07-29	3	-	-	Yes
2020-07-30	3	-	-	Yes
2020-07-30	3	-	-	Yes
2020-07-31	4	-	-	Yes
2020-08-01	1	Unknown	418 Dike	Yes
2020-08-02	1	Unknown	airport road	No
2020-08-03	1	Unknown	Old Mine Dry	No
2020-08-03	1	Unknown	vegetation plots	No
2020-08-03	1	Unknown	N of West Cell of PKC	No
2020-08-04	2	-	-	No

Date	Number of Animals	Characteristics of Animals	Location	Deterrents Used?
2020-08-05	1	Unknown	North of NCRP	No
2020-08-06	1	Young adult with brown stripe along rump	Pond 1 to rose garden veg plots, then went through PKC muster to A21	Yes
2020-08-07	1	Young adult with brown stripe along rump	Magazine storage	No
2020-08-10	2	-	Between NIWTP and A154 Dike	Yes
2020-08-11	1	-	PKC ditch	No
2020-08-12	1	-	A21 zone 3, JJM Laydown, and A21 Pit shop	Yes
2020-08-13	1	-	South Tank farm.	Yes
2020-08-16	1	Single grizzly, blonde with dark stripe	Shallow bays near backfill and Windfarm	No
2020-08-31	2	Sow and single cub	shallow bays past the MAC toward A21	Yes
2020-09-01	3	Resident sow and two cubs (first sighting since relocation)	PKC to barge road, crossed west PCK berm toward AN road	No
2020-09-02	3	Sow and two cubs	PKC refueling station, down berm to AN road	No
2020-09-03	1	Single adult male, possibly Ugly Butt	A21 pit near fish habitat	Yes
2020-09-04	1	Single adult	A21 Zone 2	No
2020-09-04	1	Unknown	tundra west of airport	No
2020-09-08	1	Unknown	landfill	No
2020-09-08	1	Ugly Butt	A21 pitshop, moved to fish habitat	Yes
2020-09-10	1	Unknown	2 miles west of airport	No
2020-09-10	1	Unknown	PKC, Test Piles, WTA, A21 Pit Shop, and Lakeshore, A21	No
2020-09-11	2	Unknown	2 miles west of airport	No
2020-09-13	2	Unknown	SCAP, Shallow Bays, Pond 11, Lakeshore, A21 Haul Road, Tundra, Zone 2, Winter Road Dispatch, Com Shack, and MAC	Yes
2020-09-14	1	Probably sow that was in MAC	window to C dorm	No
2020-09-16	3	Probably resident sow and two cubs	West of airport near approach 10	No
2020-09-21	1	Single chocolate coloured grizzly (untagged)	Airport east runway	No
2020-09-22	1	Single chocolate coloured grizzly (untagged)	Airport, North Inlet and headed E through the North Inlet	No
2020-09-23	1	Single chocolate coloured grizzly (untagged)	Airport, North Inlet, headed E through the North Inlet to A154, and NE of site	Yes
2020-10-08	1	Possibly Ugly Butt	Junction of 154 and 418 pits moving toward FAR.	Yes
2020-10-11	1	Ugly Butt	South of the airport.	Yes
2020-10-12	1	Ugly Butt	Along road from Pond 4 to wind farm	No
2020-10-25	1	Unknown, tracks found by Environment but bear not sighted	ROM hill and south tank farm	No
2020-10-26	1	Single grizzly, dark brown (untagged)	A21 Water Tree, A21 Muster, A21 Dike, Lake, SCRCP, WTA, and AN road	Yes

APPENDIX I

**Wildlife Deterrent Action Incident
Reports 2020**

Wildlife Report - 2020

Grizzly - 2020-05-01 Near Test Piles

Complete

Inspection score	Failed items	Created actions
2.95%	0	0
Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-05-01 Near Test Piles		
Document No. WildlifeReport000042		
📅 2nd May, 2020		

Type of Wildlife Report	Deterrent Reporting
-------------------------	----------------------------

Deterrent Report

Enter Initial Time of Wildlife Sighting 📅 1st May, 2020 ⌚ 3:30 PM MDT	
Department/Individual Who Reported Wildlife: PKC 933 Loader Operator	
Environment at Call-out Location 📅 1st May, 2020 ⌚ 3:40 PM MDT	
Animal Type	Grizzly Bear
Description (eg. number of individuals, colour, age, size, etc.): Ugly Butt, gold fir, dirty brown backside	
Photo (If Possible): Unanswered	

Chronological Events

<p>15:40 Called in at attachment laydown of south PKC 16:40 spotted on berm of attachment laydown, followed with TRUCK, bear went down highwall into valley 16:49 1 12Ga EXPLOSIVES fired from near south PKC seacans down into valley trying to move bear 16:57 CYCLED ACTION at top of Attachment laydown to move bear away from highwall, stop him from bedding down 17:18 moved to road near muster station, fired 2 12Ga EXPLOSIVES near sleeping bear. Grizzly ran towards base of test piles. ENV drove to test piles, proceeded to edge of test piles berm, spotted bear at base of the test pile. YELLED, CYCLED ACTION then fired 2 12Ga EXPLOSIVES to encourage the bear away. 17:24 moved back to attachment laydown, Bear attempting to bed down over there again, CYCLED ACTION. Bear moved to base of test piles and began climbing test piles. ENV moved TRUCK to test piles and stopped bear from heading towards muster station, pushed the bear back towards the AN road 18:06 ENV moved to AN road, caught bear between road and South Country Rock Pile, CYCLED ACTION, and persuaded bear north around SCRP to the tundra by emulsion plant. 18:16 End of ENV call out.</p>
<p>Movement Map (Import NotePlus Site Map)</p>
<p>– Photos</p> <div style="border: 1px solid black; width: 100px; height: 100px; margin: 5px 0;"> </div> <p>Photo 1</p>

Deterrent Count

Truck	2 From 0 to 40
Air Horn	0 From 0 to 40
C/F Bear Banger	0 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Bear Banger	0 From 0 to 40
12GA Explosive	5 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	0 From 0 to 40
12GA Slug	0 From 0 to 40
Helicopter	0 From 0 to 40
Other	5 From 0 to 40
Specify Cycling shotgun action, Yelling	
End of Environment Call-out 📅 1st May, 2020 ⌚ 6:18 PM MDT	
Final Location of Wildlife Tundra near Emulsion Plant	

Closure & Sign-off

Wildlife Report Complete	On
Signature Gordon Cumming 2nd May, 2020 5:51 PM MDT	



Photo 1

Wildlife Report - 2020

Grizzly - 2020-05-02 Shallow Bays

Complete


Inspection score	Failed items	Created actions
1.13%	0	0
Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-05-02 Shallow Bays		
Document No. WildlifeReport000043		
📅 2nd May, 2020		

Type of Wildlife Report	Deterrent Reporting
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Deterrent Report

Enter Initial Time of Wildlife Sighting 📅 2nd May, 2020 ⌚ 7:00 AM MDT	
Department/Individual Who Reported Wildlife: Unanswered	
Environment at Call-out Location 📅 2nd May, 2020 ⌚ 7:30 PM MDT	
Animal Type	Grizzly Bear
Description (eg. number of individuals, colour, age, size, etc.): Dark Brown Mother Grizzly and 2 Cubs, one lighter complexion, one dark.	
Photo (If Possible): Unanswered	

Chronological Events

<p>09:30 Swapped with GC 10:40 GC Used one 12Ga bear banger to persuade bears away from South Haul road as they were heading along the base of road berm, bears moved away into bay. 15:30 Swapped with AH 16:45 AH fired 1 PEN BANGER 18:45 GC took over 19:35 GC fired one 12Ga EXPLOSIVE to stop bears from bedding 20:40 GC fired one 12 Ga EXPLOSIVE to push bears away from backfill intersection</p>
Movement Map (Import NotePlus Site Map)
<p>– Photos</p>  <p>Photo 1</p>

Deterrent Count

Truck	0 From 0 to 40
Air Horn	0 From 0 to 40

C/F Bear Banger	1 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Bear Banger	0 From 0 to 40
12GA Explosive	3 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	0 From 0 to 40
12GA Slug	0 From 0 to 40
Helicopter	0 From 0 to 40
Other	0 From 0 to 40
Specify Unanswered	

End of Environment Call-out

📅 5th Feb, 2020 ⌚ 8:50 PM MST

Final Location of Wildlife

Shallow Bays area

Closure & Sign-off

Wildlife Report Complete	On
Signature Gordon Cumming 3rd May, 2020 9:31 AM MDT	



Photo 1

Wildlife Report - 2020

Grizzly - 2020-05-03 - Crusher ROM

Incomplete

Score	0.68%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly - 2020-05-03 - Crusher ROM

Document No.

WildlifeReport000044

Completed On

3rd May, 2020

Audit

0.68%

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0.68%

Enter Initial Time of Wildlife Sighting

3rd May, 2020 1:40 PM MDT

Department/Individual Who Reported Wildlife:

Clayton - Surface Mining

Environment On Scene

Environment at Call-out Location

3rd May, 2020 1:50 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Sow and 2 cubs - same from previous years

Photo (If Possible):

Chronological Events

13:40 - Bears called in at Crusher ROM, ENV issues announcement

13:50 - ENV on scene at Till Pile, finds bears at the top, uses TRUCK and HORN to push bears toward North Inlet - bears appear to move down the hill

13:55 - ENV searches area and cannot locate the bears

14:00 - ENV finds bears on top of Till Pile again, uses TRUCK to move bears toward the North Inlet, bears move over the edge

14:07 - ENV locates bears climbing/sliding down the hill toward the base of the Till Pile

14:15 - Bears slowly move along the base of the Till Pile/NCRP, headed in the direction of the airport

14:35 - Bears cross the road to the North Inlet

14:40 - Bears in a good area, ENV leaves

Movement Map (Import NotePlus Site Map)

Deterrent Count

0.68%

Truck

2

From 0 to 40

Air Horn

1

From 0 to 40

C/F Bear Banger

0

From 0 to 40

C/F Pen Whistle

0

From 0 to 40

12GA Bear Banger	0 From 0 to 40
12GA Explosive	0 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	0 From 0 to 40
12GA Slug	0 From 0 to 40
Helicopter	0 From 0 to 40
Other	0 From 0 to 40
Specify	
Environment Off Scene	
End of Environment Call-out	
Final Location of Wildlife	
Closure & Sign-off	0%
Wildlife Report Complete	

Wildlife Report - 2020

Grizzly - 2020-05-05

Complete

Inspection score	Failed items	Created actions
1.59%	0	0

Wildlife Report


Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly - 2020-05-05

Document No.

WildlifeReport000046

Completed On

 5th May, 2020

Wildlife Report

Type of Wildlife Report	Deterrent Reporting
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Deterrent Report

Enter Initial Time of Wildlife Sighting <input type="calendar"/> 5th May, 2020 <input type="clock"/> 11:30 AM MDT
Department/Individual Who Reported Wildlife: Truck Shop Maintenance

Environment On Scene

Environment at Call-out Location <input type="calendar"/> 5th May, 2020 <input type="clock"/> 11:45 AM MDT	
Animal Type	Grizzly Bear
Description (eg. number of individuals, colour, age, size, etc.): Dark coloured sow and 2 cubs in shallow bays near truck shop	
Photo (If Possible): Unanswered	

Chronological Events

11:30 bear called in halfway down south haul road 12:00 Env GC on scene, spots bears beside South Haul road 12:02 Fired 1 12 Ga Explosive, Bears move away from road 13:15 GC swaps with AH 1335 sow beds down to nap, cubs foraging 1408 ENV uses GUN CYCLE to move bears away from road 1410 sow beds down again 1455 ENV uses TRUCK to block bears from crossing road into pond 5, bears go back to shallow bays 1510 AH switches with GC again 17:15 Another grizzly spotted near NW corner of PKC. ENV updates announcement 17:33 GC uses TRUCK to stop bears from crossing south haul road 17:36 GC fires 2 MID RANGE RUBBER SLUGs, hits backside of cub on second shot, bears run away from road back to shallow bays. 17:40 Separate Grizzly spotted climbing ramp of South Country Rock Pile 18:00 ENV notifies area supervisors of bear, leaves scene.
Movement Map (Import NotePlus Site Map) Unanswered

Deterrent Count

Truck	2 From 0 to 40
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Air Horn	0 From 0 to 40
C/F Bear Banger	0 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Bear Banger	0 From 0 to 40
12GA Explosive	1 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	2 From 0 to 40
12GA Slug	0 From 0 to 40
Helicopter	0 From 0 to 40
Other	1 From 0 to 40
Specify Gun Cycle	

Environment Off Scene

End of Environment Call-out 📅 5th May, 2020 ⌚ 6:00 PM MDT
Final Location of Wildlife In Shallow Bays

Closure & Sign-off

Wildlife Report Complete	On
Signature Gordon Cumming 5th May, 2020 6:49 PM MDT	

Wildlife Report - 2020

Grizzly - 2020-05-06 - NCRP

Complete

Score	0.68%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly - 2020-05-06 - NCRP

Document No.

WildlifeReport000345

Completed On

6th May, 2020

Audit

0.68%

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0.46%

Enter Initial Time of Wildlife Sighting

6th May, 2020 2:15 PM MDT

Department/Individual Who Reported Wildlife:

Surface mining / Clayton

Environment On Scene

Environment at Call-out Location

6th May, 2020 2:27 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Sow and 2 cubs

Photo (If Possible):

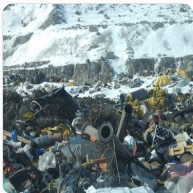


Photo 1



Photo 2



Photo 3

Chronological Events

14:15 Clayton calls on snow and two cubs on ramp to NCRP, ENV updates alert

14:25 ENV at landfill where bears are digging around outhouse

14:30 ENV banged steel, clapped hands, yelled several times and bears started climbing back up to NCRP

Movement Map (Import NotePlus Site Map)

Deterrent Count

0.46%

Truck

0

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

0

From 0 to 40

C/F Pen Whistle

0

From 0 to 40

12GA Bear Banger	0
	From 0 to 40
12GA Explosive	0
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	0
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	2
	From 0 to 40

Specify Clapping and banging steel

Environment Off Scene

End of Environment Call-out 6th May, 2020 3:28 PM MDT

Final Location of Wildlife

NCRP

Closure & Sign-off 100%

Wildlife Report Complete On

Signature



Shelby Skinner
7th May, 2020 6:29 PM MDT

Appendix



Photo 1



Photo 2



Photo 3

Wildlife Report - 2020

Grizzly - 2020-05-10 - South Haul Road

Complete

Score	0.68%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly - 2020-05-10 - South Haul Road

Document No.

WildlifeReport000346

Completed On

11th May, 2020

Audit

0.68%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0.46%

Enter Initial Time of Wildlife Sighting

10th May, 2020 2:00 PM MDT

Department/Individual Who Reported Wildlife:

Site Services

Environment On Scene

Environment at Call-out Location

10th May, 2020 2:12 PM MDT

Animal Type

Description (eg. number of individuals, colour, age, size, etc.):

Sow and two cubs

Photo (If Possible):

Chronological Events

1400 bears called in along south haul road by Backfill
1412 environment spots bears by entrance to west veg plots access road
1412 TRUCK used, bears start running into shallow bays
1413 BANGER used, bears resume running, run onto ice in Bays
1420 bears walking East towards tundra past potable water intake
1425 environment leaves scene

Movement Map (Import NotePlus Site Map)

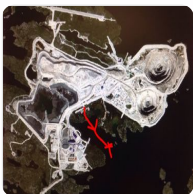


Photo 1

Deterrent Count

0.46%

Truck

1

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger	1	From 0 to 40
C/F Pen Whistle	0	From 0 to 40
12GA Bear Banger	0	From 0 to 40
12GA Explosive	0	From 0 to 40
12GA B.B. Marker	0	From 0 to 40
12GA Rubber Bullet	0	From 0 to 40
12GA Slug	0	From 0 to 40
Helicopter	0	From 0 to 40
Other	0	From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out 10th May, 2020 2:25 PM MDT

Final Location of Wildlife

Ice beyond shallow bays

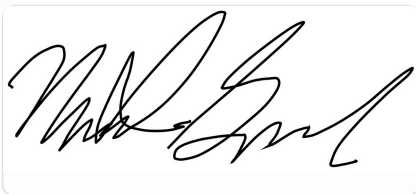
Closure & Sign-off

100%

Wildlife Report Complete



Signature



Nicole Goodman
11th May, 2020 10:40 AM MDT

Appendix

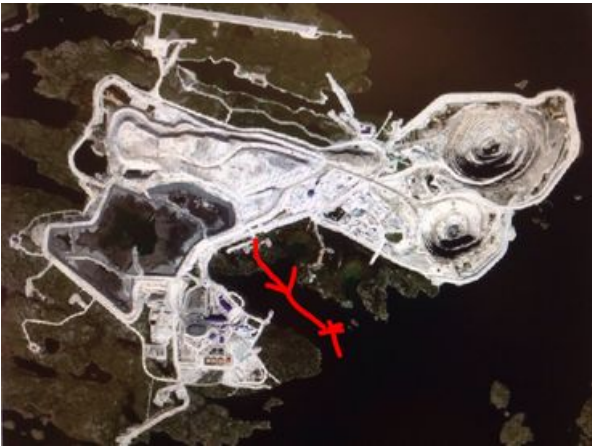


Photo 1

Wildlife Report - 2020

Grizzly - 2020-05-13 - A418

Complete

Score	0.68%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-05-13 - A418

Document No. WildlifeReport000348

Completed On

13th May, 2020

Audit

0.68%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0.46%

Enter Initial Time of Wildlife Sighting

13th May, 2020 8:29 PM MDT

Department/Individual Who Reported Wildlife:

Site Services - Duane Lutz

Environment On Scene

Environment at Call-out Location

13th May, 2020 8:50 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single grizzly

Photo (If Possible):

Chronological Events

20:30 Security called ENV about bear seen on A418 pit road headed for Old Mine Dry, issued bear alert

20:45 UG reported bear leaving C Portal heading from the fueling station.

20:50 ENV at small Laydown next to Batch Plant, bear grazing on tundra, updated Batch Plant. Clapped, yelled and banged metal to get bear to move towards East Shallow Bays

21:00 Bear out of sight.

21:30 ENV out, still no visual

Movement Map (Import NotePlus Site Map)

Deterrent Count

0.46%

Truck

0

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

0

From 0 to 40

C/F Pen Whistle

0

From 0 to 40

12GA Bear Banger	0
	From 0 to 40
12GA Explosive	0
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	0
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	2
	From 0 to 40
Specify	Clapping, banging metal

Environment Off Scene

End of Environment Call-out	13th May, 2020 9:30 PM MDT
Final Location of Wildlife	
Tundra next to Batch Plant	

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature



Shelby Skinner

16th May, 2020 4:07 PM MDT

Wildlife Report - 2020

Grizzly - 2020-05-13 - Waste Transfer

Complete

Score	0.91%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly - 2020-05-13 - Waste Transfer

Document No.

WildlifeReport000047

Completed On

13th May, 2020

Audit

0.91%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0.68%

Enter Initial Time of Wildlife Sighting

13th May, 2020 7:30 AM MDT

Department/Individual Who Reported Wildlife:

Surface mining

Environment On Scene

Environment at Call-out Location

13th May, 2020 7:40 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single male (resident)

Photo (If Possible):

Chronological Events

0730 bear reported on tundra off Lakeshore Blvd

0740 ENV on scene

0800 bear foraging on tundra, ENV leave scene

1149 bear called in by waste transfer

1158 ENV on scene.

1214 Bear walking towards AN road/A21 haul road, C/F BEAR BANGER used. Bear stands on hind legs and then resumes foraging

1219 12GA EXPLOSIVE used, bear starts walking east towards back of waste transfer

1223 SHOTGUN CYCLE used, bear walks around back of waste transfer to valley between AN road and test piles

1240 ENV leaves scene

Movement Map (Import NotePlus Site Map)



Photo 1

Deterrent Count

0.68%

Truck	0	From 0 to 40
Air Horn	0	From 0 to 40
C/F Bear Banger	1	From 0 to 40
C/F Pen Whistle	0	From 0 to 40
12GA Bear Banger	0	From 0 to 40
12GA Explosive	1	From 0 to 40
12GA B.B. Marker	0	From 0 to 40
12GA Rubber Bullet	0	From 0 to 40
12GA Slug	0	From 0 to 40
Helicopter	0	From 0 to 40
Other	1	From 0 to 40
Specify		Shotgun cycle

Environment Off Scene

End of Environment Call-out 13th May, 2020 12:40 PM MDT

Final Location of Wildlife

Between test piles and AN road

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

Nicole Goodman

14th May, 2020 3:48 PM MDT

Appendix



Photo 1

Wildlife Report - 2020

Grizzly - 2020-05-14 - Backfill Crusher Load Out

Complete

Score	2.04%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly - 2020-05-14 - Backfill
Crusher Load Out

Document No.

WildlifeReport000349

Completed On

14th May, 2020

Audit

2.04%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

1.82%

Enter Initial Time of Wildlife Sighting

16th May, 2020 8:00 AM MDT

Department/Individual Who Reported Wildlife:

Vince - Backfill

Environment On Scene

Environment at Call-out Location

14th May, 2020 8:30 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single grizzly, 4-5 years old

Photo (If Possible):

Chronological Events

08:00 Bear called in a Backfill Crusher Loadout, issued, bear alert

08:15 Bear called in on Till Pile

08:30 ENV spots bear at base of Till Pile

08:40 Bear crossed Airport Road towards ERT Training Grounds, bear heading for A154 Pit

09:00 Bear tried to cross A154 Pit road and ENV used TRUCK 7x to prevent Bear from crossing.

09:30 Used TRUCK to move Bear into Fish Habitat in A154.

Movement Map (Import NotePlus Site Map)



Photo 1

Deterrent Count

1.82%

Truck

8

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger	0
	From 0 to 40
C/F Pen Whistle	0
	From 0 to 40
12GA Bear Banger	0
	From 0 to 40
12GA Explosive	0
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	0
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	0
	From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out 14th May, 2020 9:30 AM MDT

Final Location of Wildlife

A154 Fish Habitata

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature



Shelby Skinner

16th May, 2020 4:23 PM MDT

Wildlife Report - 2020

Grizzly- 2020-05-26 - South Tank Farm

Complete

Score	0.91%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly- 2020-05-26 - South Tank Farm

Document No.

WildlifeReport000350

Completed On

26th May, 2020

Audit

0.91%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0.68%

Enter Initial Time of Wildlife Sighting

26th May, 2020 10:07 PM MDT

Department/Individual Who Reported Wildlife:

Security

Environment On Scene

Environment at Call-out Location

26th May, 2020 10:20 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single blond grizzly (ugly butt)

Photo (If Possible):

Chronological Events

22:00 Security called about bear at South Tank Farm, issued bear alert

22:20 ENV at scene, bear grazing on tundra between South Tank Farm and Lakeshore Blvd

22:45 CYCLYED ACTION and fired BB, bear moved slightly then bear looked around for

23:00 Bear crossed Lakeshore Blvd onto lake side tundra, used TRUCK, lost sight into fog

Movement Map (Import NotePlus Site Map)

Deterrent Count

0.68%

Truck

1

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

0

From 0 to 40

C/F Pen Whistle

0

From 0 to 40

12GA Bear Banger

1

From 0 to 40

12GA Explosive	0
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	0
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	1
	From 0 to 40
Specify	Cycled action

Environment Off Scene

End of Environment Call-out 26th May, 2020 11:11 PM MDT

Final Location of Wildlife

Tundra off Lakeshore Blvd

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature



Shelby Skinner

27th May, 2020 10:53 AM MDT

Wildlife Report - 2020

Grizzly - 2020-06-02 - A21 Zone 3

Complete

Score	2.27%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-06-02 - A21 Zone 3

Document No. WildlifeReport000051

Completed On

2nd Jun, 2020

Audit

2.27%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

2.05%

Enter Initial Time of Wildlife Sighting

Department/Individual Who Reported Wildlife:

Environment On Scene

Environment at Call-out Location

2nd Jun, 2020 8:15 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single grizzly, 3-4 years old

Photo (If Possible):



Photo 1

Chronological Events

0800 ENV received call of single grizzly at white sprung next to 01 Shovel, issued bear alert

0815 ENV has eyes on bear licking something on the ground, yelled and used TRUCK 3x, bear did not move far.

0830 ENV guarded spot where bear was licking while Pit Supervisor used TRUCK to move bear out of the area. Pit Supervisor determined it was glycol

0905 ENV out, no sign of bear

0930 Bear called in at same spot while labourers were trying to clean up glycol.

1030 used TRUCK 2x to keep bear away

1315 ENV spots bear at same spot, used TRUCK to move bear away from sprung

1317 Bear remains near glycol spill, C/F BEAR BANGER used to move bear onto LV road

1320 Bear remains near LV berm, C/F BEAR BANGER used to move bear onto ice

1321 ENV follows bear NE

1355 ENV leaves bear near south winter road approach

Movement Map (Import NotePlus Site Map)

Deterrent Count

2.05%

Truck	7
	From 0 to 40
Air Horn	0
	From 0 to 40
C/F Bear Banger	2
	From 0 to 40
C/F Pen Whistle	0
	From 0 to 40
12GA Bear Banger	0
	From 0 to 40
12GA Explosive	0
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	0
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	0
	From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out

Final Location of Wildlife

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

Shelby Skinner

4th Jun, 2020 2:18 PM MDT

Appendix



Photo 1

Wildlife Report - 2020

Grizzlies - 2020-06-07

Complete

Score	2.04%	Failed items	0	Actions	0
-------	-------	--------------	---	---------	---

Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzlies - 2020-06-07

Document No. WildlifeReport000048

Completed On

8th Jun, 2020

Audit

2.04%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

1.82%

Enter Initial Time of Wildlife Sighting

7th Jun, 2020 10:00 AM MDT

Department/Individual Who Reported Wildlife:

Gord/Trisa - Environment

Environment On Scene

Environment at Call-out Location

7th Jun, 2020 10:00 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

3 Individual bears:

1 - Larger, dark bear

2 - Blonde resident bear

3 - 3rd individual, darker in colour

Photo (If Possible):



Photo 1



Photo 2

Chronological Events

12:20 – AH locates bears along Lakeshore Blvd
 12:50 – AH spots bear (large, dark) headed toward N Dike of A21
 13:00 – AH uses TRUCK to move bear (large, dark) back from infield toward the dike
 13:10 – AH spots another bear off in the distance across the lake on the shoreline
 13:15 – Bear (large, dark) leaves dike and is headed across the lake away from site
 13:18 – AH locates bear (blonde, resident) in same location grazing along Lakeshore Blvd. Third bear called in in Shallow Bays near Raw Water Intake – MN locates from 3rd floor truck shop and has eyes on bear, bear starts heading toward BB dorm
 13:22 – AH spots bear near BB dorm, bear (3rd) notices ENV truck and darts back in the opposite direction, headed toward the Raw Water Intake
 13:25 – Bear (3rd) crosses Shallow Bays and is headed toward the Veg Plots
 13:40 – Bear (large, dark) called in at A21 S Dike, headed along shore line in the direction of the Emulsion Plant (good area)
 13:48 – AH loses eyes on bear (3rd) in Shallow Bays (it has ducked behind a hill) – leaves to check on bear(s) at A21
 13:55 – AH locates bear (blonde) along Lakeshore, still snacking along the tundra, leaves area to check on other bear (large, dark) that was called in earlier along A21 Dike
 14:20 – AH cannot locate bear (large, dark). Talked with person who reported the bear and bear was headed in a good direction (toward the Emulsion plant)
 14:30 – Bear (blonde) called in on corner of Lakeshore Blvd and LV Road
 14:40 – Bear (blonde) moves and crosses road, climbs wall toward Seacan Alley
 14:50 – AH locates bear (blonde) in METCON yard
 14:55 – Bear (blonde) climbs totes, AH uses TRUCK to push bear away, bear climbs down and disappears from site
 15:30 – AH cannot locate bears in METCON Yard, starts looking in surrounding areas
 16:00 – AH locates bear (blonde) at the base of the S PKC, starting to head up the rock wall
 16:20 – AH uses TRUCK to try to move bear back over the wall in the direction of the Test Piles
 16:25 - AH uses TRUCK and ROCKS to try to move bear away from PKC
 16:40 – Bear head back towards S PKC, AH uses TRUCK to move bear along the road, bear heads toward the N Haul Road, headed in the direction of Pond 5
 17:00 – Bear (blonde) spotted crossing S Haul Road to Shallow Bays, bear headed toward Rose Garden
 17:30 – AH leaves area, bear is content snacking and digging up roots
 18:10 – AH returns, locates bear (blonde) in same location (Rose Garden) content snacking, leaves area to switch with GC
 18:20 – GC on location
 21:05 – GC fires 2x 12 GA BANGER when bear (blonde, resident) bedded down, no response

Movement Map (Import NotePlus Site Map)

Deterrent Count	1.82%
Truck	5 From 0 to 40
Air Horn	0 From 0 to 40
C/F Bear Banger	0 From 0 to 40

C/F Pen Whistle	0
	From 0 to 40
12GA Bear Banger	2
	From 0 to 40
12GA Explosive	0
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	0
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	1
	From 0 to 40
Specify	Rocks

Environment Off Scene

End of Environment Call-out 7th Jun, 2020 10:00 PM MDT

Final Location of Wildlife

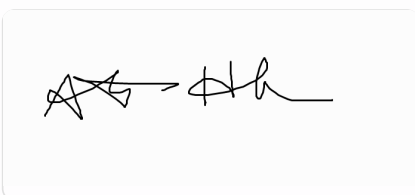
W of A21 (Bear 1), Rose Garden (Bear 2), Unknown (Bear 3)

Closure & Sign-off

100%

Wildlife Report Complete On

Signature



Atikin Hehn

8th Jun, 2020 11:13 AM MDT

Appendix



Photo 1



Photo 2

Wildlife Report - 2020

Grizzly 2020-06-09 Sow and 2 cubs

Complete

Score	2.27%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly 2020-06-09 Sow and 2 cubs

Document No.

WildlifeReport000051

Completed On

9th Jun, 2020

Audit

2.27%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

2.05%

Enter Initial Time of Wildlife Sighting

11th Jun, 2020 7:30 AM MDT

Department/Individual Who Reported Wildlife:

Delphis - Site Services

Environment On Scene

Environment at Call-out Location

11th Jun, 2020 7:30 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Dark brown sow and 2 cubs, and single blonde resident grizzly.

Photo (If Possible):

Chronological Events

07:30 Sow and 2 cubs called in @ batch plant
 07:58 AH Locates bears at UG refueling bay, uses TRUCK to move bears out of area
 08:10 Bears located in shallow bays near N winter road Approach
 08:20 Bears content feeding/napping - ENV leaves area to continue compliance inspection
 08:30 Bears still in same location, ENV leaves area
 09:30 ENV locates single grizzly off of Veg plots road
 09:35 ENV updates respective areas on location of bears
 10:50 AH and GC switch
 11:25 Bear climbed road berm at backfill intersection, ENV escorted bear across intersection with TRUCK, stopped him from going past backfill plant.
 11:29 Bear ran across road from pond 13 into backfill loadout yard, heading towards till pile. ENV attempted to block with TRUCK.
 11:32 Bear crosses North Haul road to Till Pile. ENV pushes him across with TRUCK
 11:35 Bear climbs till pile towards active shovel and haul truck. ENV enters area and pushes bear over north side of Till Pile towards North Inlet with TRUCK. YELLS at bear to encourage it away from work.
 11:45 Bear safely in North Inlet heading in good direction. ENV off scene.

15:45 GC spotted Sow and 2 cubs in the Shallow bays near south haul road veg plots
 15:53 Bears sleeping, GC left to do daily raptor scan at A21

1700 Sow and 2 cubs called in at base of ROM
 1710 AH locates bears along ROM road, headed in the direction of the PKC
 1715 AH uses TRUCK to push bears across road toward N Haul Road
 1718 AH locates bears at PKC Muster station by the seacans
 1719 ENV uses TRUCK 3 times to keep bears from entering the PKC
 1722 Bears cross S PKC entrance and head down the wall to the area at the base of the PKC and Test Piles
 1730 Bears cross AN road headed in the direction of the emulsion Plant and AN storage
 1731 ENV leaves area

Movement Map (Import NotePlus Site Map)



Photo 1

Deterrent Count	2.05%
Truck	8 From 0 to 40
Air Horn	0 From 0 to 40
C/F Bear Banger	0 From 0 to 40

C/F Pen Whistle	0
	From 0 to 40
12GA Bear Banger	0
	From 0 to 40
12GA Explosive	0
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	0
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	1
	From 0 to 40
Specify	Yelling

Environment Off Scene

End of Environment Call-out 9th Jun, 2020 5:30 PM MDT

Final Location of Wildlife

North Inlet for single male grizzly and Tundra by emulsion plant/windfarm for Sow and 2 cubs.

Closure & Sign-off

100%

Wildlife Report Complete On

Signature

Gordon Cumming

11th Jun, 2020 4:24 PM MDT

Appendix



Photo 1

Wildlife Report - 2020

Grizzly - 2020-06-22 - Metcon

Complete

Score	0.91%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-06-22 - Metcon

Document No. WildlifeReport000055

Completed On

22nd Jun, 2020

Audit

0.91%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0.68%

Enter Initial Time of Wildlife Sighting

22nd Jun, 2020 1:30 AM MDT

Department/Individual Who Reported Wildlife:

Duane - Site Services

Environment On Scene

Environment at Call-out Location

22nd Jun, 2020 2:00 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

solitary, very blonde, mature

Photo (If Possible):

Chronological Events

01:30 - call from Security reporting bear at Metcon Yard

02:00 - ENV on scene, cannot find bear, reported at STP and Process Plant

02:15 - bear spotted entering Pond 5, grazing

02:35 - bear started to bed down very close to ROM hill

02:40 - fired MR RUBBER SLUG forcing bear to move away from road east along pond edge, bear returns to grazing

03:00 - bear starts to bed down near ROM hill again

03:05 - fire 12Ga BEAR BANGER causing bear to move again east along pond

03:10 - bear attempts to bed down again CYCLE SHOTGUN ACTION and bear moves further into pond

03:25 - bear beds down near center of Pond 5 near pond shore

03:30 - ENV leaves scene and notifies site services

Movement Map (Import NotePlus Site Map)



Photo 1

Deterrent Count

0.68%

Truck	0	From 0 to 40
Air Horn	0	From 0 to 40
C/F Bear Banger	0	From 0 to 40
C/F Pen Whistle	0	From 0 to 40
12GA Bear Banger	1	From 0 to 40
12GA Explosive	0	From 0 to 40
12GA B.B. Marker	0	From 0 to 40
12GA Rubber Bullet	1	From 0 to 40
12GA Slug	0	From 0 to 40
Helicopter	0	From 0 to 40
Other	1	From 0 to 40
Specify		cycle shotgun action

Environment Off Scene

End of Environment Call-out 22nd Jun, 2020 3:30 PM MDT

Final Location of Wildlife

Pond 5

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

Mark Nelson

22nd Jun, 2020 2:37 PM MDT

Appendix



Photo 1

Wildlife Report - 2020

Grizzly - 2020-06-24 - Airport Road

Complete

Score	1.36%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-06-24 - Airport Road

Document No. WildlifeReport000052

Completed On

24th Jun, 2020

Audit

1.36%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

1.14%

Enter Initial Time of Wildlife Sighting

24th Jun, 2020 4:50 AM MDT

Department/Individual Who Reported Wildlife:

Duane - Site Services, Mike - Site Services

Environment On Scene

Environment at Call-out Location

24th Jun, 2020 5:05 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Sow and 2 cubs, and single male resident bear

Photo (If Possible):



Photo 1

Chronological Events

04:50 call from Security, GRIZZLIES (Sow and 2 cubs) spotted napping on berm at intersection of South Haul Road and North Haul Road

05:17 ENV on scene confirm sighting

05:19 MR RUBBER SLUG used on sow to push the bears east across haul road toward North Inlet, lose sight of them in the boulders on N side of Airport Road

05:25 bears spotted heading east North Inlet

05:35 ENV ends call

...

16:04 Sow and cubs found in Geology core shack pond by GC and TN

16:06-16:25 Blocked Bears with TRUCK from crossing D1 laydown, Chased across 154 Haul road and down access road into 154 infield area with TRUCK

16:30 Left bears in infield area

...

16:40 Bear called in in North Inlet basin, heading towards airport

16:50 ENV arrives, chases bear off of airport apron with TRUCK.

16:52 Chased bear down Comm tower access road with TRUCK

16:53 bear headed west across ice, ENV leaves.

Movement Map (Import NotePlus Site Map)



Photo 2

Deterrent Count	1.14%
Truck	4 From 0 to 40
Air Horn	0 From 0 to 40
C/F Bear Banger	0 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Bear Banger	0 From 0 to 40
12GA Explosive	0 From 0 to 40
12GA B.B. Marker	0 From 0 to 40

12GA Rubber Bullet

1

From 0 to 40

12GA Slug

0

From 0 to 40

Helicopter

0

From 0 to 40

Other

0

From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out

24th Jun, 2020 5:35 AM MDT

Final Location of Wildlife

North Inlet, West of Runway

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

Mark Nelson, GC

30th Jun, 2020 2:13 PM MDT

Appendix



Photo 1



Photo 2

Wildlife Report - 2020

Grizzly - 2020-06-25 SHR to Metcon

Complete

Score	2.72%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-06-25 SHR to Metcon

Document No. WildlifeReport000060

Completed On

30th Jun, 2020

Audit

2.72%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

2.5%

Enter Initial Time of Wildlife Sighting

25th Jun, 2020 7:00 PM MDT

Department/Individual Who Reported Wildlife:

Unknown

Environment On Scene

Environment at Call-out Location

25th Jun, 2020 7:35 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Sow and 2 cubs that have been around

Photo (If Possible):

Chronological Events

19:00 Sow and 2 cubs called in at South Haul Road near Backfill

19:35 ENV on scene, Bears in pond 1 next to backfill.

19:50 GC fired one 12 GAUGE CRACKER

19:51 Chased across South Haul Road with TRUCK

20:21 Fired one 12 GAUGE CRACKER at bears in shallow bays

20:30 bears bedded down, ENV left scene.

...

22:00 Bears called in at Pond 5

22:17 ENV on Scene. THREW ROCKS towards bears.

23:11 Fired 3 12 GAUGE EXPLOSIVES to wake bears up and get them moving.

23:25 Fired 1 C/F BEAR BANGER, 1 MR RUBBER SLUG (hit), got bears out of pond 5 and moving towards Rom hill.

23:45 Fired 1 MR RUBBER SLUG and hit cub in Metcon, blocked and chased over metcon haul road berm with TRUCK

00:20 No visual on Bears, ENV left Scene.

Movement Map (Import NotePlus Site Map)



Photo 1

Deterrent Count

2.5%

Truck	2 From 0 to 40
Air Horn	0 From 0 to 40
C/F Bear Banger	1 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Bear Banger	0 From 0 to 40
12GA Explosive	5 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	2 From 0 to 40
12GA Slug	0 From 0 to 40
Helicopter	0 From 0 to 40
Other	1 From 0 to 40
Specify	Threw rocks

Environment Off Scene

End of Environment Call-out

26th Jun, 2020 12:20 AM MDT

Final Location of Wildlife

Crossed A21 Haul road heading in direction of waste transfer

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

30th Jun, 2020 10:36 AM MDT

Appendix



Photo 1

Wildlife Report - 2020

Grizzlies - 2020-06-27 All over

Complete

Score	4.31%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzlies - 2020-06-27 All over

Document No. WildlifeReport000056

Completed On

27th Jun, 2020

Audit

4.31%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

4.09%

Enter Initial Time of Wildlife Sighting

26th Jun, 2020 11:30 AM MDT

Department/Individual Who Reported Wildlife:

Unknown

Environment On Scene

Environment at Call-out Location

26th Jun, 2020 2:00 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Mother grizzly and same 2 cubs that have been around site for years. Also the blonde resident male grizzly.

Photo (If Possible):

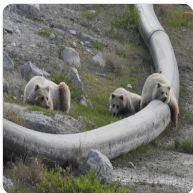


Photo 1



Photo 2

Chronological Events

14:00 Mother Grizzly and 2 cubs found in Pond 1
 14:10 used 2x MID RANGE RUBBER slugs and 2x 12G CRACKERS to get bear family away from backfill.
 14:15 1x MID RANGE RUBBER slug and 1x 12 G CRACKER
 14:16 1x SHORT RANGE RUBBER slug as bears are leaving South Haul Road into Shallow Bays
 14:44 Single male Grizzly called in at North haul road/backfill loadout intersection
 14:46 ENV used 1 SHORT RANGE RUBBER slug to persuade single male out of hollow beside road and back to Till Pile
 14:52 - 15:35: Blocked single male from crossing road using TRUCK 4 times.
 15:39: Sow and 2 cubs reported in Pond 13
 15:53 1 SHORT RANGE RUBBER slug hit cub in pond 13 near underground C portal. Bears begin moving in direction of till pile. Second truck arrives with Environment to help.
 16:00 - 16:15: 2 TRUCKS on either side of bears persuaded mother and cubs towards till pile
 16:15: ENV spotted single grizzly on Till Pile
 16:17: 1x SHORT RANGE RUBBER slug hit bear to push single male bear up till pile.
 16:20 Sow and 2 cubs crossed haul road to Till Pile
 16:56 CYCLED ACTION at Cub on North edge of till pile
 16:57 1x SHORT RANGE RUBBER at cub going down till pile
 17:23 all four bears in North Inlet, Environment off scene.

Movement Map (Import NotePlus Site Map)

Deterrent Count

4.09%

Truck	6
	From 0 to 40
Air Horn	0
	From 0 to 40
C/F Bear Banger	0
	From 0 to 40
C/F Pen Whistle	0
	From 0 to 40
12GA Bear Banger	0
	From 0 to 40
12GA Explosive	3
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	8
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40

Other

1

From 0 to 40

Specify

Cycled shotgun action

Environment Off Scene

End of Environment Call-out

26th Jun, 2020 5:23 PM MDT

Final Location of Wildlife

All in North Inlet

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

29th Jun, 2020 7:10 PM MDT

Appendix



Photo 1



Photo 2

Wildlife Report - 2020

Grizzly - 2020-06-27 - Underground - 154 dike

Complete

Score	1.59%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly - 2020-06-27 - Underground -
154 dike

Document No.

WildlifeReport000053

Completed On

28th Jun, 2020

Audit

1.59%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

1.36%

Enter Initial Time of Wildlife Sighting

27th Jun, 2020 10:30 PM MDT

Department/Individual Who Reported Wildlife:

Unknown

Environment On Scene

Environment at Call-out Location

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single resident Bear

Photo (If Possible):

Chronological Events

22:30 Bear called in at underground, ENV mobilizes

23:38 Cycled Action, blocked with TRUCK from going East towards 154 pit

23:48 1 MEDIUM RANGE RUBBER SLUG in hollow near ERT training ground

28th of June

00:12 1 MEDIUM RANGE RUBBER in 154 infield area to move bear towards dike, gun cycled 3 times

00:24 1 PEN BANGER

00:35 bear went over dike, lost visual on him. ENV off scene

Movement Map (Import NotePlus Site Map)

Deterrent Count

1.36%

Truck

1

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

1

From 0 to 40

C/F Pen Whistle

0

From 0 to 40

12GA Bear Banger	0
	From 0 to 40
12GA Explosive	1
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	2
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	1
	From 0 to 40
Specify	"Cycled Action"

Environment Off Scene

End of Environment Call-out	27th Jun, 2020 12:30 AM MDT
Final Location of Wildlife	
Somewhere near 154 dike entrance	

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

29th Jun, 2020 7:36 PM MDT

Wildlife Report - 2020

Grizzly - 2020-06-28 - Pond 1

Complete

Score	5.9%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-06-28 - Pond 1

Document No. WildlifeReport000057

Completed On

28th Jun, 2020

Audit

5.9%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

5.68%

Enter Initial Time of Wildlife Sighting

28th Jun, 2020 8:40 AM MDT

Department/Individual Who Reported Wildlife:

Unknown

Environment On Scene

Environment at Call-out Location

28th Jun, 2020 8:50 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Blonde resident bear

Photo (If Possible):

Chronological Events

08:40 – Bear called in on Haul Road near Backfill
 08:50 – ENV arrives on scene, has eyes on bear (blonde, resident) in Pond 1, bear snacking at base of rockwall
 09:25 – ENV moves into Backfill Yard, uses ROCKS over wall to wake bear
 09:45 – ENV uses GUN CYCLE to move bear, bear starts heading up wall to ward N Haul Road
 10:03 – ENV uses GUN CYCLE to get bear moving again
 10:10 – Bear beds down on rockwall
 10:35 – Bear still bedded down, ENV leaves area
 11:05 – ENV returns to area, bear still in same location
 11:30 – ENV uses GUN CYCLE, bear perks up then resumes sleeping
 11:58 – ENV uses 12 GA CRACKER, bear perks up
 12:00 – ENV uses 12 GA CRACKER, bear perks up, then resumes sleeping
 12:22 – Bear wakes and starts moving along the rockwall in direction of Pond 5, then disappears behind rocks
 13:00 – After multiple repositions, ENV locates bear hidden behind boulders approximately 5 ft from the original spot
 13:10 – ENV leaves and switches personnel

13:28 ENV shot 1 MEDIUM RANGE RUBBER SLUG at Bear in Pond 1 from backfill cement bag laydown.
 13:33 moved closer to bear at Backfill equipment laydown and CYCLED ACTION 2 times at bear below me in Pond 1.
 13:40 CYCLED ACTION 2 more times to get bear to cross road to shallow bays, chased across road in TRUCK.
 14:01 Fired 1x 12 GAUGE EXPLOSIVE At bear heading into shallow bays
 14:40 -15:40 Bear moved out of shallow bays into pond 13, used CYCLE ACTION from C-portal to move bear to backfill pipes, chase across road with TRUCK into SCAP fab shop yard, then into underground. Used CYCLE ACTION to move bear out of underground yard into batch plant yard. CYCLED ACTION to push bear towards zone 1. CYCLED ACTION in SCAP warehouse yard to push bear off SCAP berm to zone 1. Bear walked east towards boulder field.
 15:40 ENV fired one 12 GAUGE EXPLOSIVE at bear sleeping in boulder field
 15:59 fired 1 MID RANGE RUBBER SLUG at south end of Batch plant in boulder field.
 ENV left scene

...

18:25 – Single grizzly called in at North Mine Dry – bear near waste oil totes
 18:45 – ENV arrives on scene, sees bear (blonde, resident) still at waste oil totes, uses TRUCK to push bear away, bear moves to SCAP Yard
 18:47 – Bear moves farther into SCAP Yard, ENV uses TRUCK to keep it moving
 18:55 – ENV uses TRUCK again to keep bear moving in good direction
 19:00 – ENV loses eyes on bear, has to go around to find bear in Zone 1 or D1 Laydown
 19:25 – ENV locates bear at D1 Laydown, uses TRUCK to push bear in good direction (toward 154 Infield area)
 19:27 – ENV uses GUN CYCLE to keep bear moving
 19:35 – ENV loses eyes on bear, searches areas in vicinity
 19:50 – ENV cannot locate bear, updates areas and leaves

Movement Map (Import NotePlus Site Map)

Deterrent Count 5.68%

Truck **6**
From 0 to 40

Air Horn **0**
From 0 to 40

C/F Bear Banger	0
	From 0 to 40
C/F Pen Whistle	0
	From 0 to 40
12GA Bear Banger	0
	From 0 to 40
12GA Explosive	4
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	2
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	13
	From 0 to 40

Specify 1xRocks, 12xGun Cycle

Environment Off Scene

End of Environment Call-out 28th Jun, 2020 7:50 AM MDT

Final Location of Wildlife

154 Infield Area

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

29th Jun, 2020 5:23 PM MDT

Wildlife Report - 2020

Grizzly - 2020-06-29 - North Mine Dry

Complete

Score	3.86%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-06-29 - North Mine Dry

Document No. WildlifeReport000058

Completed On

29th Jun, 2020

Audit

3.86%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

3.64%

Enter Initial Time of Wildlife Sighting

29th Jun, 2020 12:51 AM MDT

Department/Individual Who Reported Wildlife:

Security

Environment On Scene

Environment at Call-out Location

29th Jun, 2020 1:10 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Blonde resident, then a larger dark bear, Then the sow and 2 cubs

Photo (If Possible):

Chronological Events

00:51 – ENV receives call of bear at North Mine Dry again – same location as before
01:10 – ENV arrives on scene, locates bears in same spot by waste oil totes, uses TRUCK to move bear, bear moves to berm, then goes back to tote
01:11 – ENV uses TRUCK again, bear moves down berm and across road to SCAP yard
01:15 – Bear moves back toward Fountain Tire Shop and along berm to C Portal Ore Pad
01:25 – Bear moves into Pond 13
01:35 – ENV uses 12 GA CRACKER to get bear moving, bear moves, then resumes and attempts to bed down behind a rock
01:45 – ENV uses C/F BANGER to get bear moving, bear gets up, moves approximately 5 ft, then beds down again
02:00 – ENV uses GUN CYCLE to get bear moving, bear perks up, then resumes napping
02:05 – ENV uses 12 GA CRACKER to get bear moving, bear is startled, moved about 10 ft, then stops and beds down again
02:10 – ENV moves location to get better shot at bear
02:25 – ENV fires 12 GA MR RUBBER SLUG at bear, bear starts moving through Pond 13 in the direction of the Backfill Plant, stops after about 20 ft, and beds down again
02:30 – ENV moves location again to get better shot at bear, fires 12 GA CRACKER, bear started and moves about 10 ft, then beds down again
02:45 – ENV uses GUN CYCLE to try and get bear moving, bear moves about 5 ft, then beds down again
03:10 – Bear still asleep in Pond 13, ENV updates area on location of the bear, then leaves
04:10 – ENV receives call of single bear at UG Mine Dry
04:20 – ENV arrives on scene – no sight of bear
04:30 – ENV searches Batch plant yard, single large grizzly (darker in colour) found in area – bear moved E over berm and headed near 418 pit edge behind Batch plant, ENV chased bear with TRUCK, bear moved along S edge of pit, through the laydown and S onto the Tundra
05:00 – ENV leaves area, bear (darker in colour) headed in good direction
05:10 – ENV finds other single grizzly (blonde, resident) at STP – followed bear through the Powerhouse Yard into the METCON
05:30 – ENV has bear (blonde resident) at WTA, sniffing along the fence, bear tried to go around S end of WTA
05:45 – ENV lost eyes on bear, assumed travel in W direction toward wind farm area, ENV leaves area
...
08:56 GC on scene, 3 bears in Underground mine dry yard eating dirt at waste fluid totes. Attempted to scare away with TRUCK, little effect. bears returned to ground and resumed eating. GC fired 3 SHORT RANGE RUBBER SLUGS, hitting each bear in succession. Bears ran away, walked down road to SCAP yard.
09:04 Cycled Action at bears in ditch between C portal loadout yard and south haul road. Bears cross to backfill loadout yard.
09:10 Fired one MEDIUM RANGE RUBBER SLUG at bear family in hollow beside backfill loadout entrance.
09:50 Cycled Action in Ditch across from NIWTP, bears cross to North Inlet

Movement Map (Import NotePlus Site Map)



Photo 1

Deterrent Count

3.64%

Truck	4	From 0 to 40
Air Horn	0	From 0 to 40
C/F Bear Banger	1	From 0 to 40
C/F Pen Whistle	0	From 0 to 40
12GA Bear Banger	0	From 0 to 40
12GA Explosive	3	From 0 to 40
12GA B.B. Marker	0	From 0 to 40
12GA Rubber Bullet	5	From 0 to 40
12GA Slug	0	From 0 to 40
Helicopter	0	From 0 to 40
Other	3	From 0 to 40
Specify		Gun Cycle

Environment Off Scene

End of Environment Call-out 29th Jun, 2020 9:50 AM MDT

Final Location of Wildlife

several places

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

30th Jun, 2020 10:15 AM MDT

Appendix



Photo 1

Wildlife Report - 2020

Grizzly - 2020-06-30 - PKC

Complete

Score	6.12%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly - 2020-06-30 - PKC

Document No.

WildlifeReport000062

Completed On

2nd Jul, 2020

Audit

6.12%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

5.91%

Enter Initial Time of Wildlife Sighting

30th Jun, 2020 7:30 PM MDT

Department/Individual Who Reported Wildlife:

Security

Environment On Scene

Environment at Call-out Location

30th Jun, 2020 7:40 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single resident blonde bear

Photo (If Possible):

Chronological Events

19:40 Bear called in walking down PKC light vehicle road towards muster point.

19:59 ENV finds bear sleeping on pipes near low point shack by pond 5

20:05 fired one 12 GAUGE BEAR BANGER at sleeping bear (not the explosive/cracker). Blondie woke up and ran down into pond 5

20:11 Yelled at Bear bedding down on other side of pond 5 near pump shack, bear began moving down ditch beside south haul road

20:17 used C/F BEAR BANGER close behind him to keep bear moving down ditch towards pond 1.

20:20 CYCLED ACTION twice to keep bear moving north

20:45 Followed bear along black pipes toward till pile. Used ACTION CYCLE to push bear over berm to north haul road. Bear began heading towards scap yard. ENV blocked with TRUCK in SCAP yard, CYCLED ACTION to push bear back. Bear tried to go back over berm towards pipes and head south. ENV repositioned, left truck to CYCLE ACTION at bear trying to head south, persuaded him to cross road.

21:21 Crossed haul road, found bear in ditch, fired one MEDIUM RANGE RUBBER SLUG.

21:31 CYCLED ACTION, STOOD THREATENINGLY on berm of north and south haul road intersection. To get bear to move further around till pile.

21:35 -21:55 Bear walked around till pile, then began climbing. ENV fired 2 SHORT RANGE RUBBER SLUGS at bear to try and persuade it to stop climbing till pile. ENV repositions to top of till pile, finds bear near the top, uses TRUCK to persuade bear back over edge. CYCLED ACTION at edge of pile to push bear down pile. ENV reposition to base of till pile, pushes bear across haul road with TRUCK to tundra near watering tree dock.

21:57 fired 1 MEDIUM RANGE RUBBER SLUG at bear, close miss, bear moved a bit. Fired 4 12 GAUGE EXPLOSIVES to push bear north and west towards north inlet dike.

22:06 fired 2 C/F BEAR BANGERS at blonde resident grizzly to push him over diffuser pipe and west of watering tree. Sow and 2 cubs called in walking down North Haul Road towards Backfill

22:10 Used TRUCK to block sow and cubs from heading down road, pushed over berm into Backfill hollow. Fired 1 MEDIUM RANGE RUBBER SLUG at cub in hollow near Backfill. Got the bears to leave backfill and back onto road.

22:11 Bears running east down North Haul Road. ENV speeds around to get in front and block them from heading that way. Successfully blocked bears at South haul road intersection with TRUCK. Bears were pushed back across road to Till pile.

22:13 ENV CYCLED ACTION at bears in ditch at base of till pile. Bears climb till pile to saddle. Lost visual on Bear Family.

22:34 Fired 1 12 GAUGE EXPLOSIVE at blonde bear in north inlet to persuade him to keep moving West away from watering tree.

22:45-23:16 watched a large brown bear (I named him Morgrim) arrive from watering tree area, headed west and crossed dike then stalked resident blonde bear around tundra near east end of runway for several minutes. Bears disappeared over rise and ENV left scene, updated announcement.

23:30 End of Callout

Movement Map (Import NotePlus Site Map)

Deterrent Count

5.91%

Truck

5

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

2

From 0 to 40

C/F Pen Whistle	0
	From 0 to 40
12GA Bear Banger	1
	From 0 to 40
12GA Explosive	5
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	5
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	8
	From 0 to 40
Specify	Cycled action

Environment Off Scene

End of Environment Call-out 30th Jun, 2020 11:30 PM MDT

Final Location of Wildlife

Airport

Closure & Sign-off

100%

Wildlife Report Complete On

Signature

Gordon Cumming

2nd Jul, 2020 12:02 PM MDT

Wildlife Report - 2020

Grizzly - 2020-06-30 - UG waste totes and metcon

Complete

Score	7.03%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly - 2020-06-30 - UG waste totes
and metcon

Document No.

WildlifeReport000059

Completed On

30th Jun, 2020

Audit

7.03%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

6.82%

Enter Initial Time of Wildlife Sighting

30th Jun, 2020 1:00 AM MDT

Department/Individual Who Reported Wildlife:

Duane - Site Services

Environment On Scene

Environment at Call-out Location

30th Jun, 2020 1:30 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Sow grizzly and 2 cubs in underground at 1 am. Single male spotted at south tank farm at 5am

Photo (If Possible):

Chronological Events

01:00 ENV receives call of 3 grizzlies in batch plant yard
 01:10 ENV receives call of grizzlies in Underground yard at waste totes
 01:36 ENV on scene, approached bears quickly with TRUCK, bears did not back down at all. ENV CYCLES ACTION of shotgun, bears run to Batch plant yard.
 01:42 Chased East out of Bath plant yard with TRUCK
 01:53 fired 1 12 GAUGE CRACKER, bears leave boulder field and cross 418 haul road towards D1 laydown.
 02:02 Fired 2 MEDIUM RANGE RUBBER SLUGS down south berm of D1 Laydown at bears grazing.
 02:07 Chased bears down access road with TRUCK towards 154 infield area
 02:14 Fired 2 12 Gauge explosives
 ...
 05:00 Single male grizzly called in at south tank farm heading to powerhouse
 05:10 bear called in entering metcon
 05:30 to 06:30 ENV in area, no visual on bear anywhere.
 ...
 11:15 Sow and cubs Called in at Underground mine dry near waste totes again.
 11:25-11:44 Drove TRUCK towards bears at waste totes, opened door and YELLED at bears. Bears moved away from totes and into Batch plant yard. Chased in TRUCK out of Batch yard East across boulder field. Used ACTION CYCLE at bears on east side of boulder field to move them across haul road. Chased across road with TRUCK into and through N3 laydown to 154 pit haul road. Went around and found bears in field beside ERT training ground. Used ACTION CYCLE to move bears away from road. Drove down to access road and used ACTION CYCLE to keep bears moving North.
 11:44 used one 12 GAUGE CRACKER in 154 infield pond by black pipe pile.
 11:52-12:08 Moved around a fair bit, used two 12 GAUGE CRACKERS, 2 MEDIUM RANGE RUBBER SLUGS and blocked bears from moving east with TRUCK two times. As bears began moving in right direction, used 2 C/F PEN BANGERS, bears move west in direction of dike entrance.
 12:18 found bears grazing at base of dirt pile, loaded RUBBER BULLET and hit sow in shoulder as she ran away.
 12:22 Chased bears off dike with TRUCK towards NIWTP
 12:31 followed bears across NI dike, HONKING in TRUCK to keep them going to north side, then CYCLED ACTION at north end to persuade them to continue going north.
 12:35 ENV updated announcement, left scene.

Movement Map (Import NotePlus Site Map)

Deterrent Count	6.82%
Truck	10 From 0 to 40
Air Horn	0 From 0 to 40
C/F Bear Banger	2 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Bear Banger	0 From 0 to 40

12GA Explosive	6 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	5 From 0 to 40
12GA Slug	0 From 0 to 40
Helicopter	0 From 0 to 40
Other	7 From 0 to 40
Specify	Cycled Action, honking

Environment Off Scene

End of Environment Call-out	30th Jun, 2020 3:00 AM MDT
Final Location of Wildlife	On tundra by North Inlet water treatment plant

Closure & Sign-off

100%

Wildlife Report Complete	On
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Signature

GC
30th Jun, 2020 9:36 AM MDT

Wildlife Report - 2020

Grizzly - 2020-07-01 - UG Mine Dry

Complete

Score	1.36%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-07-01 - UG Mine Dry

Document No. WildlifeReport000352

Completed On

1st Jul, 2020

Audit

1.36%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

1.14%

Enter Initial Time of Wildlife Sighting

1st Jul, 2020 8:23 PM MDT

Department/Individual Who Reported Wildlife:

Security/Michelle

Environment On Scene

Environment at Call-out Location

1st Jul, 2020 8:45 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Sow and two cubs from last year

Photo (If Possible):

Chronological Events

1600 Bears called in at Old Mine Dry totes. Issued bear alert

1615 ENV on scene with visual of bears on totes. Used TRUCK 3x, bear went over berm into Batch Plant yard. Used TRUCK to move bears towards SCAP, lost visual.

2023 received call from security that bears were at totes at Old Mine Dry, issued bear alert

2045 ENV on the scene with visual of sow going over berm by fueling station and cubs fighting. Used TRUCK to move them over the berm

2103 bears in Pond 13

2150 bears cross south haul road into Shallow Bays

2200 ENV out, bears resting in Shallow Bays

Movement Map (Import NotePlus Site Map)



Photo 1



Photo 2

Deterrent Count

1.14%

Truck	5	From 0 to 40
Air Horn	0	From 0 to 40
C/F Bear Banger	0	From 0 to 40
C/F Pen Whistle	0	From 0 to 40
12GA Bear Banger	0	From 0 to 40
12GA Explosive	0	From 0 to 40
12GA B.B. Marker	0	From 0 to 40
12GA Rubber Bullet	0	From 0 to 40
12GA Slug	0	From 0 to 40
Helicopter	0	From 0 to 40
Other	0	From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out 1st Jul, 2020 10:00 PM MDT

Final Location of Wildlife

Shallow Bays

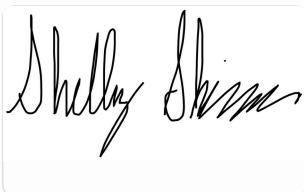
Closure & Sign-off

100%

Wildlife Report Complete

On

Signature



Shelby Skinner

2nd Jul, 2020 11:18 AM MDT

Appendix

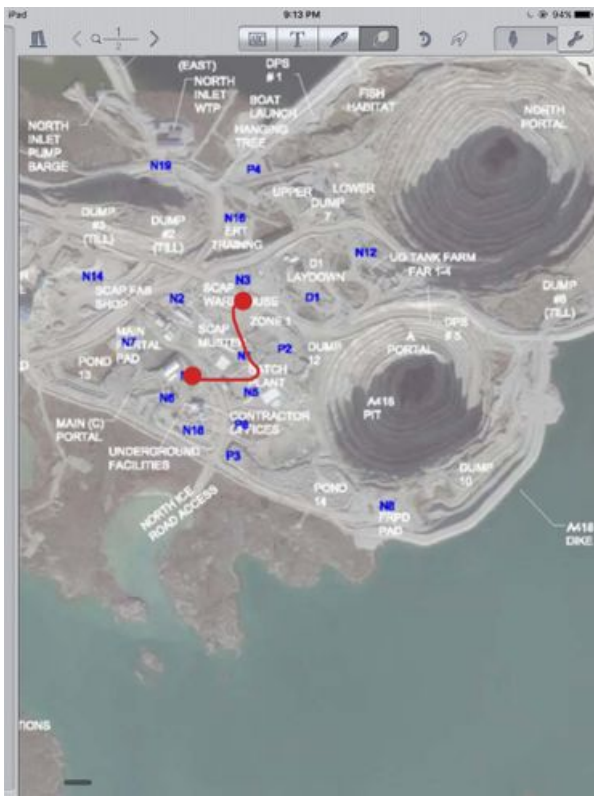


Photo 1



Photo 2

Wildlife Report - 2020

Grizzly - 2020-07-02 - Backfill

Complete

Score	3.86%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-07-02 - Backfill

Document No. WildlifeReport000353

Completed On

2nd Jul, 2020

Audit

3.86%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

3.64%

Enter Initial Time of Wildlife Sighting

2nd Jul, 2020 7:01 AM MDT

Department/Individual Who Reported Wildlife:

Backfill

Environment On Scene

Environment at Call-out Location

2nd Jul, 2020 7:15 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Sow and 2 cubs from last year

Photo (If Possible):

Chronological Events

0701 Backfill loader operator called in sow and cubs walking along pipeline next to South Haul Road, issued bear alert
0710 Electrician called in bears crossing South Haul Road heading towards Pond 13.
0715 ENV has eyes on bears in Pond 13
0730 Bears climbed up berm towards C Portal, walked up road to Old Mine Dry and behind White sprung.
0740 Cubs in the totes, updated bear alert. Sow sitting on berm at Batch Plant entrance while Cubs go back and forth between totes and berm. Used TRUCK 5x to get bears out of totes
0800 cubs cross road towards Batch Plant use TRUCK to get bears UG of yard and onto tundra next to Batch Plant. Bears grazing
0815 Bears leave tundra heading towards A418
0830 Bears in Laydown above A418
2000 Bears called in at Old Mine Dry, updated bear alert
2015 ENV on scene, sow, 2 Cubs and resident bear in the tote area. Used TRUCK 5x. Resident bear and young cub fighting over spilled product, one cub trying to get into oily rag mega bag. Used TRUCK 5x to keep Bears from materials. Resident bear submissive to cub.
2030 called UG shifter to get someone to move materials bears were getting into.
2045 Bears gone, waiting for UG operator to come clean up area.
21:40 Bears did not return, ENV out

Movement Map (Import NotePlus Site Map)



Photo 1

Deterrent Count

3.64%

Truck

16

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

0

From 0 to 40

C/F Pen Whistle

0

From 0 to 40

12GA Bear Banger

0

From 0 to 40

12GA Explosive

0

From 0 to 40

12GA B.B. Marker

0

From 0 to 40

12GA Rubber Bullet

0

From 0 to 40

12GA Slug

0

From 0 to 40

Helicopter

0

From 0 to 40

Other

0

From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out

2nd Jul, 2020 9:40 AM MDT

Final Location of Wildlife

Unknown

Closure & Sign-off

100%

Signature



Shelby Skinner

3rd Jul, 2020 11:48 AM MDT

Appendix

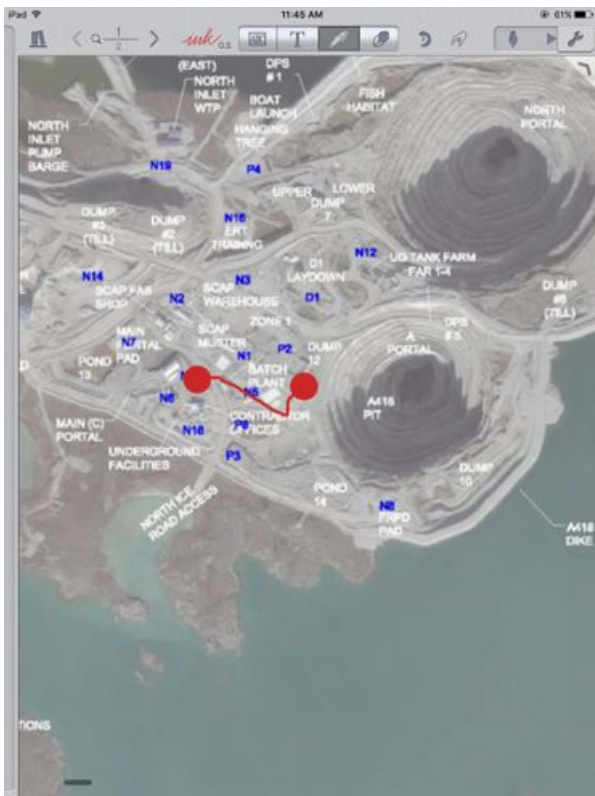


Photo 1

Wildlife Report - 2020

Grizzly - 2020-07-03 - NIWTP

Complete

Score	0.91%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly - 2020-07-03 - NIWTP

Document No.

WildlifeReport000355

Completed On

3rd Jul, 2020

Audit

0.91%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0.68%

Enter Initial Time of Wildlife Sighting

3rd Jul, 2020 7:30 PM MDT

Department/Individual Who Reported Wildlife:

Underground

Environment On Scene

Environment at Call-out Location

3rd Jul, 2020 7:51 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single resident male

Photo (If Possible):

Chronological Events

1930 single grizzly called in by old fuel pipes at north Mine Dry

1951 environment on scene

1955 single grizzly called in by water tree

2002 grizzly spotted on W side of NIWTP, TRUCK used to chase bear along NIWTP east dam

2009 TRUCK used to chase bear back along dam. Bear is sniffing ground following a scent and cannot be dissuaded from the area

2011 TRUCK used to chase bear back again along dam

2015 lost sight of bear at N end of east dam

2025 two bears one dark one light spotted walking along tundra north of runway. Potentially resident bear and non-resident female

2030 ENV leaves scene, end of callout

Movement Map (Import NotePlus Site Map)

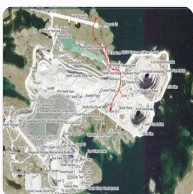


Photo 1

Deterrent Count

0.68%

Truck	3	From 0 to 40
Air Horn	0	From 0 to 40
C/F Bear Banger	0	From 0 to 40
C/F Pen Whistle	0	From 0 to 40
12GA Bear Banger	0	From 0 to 40
12GA Explosive	0	From 0 to 40
12GA B.B. Marker	0	From 0 to 40
12GA Rubber Bullet	0	From 0 to 40
12GA Slug	0	From 0 to 40
Helicopter	0	From 0 to 40
Other	0	From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out 3rd Jul, 2020 8:30 PM MDT

Final Location of Wildlife
Tundra NE of airport runway

Closure & Sign-off 100%

Wildlife Report Complete	On
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Signature
Nicole Goodman
4th Jul, 2020 11:05 AM MDT

Appendix



Photo 1

Wildlife Report - 2020

Grizzly - 2020-07-03 - UG Mine Dry

Complete

Score	1.59%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-07-03 - UG Mine Dry

Document No. WildlifeReport000354

Completed On

3rd Jul, 2020

Audit

1.59%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

1.36%

Enter Initial Time of Wildlife Sighting

3rd Jul, 2020 1:23 PM MDT

Department/Individual Who Reported Wildlife:

Environment On Scene

Environment at Call-out Location

3rd Jul, 2020 1:23 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Sow and 2 cubs

Photo (If Possible):

Chronological Events

1323 Bears called in at SCAP heading for Old Mine Dry, issued bear alert.

1330 ENV on scene, bears into tote residue. Used TRUCK to make bears leave, crossed road to Batch Plant. Used TRUCK to move them towards SCAP

1400 Bears walking towards Zone 1, ENV lost site of them

1630 Bears called in at D1 Laydown

1645 ENV on scene, bears walking towards Core Shack, used TRUCK and bears went into core box storage area, climbed berm onto A154 ramp and crossed haul road.

1700 Used TRUCK to move bears off road on to tundra.

1730 Bears crossed road to Water Tree, used TRUCK to move them onto tundra between NIWTP and Water Tree. Bears climbed berm up to plant, updated NIWTP operators of bear location

1740 Used TRUCK to move bears down barge road and into North Inlet

1754 ENV left bears grazing in North Inlet

Movement Map (Import NotePlus Site Map)



Photo 1

Deterrent Count

1.36%

Truck	6	From 0 to 40
Air Horn	0	From 0 to 40
C/F Bear Banger	0	From 0 to 40
C/F Pen Whistle	0	From 0 to 40
12GA Bear Banger	0	From 0 to 40
12GA Explosive	0	From 0 to 40
12GA B.B. Marker	0	From 0 to 40
12GA Rubber Bullet	0	From 0 to 40
12GA Slug	0	From 0 to 40
Helicopter	0	From 0 to 40
Other	0	From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out 3rd Jul, 2020 5:55 PM MDT

Final Location of Wildlife

North Inlet

Closure & Sign-off

100%

Wildlife Report Complete



Signature



Shelby Skinner

4th Jul, 2020 2:33 PM MDT

Appendix



Photo 1

Wildlife Report - 2020

Grizzly - 2020-07-06 - Pond 5

Complete

Score	2.27%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-07-06 - Pond 5

Document No. WildlifeReport000357

Completed On

6th Jul, 2020

Audit

2.27%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

2.05%

Enter Initial Time of Wildlife Sighting

6th Jul, 2020 6:20 AM MDT

Department/Individual Who Reported Wildlife:

Site Services

Environment On Scene

Environment at Call-out Location

6th Jul, 2020 6:45 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single resident bear

Photo (If Possible):

Chronological Events

0620 Single grizzly called in at Pond 5, issued bear alert

0645 ENV at Pond 5, bear startled when truck pulled in then continued grazing

0700 Bear crawled up S rock wall towards tundra behind Pond 5

0740 Bear still sleeping on tundra above Pond 5.

1530 Bear called in crossing South Haul Road heading for Process ROM, updated bear alert

1545 Bear called in at Met Con, ENV has visual of bear by tires, used TRUCK 3x to get bear to go over berm, cross haul road and into Pond 12.

1630 Bear called in at A21 Pit Shop trying to get into equipment, updated bear alert. Used TRUCK to move bear onto tundra.

1600 Bear walking along base of South Country Rock Pile

1630 Bear crossed AN road into Pond 12

1645 Bear walking perimeter of WTA, gate closed.

1650 Bear crossed Haul Road into Met Con, no visual

1715 Bear called in at Boiler House, used TRUCK to keep Bear out of Maintenance parking lot, ran through Warehouse yard and into Pond 10

1730 Bear asking along shoreline towards Shallow Bays

1830 Bear climbed berm to try and cross South Haul Road, used TRUCK 4x

1840 Bear crossed road into Pond 5

Movement Map (Import NotePlus Site Map)



Photo 1

Deterrent Count

2.05%

Truck	9 From 0 to 40
Air Horn	0 From 0 to 40
C/F Bear Banger	0 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Bear Banger	0 From 0 to 40
12GA Explosive	0 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	0 From 0 to 40
12GA Slug	0 From 0 to 40
Helicopter	0 From 0 to 40
Other	0 From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out

6th Jul, 2020 6:40 PM MDT

Final Location of Wildlife

Pond 5

Closure & Sign-off

100%

Signature



Shelby Skinner
7th Jul, 2020 9:15 AM MDT

Appendix



Photo 1

Wildlife Report - 2020

Grizzly 2020-07-07 - Batch Plant

Complete

Score	4.08%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly 2020-07-07 - Batch Plant

Document No. WildlifeReport000358

Completed On

7th Jul, 2020

Audit

4.08%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

3.86%

Enter Initial Time of Wildlife Sighting

7th Jul, 2020 4:45 AM MDT

Department/Individual Who Reported Wildlife:

Batch Plant / Abby

Environment On Scene

Environment at Call-out Location

7th Jul, 2020 5:00 AM MDT

Animal Type

Description (eg. number of individuals, colour, age, size, etc.):

Sow and two cubs

Photo (If Possible):

Chronological Events

0445 Sow trying to get in to Batch Plant at Bay 3 door.
 0500 ENV at Batch Plant, no sign of bears. Fountain Tire person reports seeing bears heading down towards Portal then over berm into Pond 13. No visual of bears in POND 13
 0550 ENV head back to office after looking for bears at Pond 13, Veggie plots, Backfill and Till Pile.
 0930 Bears called in walking on pipeline along South Haul Road heading for Pond 5
 0940 ENV at Pond 5, bear grazing in SE corner. Threw ROCKS 5x at piping, first few rocks startled the bears then they went back to grazing
 1030 Bears Bedded down at base of rock pile in Pond 5
 1400 Bears called in at Gate to WTA
 1415 ENV at WTA and bears have taken off lids, flipped totes and sow is bonding on top. Use TRUCK and bears went onto LV road, onto South Haul Road and into Met Con, updated bear alert
 1420 Cubs trying to knock over totes, sow not visible. Used TRUCK 3x to move cubs. Went behind totes
 1430 One cub ran out to join sow, used TRUCK to move them over berm, two bears waited for the 3rd to join them before crossing Haul Road and into Pond 12
 1445 heading around pond towards WTA, walked perimeter of WTA. At gate used TRUCK 3x to get away from entrance.
 1515 Bears crossed AN road heading towards A21 Pit Shop, updated Bear alert.
 1530 Bears went up and over berm on to Haul Road and towards Lakeshore Boulevard. Bears grazing
 1600 Bears still grazing
 1930 Bears called in at Main Accommodations, updated bear alert. Bears trying to get in front door
 1950 ENV in parking lot and bears reported at Process Plant, use TRUCK 2x to move bears from behind Boiler House and up to Powerhouse 2. Used TRUCK to move bears up ROM Hill.
 2015 Bears com down ROM Hill by Pond 5 and into Pond 5
 2040 Fired CRACKER at bears, move 1m
 2050 Bears cross South Haul Road into Shallow Bays heading East along shoreline

Movement Map (Import NotePlus Site Map)

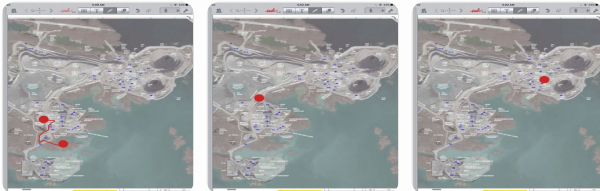


Photo 1

Photo 2

Photo 3

Deterrent Count

3.86%

Truck

11

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

0

From 0 to 40

C/F Pen Whistle

0

From 0 to 40

12GA Bear Banger	0	From 0 to 40
12GA Explosive	1	From 0 to 40
12GA B.B. Marker	0	From 0 to 40
12GA Rubber Bullet	0	From 0 to 40
12GA Slug	0	From 0 to 40
Helicopter	0	From 0 to 40
Other	5	From 0 to 40
Specify		Rocks

Environment Off Scene

End of Environment Call-out 7th Jul, 2020 9:15 PM MDT

Final Location of Wildlife

Shallow Bays

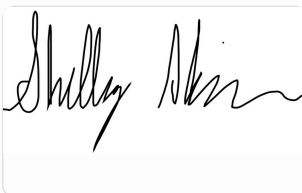
Closure & Sign-off

100%

Wildlife Report Complete

On

Signature



Shelby Skinner

8th Jul, 2020 11:25 AM MDT

Appendix



Photo 1

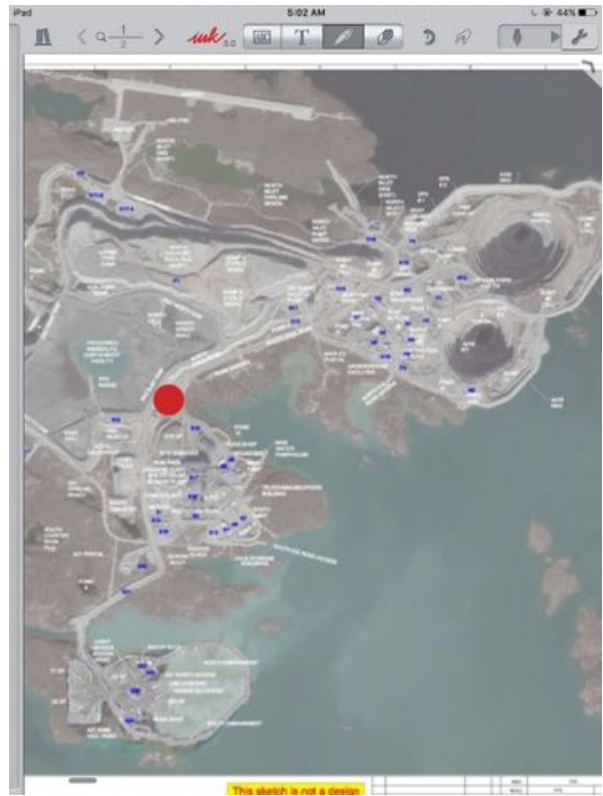


Photo 2



Photo 3

Wildlife Report - 2020

Grizzly - 2010-07-08 - Batch Plant

Complete

Score	1.36%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2010-07-08 - Batch Plant

Document No. WildlifeReport000359

Completed On

8th Jul, 2020

Audit

1.36%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

1.14%

Enter Initial Time of Wildlife Sighting

8th Jul, 2020 3:45 AM MDT

Department/Individual Who Reported Wildlife:

Abby Batch Plant

Environment On Scene

Environment at Call-out Location

8th Jul, 2020 4:20 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Sow and two cubs

Photo (If Possible):

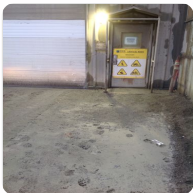


Photo 1

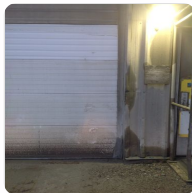


Photo 2

Chronological Events

0345 Bears called in at intersec icon of North and South Haul Road heading North, issued bear alert

0400 Bears at Batch Plant by Bay door 1, jumped up against it.

0420 ENV at Batch Plant, bears heading to Zone 1

0445 Bears at D1, knocked over Matex drilling fluids, used TRUCK 2x to move cubs away from leaking buckets

0450 Bears in Pond in D1 heading towards A154 Haul Road

0500 Bears walking through core boxes, started heading back towards A418 Ramp, use TRUCK 3x to make them go back towards the ramp.

0515 Bears crossed A154 Ramp

0531 Bears on tundra between Water Tree and NIWTP

0540 ENV left bears grazing on tundra around NIWTP

Movement Map (Import NotePlus Site Map)

Deterrent Count

1.14%

Truck	5	From 0 to 40
Air Horn	0	From 0 to 40
C/F Bear Banger	0	From 0 to 40
C/F Pen Whistle	0	From 0 to 40
12GA Bear Banger	0	From 0 to 40
12GA Explosive	0	From 0 to 40
12GA B.B. Marker	0	From 0 to 40
12GA Rubber Bullet	0	From 0 to 40
12GA Slug	0	From 0 to 40
Helicopter	0	From 0 to 40
Other	0	From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out 8th Jul, 2020 5:40 AM MDT

Final Location of Wildlife

NI

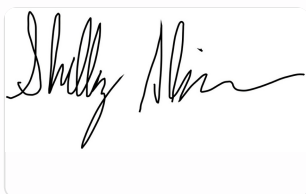
Closure & Sign-off

100%

Wildlife Report Complete

On

Signature



Shelby Skinner

10th Jul, 2020 11:29 PM MDT

Appendix



Photo 1

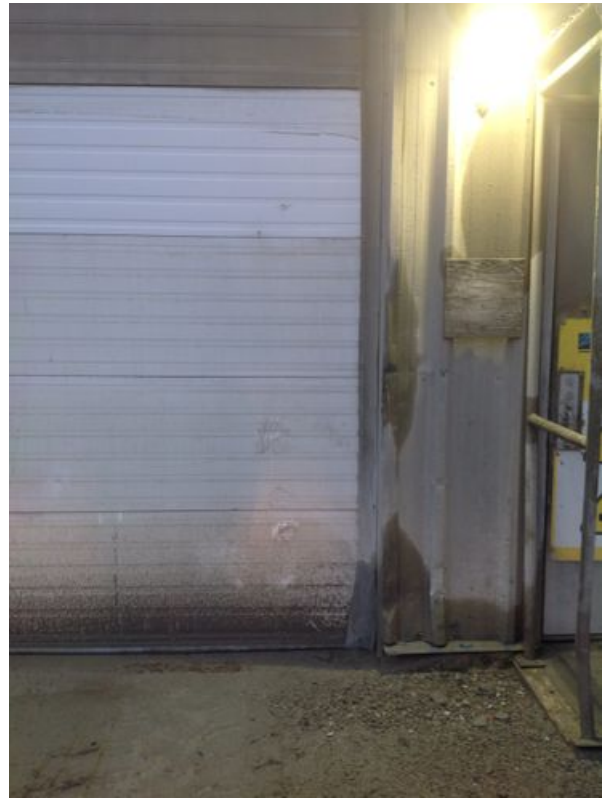


Photo 2

Wildlife Report - 2020

Grizzly - 2020-07-08 - Old Mine Dry

Complete

Score	1.81%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-07-08 - Old Mine Dry

Document No. WildlifeReport000054

Completed On

8th Jul, 2020

Audit

1.81%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

1.59%

Enter Initial Time of Wildlife Sighting

8th Jul, 2020 3:15 PM MDT

Department/Individual Who Reported Wildlife:

Underground

Environment On Scene

Environment at Call-out Location

8th Jul, 2020 3:30 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single resident bear

Photo (If Possible):

Chronological Events

15:15 Bear called in at Old Mine Dry

15:30 ENV at Old Mine Dry, told that bear went down ramp to C Portal and was heading towards Pond 13, issue bear alert.

15:45 ENV has visual of bear, threw ROCKS 3x, barely a reaction from bear

16:00 Bear walking towards South Haul Road

16:30 Bear crossed road into Shallow Bays, used TRUCK

17:00 Bear attempts 3x to cross South Haul Road, used TRUCK 3x

17:30 Bear crosses South Haul Road, climbs up toward East Dam PKC and into PKC, update bear alert.

Movement Map (Import NotePlus Site Map)

Deterrent Count

1.59%

Truck

4

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

0

From 0 to 40

C/F Pen Whistle	0
	From 0 to 40
12GA Bear Banger	0
	From 0 to 40
12GA Explosive	0
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	0
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	3
	From 0 to 40
Specify	Rocks

Environment Off Scene

End of Environment Call-out 8th Jul, 2020 5:30 PM MDT

Final Location of Wildlife

PKC

Closure & Sign-off

100%

Wildlife Report Complete On

Signature

Shelby Skinner

10th Jul, 2020 11:18 PM MDT

Wildlife Report - 2020

Grizzly - 2020-07-09

Complete

Score	3.18%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-07-09

Document No. WildlifeReport000055

Completed On

9th Jul, 2020

Audit

3.18%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

2.96%

Enter Initial Time of Wildlife Sighting

9th Jul, 2020 9:00 AM MDT

Department/Individual Who Reported Wildlife:

A21 Pit shop

Environment On Scene

Environment at Call-out Location

9th Jul, 2020 9:15 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single resident bear

Photo (If Possible):

Chronological Events

0900 Bear called in near A21 pit shop

0915 Environment on scene, bear spotted licking oil from heavy equipment in pit shop yard

0920 Bear moves from pit shop across AN road. Used TRUCK to drive bear onto tundra patch near waste transfer

0925 Bear begins grazing on tundra patch, threw several ROCKS

0930 Bear attempts to cross A21 haul road, TRUCK used 4x to drive bear back over berm

0940 Bear runs east along light vehicle road, environment follows. Bear moves onto tundra patch south of south tank farm

0950 Bear moves toward south winter road approach, used TRUCK

0955 Bear moves to tundra patch behind steel yard

1930 Bear called in at Pond between dorms C & D, updated bear alert

1945 Used TRUCK 3 times, bear moved to roadside of Pond. Threw ROCKS 3x

Movement Map (Import NotePlus Site Map)

Deterrent Count

2.96%

Truck

7

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger	0
	From 0 to 40
C/F Pen Whistle	0
	From 0 to 40
12GA Bear Banger	0
	From 0 to 40
12GA Explosive	0
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	0
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	6
	From 0 to 40
Specify	rocks

Environment Off Scene

End of Environment Call-out 9th Jul, 2020 6:00 PM MDT

Final Location of Wildlife

Pond between dorms C and D

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

Brett Potter

11th Jul, 2020 2:25 PM MDT

Wildlife Report - 2020

Grizzly - 2020-07-16 - D1

Complete

Score	0.45%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly - 2020-07-16 - D1

Document No.

WildlifeReport000056

Completed On

16th Jul, 2020

Audit

0.45%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0.23%

Enter Initial Time of Wildlife Sighting

16th Jul, 2020 10:47 PM MDT

Department/Individual Who Reported Wildlife:

Team Drilling

Environment On Scene

Environment at Call-out Location

16th Jul, 2020 10:55 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single resident bear

Photo (If Possible):

Chronological Events

1047 Bear called in at D1 Laydown by Team Drilling, issued bear alert.

1055 ENV at D1, bear in the core boxes, heading for the whip sprung. Use TRUCK to push bear up rock wall to A154 ramp

1115 Bear spotted grazing in Tundra behind ERT Training Grounds.

1145 Bear followed pipes down into A154 Fish Habitat area

0000 ENV out

Movement Map (Import NotePlus Site Map)

Deterrent Count

0.23%

Truck

1

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

0

From 0 to 40

C/F Pen Whistle

0

From 0 to 40

12GA Bear Banger	0
	From 0 to 40
12GA Explosive	0
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	0
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	0
	From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out 17th Jul, 2020 12:00 AM MDT

Final Location of Wildlife

A154 Fish Habitat

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature



Shelby Skinner

17th Jul, 2020 9:37 PM MDT

Wildlife Report - 2020

Grizzly - 2020-07-22 - Backfill

Complete

Score	0.45%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-07-22 - Backfill

Document No. WildlifeReport000363

Completed On

22nd Jul, 2020

Audit

0.45%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0.23%

Enter Initial Time of Wildlife Sighting

22nd Jul, 2020 9:00 PM MDT

Department/Individual Who Reported Wildlife:

Site Services/Liam

Environment On Scene

Environment at Call-out Location

22nd Jul, 2020 9:06 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single grizzly, blond but not sure if it is resident bear

Photo (If Possible):

Chronological Events

2100 Bear called on South Haul Road heading towards Backfill, issued bear alert.

2106 ENV at Backfill, bear in ditch at LV entrance to Backfill.

2115 Bear ran across South Haul Road into Shallow Bays. Used TRUCK.

2130 Bear grazing and rubbing scent all over tundra.

2150 Bear still grazing, ENV out.

2330 Bear spotted heading up to PKC, issued bear alert.

Movement Map (Import NotePlus Site Map)

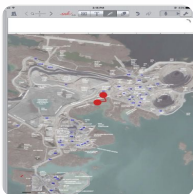


Photo 1

Deterrent Count

0.23%

Truck

1

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger	0	From 0 to 40
C/F Pen Whistle	0	From 0 to 40
12GA Bear Banger	0	From 0 to 40
12GA Explosive	0	From 0 to 40
12GA B.B. Marker	0	From 0 to 40
12GA Rubber Bullet	0	From 0 to 40
12GA Slug	0	From 0 to 40
Helicopter	0	From 0 to 40
Other	0	From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out 22nd Jul, 2020 9:50 PM MDT

Final Location of Wildlife

PKC

Closure & Sign-off

100%

Wildlife Report Complete



Signature



Shelby Skinner
23rd Jul, 2020 3:16 PM MDT

Appendix

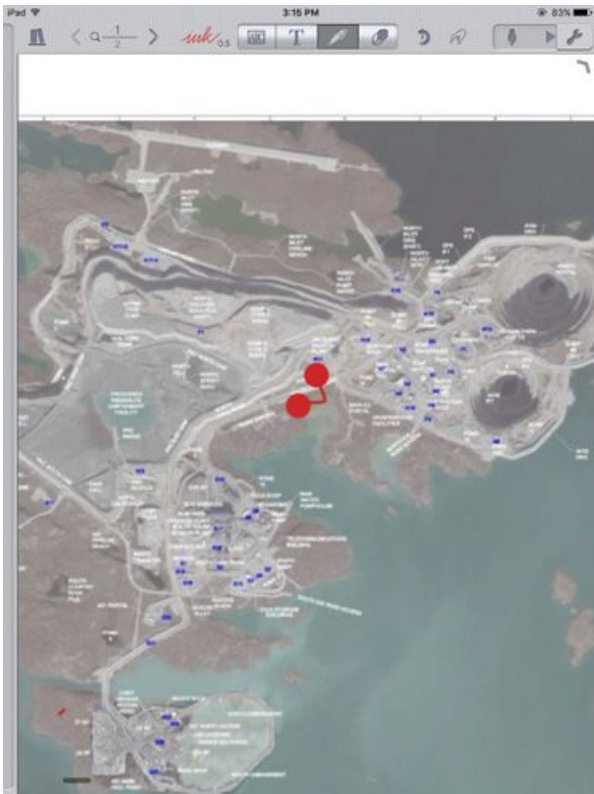


Photo 1

Wildlife Report - 2020

Grizzly - 2020-07-25 - North Haul Road

Complete

Score	3.18%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly - 2020-07-25 - North Haul Road

Document No.

WildlifeReport000364

Completed On

25th Jul, 2020

Audit

3.18%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

2.96%

Enter Initial Time of Wildlife Sighting

25th Jul, 2020 2:19 PM MDT

Department/Individual Who Reported Wildlife:

Surface Mining

Environment On Scene

Environment at Call-out Location

25th Jul, 2020 2:35 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single blonde grizzly (not resident bear)

Photo (If Possible):



Photo 1



Photo 2

Chronological Events

1420 Bear called in on North Haul Road heading towards Backfill, issued bear alert
1435 ENV on North Haul Road, no visual of bear. Inspected Till Pile, ERT Grounds, D1 before spotting bear in Pond 1
1530 Left bear grazing in Pond 1, updated bear alert.
1830 Bear reported crossing road from C Portal to Shallow Bays, updated bear alert.
1915 Bear called in at Old Mine Dry, updated bear alert.
1930 ENV at Batch Plant, bear napping on cement bags. Used TRUCK 2x, bear walked over top of cement bags.
1945 Bear napping on berm behind cement bags, used TRUCK to move bear in SCAP. Bear napping on berm. Threw ROCKS 10x, hit Bear twice around face.
2000 Bear napping on berm between Zone 1 and SCAP. When ENV pulled in with truck bear moved into Zone 1.
Bear crossed North Haul Road onto A154 Ramp and down to ERT grounds.
2030 Bear grazing by ERT grounds, ENV out

Movement Map (Import NotePlus Site Map)

Deterrent Count

2.96%

Truck	3	From 0 to 40
Air Horn	0	From 0 to 40
C/F Bear Banger	0	From 0 to 40
C/F Pen Whistle	0	From 0 to 40
12GA Bear Banger	0	From 0 to 40
12GA Explosive	0	From 0 to 40
12GA B.B. Marker	0	From 0 to 40
12GA Rubber Bullet	0	From 0 to 40
12GA Slug	0	From 0 to 40
Helicopter	0	From 0 to 40
Other	10	From 0 to 40
Specify		Rocks

Environment Off Scene

End of Environment Call-out 25th Jul, 2020 8:30 PM MDT

Final Location of Wildlife

ERT Training Grounds

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature



Shelby Skinner

26th Jul, 2020 6:24 PM MDT

Appendix



Photo 1



Photo 2

Wildlife Report - 2020

Grizzly - 2020-07-29 - Pond 1

Complete

Score	1.59%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-07-29 - Pond 1

Document No. WildlifeReport000063

Completed On

2nd Aug, 2020

Audit

1.59%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

1.36%

Enter Initial Time of Wildlife Sighting

29th Jul, 2020 11:30 AM MDT

Department/Individual Who Reported Wildlife:

Unknown

Environment On Scene

Environment at Call-out Location

29th Jul, 2020 11:40 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Sow and cubs that have been hanging around all summer, and patchy dark brown single bear

Photo (If Possible):

Chronological Events

11:25 Dark brown bear spotted entering Backfill yard

12:35 Bear reported crossing South Haul Road

12:42 Bear found sleeping in pond 13

12:45 fired 1 PEN BANGER, 1 MEDIUM RANGE RUBBER SLUG, bear ran and crossed south haul road.

12:46 Found sow and cubs in ditch between Backfill and south haul road, splotchy brown bear was beside them.

Began 24/7 watch of sow and cubs in preparation for planned relocation.

Bears made their way along ditch between backfill and south haul road and into pond 1. that is where they stayed until AH and GC switched.

18:45 - AH, GC switch, bears bedded at base of rockwall in Pond 1

19:49 - Bears cross road to Pond 13

20:10 - Bears bed down in Pond 13

21:35 - Bears get up and start moving, head toward C Ore Pad

21:45 - ENV uses TRUCK X3 to push bears through Batch Plant Yard

21:55 - ENV uses TRUCK to push bears over berm toward edge of 418 Pit

22:25 - Bears located in Fish Habitat of 418 Pit

22:40 - Another bear (4th bear) called in at 154 Dike coming from across the lake

23:00 - Another bear (potentially 5th) called in at Pond 1 near the Backfill Plant

23:15 - Lost eyes on the bears in dusk light

2020-07-30

01:20 - could not locate bears due to no daylight - AH leaves area

Movement Map (Import NotePlus Site Map)

Deterrent Count

1.36%

Truck	4 From 0 to 40
Air Horn	0 From 0 to 40
C/F Bear Banger	1 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Bear Banger	0 From 0 to 40
12GA Explosive	0 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	1 From 0 to 40
12GA Slug	0 From 0 to 40
Helicopter	0 From 0 to 40
Other	0 From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out 30th Jul, 2020 1:30 AM MDT

Final Location of Wildlife

A418 Fish Habitat

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

Wildlife Report - 2020

Grizzly - 2020-07-30 - North Mine Dry

Complete

Score	1.81%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly - 2020-07-30 - North Mine Dry

Document No.

WildlifeReport000064

Completed On

2nd Aug, 2020

Audit

1.81%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

1.59%

Enter Initial Time of Wildlife Sighting

30th Jul, 2020 4:30 AM MDT

Department/Individual Who Reported Wildlife:

Unknown

Environment On Scene

Environment at Call-out Location

30th Jul, 2020 4:30 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Sow and 2 cubs, same ones that have been hanging around solitary grizzly blonde with dark stripe over haunches and rump
solitary grizzly dark

Photo (If Possible):

Chronological Events

16:25 call of 4 bears at UG North Mine Dry

16:30 ENV arrives on scene to find 5 bears near totes

16:30-05:30 bears settle down and nap on edge of road between North Mine Dry area and SCAP

17:30-18:30 bears slowly graze and move north through SCAP and C portal area toward Pond 5

18:00 ENV loses sight of dark grizzly

18:30 ENV leaves pond 5 for crew change, 4 bears in Pond 5

18:30 GC on location. 4 bears still present.

18:30 - 21:00:

Sow and 2 cubs cross road to tundra, followed by single male. Sow and cubs make their way to Pond 10, with Env following in TRUCK.

Sow and cubs graze in pond for a while, then follow road to tundra near comm building. ENV uses MR RUBBER SLUG in their direction to move them away from road onto tundra.

21:00 Report of single male grizzly walking down road in front of truck shop. ENV moves down road and blocks bear at the megadome with TRUCK. bear goes around, ENV drives onto closed walking trail and blocks bear with TRUCK, pushes it back towards shallow bays. Bear goes towards cafeteria deck. Env stays between bear and main accommodations building. Uses GUN CYCLE to move bear away from the building.

ENV found the 4 bears later in the night in pond 11. Watched them until it got too dark to see. Then fired 2 pen bangers to try to alert the bears in order to spot them. saw single bear. lost visual again and left the area around 02:30am.

Movement Map (Import NotePlus Site Map)

Deterrent Count

1.59%

Truck

3

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

2

From 0 to 40

C/F Pen Whistle

0

From 0 to 40

12GA Bear Banger

0

From 0 to 40

12GA Explosive

0

From 0 to 40

12GA B.B. Marker

0

From 0 to 40

12GA Rubber Bullet

1

From 0 to 40

12GA Slug

0

From 0 to 40

Helicopter

0

From 0 to 40

Other

1

From 0 to 40

Specify

Gun Cycle

Environment Off Scene

End of Environment Call-out

31st Jul, 2020 2:00 AM MDT

Final Location of Wildlife

Pond 11

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

Wildlife Report - 2020

Grizzly - 2020-07-31 - Raw Water Road

Complete

Score	2.27%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly - 2020-07-31 - Raw Water Road

Document No.

WildlifeReport000065

Completed On

2nd Aug, 2020

Audit

2.27%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

2.05%

Enter Initial Time of Wildlife Sighting

31st Jul, 2020 4:30 AM MDT

Department/Individual Who Reported Wildlife:

Unknown

Environment On Scene

Environment at Call-out Location

31st Jul, 2020 4:30 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Same Sow and 2 cubs

Photo (If Possible):

Chronological Events

04:20 - ENV leaves office to locate bears for relocation
 04:30 - ENV receives call of bear on South Haul Road in front of the Truck Shop - ENV contacts Truck Shop to close bay doors
 04:40 - bears move along S Haul Road and into Pond 5 where they start grazing
 05:50 - Bears move out of pond 5 up onto the ROM Hill tundra and continue grazing
 06:00 - Bear move into PKC Muster/HME Line-up
 06:05 - ENV locates bears between 2 loaders, snacking on garbage outside of cab, ENV uses TRUCK and HORN to push bears away from garbage and onto berm. Sow attempts to climb onto truck, ENV reverses truck to keep bear from getting on truck.
 06:08 - ENV uses HORN to try to push bears off of garbage and onto berm, bears do not respond
 06:10 - ENV uses GUN CYCLE, then SR RUBBER BULLET to move bears, bear move over the berm and head across the road into the valley at the base of the PKC and Test Piles
 06:15 - ENV has eyes on bears in valley at base of PKC and Test Piles while garbage is cleaned up
 06:45 - Bears are making their way toward the AN Road
 07:00 - Bears cross AN Road and are on tundra between SCRIP and AN Road
 07:20 - Caribou notices bears but bears pay no attention to Caribou
 07:35 - Bears slowly making their way along tundra toward the AN Building and Windfarm
 07:45 - ENV leaves area to switch out personnel

09:45 GC finds Sow and Cubs around the rock pile in Pond 4. TN joins shortly after.
 09:52 - 10:15 GC and TN follow bears into Pond 3, use TRUCKS to keep them going in good direction.
 11:00 ENR biologists arrive in Helicopter for briefing with DDMI personnel
 11:08 Heli lifts off and GC uses 1x MEDIUM RANGE RUBBER SLUG and 2x 12 GAUGE EXPLOSIVES to get bears moving around pond towards tundra offsite.
 HELICOPTER chases bears over road berm onto tundra. ENR biologists successfully tranquilize all three bears and relocate them 100km to the east of Diavik.

Movement Map (Import NotePlus Site Map)

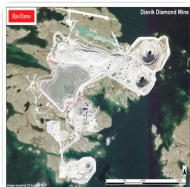


Photo 1

Deterrent Count	2.05%
Truck	2 From 0 to 40
Air Horn	2 From 0 to 40
C/F Bear Banger	0 From 0 to 40
C/F Pen Whistle	0 From 0 to 40

12GA Bear Banger	0	From 0 to 40
12GA Explosive	2	From 0 to 40
12GA B.B. Marker	0	From 0 to 40
12GA Rubber Bullet	1	From 0 to 40
12GA Slug	0	From 0 to 40
Helicopter	1	From 0 to 40
Other	1	From 0 to 40
Specify		Gun Cycle

Environment Off Scene

End of Environment Call-out	31st Jul, 2020 12:00 PM MDT
Final Location of Wildlife	
Relocation by ENR of Sow and Cubs	

Closure & Sign-off 100%

Wildlife Report Complete	On
Signature	

Appendix



Photo 1

Wildlife Report - 2020

Grizzly - 2020-08-01 - Backfill/418 Dike

Complete

Score	0.45%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-08-01 - Backfill/418 Dike

Document No. WildlifeReport000066

Completed On

2nd Aug, 2020

Audit

0.45%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0.23%

Enter Initial Time of Wildlife Sighting

1st Aug, 2020 11:30 AM MDT

Department/Individual Who Reported Wildlife:

Unknown/Survey

Environment On Scene

Environment at Call-out Location

1st Aug, 2020 11:40 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single Grizzly

Photo (If Possible):

Chronological Events

11:30 - ENV receives call of bear in ditch at intersection of Backfill and South Haul Road

11:40 - ENV arrives on scene and starts looking for bear

12:20 - ENV searches all surrounding areas and cannot locate bear, leaves area

12:30 - ENV receives call from Survey of Bear on the 418 Dike

12:35 - ENV arrives on scene and spots bear on the Dike and 2 LV with people on foot near vehicle, ENV lays on HORN to alert personnel in area to return to their vehicle, bear moves across dike and into the infield area

12:40 - ENV approaches 2 LV and notices that Surveyor's tripod with digital level was knocked down presumably by the bear, personnel confirm that it was bear that knocked down the piece of equipment

12:45 - Bear continues along into the infield of the 418, headed in direction of the 154 infield, good area, ENV leaves

Movement Map (Import NotePlus Site Map)

Deterrent Count

0.23%

Truck

0

From 0 to 40

Air Horn

1

From 0 to 40

C/F Bear Banger

0

From 0 to 40

C/F Pen Whistle	0
	From 0 to 40
12GA Bear Banger	0
	From 0 to 40
12GA Explosive	0
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	0
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	0
	From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out 1st Aug, 2020 12:45 PM MDT

Final Location of Wildlife

A418 Infield Area

Closure & Sign-off

100%

Wildlife Report Complete On

Signature

Atikin Hehn

2nd Aug, 2020 8:10 AM MDT

Wildlife Report - 2020

Girzzly - 2020-08-06 - A21

Complete

Score	2.74%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Girzzly - 2020-08-06 - A21

Document No.

WildlifeReport000068

Completed On

7th Aug, 2020

Audit

2.74%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

2.5%

Enter Initial Time of Wildlife Sighting

6th Aug, 2020 8:30 PM MDT

Department/Individual Who Reported Wildlife:

Frank - Surface Mining

Environment On Scene

Environment at Call-out Location

6th Aug, 2020 9:00 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single Bear with dark brown stripe around hind quarters, blonde with splotches of brown occasionally.

Photo (If Possible):

Chronological Events

20:30 Bear called in behind PKC muster station

21:00 ENV on scene, no visual on bear, begin scanning

21:20 Found bear beside AN road near test piles and waste transfer, followed in truck

21:25 YELLED, CLAPPED to encourage bear to go towards emulsion building, bear decides to be a dick and climbs south country rock pile and heads towards A21

21:30 ENV arrives at SCRP, attempts to push bear away with TRUCK, bear climbs berm before ENV can block

21:34 ENV relocates, unable to locate bear.

21:50 bear called in crossing road berm to lakeshore boulevard, ENV mobilizes

21:53 - 22:04 ENV Blocks bear with TRUCK twice from attempting to cross towards zone 3.

22:05 Bear crosses in front of active Haul trucks multiple times to reach zone three. Blocked from going past workers by ENV TRUCK

22:07 ENV blocks bear with TRUCK twice on south side of zone 4, tries to fire 2 C/F BANGERS, second one misfires, bear backs away, Lost visual

for next 40 mins ENV looks for bear, cannot find it.

23:15 ENV updates site announcement and leaves scene

Movement Map (Import NotePlus Site Map)

Deterrent Count

2.5%

Truck

6

From 0 to 40

Air Horn	0
	From 0 to 40
C/F Bear Banger	2
	From 0 to 40
C/F Pen Whistle	0
	From 0 to 40
12GA Explosive	0
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	0
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	2
	From 0 to 40
Specify	yelling, clapping

Environment Off Scene

End of Environment Call-out	6th Aug, 2020 11:30 PM MDT
Final Location of Wildlife	
Unknown, A21	

Closure & Sign-off

100%

Wildlife Report Complete	On
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Signature

GC
7th Aug, 2020 1:28 AM MDT

Wildlife Report - 2020

Grizzly - 2020-08-10 North Inlet

Complete

Score	1.25%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-08-10 North Inlet

Document No. WildlifeReport000070

Completed On

11th Aug, 2020

Audit

1.25%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

1%

Enter Initial Time of Wildlife Sighting

10th Aug, 2020 11:45 AM MDT

Department/Individual Who Reported Wildlife:

Jim at North Inlet

Environment On Scene

Environment at Call-out Location

10th Aug, 2020 12:00 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Large very brown grizzly and smaller blond with dark brown striped grizzly in same area

Photo (If Possible):



Photo 1



Photo 2

Chronological Events

11:45 2 Bears called in by Jim at North Inlet

12:45 Env unable to locate bears, left the area.

14:40 Bears called in in same area by people working on Dock, Env made announcement and went out to monitor.

15:25 Blonde bear with Strike crossed airport road towards till pile, attempted to block with TRUCK, but unsuccessful.

15:28 fired 3x 12G EXPLOSIVES to push bear to west back towards north inlet.

15:35 Bear crossed road by North Inlet pipe diversion shack into the north inlet tundra.

Movement Map (Import NotePlus Site Map)

Deterrent Count

1%

Truck

1

From 0 to 40

Air Horn	0	From 0 to 40
C/F Bear Banger	0	From 0 to 40
C/F Pen Whistle	0	From 0 to 40
12GA Explosive	3	From 0 to 40
12GA B.B. Marker	0	From 0 to 40
12GA Rubber Bullet	0	From 0 to 40
12GA Slug	0	From 0 to 40
Helicopter	0	From 0 to 40
Other	0	From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out 8th Oct, 2020 4:00 PM MDT

Final Location of Wildlife

Both in North Inlet

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

11th Aug, 2020 6:45 PM MDT

Appendix



Photo 1



Photo 2

Wildlife Report - 2020

Grizzly - 2020-08-12 - A21 Pit shop

Complete

Score	2.99%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-08-12 - A21 Pit shop

Document No. WildlifeReport000072

Completed On

13th Aug, 2020

Audit

2.99%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

2.75%

Enter Initial Time of Wildlife Sighting

12th Aug, 2020 8:00 PM MDT

Department/Individual Who Reported Wildlife:

Surface Mining

Environment On Scene

Environment at Call-out Location

12th Aug, 2020 8:30 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Blonde bear with dark brown butt and dark brown patches.

Photo (If Possible):

Chronological Events

20:08 Bear called in @ A21 Pitshop, heading to South Winter Road Approach.

20:35 to 20:42 CYCLED ACTION once, fired 1x 12 GAUGE MEDIUM RANGE RUBBER SLUG to stop bear from crossing to tundra near comm shack. Got bear moving West. used 2 C/F BANGERS and 1 CYCLE ACTION to keep bear moving west parallel to road.

21:05 CYCLED ACTION to keep bear moving

21:35 Bear crosses A21 haul road heading towards pitshop. Follows pipe towards base of South Country Rock Pile

21:45 - 22:17 CYCLED ACTION 3 times to push bear around SCRIP to tundra near AN road, yelling while driving alongside to keep it moving.

20:45 Bear in good area, End of wildlife call.

Movement Map (Import NotePlus Site Map)

Deterrent Count

2.75%

Truck

0

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

2

From 0 to 40

C/F Pen Whistle

0
From 0 to 40

12GA Explosive

0
From 0 to 40

12GA B.B. Marker

0
From 0 to 40

12GA Rubber Bullet

1
From 0 to 40

12GA Slug

0
From 0 to 40

Helicopter

0
From 0 to 40

Other

8
From 0 to 40

Specify

Cycled action 7 times, yelled

Environment Off Scene

End of Environment Call-out

12th Aug, 2020 10:45 PM MDT

Final Location of Wildlife

Tundra west of SCRP

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

13th Aug, 2020 7:49 AM MDT

Wildlife Report - 2020

Grizzly- 2020-08-13 - Main camp to PKC muster

Complete

Score	2.24%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly- 2020-08-13 - Main camp to
PKC muster

Document No.

WildlifeReport000073

Completed On

15th Aug, 2020

Audit

2.24%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

2%

Enter Initial Time of Wildlife Sighting

13th Aug, 2020 8:24 AM MDT

Department/Individual Who Reported Wildlife:

PKC

Environment On Scene

Environment at Call-out Location

13th Aug, 2020 12:00 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Blonde bear with Dark patch on rump. same bear as last several days

Photo (If Possible):



Photo 1

Chronological Events

08:15 Bear called in on green patch in front of main accommodations building cafeteria
 08:24 ENV on scene, bear is at edge of pond 10
 08:29 1 CYCLED ACTION at bear near pond 10 to push it west along base of road berm
 08:46 Bear attempts to cross road to pond 5. Blocked with TRUCK twice, bear able to cross road on third attempt.
 08:49 2 12G EXPLOSIVES in Pond 5
 08:53 1 MEDIUM RANGE RUBBER in Pond 5 to push bear out of pond and up rock pile to PKC
 09:13 stalked towards bear with shotgun, CYCLED ACTION to push bear out of green space above pond 5 and push him up the road towards PKC
 09:20 Bear climbed low point shack pipe road towards PKC muster, spotted heading south by haul traffic,
 09:30 ENV unable to find bear after looking in all workplaces around. Went to Test Piles to help collect samples.
 10:19 Bear called in at PKC muster heavy vehicle parking area. ENV mobilizes
 10:21 Charged bear with TRUCK, fired 1 CENTER FIRE BEAR BANGER. Bear ran into valley between test piles and PKC, headed for green space on west side of valley.
 10:30 ENV repositioned to test piles west toe, found bear feeding on grass near test pile trailer, fired one CENTERFIRE BANGER towards bear, exploded nearby and bear kept running west
 10:37 ENV went around test piles, fired 1 CENTERFIRE BANGER from road towards bear on tundra in valley, bear began moving out of valley towards Emulsion pad tundra.

Movement Map (Import NotePlus Site Map)



Photo 2

Deterrent Count	2%
Truck	3 From 0 to 40
Air Horn	0 From 0 to 40
C/F Bear Banger	3 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Explosive	2 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	0 From 0 to 40

12GA Slug

0
From 0 to 40

Helicopter

0
From 0 to 40

Other

0
From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out

13th Aug, 2020 10:40 AM MDT

Final Location of Wildlife

Near Ammonium Nitrate road heading west

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

15th Aug, 2020 7:53 AM MDT

Appendix



Photo 1



Photo 2

Wildlife Report - 2020

Grizzly-2020-08-31-MAC-Lakeshore

Complete

Score	0.75%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly-2020-08-31-MAC-Lakeshore

Document No. WildlifeReport000367

Completed On

31st Aug, 2020

Audit

0.75%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0.5%

Enter Initial Time of Wildlife Sighting

31st Aug, 2020 12:45 PM MDT

Department/Individual Who Reported Wildlife:

Jeff - Site Services

Environment On Scene

Environment at Call-out Location

31st Aug, 2020 1:01 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Sow and first-year cub

Photo (If Possible):



Photo 1



Photo 2

Chronological Events

1245 Sow and cub reported near MAC dining room

1301 Environment on scene, sow and cub spotted behind steel yard

1305 Environment follows sow and cub past south winter road approach toward Lakeshore Boulevard

1316 Sow and cub attempt to cross berm onto road, pen-fired BANGER fired. Bears stop but do not leave area

1320 Second BANGER fired, no response from bears

1325 Environment follows sow and cub back and forth along Lakeshore several times

1450 Environment leaves sow and cub feeding on tundra east of Lakeshore Boulevard

Movement Map (Import NotePlus Site Map)

Deterrent Count

0.5%

Truck

0

From 0 to 40

Air Horn	0
	From 0 to 40
C/F Bear Banger	2
	From 0 to 40
C/F Pen Whistle	0
	From 0 to 40
12GA Explosive	0
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	0
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	0
	From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out 31st Jul, 2020 3:00 PM MDT

Final Location of Wildlife

Tundra east of Lakeshore Boulevard

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

Brett Potter

1st Sep, 2020 9:48 AM MDT

Appendix



Photo 1



Photo 2

Wildlife Report - 2020

Grizzly-2020-09-02-Till Pile

Complete

Score	0.75%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly-2020-09-02-Till Pile

Document No.

WildlifeReport000368

Completed On

3rd Sep, 2020

Audit

0.75%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0.5%

Enter Initial Time of Wildlife Sighting

2nd Sep, 2020 5:30 PM MDT

Department/Individual Who Reported Wildlife:

ERT - Joelene

Environment On Scene

Environment at Call-out Location

2nd Sep, 2020 5:50 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Resident sow and two cubs

Photo (If Possible):

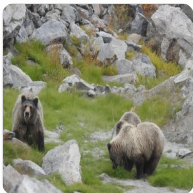


Photo 1

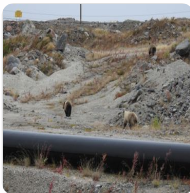


Photo 2

Chronological Events

1740 Bears reported walking along pipes next to Airport Road, Environment responds

1750 Environment on scene, sow and two cubs seen walking toward backfill plant at the base of the till pile

1800 Bears attempt to cross South Haul Road, used TRUCK to reverse their direction

1803 Bears attempt to cross South Haul Road heading toward 154 pit, used TRUCK to drive bears toward North Inlet

1805 Bears move to tundra north of NI water treatment plant

1815 Environment leaves bears feeding on tundra

Movement Map (Import NotePlus Site Map)

Deterrent Count

0.5%

Truck

2

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger	0
	From 0 to 40
C/F Pen Whistle	0
	From 0 to 40
12GA Explosive	0
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	0
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	0
	From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out 2nd Sep, 2020 6:30 PM MDT

Final Location of Wildlife

Tundra north of NIWTP

Closure & Sign-off

100%

Wildlife Report Complete On

Signature

Brett Potter

3rd Sep, 2020 9:19 AM MDT

Appendix



Photo 1



Photo 2

Wildlife Report - 2020

Grizzly-2020-09-03

Complete

Score	1.25%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly-2020-09-03

Document No.

WildlifeReport000057

Completed On

4th Sep, 2020

Audit

1.25%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

1%

Enter Initial Time of Wildlife Sighting

3rd Sep, 2020 7:05 PM MDT

Department/Individual Who Reported Wildlife:

Surface Mining

Environment On Scene

Environment at Call-out Location

3rd Sep, 2020 7:40 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single adult male, possibly resident

Photo (If Possible):

Chronological Events

1905 Single grizzly reported in A21 pit

1940 Environment sights bear moving back and forth between pit and fish habitat

1950 CYCLED ACTION, bear quickly moves north toward north ramp

2000 Environment spots bear on gravel pile north of north ramp, fires BANGER. Bear quickly moves north onto dike road

2013 Environment follows bear slowly onto dike road, charges bear with TRUCK in an effort to move bear toward Lakeshore Boulevard

2015 Bear changes direction and crosses north ramp toward fish habitat

2030 Environment spots bear on fish habitat and monitors as it paces from north to south

2055 Bear lays down to sleep on fish habitat

2105 End call

Movement Map (Import NotePlus Site Map)

Deterrent Count

1%

Truck

2

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger	1 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Explosive	0 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	0 From 0 to 40
12GA Slug	0 From 0 to 40
Helicopter	0 From 0 to 40
Other	1 From 0 to 40
Specify	Cycle action

Environment Off Scene

End of Environment Call-out 3rd Sep, 2020 9:05 PM MDT

Final Location of Wildlife
Sleeping on A21 fish habitat

Closure & Sign-off 100%

Wildlife Report Complete On

Signature

Brett potter
4th Sep, 2020 8:42 AM MDT

Wildlife Report - 2020

Grizzly-2020-09-08-A21

Complete

Score	1.5%	Failed items	0	Actions	0
-------	------	--------------	---	---------	---

Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly-2020-09-08-A21

Document No.

WildlifeReport000370

Completed On

9th Sep, 2020

Audit

1.5%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

1.25%

Enter Initial Time of Wildlife Sighting

8th Sep, 2020 8:11 PM MDT

Department/Individual Who Reported Wildlife:

Surface Mining

Environment On Scene

Environment at Call-out Location

8th Sep, 2020 8:25 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single resident male

Photo (If Possible):

Chronological Events

2011: Environment receives call for single bear at A21 Pitshop

2025: Environment on scene, A21 personnel call to report bear near Zone 3

2035: Environment spots bear on fish habitat near Seepage Location 6. Fired RUBBER BULLET, missed. Fired second RUBBER BULLET, bear runs north toward north ramp.

2045: Followed bear to dike road, used TRUCK to change bear's direction toward Lakeshore Boulevard

2050: Continue following bear, used PEN BANGER to prevent bear from crossing berm to north ramp. Used second PEN BANGER to move bear toward Lakeshore Boulevard.

2100: Bear crosses north ramp and returns to fish habitat, then moves into A21 pit and follows pipeline parallel to south ramp. Environment continues to monitor bear until darkness prevents visual contact.

2130: End call

Movement Map (Import NotePlus Site Map)

Deterrent Count

1.25%

Truck

1

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

2

From 0 to 40

C/F Pen Whistle	0
	From 0 to 40
12GA Explosive	0
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	2
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	0
	From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out 8th Sep, 2020 9:45 AM MDT

Final Location of Wildlife

A21 near south ramp

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

Brett Potter

9th Sep, 2020 9:11 AM MDT

Wildlife Report - 2020

Grizzly - 2020-09-13 - SCAP

Complete

Score	0.5%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-09-13 - SCAP

Document No. WildlifeReport000371

Completed On

13th Sep, 2020

Audit

0.5%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0.25%

Enter Initial Time of Wildlife Sighting

13th Sep, 2020 1:07 PM MDT

Department/Individual Who Reported Wildlife:

HSE / Craig Bernadette

Environment On Scene

Environment at Call-out Location

13th Sep, 2020 1:18 PM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Sow and cub, sow has patchy coat

Photo (If Possible):

Chronological Events

1307 Bears called in at SCAP, issued bear alert
1320 ENV on scene, no visual
1330 ENV spots bears in Shallow Bays, updated bear alert
1400 Bears attempted crossing South Haul road, used TRUCK to deter
1415 Bears walking along shoreline past Pond 10, dailies
1430 Bears cross road by dailies and into Pond 11 then down towards 1645-33 Well.
1500 Bears walking and grazing along Lakeshore Boulevard.
1530 Cub runs onto road and Sow cant see it. Cub runs towards A21 on road, Sow swims in bay looking for cub. The two are reunited and climb up berm onto A21 Haul Road and onto tundra near SCRP. ENV out
1745 Sow and cub called in on A21 Haul Road heading towards South Ramp. Updated bear alert.
1800 Bears go into Zone 2, no visual.
1830 Bears spotted on tundra near A21 Muster, updated bear alert.
1930 Bears spotted by Winter Road Dispatch, updated bear alert.
1945 Bears spotted near dailies, started running towards Com Shack/Raw Water Uptake
2000 Lost sight as it started getting dark and bears went up over hill
2030 Bear reported near D Dorm, updated bear alert and went to check on foot first. When I first arrived at the stairwell I heard some rustling around thinking it was a person. When i got to the main floor I saw the bear trying to get out the doors between C & D dorms. Went into kitchen and asked everyone to head to the gym. Called security to get a hold of Env Supervisor. Updated bear alert.
2100 Bear pacing through kitchen, trying to get out though windows, eating fruit, walking past old Health office and towards the main entrance. Contacted ERT to open doors in Dining Hall and front door of Main Accommodations.
2115 bear walks out front door. ERT does sweep of building before releasing people

Movement Map (Import NotePlus Site Map)



Photo 1

Deterrent Count

0.25%

Truck

1

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

0

From 0 to 40

C/F Pen Whistle

0

From 0 to 40

12GA Explosive

0

From 0 to 40

12GA B.B. Marker

0

From 0 to 40

12GA Rubber Bullet

0

From 0 to 40

12GA Slug

0

From 0 to 40

Helicopter

0

From 0 to 40

Other

0

From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out

14th Sep, 2020 12:00 AM MDT

Final Location of Wildlife

Unknown

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

A rectangular box containing a handwritten signature in black ink. The signature is cursive and appears to read "Shelby Skinner".

Shelby Skinner

14th Sep, 2020 4:49 AM MDT

Appendix



Photo 1

Wildlife Report - 2020

Grizzly - 2020-09-23 - Airport

Complete

Score	1.75%	Failed items	0	Actions	0
-------	-------	--------------	---	---------	---

Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly - 2020-09-23 - Airport

Document No.

WildlifeReport000078

Completed On

24th Sep, 2020

Audit

1.75%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

1.75%

Enter Initial Time of Wildlife Sighting

23rd Sep, 2020 9:00 AM MDT

Department/Individual Who Reported Wildlife:

RTX

Environment On Scene

Environment at Call-out Location

23rd Sep, 2020 9:15 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Cocoa: single, chocolate coloured bear, no visible ear tag, full grown, healthy looking

Photo (If Possible):

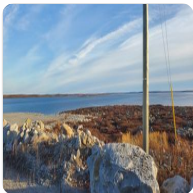


Photo 1



Photo 2

Chronological Events

09:00 RTX calls they are trapped in helishack because there is a bear outside the building
 09:00 ENV makes all announce of bears location.
 09:15 ENV arrives on site, the bear is sleeping on tundra between East runway and helipad
 09:17 cycled shotgun loading 12GA explosive/cracker shell, bear wakes up
 09:18 fired one 12Ga explosive/cracker shell, bear ran east toward end of runway, then north over the runway
 09:30 fired mid range rubber slug at bear on tundra north side of the runway, bear moved further north
 09:45 fired one 12Ga explosive/cracker shell, bear ran out of site north toward lake
 11:50 ENV receives call from airport grizzly is now at the heli pad area.
 12:00 ENV on scene. Bear is 50m away from heli pad sleeping on tundra. ENV shot 2 hand held BANGERS at bear.
 Bear moves east towards runway out of site.
 12:30 ENV locates bear lake side of runway grazing.
 1:00 ENV leaves.
 17:00 Bear called in at airport road making it's way up the north country rock pile.
 17:01 ENV updates bear announcement
 17:25 - ENV arrives at Backfill Plant to resume looking for the bear - cannot locate
 17:30 - ENV receives call of bear at the Core Shack
 17:32 - ENV locates bear in D1/Geology Laydown and uses TRUCK to move bear in good direction out of the
 D1/Geology Laydown
 17:40 - Bear found swimming NE away from Diavik
 18:00 - Bear passes the half-way point of the swim across the lake, ENV updates announcement and leaves area

Movement Map (Import NotePlus Site Map)

Deterrent Count	1.75%
Truck	1 From 0 to 40
Air Horn	0 From 0 to 40
C/F Bear Banger	2 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Explosive	2 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	1 From 0 to 40
12GA Slug	0 From 0 to 40
Helicopter	0 From 0 to 40

Other

1

From 0 to 40

Specify

cycle shotgun mechanism

Environment Off Scene

End of Environment Call-out

23rd Sep, 2020 6:00 PM MDT

Final Location of Wildlife

Lac de Gras swimming NE

Closure & Sign-off

0%

Wildlife Report Complete

Appendix



Photo 1



Photo 2

Wildlife Report - 2020

Grizzly-2020-10-08-FAR-North Inlet

Complete

Score	0.5%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly-2020-10-08-FAR-North Inlet

Document No. WildlifeReport000086

Completed On

8th Oct, 2020

Audit

0.5%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0.25%

Enter Initial Time of Wildlife Sighting

8th Oct, 2020 11:30 AM MDT

Department/Individual Who Reported Wildlife:

Surface Mining

Environment On Scene

Environment at Call-out Location

8th Oct, 2020 11:44 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single resident male

Photo (If Possible):

Chronological Events

1130 Surface mining reports single grizzly between 418 and 154 pits, moving toward FAR

1144 Environment on scene at FAR, observes grizzly tracks and follows them from FAR across haul road to tundra patch behind ERT training ground and past NIWTP.

1210 Environment sights single grizzly on tundra near shoreline north of NIWTP. Bear appears to be digging in the ground and feeding on an animal (possibly a siksik).

1215 Environment fires C/F PEN BANGER, bear looks up and eventually moves slowly away, crossing the dam to the other side of the inlet

1231 Environment leaves scene with bear moving north across tundra

Movement Map (Import NotePlus Site Map)

Deterrent Count

0.25%

Truck

0

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

1

From 0 to 40

C/F Pen Whistle

0
From 0 to 40

12GA Explosive

0
From 0 to 40

12GA B.B. Marker

0
From 0 to 40

12GA Rubber Bullet

0
From 0 to 40

12GA Slug

0
From 0 to 40

Helicopter

0
From 0 to 40

Other

0
From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out

8th Oct, 2020 12:31 PM MDT

Final Location of Wildlife

moving north on tundra on the north side of the north inlet

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

Brett Potter

8th Oct, 2020 5:00 PM MDT

Wildlife Report - 2020

Grizzly - 2020-10-11 Helipad

Complete

Score	5.49%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Grizzly - 2020-10-11 Helipad

Document No.

WildlifeReport000088

Completed On

12th Oct, 2020

Audit

5.49%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

5.25%

Enter Initial Time of Wildlife Sighting

11th Oct, 2020 9:00 AM MDT

Department/Individual Who Reported Wildlife:

April - Airport

Environment On Scene

Environment at Call-out Location

11th Oct, 2020 9:30 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Resident blonde grizzly, in very good shape. Well rounded out, lots of fat reserves for winter.

Photo (If Possible):



Photo 1

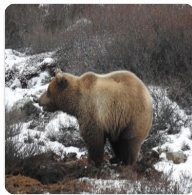


Photo 2



Photo 3

Chronological Events

09:00 April at airport spotted bear getting into waste bin near helipad seacan. Environment made announcement
10:00 Env arrives at helipad, finds bear digging in side of hill between helipad and airport runway. Watching bear for several minutes, bear continues digging deeper into the hillside. Gord Cumming (GC) and Brett Potter (BP) return to truck shop to grab deterrents.
10:45 Env back at helipad. Bear still digging in same location
10:50 Fired 2 12 Gauge CRACKER shells, bear moved short distance away
10:51 fired 1 PEN BANGER, YELLED at bear to encourage it further away.
10:53 1 12 Ga CRACKER as bear ambled away. Bear crosses runway heading north
10:55 GC and BP approach the dig site with deterrents and camera, announcing their presence. Dig site appears to be beginnings of an incomplete den. GC and BP contact supervisor, plan made to roll boulders into and refill hole with dirt.
11:22 GC and BP drove onto runway to gain visual on bear, spotted it heading for the runway in the direction of its attempted den, blocked it with TRUCK, YELLED to move bear north away from runway and dig site.
11:24 BP monitors bear from truck while GC heads to dig site to fill in hole with boulders and dirt.
11:55 GC drops BP at truck shop, heads back to airport
12:12 GC spots bear crossing center of runway heading south. GC too far away to try and block with truck. GC moves to helipad to monitor bear activity for denning behaviour.
13:00 GC repositioned from helipad to North Inlet dam. Bear close by eating berries
14:01 bear crosses north inlet to south side, heads towards airport road. Env fires 1 12 Ga CRACKER, bear runs west along pipes beside road.
14:14 fired 1 PEN BANGER from road to stop bear coming towards road.
14:17 Blocked bear from crossing road with TRUCK.
14:27 CYCLED SHOTGUN ACTION to keep bear away from road.
14:34 1 PEN BANGER at West end of airport road to keep it from crossing
14:53 bear crosses west end of North Inlet, heading north towards dig site.
15:14 Bear arrived at dig site, sniffing around and digging in the area. Env CYCLED ACTION, bear moved west
15:31 Env fired 1 12 Ga CRACKER at bear west of dig site as it was spending a lot of time sniffing and scratching in an area. It moved west towards airport taxiway
15:43 used 1 MID RANGE RUBBER BULLET to push bear away from West end of runway, trying to get it to go northwest towards West Island.
16:30 2 MID RANGE RUBBER BULLETS as bear came towards runway and passed beside it, heading southwest. 1st missed but pushed him back briefly, second hit as he was running past. unable to block him.
17:35 2 PEN BANGERS to try and keep bear from going south. Bear went south
17:40 1 MID RANGE RUBBER BULLET near lake shore to stop bear from going south. bear moved north briefly, then headed for airport apron. Env repositioned to stay between bear and infrastructure, bear turned around, snuck along lakeshore and went south.
17:48 1 12 GA CRACKER to encourage bear away from area.
17:50 Bear heading towards N17 laydown, Env left area.

Movement Map (Import NotePlus Site Map)



Photo 4

Deterrent Count

5.25%

Truck	2 From 0 to 40
Air Horn	0 From 0 to 40
C/F Bear Banger	5 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Explosive	6 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	4 From 0 to 40
12GA Slug	0 From 0 to 40
Helicopter	0 From 0 to 40
Other	4 From 0 to 40
Specify	yelling (2), cycling shotgun action (2)

Environment Off Scene

End of Environment Call-out	11th Oct, 2020 6:00 PM MDT
Final Location of Wildlife	On tundra SW of airport heading towards N17 area

Closure & Sign-off

100%

Wildlife Report Complete	On
Signature	
GC	
12th Oct, 2020 8:20 AM MDT	

Appendix



Photo 1



Photo 2



Photo 3



Photo 4

Wildlife Report - 2020

Grizzly - 2020-10-26 A21

Complete

Score	1.5%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Grizzly - 2020-10-26 A21

Document No. WildlifeReport000089

Completed On

26th Oct, 2020

Audit

1.5%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

1.25%

Enter Initial Time of Wildlife Sighting

26th Oct, 2020 10:30 AM MDT

Department/Individual Who Reported Wildlife:

Jimmy Larkin - Pit Ops

Environment On Scene

Environment at Call-out Location

26th Oct, 2020 11:00 AM MDT

Animal Type

Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Adult, dark brown, no tags, large

Photo (If Possible):



Photo 1

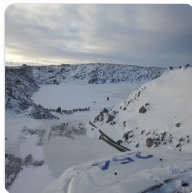


Photo 2

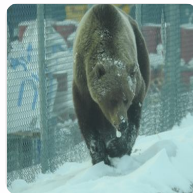


Photo 3



Photo 4

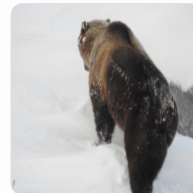


Photo 5

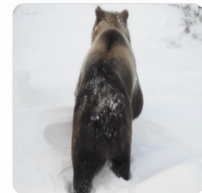


Photo 6



Photo 7

Chronological Events

10:30 Bear called in at A21 Water Tree heading towards A21 Muster, issued bear alert.
 10:45 ENV at A21 Water Tree. Tracks are spotted heading down to the ice, no visual of bear
 11:00 Bear spotted walking on ice towards A21 Muster
 11:30 Bear walked across LV parking lot, into HME parking lot and into Zone 2. Updated bear alert. Used TRUCK move bear onto Tundra. Bear sleeping.
 12:00 Bear up and moving slowly along the shoreline towards A21 Dike.
 12:30 Bear walking on ice, then turned around and headed back the same way it came. Used TRUCK to move bear out of Zone 2.
 13:30 Bear spotted on ice walking towards Emulsion Plant, updated bear alert.
 13:45 Bear called in at A21 Water Tree, used TRUCK to help move bear across SCRIP road into E21 sump and started heading towards A21 Pit Shop.
 14:00 Bear crossed AN road into Pond 12. Used TRUCK Updated bear alert. The bear walked the perimeter of WTA trying to get through the fence. Used TRUCK to push bear away from gate. Bear would stand on head and use butt to push weight into fence.
 14:30 Bear walking on AN road heading towards AN building.

Movement Map (Import NotePlus Site Map)



Photo 8

Deterrent Count

1.25%

Truck	5 From 0 to 40
Air Horn	0 From 0 to 40
C/F Bear Banger	0 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Explosive	0 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	0 From 0 to 40
12GA Slug	0 From 0 to 40

Helicopter

0

From 0 to 40

Other

0

From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out

26th Oct, 2020 2:30 PM MDT

Final Location of Wildlife

AN Road

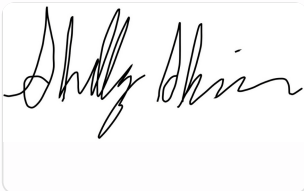
Closure & Sign-off

100%

Wildlife Report Complete

On

Signature



Shelby Skinner

27th Oct, 2020 5:20 PM MDT

Appendix



Photo 1



Photo 2



Photo 3



Photo 4

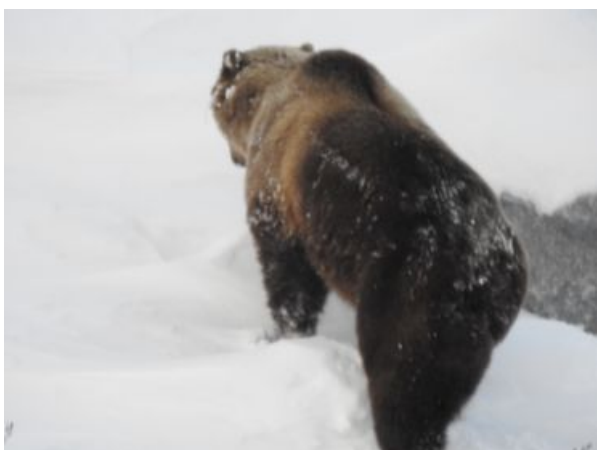


Photo 5



Photo 6



Photo 7



Photo 8

Wolf - 2020-01-06 - West PKC

Wildlife Report - 2019

Complete

Inspection score	Failed items	Created actions
0.68%	0	0
Audit Title (Animal - yyyy-mm-dd - Location)		
Wolf - 2020-01-06 - West PKC		
Document No.		
WildlifeReport000041		
📅 6th Jan, 2020		

Type of Wildlife Report	Deterrent Reporting
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Deterrent Report

Enter Initial Time of Wildlife Sighting <input type="calendar"/> 6th Jan, 2020 <input type="clock"/> 10:00 AM MST	
Department/Individual Who Reported Wildlife: PKC - Projects	
Environment at Call-out Location <input type="calendar"/> 6th Jan, 2020 <input type="clock"/> 11:00 AM MST	
Animal Type	Wolf
Description (eg. number of individuals, colour, age, size, etc.): Grey wolf, healthy	
Photo (if Possible): Unanswered	

Chronological Events

10:00 ENV receives call of Wolf on the SW corner of the PKC, ENV issues announcement to relevant channels 10:50 ENV received another call of the Wolf near the South Tank Farm, headed around the road toward Pond 11 area. ENV issues announcement and mobilizes 11:00 ENV arrives on scene near the Raw Water Intake, Wolf is on the lake headed toward the North Winter Road Approach 11:20 ENV arrives at North Winter Road and spots the wolf moving toward them 11:22 ENV fires 2 X c/f BANGER at the Wolf to move it away from the Winter Road Approach. Wolf continues along the road headed in the direction of the 418 Dike entrance 11:30 ENV loses visual on the wolf due to snow blockage 11:50 ENV locates wolf across the lake, headed away from camp, ENV leaves area
Movement Map (Import NotePlus Site Map) Unanswered

Deterrent Count

Truck	0 From 0 to 40
Air Horn	0 From 0 to 40
C/F Bear Banger	2 From 0 to 40
C/F Pen Whistle	0 From 0 to 40

12GA Bear Banger	0 From 0 to 40
12GA Explosive	0 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	0 From 0 to 40
12GA Slug	0 From 0 to 40
Helicopter	0 From 0 to 40
Other	0 From 0 to 40
Specify Unanswered	

End of Environment Call-out

📅 6th Jan, 2020 ⌚ 12:00 PM MST

Final Location of Wildlife

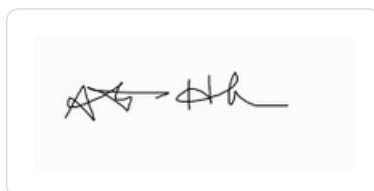
Shore across Lac de Gras

Closure & Sign-off

Wildlife Report Complete

On

Signature



Atikin Hehn

6th Jan, 2020 1:38 PM MST

Wildlife Report - 2020

Wolf - 2020-11-12

Complete

Score	1%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Wolf - 2020-11-12

Document No. WildlifeReport000090

Completed On

14th Nov, 2020

Audit

1%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0.75%

Enter Initial Time of Wildlife Sighting

11th Nov, 2020 11:00 AM MST

Department/Individual Who Reported Wildlife:

Site Services Delphis

Environment On Scene

Environment at Call-out Location

11th Nov, 2020 11:15 AM MST

Animal Type

Wolf

Description (eg. number of individuals, colour, age, size, etc.):

2 young arctic wolves

Photo (If Possible):



Photo 1

Chronological Events

11:00 2 wolves reported inside the fence of Waste Transfer

11:15 Environment on site, approached wolves from rear with TRUCK, YELLED to get them moving towards the open gate.

Environment followed the wolves in TRUCK to the tundra west of the south country rock pile.

11:28 Environment left area

Movement Map (Import NotePlus Site Map)



Photo 2

Deterrent Count

0.75%

Truck

2

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

0

From 0 to 40

C/F Pen Whistle

0

From 0 to 40

12GA Explosive

0

From 0 to 40

12GA B.B. Marker

0

From 0 to 40

12GA Rubber Bullet

0

From 0 to 40

12GA Slug

0

From 0 to 40

Helicopter

0

From 0 to 40

Other

1

From 0 to 40

Specify

Yelling

Environment Off Scene

End of Environment Call-out

12th Nov, 2020 11:30 AM MST

Final Location of Wildlife

On tundra west of south country rock pile

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

14th Nov, 2020 7:13 AM MST

Appendix



Photo 1



Photo 2

Wildlife Report - 2020

Wolf - 2020-11-28 - South Winter Road Approach

Complete

Score	0.75%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Wolf - 2020-11-28 - South Winter
Road Approach

Document No.

WildlifeReport000375

Completed On

28th Nov, 2020

Audit

0.75%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0.5%

Enter Initial Time of Wildlife Sighting

28th Nov, 2020 9:55 AM MST

Department/Individual Who Reported Wildlife:

Surface Mining

Environment On Scene

Environment at Call-out Location

28th Nov, 2020 10:10 AM MST

Animal Type

Wolf

Description (eg. number of individuals, colour, age, size, etc.):

2 adults

Photo (If Possible):

Chronological Events

0955 Environment personnel received report of two wolves near the AN road sign in shack heading toward the South Winter Road Approach (SWRA).

1010 Environment personnel on scene, two wolves spotted on the SWRA near the water's edge. Used TRUCK to move wolves onto the lake, minimal response.

1015 Used pen-fired BANGER, wolves moved onto lake heading east. Environment personnel remained on scene until wolves moved out of sight across the lake.

1030 End call.

Movement Map (Import NotePlus Site Map)

Deterrent Count

0.5%

Truck

1

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

1

From 0 to 40

C/F Pen Whistle

0

From 0 to 40

12GA Explosive	0
	From 0 to 40
12GA B.B. Marker	0
	From 0 to 40
12GA Rubber Bullet	0
	From 0 to 40
12GA Slug	0
	From 0 to 40
Helicopter	0
	From 0 to 40
Other	0
	From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out 28th Nov, 2020 10:30 AM MST

Final Location of Wildlife

Lac de Gras east of south winter road approach

Closure & Sign-off 100%

Wildlife Report Complete On

Signature



Brett Potter
28th Nov, 2020 10:50 AM MST

Wildlife Report - 2020

Wolverine - 2020-09-28 - Main Camp

Complete

Score	1%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location) Wolverine - 2020-09-28 - Main Camp

Document No. WildlifeReport000080

Completed On

1st Oct, 2020

Audit

1%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

0.75%

Enter Initial Time of Wildlife Sighting

28th Sep, 2020 1:30 PM MDT

Department/Individual Who Reported Wildlife:

Rick - ERT

Environment On Scene

Environment at Call-out Location

28th Sep, 2020 2:00 PM MDT

Animal Type

Wolverine

Description (eg. number of individuals, colour, age, size, etc.):

Adult animal

Photo (If Possible):

Chronological Events

13:30 Wolverine called in going up ROM hill by ERT advisor. ENV made announcement.

13:40 Wolverine called in near white sprung between Main Accommodations Complex (MAC) and truck shop, ENV began mobilizing with deterrents.

13:45 Wolverine near kitchen loading bay, sniffing at doors. ENV arrived with deterrents and watched animal crawl underneath E dorm access stairwell to north side of D Dorm.

Wolverine followed edge of main accommodations around to the cafeteria deck. Wolverine was spotted returning back around D dorm, crawling underneath E dorm access stairwell and crossing MAC parking lot, ENV arrived and saw it go around ERT firehall building. Watched it follow the edge of MAC, then it crossed the road north of cafeteria deck towards lake near raw water intake.

14:31 Wolverine now lakeside of ring road near raw water intake. Env kept truck on road and followed wolverine as it moved west to persuade it not to cross road.

14:38 Wolverine moved west, Env was standing on berm watching it walk along the lakeshore with deterrents in hand, over 150m away. Wolverine spotted me, then began ambling towards me, I fired 2 C/F BEAR BANGERS at it, and it continued moving west.

14:45 Lost visual on animal as it went around the bay and ambled north

Movement Map (Import NotePlus Site Map)



Photo 1

Deterrent Count

0.75%

Truck

1

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

2

From 0 to 40

C/F Pen Whistle

0

From 0 to 40

12GA Explosive

0

From 0 to 40

12GA B.B. Marker

0

From 0 to 40

12GA Rubber Bullet

0

From 0 to 40

12GA Slug

0

From 0 to 40

Helicopter

0

From 0 to 40

Other

0

From 0 to 40

Specify

Environment Off Scene

End of Environment Call-out

28th Sep, 2020 2:45 PM MDT

Final Location of Wildlife

Shallow Bays area

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

3rd Oct, 2020 5:56 PM MDT

Appendix



Photo 1

Wildlife Report - 2020

Wolverine - 2020-10-02 - Waste Transfer

Complete

Score	2.74%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Wolverine - 2020-10-02 - Waste Transfer

Document No.

WildlifeReport000083

Completed On

3rd Oct, 2020

Audit

2.74%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

2.5%

Enter Initial Time of Wildlife Sighting

2nd Oct, 2020 1:30 PM MDT

Department/Individual Who Reported Wildlife:

Douglas - Waste Transfer/Site Services

Environment On Scene

Environment at Call-out Location

2nd Oct, 2020 12:00 AM MDT

Animal Type

Wolverine

Description (eg. number of individuals, colour, age, size, etc.):

Same individual, adult wolverine, small-average size likely.

Photo (If Possible):

Chronological Events

- Wolverine called in at Waste Transfer Area (WTA), got into sea can where kitchen garbage is stored.
- ENV arrives, attempts to get wolverine out from under sea can 2. Used air horn pointed underneath sea can, banging on sea can sides with shovel, unsuccessful at scaring it out.
- ENV looks around WTA, no sign of wolverine, ENV starts opening doors of sea cans to inspect.
- Wolverine found inside sea can 2, ENV uses shovel to make noise on outside of sea can to get the wolverine to move out of the sea can; 2nd ENV personnel positioned at the entrance to the sea can with bear spray, wolverine moves under the sea can from a hole in the bottom of the sea can.
- ENV scours the area, does not get visual on animal. Began opening sea cans one by one to check for animal inside. All sea cans clear. Meanwhile Waste transfer staff removed all garbage bags from the sea can with hole in it, while environment personnel were watching for animal.
- Group of 3 personnel (2 environment) went to grab plywood boards to cover the holes in the bottom of the sea can, wolverine pops out from under one of the sea cans not far away. It watched group of three calmly back away, then moved away from personnel.
- ENV waited for animal to reappear. Wolverine appeared at the north west side of the sea cans, ENV attempts to spray with BEAR SPRAY, wolverine darts back behind sea can.
- Group spreads out and covers each end of row of sea cans, one person in the middle with bear spray banging a METAL SHOVEL against sea can sides.
- Wolverine is located behind the sea cans, ENV attempts to spray with BEAR SPRAY again
- Wolverine escapes from the NW corner of WTA via a hole in the fence;
- ENV speaks to Waste transfer supervisor and staff about the need to keep garbage out of that seacan until the hole can be fixed, to check all seacans for holes, and to fix the hole in fence.
- 14:30 Wolverine called in again at WTA underneath same sea can.
- 15:00 ENV arrives, Wolverine last spotted underneath same sea can. ENV used BANGING SHOVEL and AIRHORN to try and coax it out. Unsuccessful.
- ENV sprayed bit of BEAR SPRAY underneath sea can with personnel out of way.
- Wolverine appears lying down between pieces of equipment on North side of sea cans, ENV uses BEAR SPRAY at close range and hits wolverine on backside with bear spray.
- Wolverine begins heading back from sea cans towards WTA fence berm, sneezing and rubbing face on the dirt. ENV goes around south side of sea cans, and while YELLING, brandishing spray bottle without spraying it, MOVED ASSERTIVELY TOWARDS animal. It jogged North and left WTA from the same hole in the fence, ENV blocks hole in fence with plywood and heavy objects, reiterates to waste transfer supervisor and staff the need to remove access to garbage by covering holes and checking all sea cans.

Movement Map (Import NotePlus Site Map)

Deterrent Count	2.5%
Truck	0 From 0 to 40
Air Horn	2 From 0 to 40
C/F Bear Banger	0 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Explosive	0 From 0 to 40

12GA B.B. Marker **0**
From 0 to 40

12GA Rubber Bullet **0**
From 0 to 40

12GA Slug **0**
From 0 to 40

Helicopter **0**
From 0 to 40

Other **8**
From 0 to 40

Specify Banging on seacan with shovel (3),
Bear Spray (4), Yelling (1)

Environment Off Scene

End of Environment Call-out 2nd Oct, 2020 4:00 PM MDT

Final Location of Wildlife

Left Waste Transfer Area and went west across Ammonium Nitrate road

Closure & Sign-off 100%

Wildlife Report Complete  On

Signature

GC

3rd Oct, 2020 6:57 PM MDT

Wildlife Report - 2020

Wolverine - 2020-10-06 - Main Camp to WTA

Complete

Score	4.74%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Wolverine - 2020-10-06 - Main Camp
to WTA

Document No.

WildlifeReport000085

Completed On

7th Oct, 2020

Audit

4.74%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

4.5%

Enter Initial Time of Wildlife Sighting

7th Oct, 2020 4:45 AM MDT

Department/Individual Who Reported Wildlife:

DOC staff

Environment On Scene

Environment at Call-out Location

7th Oct, 2020 5:00 PM MDT

Animal Type

Wolverine

Description (eg. number of individuals, colour, age, size, etc.):

Same young individual from last several days. Light colouring on face and back.

Photo (If Possible):

Chronological Events

Wolverine spotted underneath vehicles in Diavik Operations Center (DOC) parking lot.

17:00 Env arrives on scene, wolverine is near South Camp loading bay, pushed animal through DOC/South Camp walkway with TRUCK. Wolverine went around G and H dorm, then went down the berm into the Main Accommodations Complex (MAC).

Waste transfer operators were at MAC loading bay, had to scramble to close the loading bay door when someone made them aware of the animal over the radio. Wolverine was heading towards front doors and sniffing along edges of the building. Env went down to parking lot and PUSHED the animal away from main entrance towards the E dorm access stairwell. Wolverine dashed underneath the covered access stairwell and after a brief stare down with environment continued through to the north side of D dorm.

Env went around E dorm trailers and spotted wolverine on the ring road beginning to head down the MAC access road. Env drove down D dorm access road and got between animal and E dorm access stairwell with TRUCK.

Wolverine moved around C dorm wing towards cafeteria deck. Env followed and pressured it by following in a TRUCK. Wolverine ducked underneath cafeteria deck. Shortly afterwards, it exited the cafeteria deck and headed towards the end of BB dorm. ENV continued pressuring it with TRUCK. As it went around BB dorm it began running back up the other side of BB dorm towards the A and B dorm stairwell doors. ENV sped past it in TRUCK to block it from continuing south, managed to persuade it back north towards end of BB dorm. This process of following and blocking it at backsides of C and B dorm wings continued 3 more times, passing in front of the cafeteria windows and underneath the deck a total of 5 times.

On the second chase towards BB dorm, Env was able to get between the animal and MAC with the TRUCK and push the wolverine across the ring road to the lakeshore tundra. The animal snuck along the bank and crossed the road back towards BB dorm behind the Env truck. Env began the block and pressure maneuvers again.

On the fifth time following it past the cafeteria deck, heading towards BB dorm, Env was again able to get between it and BB dorm, and PUSH it away from the building towards the lakeshore tundra near the raw water intake. The wolverine then followed the water pipe towards the communications shack tundra.

Env followed the wolverines movements across the tundra from the ring road, ensuring it did not attempt to cross the road back towards MAC.

17:35 Wolverine crossed the south winter road approach near pond 11, heading west. Environment continued following and monitoring it.

17:43 on the tundra south of the old winter road staging area (South of the large tank farm), The wolverine began heading towards the roadway berm. ENV tried cycling shotgun action, it had no effect on the animal. When the animal was getting close to the base of the berm looking like it intended to climb the berm to get back to the road, Env fired 2 C/F BANGERS. This persuaded it to stay on the tundra and continue moving west.

18:08 Wolverine spotted by lube truck crossing the A21 haul road in the direction of Waste Transfer Area (WTA). Env was immediately on scene and gained visual. Env watched the wolverine travel around pond 12 and head in the direction of the WTA fence. Env repositioned and entered WTA. Env arrived at the southwest corner of the WTA fence, and got out of the vehicle with shotgun and rubber buckshot as deterrent. The wolverine arrived and proceeded to walk around the edge of the WTA fence with ENV following on foot from inside, all the while yelling and attempting to verbally persuade the animal away. It would stop briefly to regard the noise, then continue following the fence edge.

08:11 Animal and Env reached the Northwest corner of WTA where the animal previously in the week had gained access to the enclosure through a hole in the fence. Env boarded up this hole on the 2nd of October. The animal stopped and regarded the boarded up hole intently, then began jogging along the fenceline in the direction of the WTA gate. Env decided escalation of deterrent was warranted and fired 1 rubber buckshot from behind and to the right of animal as it was running along the fence access road. It yelped, scrambled over the edge of the road and was not seen again. Env spent several minutes checking the surrounding are for signs of the animal and could not find it. It is assumed it made its way to the SCRP tundra area by crossing the AN road.

Movement Map (Import NotePlus Site Map)

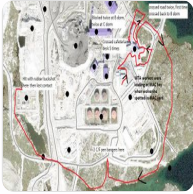


Photo 1

Deterrent Count

4.5%

Truck

13

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

2

From 0 to 40

C/F Pen Whistle

0

From 0 to 40

12GA Explosive

0

From 0 to 40

12GA B.B. Marker

0

From 0 to 40

12GA Rubber Bullet

0

From 0 to 40

12GA Slug

0

From 0 to 40

Helicopter

0

From 0 to 40

Other

3

From 0 to 40

Specify

Yelling (1), Cycling Action (1), 12 Ga non-Lethal Rubber Buckshot round (1)

Environment Off Scene

End of Environment Call-out

6th Oct, 2020 6:30 PM MDT

Final Location of Wildlife

Last spotted running from WTA

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

7th Oct, 2020 9:05 AM MDT

Appendix

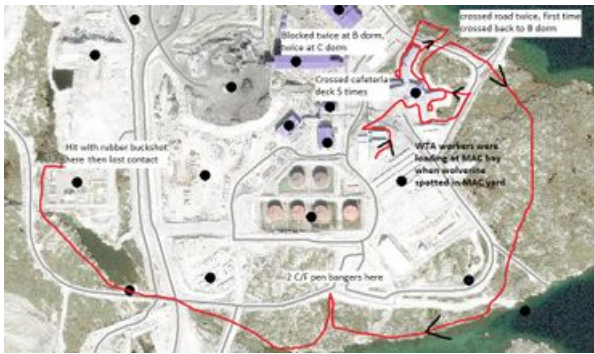


Photo 1

Wildlife Report - 2020

Wolverine - 2020-10-09 - WTA bin

Complete

Score	1.25%	Failed items	0	Actions	0
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Wildlife Report

Audit Title (Animal - yyyy-mm-dd - Location)

Wolverine - 2020-10-09 - WTA bin

Document No.

WildlifeReport000087

Completed On

10th Oct, 2020

Audit

1.25%

Wildlife Report

Type of Wildlife Report

Deterrent Reporting

Deterrent Report

1%

Enter Initial Time of Wildlife Sighting

9th Oct, 2020 10:00 AM MDT

Department/Individual Who Reported Wildlife:

Gord Cumming with Environment found wolverine in Waste Transfer

Environment On Scene

Environment at Call-out Location

9th Oct, 2020 10:00 AM MDT

Animal Type

Wolverine

Description (eg. number of individuals, colour, age, size, etc.):

Definitely the same individual that has been on site. Blonde fur on face, with light blonde "V" on backside.

Photo (If Possible):

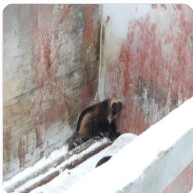


Photo 1



Photo 2



Photo 3



Photo 4

Chronological Events

9 Oct, 10:00 Environment personnel GC and BP were completing waste inspections at Waste Transfer Area (WTA) in the morning of Oct 9th. Environment did a sweep of the area looking for any signs of recent wolverine activity. There were no new tracks as it had snowed significantly overnight. As GC was approaching the non-burn waste roll-off bin, he followed standard procedure and stayed alert for signs of wildlife inside the bin. He heard scratching coming from the bin as he approached. He cautiously climbed the stairs beside and looked inside to find the wolverine in the waste bin. The ENV supervisor was immediately contacted. Waste Transfer was made aware of the situation and the bin was barricaded to prevent personnel from approaching it. ENR was contacted immediately by Environment supervisor to request permission to relocate, and get guidance on best course of action. ENR advised DDMI staff to not trap the animal in a live-trap unless it could be immediately relocated. ENR advised that the animal could be safely left inside the barricaded roll-off waste bin until relocation could safely be organized.

10:00-13:00 GC and BP readied boats, trap, and release equipment in preparation for imminent relocation.

13:00-14:00 Task-Based Risk Assessment meeting was completed with relevant safety and environment staff to determine safest method of relocation for personnel and the wolverine. With afternoon waning, plan was made to leave the animal in the bin overnight and finish prepping for a relocation by boat as early as possible the next day, 10 October.

October 10th, 2020

08:00 Environment personnel GC and BP meet with crane operator at WTA.

09:00 Trap was baited, then crane lifted the set trap off the back of a pickup and slowly lowered it into the opposite end of the bin from the animal. The crane remained attached while GC monitored the animal.

After about 10 seconds of the trap being left motionless in the bin, the wolverine began climbing the trap as if to attempt to climb out using the rigging lines. GC YELLED, SLAPPED the side of the waste bin, and flicked the rope tag line to get wolverine off the trap. The animal jumped off, then sniffed the entrance of the trap, caught the scent of baitfish inside, and slowly entered fully. GC gave the signal to BP, who pulled the line attached to the trigger mechanism, releasing the door and ensuring the animal was successfully captured. The animal and trap were then immediately lifted out of the bin and swung into the back of a waiting pickup.

09:15 Lines were detached and the truck slowly drove straight to the dock. While pickup with animal sat near the boat launch, GC and BP in separate vehicle grabbed Lunds out of a warm storage bay and completed final equipment preps. 3 Environment personnel and one Safety advisor prepped for boat departure.

10:40 Wolverine in the trap was loaded into a lund and placed securely between two seats before boat was launched.

10:45 4 personnel left site in 2 boats with animal, deterrents and release equipment heading to East side of lake.

11:20 Group reached sheltered bay and prepared to release animal.

11:25 Trap door was raised, it took animal about 10-15 seconds to leave trap. It moved away slowly while looking back at personnel. From a distance back, Env tech with shotgun waited for wolverine to look away from group, then fired 1 RUBBER BUCKSHOT round to encourage wolverine away from people and trap. When the animal moved away, the group moved forward and collected the trap, then returned to the boats and pushed off to head back to camp.

After leaving the trap the wolverine was mobile, spent some time rolling in fresh snow to clean itself off, then galloped healthily over a hill and away from the group of people. It showed no visible signs of injury. While it was in the cage it attempted to chew through the metal grate. Its teeth looked to be in good condition,

12:10 2 boats and all personnel return to site.

Movement Map (Import NotePlus Site Map)

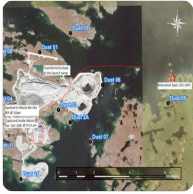


Photo 5

Deterrent Count

1%

Truck

0

From 0 to 40

Air Horn

0

From 0 to 40

C/F Bear Banger

0

From 0 to 40

C/F Pen Whistle

0

From 0 to 40

12GA Explosive

0

From 0 to 40

12GA B.B. Marker

0

From 0 to 40

12GA Rubber Bullet

0

From 0 to 40

12GA Slug

0

From 0 to 40

Helicopter

0

From 0 to 40

Other

4

From 0 to 40

Specify

Yelling, Hitting bin sides, flipping rope, 12Ga rubber buckshot

Environment Off Scene

End of Environment Call-out

10th Oct, 2020 12:12 PM MDT

Final Location of Wildlife

Deposited successfully on peninsula on East side of Lac de Gras, several kilometers across the water from diavik.

Closure & Sign-off

100%

Wildlife Report Complete

On

Signature

GC

10th Oct, 2020 3:46 PM MDT

Appendix



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5

APPENDIX J

Wolverine Snow Track Cancellation

Diavik Diamond Mines (2012) Inc.
P.O. Box 2498
Suite 300, 5201-50th Avenue
Yellowknife, NT X1A 2P8 Canada
T (867) 669 6500 F 1-866-313-2754

Charlie Catholique, Chair
Environmental Monitoring Advisory Board
PO Box 2577
Yellowknife, NT, X1A 2P9
Canada

12 May 2020

Dear Mr. Catholique,

Subject: Notification of Cancellation of Second Round of Wolverine Track Survey

Due to exceptional circumstances brought on by COVID-19 restrictions put in place by Diavik Diamond Mines (2012) Inc. (DDMI) to protect employees and NWT communities, and in response to orders of the Chief Public Health Officer of the NWT (GNWT-CPHO), DDMI was unable to complete the second round of the Wolverine Track Survey during the Spring 2020 field season. As described in the Diavik Wildlife Monitoring Report, from 2003 to 2014 DDMI completed one (1) round of wolverine track surveys per year. Starting in 2015, DDMI began conducting two (2) rounds of track surveys per year to improve detectability of wolverines. DDMI intends to resume two (2) rounds of wolverine track surveys next year in the 2021 winter/spring field season.

DDMI notes that the following events have collectively resulted in cancellation of round two (2) of the wolverine track survey:

- DDMI usually has a community participant(s) support with the wolverine tracks program; however, all travel to Diavik from remote communities have been cancelled in response to COVID-19. The loss of participation by a community member has impacted the program by:
 - reducing the number of available field crew; and
 - limiting DDMI's collection of the Traditional Knowledge component of the wolverine program.
- Mandatory self-isolation of field staff and flight reductions as per GNWT-CPHO guidance have resulted in temporary staff shortages in the Environment team. The on-site team had insufficient numbers of trained personnel for the first two (2) weeks of the winter field season, delaying the start date of the field programs.
- DDMI prioritised resources to complete round one (1) of the Wolverine Track Survey, Dust Gauges, Snow Core Survey and the Under Ice Aquatic Effects Monitoring Program (AEMP) ahead of completing round two of the Track Survey. These priority programs were completed on May 1, 2020.

- Snowpack conditions in the project area have deteriorated since late April, exposing tundra vegetation and extensive boulder fields, making remote travel on land and wolverine track surveys unsafe.
- Since late April, four (4) newly awoken Grizzly bears near the Diavik site have required the dedication of the presently limited environment department human resources on site to managing human-wildlife interactions.

Please do not hesitate to contact the undersigned if you have any questions related to this submission.

Yours sincerely,



Sean Sinclair,
Principal Advisor, Environment and Closure Readiness

cc: John McCullum, EMAB
Brett Elkin, GNWT-ENR

APPENDIX K

**Wolverine Snow Track Survey
Results 2020**

Table 1: Wolverine Snow Track Survey Observations, 2020

Date	Transect	UTM Zone 12 W		Days Since		Observation Type	Number of Individuals	Age of Track	Comments
		Easting	Northing	Last Snow	Last Wind				
12 April	WT22	551514	7151966	1.5	0.5	Tracks	1	After	Heading E
12 April	WT22	552735	7152977	1.5	0.5	Tracks	1	After	Heading N
12 April	WT22	552685	7152977	1.5	0.5	Tracks	1	After	Same Individual, heading N
12 April	WT35	557278	7158907	1.5	0.5	Tracks	2	After	2+ tracks heading E, lots of caribou tracks
12 April	WT08	549023	7157042	1.5	0.5	Tracks	1	After	Heading E, lots of wolf tracks
13 April	WT11	523815	7133317	3	3	Tracks	1	After	Old wolverine tracks heading NW
13 April	WT28	534272	7130796	3	3	Tracks	1	After	Large track heading E
13 April	WT20	536944	7137375	3	3	Tracks	1	After	Heading WSW, crossed backs 400 m W
14 April	WT18	555221	7132897	4	4	Tracks	1	After	Fresh tracks heading W
14 April	WT38	544696	7140603	4	4	Tracks	1	After	Smallish wolverine tracks heading W
14 April	WT38	543989	7141254	4	4	Tracks	1	Before	Single wolverine tracks heading W
14 April	WT04	535641	7142603	4	4	Tracks	1	Before	Single track heading W
18 April	Off Transect	555760	7168871	1	7	Animals	1	N/A	Trotting East
18 April	WT31	557260	7169365	1	7	Tracks	1	After	1 wolverine heading SW
18 April	WT31	557229	7167052	1	7	Tracks	1	After	1 Wolverine heading E, fresh
18 April	WT07	554848	7166810	1	7	Tracks	1	After	1 Wolverine heading E, fresh
18 April	WT07	552346	7166648	1	7	Tracks	1	After	1 Wolverine heading SW, fresh
18 April	WT07	551094	7166560	1	7	Tracks	1	After	1 Wolverine heading SW, fresh
18 April	WT10	542668	7147248	1	7	Tracks	1	After	Travel South, hard packed snow
18 April	WT10	542713	7148432	1	7	Tracks	1	Before	Travel South, hard packed snow
18 April	WT10	542776	7148985	1	7	Tracks	1	Before	Travel North, hard packed snow

APPENDIX L

**Wolverine Incidental Observations
Summary 2020**

Date	Number of Animals	Characteristics of Animals	Location
2020-02-13	1	-	Near A21 Pit Shop
2020-02-25	1	-	Near airport
2020-05-25	1	-	North of A154 pit
2020-05-25	1	-	Near main camp patio
2020-09-24	1	Single wolverine	Airport and A154 Pit
2020-09-25	1	Single wolverine	Truck Shop, Raw Water Inlet, and A21 South Ramp
2020-09-28	1	Single wolverine	Around MAC, Shallow Bays
2020-09-29	1	Single wolverine	Waste Transfer
2020-10-01	1	Single wolverine	Waste Transfer
2020-10-02	1	Single wolverine	Waste Transfer
2020-10-03	1	Single wolverine	Waste Transfer
2020-10-05	1	Same wolverine from last week	Near PKC, moving through metcon and main camp area
2020-10-06	1	-	DOC parking lot chased around MAC to WTA
2020-10-09	1	Same wolverine from last week	WTA waste bin
2020-10-10	1	Same wolverine from last week	East across bay
2020-12-26	1	-	ROM toward Pond 5
2020-12-28	1	-	The METCON, followed to Raw Water Building

APPENDIX M

**Pit Wall / Mine Infrastructure Raptor
Survey Results 2020Camp
Population**

Pit Wall Mine Infrastructure Raptor Nesting Summary 2020

Date	Area	Method Used (D/L)	Bird Species	Number of Observed	Confirm Active Nest (Y/N)	Potential Nesting (Y/N)	Young/Fledgings (#,U,N)	Comments
2020-05-09	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-05-09	A21 Lookout #2	not reported	Rough-legged hawk	1	N	N	N	circling above pit
2020-05-09	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-05-10	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-05-10	A21 Lookout #2	not reported	Rough-legged hawk	1	N	N	N	circling above lookout 1 then flew away from pit to east
2020-05-10	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-05-11	A21 Lookout #1	not reported	Peregrine falcon	1	N	N	N	circling above lookout 1
2020-05-11	A21 Lookout #1	not reported	Rough-legged hawk	1	N	N	N	circling above lookout 1
2020-05-11	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-05-11	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-05-12	A21 Lookout #1	not reported	Rough-legged hawk	1	N	N	N	Flying west over bay north of A21 dike, landed on tundra. Seen from A21 dike, not lookout 1.
2020-05-12	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-05-12	A21 Lookout #3	not reported	Peregrine falcon	1	N	N	N	Flying over south ramp before landing on wall nearby
2020-05-13	A21 Lookout #1	not reported	Peregrine falcon	1	N	N	N	PEFA flying north over pit.
2020-05-13	A21 Lookout #1	not reported	unknown	1	N	N	N	Unidentified raptor flying through pit.
2020-05-13	A21 Lookout #2	not reported	Common raven	1	N	N	N	
2020-05-13	A21 Lookout #2	not reported	Peregrine falcon	1	N	Y	N	PEFA flew north to wall below lookout 1 and perched. Possibly nesting. Bear banger fired from north ramp.
2020-05-13	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-05-14	A21 Lookout #1	not reported	Rough-legged hawk	1	N	N	N	Seen flying northeast over ice east of A21 pit
2020-05-14	A21 Lookout #2	not reported	Rough-legged hawk	1	N	N	N	Flying against strong winds over east side of pit
2020-05-14	A21 Lookout #2	not reported	Peregrine falcon	1	N	N	N	Flying against strong winds over east side of pit
2020-05-14	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-05-14	A21 North Ramp	not reported	Peregrine falcon	2	N	Y	N	2 falcons on the wall below lookout 1. Possibly nesting.
2020-05-15	A21 Lookout #1	not reported	Peregrine falcon	2	N	Y	N	One circling pit before flying away to the north. Another flying through pit and landing at possible nesting site below lookout 1.
2020-05-15	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-05-15	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-05-16	A21 Lookout #1	not reported	Peregrine falcon	1	N	N	N	Flew north out of the pit toward main camp
2020-05-16	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-05-16	A21 Lookout #3	not reported	Common raven	1	N	N	N	CORA flew east and landed on a shack near lookout 2.
2020-05-16	A21 Lookout #3	not reported	unknown	1	N	N	N	Unidentified bird seen from dike road flying west below lookout 1.
2020-05-16	A21 South Ramp	not reported	N/A	0	N	N	N	
2020-05-17	A154 Lookout 1	D	Rough-legged hawk	1	N	N	N	-
2020-05-17	A154 Lookout 2	D	N/A	0	N	N	N	Lookout inaccessible due to snow.
2020-05-17	A418 Lookout 1	D	N/A	0	N	N	N	Lookout inaccessible due to snow.
2020-05-17	A418 Lookout 2	D	N/A	0	N	N	N	Lookout inaccessible due to snow.
2020-05-17	South Tank Farm	D	N/A	0	N	N	N	-
2020-05-17	Process Plant	D	N/A	0	N	N	N	-
2020-05-17	Powerhouse 1	D	N/A	0	N	N	N	-
2020-05-17	Powerhouse 2	D	N/A	0	N	N	N	-
2020-05-17	Boiler House	D	Common raven	1	N	Y	N	Single raven perched on elbow joint.
2020-05-17	Site Services Line-up	D	Common raven	0	N	Y	N	Raven nest on rock wall near old peregrine nest.
2020-05-17	Backfill Plant	D	N/A	0	N	N	N	-
2020-05-17	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-05-17	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-05-17	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-05-17	A21 South Ramp	not reported	N/A	0	N	N	N	
2020-05-18	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-05-18	A21 Lookout #2	not reported	Rough-legged hawk	1	N	N	N	RLHA circled pit, flew away to the south.
2020-05-18	A21 Lookout #2	not reported	Peregrine falcon	2	N	N	N	2 PEFA circled pit, 1 flew away NE.
2020-05-18	A21 Lookout #3	not reported	N/A	0	N	N	N	

Pit Wall Mine Infrastructure Raptor Nesting Summary 2020

Date	Area	Method Used (D/L)	Bird Species	Number of Observed	Confirm Active Nest (Y/N)	Potential Nesting (Y/N)	Young/Fledgings (#,U,N)	Comments
2020-05-18	A21 South Ramp	not reported	Rough-legged hawk	2	N	N	N	1 circled and flew away to the west, later seen landing on the pit wall. The other landed on an electrical pole on dike road.
2020-05-18	South Tank Farm	not reported	Peregrine falcon	1	N	N	N	Flew south from tank farm toward A21 pit
2020-05-19	A21 Lookout #1	not reported	Rough-legged hawk	1	N	N	N	Circled A21 pit, then circled environment truck before flying away to the north
2020-05-19	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-05-19	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-05-19	A21 South Ramp	not reported	Rough-legged hawk	1	N	N	N	Perched on electrical pole near ramp, no evidence of nesting. Flew away when approached.
2020-05-20	A21 Lookout #1	not reported	Peregrine falcon	2	N	N	N	Flying over north dike toward south tank farm
2020-05-20	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-05-20	A21 Lookout #3	not reported	Rough-legged hawk	1	N	N	N	RLHA flying from one side of south ramp to the other
2020-05-20	A21 Lookout #3	not reported	merlin	1	N	N	N	
2020-05-20	A21 South Ramp	not reported	Rough-legged hawk	1	N	Y	N	RLHA nest material on north facing side of south ramp pit wall
2020-05-21	A21 Lookout #1	not reported	Rough-legged hawk	2	N	N	N	Circled pit and flew away to the northwest
2020-05-21	A21 Lookout #1	not reported	Peregrine falcon	2	N	N	N	Circled pit and flew away to the northwest
2020-05-21	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-05-21	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-05-21	A21 South Ramp	not reported	Rough-legged hawk	1	N	Y	N	Circling potential nest area
2020-05-22	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-05-22	A21 Lookout #2	not reported	Peregrine falcon	1	N	N	N	PEFA Perched on wall near lookout 1, then took off and circled the area.
2020-05-22	A21 Lookout #2	not reported	Rough-legged hawk	1	N	N	N	RLHA perched on power pole near south ramp
2020-05-22	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-05-22	A21 South Ramp	not reported	Peregrine falcon	1	N	N	N	
2020-05-22	A21 South Ramp	not reported	Rough-legged hawk	2	N	Y	N	2 RLHA circling the area and perching at nest site
2020-05-22	A21 South Ramp	not reported	Rough-legged hawk	1	N	Y	N	Landed at nest site
2020-05-23	A21 South Ramp	not reported	N/A	0	N	N	N	Hawks not present
2020-05-23	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-05-23	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-05-23	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-05-24	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-05-24	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-05-24	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-05-24	A21 South Ramp	not reported	Rough-legged hawk	1	N	Y	N	RLHA perched in nest
2020-05-25	A154 Lookout 1	D	N/A	0	N	N	N	-
2020-05-25	A154 Lookout 2	D	Rough-legged hawk	1	N	N	N	-
2020-05-25	A418 Lookout 1	D	N/A	0	N	N	N	-
2020-05-25	A418 Lookout 2	D	N/A	0	N	N	N	-
2020-05-25	South Tank Farm	D	N/A	0	N	N	N	-
2020-05-25	Process Plant	D	N/A	0	N	N	N	-
2020-05-25	Powerhouse 1	D	N/A	0	N	N	N	-
2020-05-25	Powerhouse 2	D	N/A	0	N	N	N	-
2020-05-25	Boiler House	D	Common raven	1	N	N	N	-
2020-05-25	Site Services Line-up	D	Common raven	1	Y	N	N	Raven nest on rock wall near old peregrine nest.
2020-05-25	Backfill Plant	D	N/A	0	N	N	N	-
2020-05-25	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-05-25	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-05-25	A21 Lookout #3	not reported	Rough-legged hawk	2	N	N	N	One perched on power pole near south ramp, another flew up from nesting area and landed on a different pole.
2020-05-25	A21 South Ramp	not reported	Rough-legged hawk	1	N	Y	N	Landed at nest site carrying nest material.
2020-05-26	A21 South Ramp	not reported	Rough-legged hawk	1	N	Y	N	Flew up from nest site over dike road
2020-05-26	A21 Lookout #1	not reported	N/A	0	N	N	N	Wolverine tracks near lookout and outside dike
2020-05-26	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-05-26	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-05-26	A21 South Ramp	not reported	Rough-legged hawk	2	N	N	N	RLHA in nest, another flying toward nest.
2020-05-26	A21 South Ramp	not reported	Peregrine falcon	2	N	N	N	2 PEFA flying over ramp

Pit Wall Mine Infrastructure Raptor Nesting Summary 2020

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2020-05-27	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-05-27	A21 Lookout #2	not reported	Rough-legged hawk	1	N	N	N	RLHA perched on power pole near south ramp.
2020-05-27	A21 Lookout #2	not reported	Peregrine falcon	1	N	N	N	PEFA perched on pit edge at lookout 2.
2020-05-27	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-05-27	A21 South Ramp	not reported	N/A	0	N	N	N	
2020-05-28	A21 Lookout #1	not reported	N/A	0	N	N	N	Repeated peregrine wails heard, direction unknown
2020-05-28	A21 Lookout #1	not reported	Peregrine falcon	1	N	N	N	Flying low over west side of pit
2020-05-28	A21 Lookout #2	not reported	Gyrfalcon	1	N	N	N	GYRF hunting on north side of pit.
2020-05-28	A21 Lookout #2	not reported	Peregrine falcon	1	N	N	N	PEFA flying over pit.
2020-05-28	A21 Lookout #3	not reported	Rough-legged hawk	1	N	Y	N	Perched on power pole near nest site. When approached, flew away and returned carrying nest material
2020-05-29	A21 Lookout #1	not reported	Peregrine falcon	2	N	N	N	One flew out of pit heading north, the other landed on power pole near lookout 2. Possibly breeding pair.
2020-05-29	A21 Lookout #2	not reported	Rough-legged hawk	1	N	N	N	Perched on power pole near south ramp
2020-05-29	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-05-31	A154 Lookout 1	D	Rough-legged hawk	2	N	N	N	Circling overhead before swooping into pit.
2020-05-31	A154 Lookout 2	D	N/A	0	N	N	N	-
2020-05-31	A418 Lookout 1	L	N/A	0	N	N	N	-
2020-05-31	A418 Lookout 2	D	N/A	0	N	N	N	-
2020-05-31	South Tank Farm	D	N/A	0	N	N	N	-
2020-05-31	Process Plant	D	N/A	0	N	N	N	-
2020-05-31	Powerhouse 1	D	N/A	0	N	N	N	-
2020-05-31	Powerhouse 2	D	N/A	0	N	N	N	-
2020-05-31	Boiler House	D	N/A	0	N	N	N	-
2020-05-31	Site Services Line-up	L	Common raven	2	Y	N	U	Two ravens flying back and forth from nest. Could hear squawking from nest but did not see babies.
2020-05-31	Backfill Plant	D	N/A	0	N	N	N	-
2020-05-31	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-05-31	A21 Lookout #2	not reported	Peregrine falcon	3	N	N	N	Flying low over north side of pit
2020-05-31	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-01	A21 Lookout #1	not reported	N/A	0	N	N	N	Poor visibility
2020-06-01	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-06-01	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-02	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-06-02	A21 Lookout #2	not reported	Peregrine falcon	1	N	N	N	Flew across pit and landed at previous nesting site.
2020-06-02	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-03	A21 Lookout #1	not reported	Peregrine falcon	1	N	N	N	PEFA flying to the E.
2020-06-03	A21 Lookout #1	not reported	Rough-legged hawk	1	N	N	N	RLHA in nest (South Ramp wall).
2020-06-03	A21 Lookout #2	not reported	Peregrine falcon	1	N	N	N	PEFA flying over pit, poor visibility - could not get good eyes on suspected nest, moved more to obtain better visual & for weather to clear - spotted white wash - no birds present
2020-06-03	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-03	A21 South Ramp	not reported	Peregrine falcon	1	N	N	N	
2020-06-03	A21 South Ramp	not reported	Rough-legged hawk	2	Y	N	N	Female has been incubating on the nest for a week
2020-06-04	A21 Lookout #1	not reported	N/A	0	N	N	N	All photos placed in 9.0 photos -> wildlife -> 2020 -> 2020 A21 Raptor Perches
2020-06-04	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-06-04	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-04	A21 South Ramp	not reported	Peregrine falcon	1	N	N	N	
2020-06-04	A21 South Ramp	not reported	Rough-legged hawk	2	Y	N	N	1 RLHA brought nest material to its mate in nest
2020-06-05	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-06-05	A21 Lookout #2	not reported	Peregrine falcon	1	N	N	N	Photos collected
2020-06-05	A21 Lookout #3	not reported	Peregrine falcon	1	N	N	N	Net set up in old nesting area. PEFA perched in new area just down the cliff from the old one.

Pit Wall Mine Infrastructure Raptor Nesting Summary 2020

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2020-06-05	A21 South Ramp	not reported	Rough-legged hawk	2	N	N	N	Photos Collected, both RLHA seen flying west of SCRPs earlier in afternoon.
2020-06-06	A154 Lookout 1	L	Rough-legged hawk	1	N	N	N	Rough-legged hawk flying low and slow over the Northeast fish habitat of the 154 pit, between dike and pit edge.
2020-06-06	A154 Lookout 2	L	N/A	0	N	N	N	-
2020-06-06	A418 Lookout 1	L	Peregrine falcon	1	N	Y	N	Peregrine falcon flew off of west wall to harass Common raven as it flew over.
2020-06-06	A418 Lookout 2	L	N/A	0	N	N	N	-
2020-06-06	South Tank Farm	D	N/A	0	N	N	N	-
2020-06-06	Process Plant	D	N/A	0	N	N	N	-
2020-06-06	Powerhouse 1	D	N/A	0	N	N	N	-
2020-06-06	Powerhouse 2	D	N/A	0	N	N	N	-
2020-06-06	Boiler House	D	N/A	0	N	N	N	-
2020-06-06	Site Services Line-up	D	N/A	0	N	N	N	-
2020-06-06	Backfill Plant	D	N/A	0	N	N	N	-
2020-06-06	A21 South Ramp	not reported	Rough-legged hawk	2	Y	N	N	RLHA in the nest
2020-06-06	A21 South Ramp	not reported	Peregrine falcon	1	N	N	N	
2020-06-06	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-06-06	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-06-06	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-06	A21 South Ramp	not reported	Rough-legged hawk	1	Y	N	N	1 female RLHA incubating in nest
2020-06-08	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-06-08	A21 Lookout #2	not reported	Peregrine falcon	2	N	N	N	Pair of peregrines flying around North Wall.
2020-06-08	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-08	A21 South Ramp	not reported	Rough-legged hawk	1	Y	N	N	Female RLHA incubating eggs in nest
2020-06-08	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-06-08	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-06-08	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-08	A21 South Ramp	not reported	Rough-legged hawk	1	Y	N	N	1 female RLHA incubating in nest
2020-06-09	A21 Lookout #1	not reported	Peregrine falcon	2	N	N	N	Actively deterred birds with water spray and rock throwing
2020-06-09	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-06-09	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-09	A21 South Ramp	not reported	Rough-legged hawk	1	Y	N	N	Female RLHA in nest
2020-06-09	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-06-09	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-06-09	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-09	A21 South Ramp	not reported	Rough-legged hawk	1	Y	N	N	Female RLHA in nest
2020-06-10	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-06-10	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-06-10	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-10	A21 South Ramp	not reported	Rough-legged hawk	1	Y	N	N	Female RLHA in nest
2020-06-10	A21 - Other	not reported	Peregrine falcon	2	N	N	N	2 PEFA spotted flying near process plant
2020-06-10	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-06-10	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-06-10	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-10	A21 South Ramp	not reported	Rough-legged hawk	1	Y	N	N	Female RLHA in nest
2020-06-11	A21 Lookout #1	not reported	Peregrine falcon	2	N	N	N	Could see bird flying around - lost sight behind rocks
2020-06-11	A21 Lookout #2	not reported	Peregrine falcon	2	N	N	N	Better visual - one bird perched, one flying, then landed behind rock face
2020-06-11	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-11	A21 South Ramp	not reported	Rough-legged hawk	1	N	N	N	
2020-06-11	A21 Lookout #1	not reported	Peregrine falcon	1	N	N	N	Same bird as before - saw flying around
2020-06-11	A21 Lookout #2	not reported	Peregrine falcon	2	N	N	N	same birds - same location as prior
2020-06-11	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-11	A21 South Ramp	not reported	Rough-legged hawk	1	N	N	N	
2020-06-12	A21 Lookout #1	not reported	Peregrine falcon	1	N	N	N	Flew away from top of power pole on dike when vehicle pulled up
2020-06-12	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-06-12	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-12	A21 South Ramp	not reported	Rough-legged hawk	1	Y	N	N	1 female RLHA incubating in nest

Pit Wall Mine Infrastructure Raptor Nesting Summary 2020

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2020-06-12	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-06-12	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-06-12	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-12	A21 South Ramp	not reported	Rough-legged hawk	1	Y	N	N	1 female RLHA incubating in nest
2020-06-13	A21 Lookout #1	not reported	N/A	0	N	N	N	Thick fog over site in the morning
2020-06-13	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-06-13	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-13	A21 South Ramp	not reported	Rough-legged hawk	2	Y	N	N	Male RLHA soaring over nest, Female incubating
2020-06-13	A21 Lookout #1	not reported	Peregrine falcon	1	N	N	N	used 1 bear banger to scare bird off N wall after throw rope failed to deter. Bird flew to East wall
2020-06-13	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-06-13	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-13	A21 South Ramp	not reported	N/A	0	N	N	N	
2020-06-14	A154 Lookout 1	L	Rough-legged hawk	1	N	N	U	-
2020-06-14	A154 Lookout 2	L	Rough-legged hawk	1	N	Y	N	Flew to old perch near old Rough-legged hawk nest. Lots of bird droppings around old nest. Possibly active. Too far away to confirm.
2020-06-14	A418 Lookout 1	L	Rough-legged hawk	1	N	Y	N	Flying along south edge of pit. Probably checking us out.
2020-06-14	A418 Lookout 2	L	Rough-legged hawk	1	N	Y	N	Rough-legged hawk Flew away down into pit when we drove up.
2020-06-14	A418 Lookout 2	L	Peregrine falcon	1	N	Y	N	Peregrine falcon was dive bombing a raven on a ledge, possibly protecting its nest?
2020-06-14	A418 Lookout 2	L	Common raven	1	N	N	N	-
2020-06-14	South Tank Farm	D	N/A	0	N	N	N	-
2020-06-14	Process Plant	D	N/A	0	N	N	N	-
2020-06-14	Powerhouse 1	D	N/A	0	N	N	N	-
2020-06-14	Powerhouse 2	D	N/A	0	N	N	N	-
2020-06-14	Boiler House	D	N/A	0	N	N	N	-
2020-06-14	Site Services Line-up	D	Peregrine falcon	1	N	N	N	Peregrine falcon flying along edge of cliff where old Peregrine falcon nest was. No peregrine in the nest.
2020-06-14	Backfill Plant	D	N/A	0	N	N	N	-
2020-06-14	A21 Lookout #1	not reported	Peregrine falcon	1	N	N	N	on top of East wall
2020-06-14	A21 Lookout #2	not reported	Peregrine falcon	2	N	N	N	on same ledge heard 2nd bird further south on same wall
2020-06-14	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-14	A21 South Ramp	not reported	Rough-legged hawk	1	Y	N	N	female in nest on egg
2020-06-14	A21 Lookout #1	not reported	Peregrine falcon	2	N	N	N	both peregrines on edge of east wall. Fired 1 bear banger to scare them off
2020-06-14	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-06-14	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-14	A21 South Ramp	not reported	N/A	0	N	N	N	
2020-06-15	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-06-15	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-06-15	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-15	A21 South Ramp	not reported	Rough-legged hawk	1	Y	N	N	Bird in nest
2020-06-15	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-06-15	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-06-15	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-15	A21 South Ramp	not reported	Rough-legged hawk	1	Y	N	N	Bird in nest
2020-06-16	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-06-16	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-06-16	A21 Lookout #3	not reported	Peregrine falcon	1	N	N	N	On NE wall
2020-06-16	A21 South Ramp	not reported	Rough-legged hawk	1	N	N	N	
2020-06-16	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-06-16	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-06-16	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-16	A21 South Ramp	not reported	Rough-legged hawk	2	Y	N	N	same nest, got photo of Male bird entering nest to drop something off
2020-06-17	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-06-17	A21 Lookout #2	not reported	Peregrine falcon	1	N	N	N	Fired 3 bear bangers to try and scare peregrine away from wall.

Pit Wall Mine Infrastructure Raptor Nesting Summary 2020

Date	Area	Method Used (D/L)	Bird Species	Number of Observed	Confirm Active Nest (Y/N)	Potential Nesting (Y/N)	Young/Fledgings (#,U,N)	Comments
2020-06-17	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-17	A21 South Ramp	not reported	Peregrine falcon	1	N	N	N	Peregrine flying East back into Pit.
2020-06-17	A21 South Ramp	not reported	Rough-legged hawk	1	N	N	N	RLHA staying in nest.
2020-06-18	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-06-18	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-06-18	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-18	A21 South Ramp	not reported	Rough-legged hawk	1	Y	N	N	Staying in nest
2020-06-19	A21 Lookout #2	not reported	Peregrine falcon	2	N	N	N	Morning survey: Fired 2 bear bangers to scare peregrines. Flew away after second bear banger shot.
2020-06-19	A21 Lookout #1	not reported	Peregrine falcon	1	N	N	N	Afternoon survey: Perched then flew away to the north.
2020-06-19	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-06-19	A21 South Ramp	not reported	N/A	0	N	N	N	
2020-06-21	A154 Lookout 1	L	N/A	0	N	N	N	-
2020-06-21	A154 Lookout 2	L	N/A	0	N	N	N	-
2020-06-21	A418 Lookout 1	L	N/A	0	N	N	N	-
2020-06-21	A418 Lookout 2	L	N/A	0	N	N	N	-
2020-06-21	South Tank Farm	D	N/A	0	N	N	N	-
2020-06-21	Process Plant	D	N/A	0	N	N	N	-
2020-06-21	Powerhouse 1	D	N/A	0	N	N	N	-
2020-06-21	Powerhouse 2	D	N/A	0	N	N	N	-
2020-06-21	Boiler House	D	N/A	0	N	N	N	-
2020-06-21	Site Services Line-up	D	N/A	0	N	N	N	-
2020-06-21	Backfill Plant	D	N/A	0	N	N	N	-
2020-06-28	A154 Lookout 1	L	Rough-legged hawk	2	N	N	N	No visible nest site. Possibly on S side of Pit.
2020-06-28	A154 Lookout 2	L	N/A	0	N	Y	N	No visual on Rough-legged hawks.
2020-06-28	A418 Lookout 1	L	N/A	0	N	N	N	-
2020-06-28	A418 Lookout 2	L	N/A	0	N	N	N	-
2020-06-28	South Tank Farm	D	N/A	0	N	N	N	-
2020-06-28	Process Plant	D	N/A	0	N	N	N	-
2020-06-28	Powerhouse 1	D	N/A	0	N	N	N	-
2020-06-28	Powerhouse 2	D	N/A	0	N	N	N	-
2020-06-28	Boiler House	D	N/A	0	N	N	N	-
2020-06-28	Site Services Line-up	L	Peregrine falcon	2	N	Y	N	Both perched on wall behind Site Services lineup, female looked like she might drop an egg.
2020-06-28	Backfill Plant	D	N/A	0	N	N	N	-
2020-07-01	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-07-01	A21 Lookout #3	not reported	Peregrine falcon	2	N	N	N	Circling over north side of pit
2020-07-05	A154 Lookout 1	L	N/A	0	N	N	N	-
2020-07-05	A154 Lookout 2	L	N/A	0	N	N	N	-
2020-07-05	A418 Lookout 1	L	N/A	0	N	N	N	-
2020-07-05	A418 Lookout 2	L	Rough-legged hawk	1	N	N	N	Soaring
2020-07-05	South Tank Farm	D	N/A	0	N	N	N	-
2020-07-05	Process Plant	D	N/A	0	N	N	N	-
2020-07-05	Powerhouse 1	D	N/A	0	N	N	N	-
2020-07-05	Powerhouse 2	D	N/A	0	N	N	N	-
2020-07-05	Boiler House	D	Common raven	0	N	Y	N	-
2020-07-05	Site Services Line-up	L	N/A	0	N	N	N	-
2020-07-05	Backfill Plant	D	N/A	0	N	N	N	-
2020-07-05	A21 Lookout #1	not reported	N/A	0	N	N	N	
2020-07-05	A21 Lookout #2	not reported	N/A	0	N	N	N	
2020-07-05	A21 Lookout #3	not reported	N/A	0	N	N	N	
2020-07-12	A154 Lookout 1	D	N/A	0	N	N	N	-
2020-07-12	A154 Lookout 2	D	N/A	0	N	N	N	-
2020-07-12	A418 Lookout 1	D	Rough-legged hawk	1	N	Y	N	Soaring, did not see it land
2020-07-12	A418 Lookout 2	D	N/A	0	N	N	N	-
2020-07-12	South Tank Farm	D	N/A	0	N	N	N	-
2020-07-12	Process Plant	D	N/A	0	N	N	N	-
2020-07-12	Powerhouse 1	D	N/A	0	N	N	N	-
2020-07-12	Powerhouse 2	D	N/A	0	N	Y	N	-
2020-07-12	Boiler House	L	Common raven	0	N	N	N	Nest visible but no activity around nest
2020-07-12	Site Services Line-up	L	N/A	0	N	N	N	-
2020-07-12	Backfill Plant	D	N/A	0	N	N	N	-
2020-07-13	A154 Lookout 1	L	N/A	0	N	N	N	-
2020-07-13	A154 Lookout 2	L	N/A	0	N	N	N	-
2020-07-13	A418 Lookout 1	L	Rough-legged hawk	1	N	N	N	Circled Pit and perched on wall
2020-07-13	A418 Lookout 2	L	N/A	0	N	N	N	-
2020-07-13	South Tank Farm	D	N/A	0	N	N	N	-
2020-07-13	Process Plant	D	N/A	0	N	N	N	-
2020-07-13	Powerhouse 1	D	N/A	0	N	N	N	-

Pit Wall Mine Infrastructure Raptor Nesting Summary 2020

Date	Area	Method Used (D/L)	Bird Species	Number of Observed	Confirm Active Nest (Y/N)	Potential Nesting (Y/N)	Young/Fledgings (#,U,N)	Comments
2020-07-13	Powerhouse 2	D	N/A	0	N	N	N	-
2020-07-13	Boiler House	D	N/A	0	N	N	N	-
2020-07-13	Site Services Line-up	D	N/A	0	N	N	N	-
2020-07-13	Backfill Plant	D	N/A	0	N	N	N	-
2020-07-14	A21 Lookout #2	not reported	N/A	0	N	N	N	-
2020-07-14	A21 Lookout #1	not reported	Peregrine falcon	1	N	N	N	Perched on N Ramp, installed snow fencing over perches July 16
2020-07-14	A21 Lookout #3	not reported	N/A	0	N	N	N	-
2020-07-14	A21 South Ramp	not reported	N/A	0	N	N	N	-
2020-07-20	A154 Lookout 1	D	N/A	0	N	N	N	-
2020-07-20	A154 Lookout 2	D	N/A	0	N	N	N	-
2020-07-20	A418 Lookout 1	D	N/A	0	N	N	N	-
2020-07-20	A418 Lookout 2	D	N/A	0	N	N	N	-
2020-07-20	South Tank Farm	L	N/A	0	N	N	N	-
2020-07-20	Process Plant	D	N/A	0	N	N	N	-
2020-07-20	Powerhouse 1	D	N/A	0	N	N	N	-
2020-07-20	Powerhouse 2	D	N/A	0	N	N	N	-
2020-07-20	Boiler House	D	N/A	0	N	N	N	-
2020-07-20	Site Services Line-up	L	N/A	0	N	N	N	-
2020-07-20	Backfill Plant	D	N/A	0	N	N	N	-
2020-07-25	A154 Lookout 1	L	Rough-legged hawk	1	N	N	N	Perched on power pole, then flew over pit
2020-07-26	A154 Lookout 2	L	N/A	0	N	N	N	-
2020-07-27	A418 Lookout 1	L	N/A	0	N	N	N	-
2020-07-28	A418 Lookout 2	L	N/A	0	N	N	N	-
2020-07-29	South Tank Farm	D	N/A	0	N	N	N	-
2020-07-30	Process Plant	D	N/A	0	N	N	N	-
2020-07-31	Powerhouse 1	D	N/A	0	N	N	N	-
2020-08-01	Powerhouse 2	D	N/A	0	N	N	N	-
2020-08-02	Boiler House	D	N/A	0	N	N	N	-
2020-08-02	A154 Lookout 1	L	N/A	0	N	N	N	-
2020-08-02	A154 Lookout 2	L	N/A	0	N	N	N	-
2020-08-02	A418 Lookout 1	L	N/A	0	N	N	N	-
2020-08-02	A418 Lookout 2	L	N/A	0	N	N	N	-
2020-08-02	South Tank Farm	D	N/A	0	N	N	N	-
2020-08-02	Process Plant	D	N/A	0	N	N	N	-
2020-08-02	Powerhouse 1	D	N/A	0	N	N	N	-
2020-08-02	Powerhouse 2	D	N/A	0	N	N	N	-
2020-08-02	Boiler House	D	N/A	0	N	N	N	-
2020-08-02	Site Services Line-up	D	N/A	0	N	N	N	-
2020-08-02	Backfill Plant	D	N/A	0	N	N	N	-
2020-08-03	Site Services Line-up	D	N/A	0	N	N	N	-
2020-08-04	Backfill Plant	D	N/A	0	N	N	N	-
2020-08-09	A154 Lookout 1	D	Rough-legged hawk	1	N	N	N	-
2020-08-09	A154 Lookout 2	D	Peregrine falcon	1	N	N	N	-
2020-08-09	A418 Lookout 1	D	N/A	0	N	N	N	-
2020-08-09	A418 Lookout 2	D	N/A	0	N	N	N	-
2020-08-09	South Tank Farm	L	N/A	0	N	N	N	-
2020-08-09	Process Plant	D	N/A	0	N	N	N	-
2020-08-09	Powerhouse 1	D	N/A	0	N	N	N	-
2020-08-09	Powerhouse 2	D	N/A	0	N	N	N	-
2020-08-09	Boiler House	D	N/A	0	N	N	N	-
2020-08-09	Site Services Line-up	L	N/A	0	N	N	N	-
2020-08-09	Backfill Plant	D	N/A	0	N	N	N	-
2020-08-09	A21	L	Rough-legged hawk	4	Y	Y	3	3 chicks in nest, one hawk flying
2020-08-17	A154 Lookout 1	L	N/A	0	N	Y	N	lots of whitewash on south walls not too far from the white trailer beside the road
2020-08-17	A154 Lookout 2	L	N/A	0	N	N	N	-
2020-08-17	A418 Lookout 1	L	N/A	0	N	N	N	-
2020-08-17	A418 Lookout 2	L	Rough-legged hawk	1	N	N	N	-
2020-08-17	South Tank Farm	D	N/A	0	N	N	N	-
2020-08-17	Process Plant	D	N/A	0	N	N	N	-
2020-08-17	Powerhouse 1	D	N/A	0	N	N	N	-
2020-08-17	Powerhouse 2	D	N/A	0	N	N	N	-
2020-08-17	Boiler House	D	N/A	0	N	N	N	-
2020-08-17	Site Services Line-up	D	N/A	0	N	N	N	-
2020-08-17	Backfill Plant	D	N/A	0	N	N	N	-
2020-08-31	A154 Lookout 1	L	N/A	0	N	N	N	-
2020-08-31	A154 Lookout 2	L	N/A	0	N	N	N	-
2020-08-31	A418 Lookout 1	L	N/A	0	N	N	N	-
2020-08-31	A418 Lookout 2	L	N/A	0	N	N	N	-
2020-08-31	South Tank Farm	D	N/A	0	N	N	N	-
2020-08-31	Process Plant	D	N/A	0	N	N	N	-
2020-08-31	Powerhouse 1	D	N/A	0	N	N	N	-
2020-08-31	Powerhouse 2	D	N/A	0	N	N	N	-
2020-08-31	Boiler House	D	N/A	0	N	N	N	-

Pit Wall Mine Infrastructure Raptor Nesting Summary 2020

Date	Area	Method Used (D/L)	Bird Species	Number of Observed	Confirm Active Nest (Y/N)	Potential Nesting (Y/N)	Young/Fledgings (#,U,N)	Comments
2020-08-31	Site Services Line-up	D	N/A	0	N	N	N	-
2020-08-31	Backfill Plant	D	N/A	0	N	N	N	-
2020-09-05	A154 Lookout 1	L	N/A	0	N	N	N	-
2020-09-05	A154 Lookout 2	L	N/A	0	N	N	N	-
2020-09-05	A418 Lookout 1	L	Peregrine falcon	3	N	N	N	Flying over edge of pit and making frequent calls
2020-09-05	A418 Lookout 2	L	N/A	0	N	N	N	-
2020-09-05	South Tank Farm	D	N/A	0	N	N	N	-
2020-09-05	Process Plant	D	N/A	0	N	N	N	-
2020-09-05	Powerhouse 1	D	N/A	0	N	N	N	-
2020-09-05	Powerhouse 2	D	N/A	0	N	N	N	-
2020-09-05	Boiler House	D	N/A	0	N	N	N	-
2020-09-05	Site Services Line-up	D	N/A	0	N	N	N	-
2020-09-05	Backfill Plant	D	N/A	0	N	N	N	-

APPENDIX N

Camp Population

Month	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
January	-	-	-	389	429	443	534	593	866	692	495	603	627	542	489	510	542	565	578	562	583
February	-	-	-	424	408	512	671	682	973	702	545	661	647	574	524	557	573	615	627	579	617
March	63	402	576	413	453	585	748	729	1010	712	552	672	617	559	508	556	572	635	620	580	578
April	-	-	-	318	570	678	743	755	1001	679	548	648	595	553	495	543	580	684	590	570	546
May	-	-	-	333	470	682	871	854	1021	645	610	634	618	561	509	552	642	718	614	594	616
June	189	523	751	326	392	746	821	873	1,028	600	612	641	611	552	500	561	694	698	587	606	606
July	-	-	-	443	396	736	819	857	600	378	589	588	607	524	465	554	701	692	574	583	606
August	-	-	-	425	399	745	768	868	990	335	623	607	625	524	442	562	703	651	562	584	597
September	211	681	879	432	408	755	708	943	993	526	639	648	608	547	466	586	704	670	561	609	585
October	-	-	-	457	390	726	714	950	1,042	524	620	646	577	546	481	564	664	649	563	589	565
November	-	-	-	379	425	670	704	984	1,043	536	608	648	579	515	498	550	627	618	562	604	569
December	287	881	766	-	386	611	524	696	1,030	453	510	546	464	452	460	498	490	518	518	545	551
Maximum (Jun-Sep)	211	681	879	433	408	755	821	943	1,028	600	639	672	647	574	500	562	703	698	587	609	606

APPENDIX O

Waste Inspection Summary

Date	Location	Attractants				Wildlife				Wildlife Sign			
		Attractants Present?	Items	Number of Items Present	Comments	Wildlife Present?	Species	# of Individuals Observed	Wildlife Comments	Wildlife Sign Observed?	Wildlife Sign Observed Species	Wildlife Sign Type	Wildlife Sign Observed Comments
2020-01-02	A21	No		0		No	-	-	-	Yes	unspecified	tracks	prints in snow
2020-01-06	A21	No		0		No	-	-	-	No	-	-	-
2020-01-08	A21	No		0		No	-	-	-	No	-	-	-
2020-01-12	A21	Yes	Oily Rags	2		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-01-14	A21	Yes	Other	3		No	-	-	-	Yes	unspecified	tracks	tracks
2020-01-17	A21	No		0		No	-	-	-	No	-	-	-
2020-01-19	A21	No		0		No	-	-	-	No	-	-	-
2020-01-22	A21	No		0		No	-	-	-	No	-	-	-
2020-01-26	A21	No		0		No	-	-	-	No	-	-	-
2020-01-29	A21	Yes	Food Packaging, Other	11	Bag of incinerator garbage	No	-	-	-	No	-	-	-
2020-02-02	A21	No		0		No	-	-	-	No	-	-	-
2020-02-05	A21	No		0		No	-	-	-	Yes	unspecified	tracks	prints in snow
2020-02-09	A21	No		0		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-02-12	A21	No		0		No	-	-	-	No	-	-	-
2020-02-16	A21	No		0		No	-	-	-	No	-	-	-
2020-02-23	A21	Yes	Gloves, Oily Rags	2		No	-	-	-	No	-	-	-
2020-02-26	A21	Yes	Oily Rags	3		No	-	-	-	No	-	-	-
2020-03-02	A21	Yes	Oily Rags	4		No	-	-	-	No	-	-	-
2020-03-04	A21	Yes	Drink Containers Recyclable	1		No	-	-	-	No	-	-	-
2020-03-08	A21	No		0		No	-	-	-	No	-	-	-
2020-03-11	A21	No		0		No	-	-	-	No	-	-	-
2020-03-15	A21	No		0		No	-	-	-	No	-	-	-
2020-03-19	A21	Yes	Drink Containers Recyclable	1		No	-	-	-	No	-	-	-
2020-03-22	A21	Yes	Gloves	1		No	-	-	-	No	-	-	-
2020-03-25	A21	No		0		No	-	-	-	No	-	-	-
2020-03-31	A21	No		0		No	-	-	-	No	-	-	-
2020-04-05	A21	No		0		No	-	-	-	Yes	red fox	tracks, scat	fox scat and tracks
2020-04-10	A21	No		0		No	-	-	-	No	-	-	-

Date	Location	Attractants				Wildlife				Wildlife Sign			
		Attractants Present?	Items	Number of Items Present	Comments	Wildlife Present?	Species	# of Individuals Observed	Wildlife Comments	Wildlife Sign Observed?	Wildlife Sign Observed Species	Wildlife Sign Type	Wildlife Sign Observed Comments
2020-04-13	A21	No		0		No	-	-	-	No	-	-	-
2020-04-16	A21	No		0		No	-	-	-	No	-	-	-
2020-04-19	A21	Yes	Gloves, Oily Rags	5		No	-	-	-	No	-	-	-
2020-04-22	A21	No		0		No	-	-	-	No	-	-	-
2020-04-26	A21	No		0		No	-	-	-	Yes	unspecified	tracks	prints in snow
2020-04-30	A21	No		0		No	-	-	-	No	-	-	-
2020-05-04	A21	No		0		No	-	-	-	No	-	-	-
2020-05-06	A21	No		0		No	-	-	-	No	-	-	-
2020-05-11	A21	Yes	Food Packaging, Gloves	13		No	-	-	-	No	-	-	-
2020-05-14	A21	Yes	Drink Containers Recyclable, Gloves	7		No	-	-	-	No	-	-	-
2020-05-17	A21	No		0		No	-	-	-	No	-	-	-
2020-05-20	A21	No		0		No	-	-	-	No	-	-	-
2020-05-24	A21	No		0		No	-	-	-	No	-	-	-
2020-05-28	A21	Yes	Gloves	2		No	-	-	-	No	-	-	-
2020-06-03	A21	Yes	Cigarette Packaging, Drink Containers Recyclable, Food Packaging, Gloves, Oily Rags	12		No	-	-	-	No	-	-	-
2020-06-10	A21	Yes	Food Packaging, Gloves, Oily Rags	9		No	-	-	-	No	-	-	-
2020-06-18	A21	Yes	Aerosol Cans	6		No	-	-	-	No	-	-	-
2020-06-24	A21	Yes	Aerosol Cans, Oily Rags	14		No	-	-	-	No	-	-	-
2020-07-01	A21	No		0		No	-	-	-	No	-	-	-
2020-07-09	A21	No		0		No	-	-	-	No	-	-	-
2020-07-15	A21	No		0		No	-	-	-	No	-	-	-
2020-08-05	A21	Yes	Gloves, Oily Rags	4		No	-	-	-	No	-	-	-
2020-08-15	A21	Yes	Drink Containers Recyclable, Gloves, Oily Rags	14		No	-	-	-	No	-	-	-
2020-08-20	A21	Yes	Aerosol Cans, Gloves, Oily Rags	46		No	-	-	-	No	-	-	-

Date	Location	Attractants				Wildlife				Wildlife Sign			
		Attractants Present?	Items	Number of Items Present	Comments	Wildlife Present?	Species	# of Individuals Observed	Wildlife Comments	Wildlife Sign Observed?	Wildlife Sign Observed Species	Wildlife Sign Type	Wildlife Sign Observed Comments
2020-08-26	A21	Yes	Oily Rags	4		No	-	-	-	No	-	-	-
2020-09-24	A21	No		0		No	-	-	-	No	-	-	-
2020-09-30	A21	Yes	Aerosol Cans, Gloves, Oil Contaminated Waste, Oily Rags	42		No	-	-	-	No	-	-	-
2020-10-09	A21	No		0		No	-	-	-	No	-	-	-
2020-10-13	A21	Yes	Cigarette Packaging, Gloves, Oil Contaminated Waste, Oily Rags	9		No	-	-	-	No	-	-	-
2020-10-15	A21	Yes	Aerosol Cans, Oily Rags	3		No	-	-	-	No	-	-	-
2020-10-18	A21	Yes	Aerosol Cans, Cigarette Packaging, Drink Containers Recyclable, Gloves, Oil Contaminated Waste, Oily Rags	11		No	-	-	-	No	-	-	-
2020-10-21	A21	Yes	Drink Containers Recyclable, Gloves, Oily Rags	21		No	-	-	-	No	-	-	-
2020-10-25	A21	Yes	Oily Rags	5		No	-	-	-	No	-	-	-
2020-10-28	A21	Yes	Cigarette Packaging, Drink Containers Recyclable, Gloves, Oil Products and Containers, Oily Rags	8		No	-	-	-	Yes	red fox	tracks	fox prints near bins
2020-11-01	A21	No		0		No	-	-	-	No	-	-	-
2020-11-04	A21	Yes	Gloves	2		No	-	-	-	No	-	-	-
2020-11-08	A21	No		0		No	-	-	-	No	-	-	-
2020-11-11	A21	No		0		No	-	-	-	No	-	-	-
2020-11-15	A21	Yes	Gloves, Oily Rags	14		No	-	-	-	No	-	-	-
2020-11-18	A21	No		0		No	-	-	-	No	-	-	-
2020-11-23	A21	No		0		No	-	-	-	No	-	-	-
2020-11-25	A21	Yes	Aerosol Cans	1		No	-	-	-	No	-	-	-
2020-12-02	A21	No		0		No	-	-	-	No	-	-	-
2020-12-06	A21	Yes	Drink Containers Recyclable	2		No	-	-	-	No	-	-	-

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2020-12-09	A21	Yes	Drink Containers Recyclable	1		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-12-13	A21	No		0		No	-	-	-	No	-	-	-
2020-12-16	A21	Yes	Oily Rags	4		No	-	-	-	No	-	-	-
2020-12-19	A21	Yes	Cigarette Packaging	1		No	-	-	-	Yes	red fox	scat	fox scat
2020-12-23	A21	Yes	Oily Rags	5		No	-	-	-	Yes	red fox	tracks	fox tracks around bins
2020-12-27	A21	Yes	Oily Rags	3		No	-	-	-	Yes	red fox	tracks	fox tracks around bins
2020-12-30	A21	Yes	Aerosol Cans, Gloves	4		No	-	-	-	No	-	-	-
2020-01-02	Landfill	No		0		No	-	-	-	Yes	unspecified	tracks	prints in snow
2020-01-05	Landfill	Yes	Gloves, Oil Contaminated Waste	6	Spill of hydrocarbon	No	-	-	-	No	-	-	-
2020-01-08	Landfill	Yes	Food Packaging, Gloves	6		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-01-12	Landfill	Yes	Gloves, Oil Contaminated Waste, Oily Rags	7		No	-	-	-	No	-	-	-
2020-01-14	Landfill	Yes	Gloves	1		No	-	-	-	No	-	-	-
2020-01-17	Landfill	No		0		No	-	-	-	No	-	-	-
2020-01-20	Landfill	Yes	Gloves	1		No	-	-	-	No	-	-	-
2020-01-22	Landfill	No		0		No	-	-	-	No	-	-	-
2020-01-26	Landfill	No		0		No	-	-	-	No	-	-	-
2020-01-29	Landfill	No		0		No	-	-	-	No	-	-	-
2020-02-02	Landfill	Yes	Gloves, Oily Rags	12		No	-	-	-	No	-	-	-
2020-02-05	Landfill	No		0		No	-	-	-	Yes	unspecified	tracks	prints in snow
2020-02-09	Landfill	Yes	Aerosol Cans, Gloves	3		No	-	-	-	No	-	-	-
2020-02-12	Landfill	No		0		No	-	-	-	No	-	-	-
2020-02-16	Landfill	Yes	Gloves	1		No	-	-	-	No	-	-	-
2020-02-19	Landfill	Yes	Other	20	2 bags garbage with household waste	No	-	-	-	No	-	-	-
2020-02-23	Landfill	No		0		No	-	-	-	No	-	-	-
2020-02-26	Landfill	No		0		No	-	-	-	No	-	-	-

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2020-03-01	Landfill	Yes	Gloves	2		No	-	-	-	Yes	unspecified	blood	blood spatter
2020-03-04	Landfill	No		0		No	-	-	-	No	-	-	-
2020-03-08	Landfill	Yes	Drink Containers Recyclable, Food Packaging, Gloves, Oily Rags	33		No	-	-	-	Yes	red fox	tracks	Red fox tracks
2020-03-11	Landfill	Yes	Gloves, Oily Rags	5		No	-	-	-	Yes	unspecified	tracks	prints in snow
2020-03-15	Landfill	No		0		No	-	-	-	No	-	-	-
2020-03-19	Landfill	Yes	Gloves	2		No	-	-	-	No	-	-	-
2020-03-22	Landfill	No		0		No	-	-	-	No	-	-	-
2020-03-26	Landfill	Yes	Gloves	2		No	-	-	-	No	-	-	-
2020-03-31	Landfill	Yes	Gloves, Other	21		No	-	-	-	No	-	-	-
2020-04-05	Landfill	Yes	Cigarette Packaging, Gloves	2		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-04-10	Landfill	Yes	Oily Rags	2		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-04-13	Landfill	No		0		No	-	-	-	No	-	-	-
2020-04-16	Landfill	Yes	Gloves, Oil Contaminated Waste, Oily Rags	8		No	-	-	-	No	-	-	-
2020-04-19	Landfill	No		0		No	-	-	-	No	-	-	-
2020-04-22	Landfill	No		0		No	-	-	-	No	-	-	-
2020-04-26	Landfill	No		0		No	-	-	-	Yes	unspecified	tracks	prints in snow
2020-04-30	Landfill	No		0		No	-	-	-	No	-	-	-
2020-05-06	Landfill	Yes	Gloves	10		No	-	-	-	Yes	red fox, grizzly bear	tracks	fox and grizzly bear tracks
2020-05-10	Landfill	Yes	Aerosol Cans, Drink Containers Recyclable, Food Packaging, Gloves, Oily Rags	15		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-05-17	Landfill	Yes	Drink Containers Recyclable, Gloves	7		No	-	-	-	No	-	-	-
2020-05-20	Landfill	No		0		No	-	-	-	No	-	-	-
2020-05-25	Landfill	No		0		No	-	-	-	No	-	-	-
2020-05-27	Landfill	Yes	Cigarette Packaging, Gloves, Oily Rags	16		No	-	-	-	No	-	-	-

Date	Location	Attractants				Wildlife				Wildlife Sign			
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2020-06-03	Landfill	No		0		No	-	-	-	No	-	-	-
2020-06-18	Landfill	Yes	Aerosol Cans, Gloves, Oily Rags	44		No	-	-	-	No	-	-	-
2020-06-24	Landfill	No		0		No	-	-	-	No	-	-	-
2020-07-02	Landfill	Yes	Aerosol Cans, Cigarette Butts, Cigarette Packaging, Drink Containers Recyclable, Food Packaging, Gloves, Oily Rags	41		No	-	-	-	No	-	-	-
2020-07-09	Landfill	Yes	Aerosol Cans, Drink Containers Recyclable, Food Packaging, Gloves, Oily Rags	18		No	-	-	-	No	-	-	-
2020-07-15	Landfill	Yes	Batteries, Cigarette Butts, Drink Containers Recyclable, Gloves, Oily Rags, Other	126		No	-	-	-	No	-	-	-
2020-07-22	Landfill	Yes	Aerosol Cans, Batteries, Drink Containers Recyclable, Gloves, Oil Products and Containers, Oily Rags	28		No	-	-	-	No	-	-	-
2020-08-12	Landfill	Yes	Aerosol Cans, Gloves, Oily Rags	38		No	-	-	-	No	-	-	-
2020-08-20	Landfill	Yes	Aerosol Cans, Drink Containers Recyclable, Gloves, Oily Rags	35		No	-	-	-	No	-	-	-
2020-08-26	Landfill	Yes	Batteries, Drink Containers Recyclable, Food, Gloves, Oily Rags	37		No	-	-	-	Yes	red fox	scat	fox scat
2020-09-02	Landfill	Yes	Aerosol Cans, Drink Containers Recyclable, Food Packaging, Gloves, Oil Contaminated Waste, Oil Products and Containers, Oily Rags, Other	32	Fire-damaged trailer	No	-	-	-	No	-	-	-
2020-09-09	Landfill	Yes	Aerosol Cans, Drink Containers Recyclable, Food Packaging, Gloves, Oil	51		No	-	-	-	No	-	-	-

Date	Location	Attractants				Wildlife				Wildlife Sign			
		Attractants Present?	Items	Number of Items Present	Comments	Wildlife Present?	Species	# of Individuals Observed	Wildlife Comments	Wildlife Sign Observed?	Wildlife Sign Observed Species	Wildlife Sign Type	Wildlife Sign Observed Comments
			Contaminated Waste, Oil Products and Containers, Oily Rags										
2020-09-16	Landfill	Yes	Drink Containers Recyclable, Gloves, Oily Rags	9		No	-	-	-	No	-	-	-
2020-09-24	Landfill	Yes	Gloves, Oily Rags	4		No	-	-	-	No	-	-	-
2020-09-30	Landfill	No		0		No	-	-	-	No	-	-	-
2020-10-09	Landfill	Yes	Drink Containers Recyclable, Food, Food Packaging, Gloves, Oil Contaminated Waste, Oil Products and Containers, Oily Rags	61		No	-	-	-	No	-	-	-
2020-10-15	Landfill	No		0		No	-	-	-	No	-	-	-
2020-10-18	Landfill	Yes	Gloves, Oily Rags	9	Partly burnt food waste remaining from previous inspection	No	-	-	-	Yes	red fox	tracks	numerous fox prints
2020-10-21	Landfill	Yes	Drink Containers Recyclable	2		No	-	-	-	No	-	-	-
2020-10-25	Landfill	No		0		No	-	-	-	No	-	-	-
2020-10-28	Landfill	No		0		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-11-01	Landfill	Yes	Gloves, Oily Rags	6		No	-	-	-	No	-	-	-
2020-11-04	Landfill	Yes	Drink Containers Recyclable, Gloves, Oily Rags, Other	72	5 bags of old clothes, PPE	No	-	-	-	No	-	-	-
2020-11-11	Landfill	Yes	Gloves	4		No	-	-	-	Yes	unspecified	tracks	prints in snow
2020-11-15	Landfill	No		0		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-11-18	Landfill	No		0		No	-	-	-	No	-	-	-
2020-11-23	Landfill	Yes	Oily Rags	1		No	-	-	-	Yes	red fox, hare	tracks	fox and hare tracks
2020-11-25	Landfill	No		0		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-11-29	Landfill	Yes	Food Packaging, Gloves	5		No	-	-	-	No	-	-	-
2020-12-03	Landfill	Yes	Drink Containers Recyclable, Food Packaging, Gloves, Oil Contaminated Waste,	20		No	-	-	-	Yes	red fox	tracks	fox tracks

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			Oil Products and Containers, Oily Rags										
2020-12-06	Landfill	Yes	Aerosol Cans	1		No	-	-	-	No	-	-	-
2020-12-09	Landfill	Yes	Cigarette Packaging, Gloves, Oily Rags	11		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-12-13	Landfill	Yes	Aerosol Cans, Food Packaging	2		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-12-16	Landfill	No		0		No	-	-	-	No	-	-	-
2020-12-19	Landfill	Yes	Gloves	1		Yes	red fox	1	Animal present at Landfill during inspection	No	-	-	-
2020-12-23	Landfill	Yes	Cigarette Packaging, Drink Containers Recyclable	3		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-12-27	Landfill	Yes	Cigarette Packaging, Other	4	Clothing 1 jacket	No	-	-	-	No	-	-	-
2020-12-30	Landfill	Yes	Gloves	4		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-01-02	Underground	No		0		No	-	-	-	Yes	unspecified	tracks	prints in snow
2020-01-05	Underground	No		0		No	-	-	-	No	-	-	-
2020-01-08	Underground	Yes	Cigarette Butts, Drink Containers Recyclable, Gloves	7		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-01-12	Underground	No		0		No	-	-	-	No	-	-	-
2020-01-14	Underground	Yes	Cigarette Butts, Food Packaging, Gloves	19		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-01-17	Underground	No		0		No	-	-	-	No	-	-	-
2020-01-20	Underground	No		0		No	-	-	-	No	-	-	-
2020-01-22	Underground	No		0		No	-	-	-	No	-	-	-
2020-01-26	Underground	No		0		No	-	-	-	No	-	-	-
2020-01-29	Underground	Yes	Batteries	1		No	-	-	-	No	-	-	-
2020-02-02	Underground	No		0		No	-	-	-	No	-	-	-
2020-02-05	Underground	Yes	Oily Rags	6		No	-	-	-	No	-	-	-
2020-02-09	Underground	Yes	Gloves, Oil Contaminated Waste	2		No	-	-	-	No	-	-	-
2020-02-12	Underground	Yes	Oily Rags	1		No	-	-	-	No	-	-	-

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2020-02-16	Underground	Yes	Cigarette Butts, Food Packaging, Gloves	12		No	-	-	-	No	-	-	-
2020-02-19	Underground	No		0		No	-	-	-	No	-	-	-
2020-02-23	Underground	Yes	Gloves, Oily Rags	10		No	-	-	-	No	-	-	-
2020-02-26	Underground	Yes	Aerosol Cans, Oily Rags	6		No	-	-	-	No	-	-	-
2020-03-01	Underground	No		0		No	-	-	-	No	-	-	-
2020-03-04	Underground	Yes	Cigarette Butts, Gloves	8		No	-	-	-	No	-	-	-
2020-03-08	Underground	No		0		No	-	-	-	No	-	-	-
2020-03-11	Underground	No		0		No	-	-	-	No	-	-	-
2020-03-15	Underground	No		0		No	-	-	-	No	-	-	-
2020-03-19	Underground	Yes	Cigarette Butts, Gloves	4		No	-	-	-	No	-	-	-
2020-03-22	Underground	Yes	Cigarette Butts, Food	6		No	-	-	-	No	-	-	-
2020-03-26	Underground	Yes	Cigarette Butts	5		No	-	-	-	No	-	-	-
2020-03-31	Underground	Yes	Cigarette Butts, Gloves, Oily Rags	13		No	-	-	-	No	-	-	-
2020-04-05	Underground	No		0		No	-	-	-	No	-	-	-
2020-04-10	Underground	No		0		No	-	-	-	No	-	-	-
2020-04-13	Underground	No		0		No	-	-	-	No	-	-	-
2020-04-16	Underground	No		0		No	-	-	-	No	-	-	-
2020-04-19	Underground	No		0		No	-	-	-	No	-	-	-
2020-04-22	Underground	No		0		No	-	-	-	No	-	-	-
2020-04-26	Underground	No		0		No	-	-	-	Yes	unspecified	tracks	prints in snow
2020-04-30	Underground	No		0		No	-	-	-	No	-	-	-
2020-05-04	Underground	No		0		No	-	-	-	No	-	-	-
2020-05-06	Underground	No		0		No	-	-	-	No	-	-	-
2020-05-11	Underground	Yes	Cigarette Butts, Drink Containers Recyclable, Gloves, Oil Contaminated Waste	25	Small unidentifiable spill in parking lot	No	-	-	-	No	-	-	-
2020-05-14	Underground	Yes	Aerosol Cans	4		No	-	-	-	No	-	-	-
2020-05-17	Underground	No		0		No	-	-	-	No	-	-	-

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2020-05-20	Underground	Yes	Cigarette Butts, Drink Containers Recyclable	51		No	-	-	-	No	-	-	-
2020-05-24	Underground	Yes	Cigarette Butts, Cigarette Packaging	11		No	-	-	-	No	-	-	-
2020-05-27	Underground	Yes	Aerosol Cans, Cigarette Butts, Food Packaging, Gloves	19		No	-	-	-	Yes	goose sp.	tracks	goose prints near food packaging
2020-06-03	Underground	Yes	Other	10	Lots of non burn material on ground around bin	No	-	-	-	No	-	-	-
2020-06-10	Underground	Yes	Oily Rags	3		No	-	-	-	No	-	-	-
2020-06-18	Underground	No		0		No	-	-	-	No	-	-	-
2020-06-24	Underground	No		0		No	-	-	-	No	-	-	-
2020-07-02	Underground	No		0		No	-	-	-	Yes	bear sp.	scat	bear scat near totes
2020-07-09	Underground	Yes	Aerosol Cans, Cigarette Butts, Gloves, Oily Rags	69		No	-	-	-	No	-	-	-
2020-07-15	Underground	Yes	Cigarette Butts, Drink Containers Recyclable, Gloves, Oily Rags	109		No	-	-	-	No	-	-	-
2020-07-22	Underground	Yes	Batteries, Cigarette Butts, Drink Containers Recyclable, Gloves, Oil Contaminated Waste, Oily Rags	72		No	-	-	-	No	-	-	-
2020-08-05	Underground	No		0		No	-	-	-	No	-	-	-
2020-08-15	Underground	No		0		No	-	-	-	No	-	-	-
2020-08-20	Underground	No		0		No	-	-	-	No	-	-	-
2020-08-26	Underground	Yes	Cigarette Butts, Gloves, Oily Rags	115		No	-	-	-	No	-	-	-
2020-09-02	Underground	Yes	Cigarette Butts, Cigarette Packaging, Gloves, Oily Rags	26		No	-	-	-	No	-	-	-
2020-09-09	Underground	Yes	Aerosol Cans, Cigarette Butts, Cigarette Packaging, Gloves, Oil Products and Containers	31		No	-	-	-	No	-	-	-
2020-09-16	Underground	Yes	Cigarette Butts, Drink Containers Recyclable, Gloves, Oily Rags	19		No	-	-	-	No	-	-	-

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2020-09-24	Underground	Yes	Gloves, Oil Contaminated Waste, Oily Rags	15	1 bag of gloves and oily rags	No	-	-	-	No	-	-	-
2020-09-30	Underground	No		0		No	-	-	-	No	-	-	-
2020-10-09	Underground	No		0		No	-	-	-	No	-	-	-
2020-10-13	Underground	No		0		No	-	-	-	No	-	-	-
2020-10-15	Underground	No		0		No	-	-	-	No	-	-	-
2020-10-18	Underground	Yes	Gloves	2		No	-	-	-	No	-	-	-
2020-10-21	Underground	Yes	Drink Containers Recyclable, Oily Rags	6		No	-	-	-	No	-	-	-
2020-10-25	Underground	No		0		No	-	-	-	No	-	-	-
2020-10-28	Underground	Yes	Drink Containers Recyclable, Gloves	3		No	-	-	-	No	-	-	-
2020-11-01	Underground	Yes	Gloves	2		No	-	-	-	No	-	-	-
2020-11-04	Underground	No		0		No	-	-	-	No	-	-	-
2020-11-08	Underground	No		0		No	-	-	-	No	-	-	-
2020-11-11	Underground	No		0		No	-	-	-	No	-	-	-
2020-11-15	Underground	No		0		No	-	-	-	No	-	-	-
2020-11-18	Underground	Yes	Gloves, Oily Rags	4		No	-	-	-	No	-	-	-
2020-11-23	Underground	Yes	Aerosol Cans, Gloves	6		No	-	-	-	No	-	-	-
2020-11-25	Underground	No		0		No	-	-	-	No	-	-	-
2020-11-29	Underground	Yes	Aerosol Cans, Gloves, Oil Products and Containers, Oily Rags	24		No	-	-	-	No	-	-	-
2020-12-02	Underground	Yes	Aerosol Cans, Gloves, Oil Contaminated Waste, Oil Products and Containers, Oily Rags	16		No	-	-	-	No	-	-	-
2020-12-06	Underground	No		0		No	-	-	-	No	-	-	-
2020-12-09	Underground	Yes	Cigarette Packaging	1		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-12-13	Underground	No		0		No	-	-	-	No	-	-	-
2020-12-16	Underground	Yes	Cigarette Packaging, Other	21	2 bags of garbage in burn bin	No	-	-	-	No	-	-	-
2020-12-19	Underground	Yes	Aerosol Cans	1		No	-	-	-	No	-	-	-

Date	Location	Attractants				Wildlife				Wildlife Sign			
		Attractants Present?	Items	Number of Items Present	Comments	Wildlife Present?	Species	# of Individuals Observed	Wildlife Comments	Wildlife Sign Observed?	Wildlife Sign Observed Species	Wildlife Sign Type	Wildlife Sign Observed Comments
2020-12-23	Underground	No		0		No	-	-	-	No	-	-	-
2020-12-27	Underground	No		0		No	-	-	-	No	-	-	-
2020-12-30	Underground	No		0		No	-	-	-	No	-	-	-
2020-01-02	Waste Transfer Area	No		0		No	-	-	-	Yes	unspecified	tracks	prints in snow
2020-01-05	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-01-08	Waste Transfer Area	Yes	Gloves	1		No	-	-	-	Yes	red fox	tracks	fox scat and tracks
2020-01-12	Waste Transfer Area	Yes	Drink Containers Recyclable, Food, Food Packaging, Gloves	5		No	-	-	-	Yes	red fox	tracks, scat	fox tracks and scat
2020-01-14	Waste Transfer Area	Yes	Cigarette Packaging, Food Packaging, Oily Rags	7		No	-	-	-	Yes	red fox	tracks, scat	tracks, scat
2020-01-17	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-01-20	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-01-22	Waste Transfer Area	Yes	Gloves, Oily Rags	2		No	-	-	-	No	-	-	-
2020-01-26	Waste Transfer Area	No		0		No	-	-	-	Yes	red fox	tracks, scat	-
2020-01-29	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-02-02	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-02-05	Waste Transfer Area	Yes	Drink Containers Recyclable	3		No	-	-	-	Yes	red fox	tracks	prints in snow
2020-02-09	Waste Transfer Area	Yes	Drink Containers Recyclable	40		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-02-12	Waste Transfer Area	No		0		Yes	red fox	1	0	No	-	-	fox in burn pit
2020-02-17	Waste Transfer Area	No		0		No	-	-	-	Yes	red fox	scat	scat
2020-02-23	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-02-26	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-

Date	Location	Attractants				Wildlife				Wildlife Sign			
		Attractants Present?	Items	Number of Items Present	Comments	Wildlife Present?	Species	# of Individuals Observed	Wildlife Comments	Wildlife Sign Observed?	Wildlife Sign Observed Species	Wildlife Sign Type	Wildlife Sign Observed Comments
2020-03-02	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-03-04	Waste Transfer Area	Yes	Aerosol Cans, Drink Containers Recyclable	2		No	-	-	-	No	-	-	-
2020-03-08	Waste Transfer Area	No		0		No	-	-	-	Yes	red fox	tracks, scat	Red fox tracks and scat
2020-03-11	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-03-15	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-03-19	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-03-22	Waste Transfer Area	No		0		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-03-26	Waste Transfer Area	Yes	Gloves	1		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-03-31	Waste Transfer Area	No		0		No	-	-	-	Yes	red fox	tracks	tracks
2020-04-05	Waste Transfer Area	Yes	Drink Containers Recyclable, Gloves	4		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-04-10	Waste Transfer Area	No		0		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-04-13	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-04-16	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-04-19	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-04-22	Waste Transfer Area	Yes	Gloves	3		No	-	-	-	No	-	-	-
2020-04-26	Waste Transfer Area	Yes	Drink Containers Recyclable, Food, Food Packaging, Gloves, Oily Rags	8		No	-	-	-	Yes	unspecified	tracks	prints in snow
2020-04-30	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-05-04	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-05-06	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-

Date	Location	Attractants				Wildlife				Wildlife Sign			
		Attractants Present?	Items	Number of Items Present	Comments	Wildlife Present?	Species	# of Individuals Observed	Wildlife Comments	Wildlife Sign Observed?	Wildlife Sign Observed Species	Wildlife Sign Type	Wildlife Sign Observed Comments
2020-05-11	Waste Transfer Area	Yes	Aerosol Cans, Gloves, Oily Rags	5		No	-	-	-	No	-	-	-
2020-05-14	Waste Transfer Area	Yes	Batteries, Gloves	2		No	-	-	-	No	-	-	-
2020-05-17	Waste Transfer Area	Yes	Gloves	5		No	-	-	-	No	-	-	-
2020-05-20	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-05-25	Waste Transfer Area	No		0		No	-	-	-	Yes	wolverine	tracks	wolverine tracks near non-burn bin
2020-05-27	Waste Transfer Area	Yes	Drink Containers Recyclable, Gloves	30		No	-	-	-	No	-	-	-
2020-06-03	Waste Transfer Area	Yes	Food Packaging, Gloves	3		No	-	-	-	No	-	-	-
2020-06-10	Waste Transfer Area	Yes	Aerosol Cans, Gloves, Oily Rags	18		No	-	-	-	No	-	-	-
2020-06-18	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-06-24	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-07-01	Waste Transfer Area	Yes	Aerosol Cans, Drink Containers Recyclable, Gloves, Other	25	Dryer in burn pile	No	-	-	-	No	-	-	-
2020-07-10	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-07-15	Waste Transfer Area	Yes	Food Packaging, Gloves	6		No	-	-	-	No	-	-	-
2020-07-22	Waste Transfer Area	Yes	Cigarette Packaging, Drink Containers Recyclable, Food Packaging, Gloves	6		No	-	-	-	No	-	-	-
2020-08-05	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-08-15	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-08-20	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-08-26	Waste Transfer Area	Yes	Aerosol Cans, Food Packaging, Oily Rags	8		No	-	-	-	No	-	-	-
2020-09-03	Waste Transfer Area	Yes	Cigarette Packaging, Food Packaging, Gloves	3		No	-	-	-	No	-	-	-

Date	Location	Attractants				Wildlife				Wildlife Sign			
		Attractants Present?	Items	Number of Items Present	Comments	Wildlife Present?	Species	# of Individuals Observed	Wildlife Comments	Wildlife Sign Observed?	Wildlife Sign Observed Species	Wildlife Sign Type	Wildlife Sign Observed Comments
2020-09-09	Waste Transfer Area	Yes	Food Packaging, Gloves, Oily Rags	17		No	-	-	-	No	-	-	-
2020-09-16	Waste Transfer Area	Yes	Aerosol Cans, Food, Gloves	55		No	-	-	-	No	-	-	-
2020-09-24	Waste Transfer Area	Yes	Other	1	1 - open seacan with garbage remnants	No	-	-	-	No	-	-	-
2020-09-30	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-10-09	Waste Transfer Area	No		0		No	-	-	-	Yes	red fox	tracks	numerous fox tracks
2020-10-15	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-10-18	Waste Transfer Area	Yes	Cigarette Packaging, Food Packaging, Gloves	4		No	-	-	-	Yes	red fox	tracks	Innumerable fox prints near oily rag storage and burn pit
2020-10-21	Waste Transfer Area	Yes	Drink Containers Recyclable	1		No	-	-	-	No	-	-	-
2020-10-25	Waste Transfer Area	Yes	Cigarette Packaging, Drink Containers Recyclable, Food, Oily Rags	6		No	-	-	-	No	-	-	-
2020-10-28	Waste Transfer Area	Yes	Aerosol Cans, Drink Containers Recyclable, Food Packaging, Gloves, Oily Rags	12		No	-	-	-	Yes	red fox	tracks	numerous fox tracks
2020-11-01	Waste Transfer Area	Yes	Cigarette Packaging, Drink Containers Recyclable, Food, Food Packaging, Gloves	9		No	-	-	-	Yes	unspecified	tracks	prints in snow
2020-11-04	Waste Transfer Area	Yes	Cigarette Packaging, Gloves	6		No	-	-	-	Yes	red fox	tracks	fox prints in snow
2020-11-08	Waste Transfer Area	No		0		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-11-11	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-11-15	Waste Transfer Area	Yes	Food	20		Yes	red fox	1	0	Yes	fox and grey wolf	tracks	wolf and fox prints
2020-11-18	Waste Transfer Area	Yes	Gloves	2		No	-	-	-	Yes	unspecified	tracks	prints in snow
2020-11-23	Waste Transfer Area	Yes	Gloves	3		No	-	-	-	Yes	red fox	tracks	numerous fox tracks

Date	Location	Attractants				Wildlife				Wildlife Sign			
		Attractants Present?	Items	Number of Items Present	Comments	Wildlife Present?	Species	# of Individuals Observed	Wildlife Comments	Wildlife Sign Observed?	Wildlife Sign Observed Species	Wildlife Sign Type	Wildlife Sign Observed Comments
2020-11-25	Waste Transfer Area	Yes	Gloves	6		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-12-02	Waste Transfer Area	Yes	Drink Containers Recyclable, Gloves	5		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-12-06	Waste Transfer Area	Yes	Gloves	10		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-12-09	Waste Transfer Area	Yes	Aerosol Cans, Food Packaging, Gloves	7		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-12-13	Waste Transfer Area	Yes	Drink Containers Recyclable, Food, Food Packaging, Other	9	1 jacket in burn pit	No	-	-	-	Yes	unspecified	tracks	prints in snow
2020-12-16	Waste Transfer Area	No		0		No	-	-	-	No	-	-	-
2020-12-19	Waste Transfer Area	Yes	Drink Containers Recyclable	5		No	-	-	-	Yes	red fox	tracks, scat	scat, tracks
2020-12-23	Waste Transfer Area	No		0		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-12-27	Waste Transfer Area	Yes	Drink Containers Recyclable, Food Packaging, Gloves	7		No	-	-	-	Yes	red fox	tracks	fox tracks
2020-12-30	Waste Transfer Area	Yes	Cigarette Butts, Cigarette Packaging, Drink Containers Recyclable, Food Packaging, Gloves	127		No	-	-	-	Yes	red fox	tracks	fox tracks

APPENDIX P

Monitoring Report on
Rough-Legged Hawk Nest in
A21 Open Pit

A potential rough-legged hawk nesting site was first identified at the south ramp pit wall of the A21 open pit on 20 May 2020. When the potential nest was identified Diavik Diamond Mines (2012) Inc. (DDMI) undertook passive and active deterrence (e.g., scarecrows, bangers, fox decoys) with limited / short-term success. No blasting activity was scheduled to be undertaken within 250 m of the nest site during summer 2020. DDMI contacted the Government of Northwest Territories Department of Environment and Natural Resources (ENR) to determine the best course of action. On 27 May 2020 ENR granted DDMI approval to leave the rough-legged hawk nest in its location. ENR requested that DDMI monitor the nest twice a week throughout the remainder of the nesting season to determine nest success (Table 1).

DDMI conducted monitoring of the rough-legged hawk nest twice per week throughout the nesting season and documented the nesting activities in photos (Figures P-1 to P-6 are a subset of the photos collected). At least one adult was frequently observed in the nest throughout June and early July. The presence/absence of eggs was not possible to determine. Based on observations of the adult in the nest it was assumed that one or more eggs were present.

Chicks were initially observed in the nest on 12 July and observed during subsequent visits throughout July. They were noted as having brown plumage on 30 July.

12 August was the last observation of the juveniles. They were observed to be fully feathered, two standing and one roosting on edge of nest. The monitoring continued until 3 September, when no rough-legged hawks were observed in the A21 open pit area. DDMI is of the assumption that the young fledged successfully from the nest.

Table 1: Observation log for the rough-legged hawk (RLHA) nest at A21 open pit south ramp pit wall

Date	Behaviour	Comments
2020-06-04	Flying 1 Nesting, 1 flying	1 RLHA brought nest material to its mate in nest
2020-06-05	Flying, Nesting	Photos Collected, both RLHA seen flying west of SCRP earlier in afternoon.
2020-06-06	Flying, incubating Flying	RLHA in the nest
2020-06-06	Incubating	1 female RLHA incubating in nest
2020-06-08	Incubating	Female RLHA incubating eggs in nest
2020-06-08	Incubating	1 female RLHA incubating in nest
2020-06-09	Incubating	Female RLHA in nest
2020-06-09	Incubating	Female RLHA in nest
2020-06-10	Incubating	Female RLHA in nest
2020-06-10	Incubating	Female RLHA in nest
2020-06-11	Perched in nest	
2020-06-11	Perched in nest	
2020-06-12	Incubating	1 female RLHA incubating in nest
2020-06-12	Incubating	1 female RLHA incubating in nest
2020-06-13	incubating, flying	Male RLHA soaring over nest, Female incubating
2020-06-13		
2020-06-14	Incubating	Female in nest on egg
2020-06-14		
2020-06-15	Incubating	Bird in nest
2020-06-15	Incubating	Bird in nest
2020-06-16	Incubating	
2020-06-16	Incubating, Flying	same nest, got photo of Male bird entering nest to drop something off
2020-06-17	Flying, Incubating egg	Peregrine flying East back into Pit, RLHA staying in nest.
2020-06-18	Incubating egg	Staying in nest
2020-06-19		
2020-07-09	Roosting/incubating	
2020-07-12	Feeding	1 adult returned to nest and fed 3 chicks
2020-07-14		
2020-07-15	Roosting	1 adult visible in nest
2020-07-19	Nested	3 fluffy chicks, mostly white, in nest
2020-07-22	Nested	3 fluffy chicks in nest, more brown showing on wing tips
2020-07-26	Feeding/Perched	1 adult in nest, possibly feeding 3 Chicks
2020-07-30	Perched	3 chicks growing quickly, now mostly brown
2020-08-02	Perched	3 chicks in nest, two standing on edge of nest.
2020-08-05	Perched	3 chicks in nest, one on nest edge looking down.
2020-08-09	Perched	2 chicks visible, both standing on edge of nest.
2020-08-12	Perched	3 chicks, 2 standing, one roosting in on edge of nest. All chicks grown, fully feathered
2020-08-20	N/A	No birds visible in nest
2020-08-24	N/A	No birds visible in nest
2020-08-31	N/A	No birds visible in nest for third scan in a row.
2020-09-03	N/A	No birds visible in nest for fourth scan in a row.

Photos of the rough-legged hawk (RLHA) nest at A21 open pit south ramp pit wall



Figure P-1: RLHA Nest at A21 open pit 28 May 2020



Figure P-2: RLHA Nest at A21 open pit 16 June 2020



Figure P-3: RLHA Nest at A21 open pit 12 July 2020



Figure P-4: RLHA Nest at A21 open pit 22 July 2020



Figure P-5: RLHA Nest at A21 open pit 12 August 2020



Figure P-6: RLHA Nest at A21 open pit 20 August 2020



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