Appendix A2

Report: 2013 Mine Plan

MEADOWBANK GOLD PROJECT

Production Lease KVPL08D280
2013 Mine Plan

DECEMBER 2012

EXECUTIVE SUMMARY

Condition 5.09 of Production Lease KVPL08D280 for the Meadowbank Gold Project states:

On or before January 1st in each year of the Term, AEM shall deliver to KIA its annual Mine Plan for the next calendar year, detailing at least the following:

(i) a description of the activities and work that AEM proposes to perform in that year on the Leased Land, together with a listing of major equipment to be brought onto the Leased Land; and
(ii) a description of the topographical features and any natural or manmade features, structures, works and waters that may be affected.

This document presents the 2013 Annual Mine Plan for the Meadowbank Gold Project.

The Meadowbank gold mine began the operations phase of the project in February 2010, and thus, is entering its fourth year of operations. In addition to routine activities throughout the 2013 season, a number of secondary construction/modification projects will be undertaken, and dike construction and dewatering activities will continue. Environmental monitoring (wildlife, aquatic effects, groundwater, noise and air) will continue through.

2013 in support of all operational undertakings at the Meadowbank site as required by the NWB Type A Water License 2AM-MEA0815, NIRB Project Certificate No.004, DFO authorizations, and MMER regulations.

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SECTION 1 • INTRODUCTION

The Meadowbank gold mine began the operations phase of the project in February 2010, and thus, is entering its fourth year of operations. In addition to routine activities throughout the 2013 season, a number of secondary construction/modification projects will be undertaken, and dike construction and dewatering activities will continue.

The following sections outline the exploration, construction, operation and environmental activities planned for 2013 at the Meadowbank Gold Project, conducted in accordance with Production Lease KVPL08D280.

SECTION 2 • 2013 PLANNED EXPLORATION ACTIVITIES

The 2013 exploration program for the Meadowbank Gold Project area will be conducted by the Exploration Division of Agnico-Eagle Mines Ltd. Consequently, this work will be performed under KIA Commercial Exploration Lease KVCL303H305.

SECTION 3 • 2013 PLANNED CONSTRUCTION ACTIVITIES

Construction activities at the Meadowbank mine are mainly complete. There are a number of secondary projects and modifications to existing infrastructure that will continue in 2013. Major works will be undertaken at Vault for the preparation of the production of Vault pit (beginning of 2014) and the extension of the airstrip.

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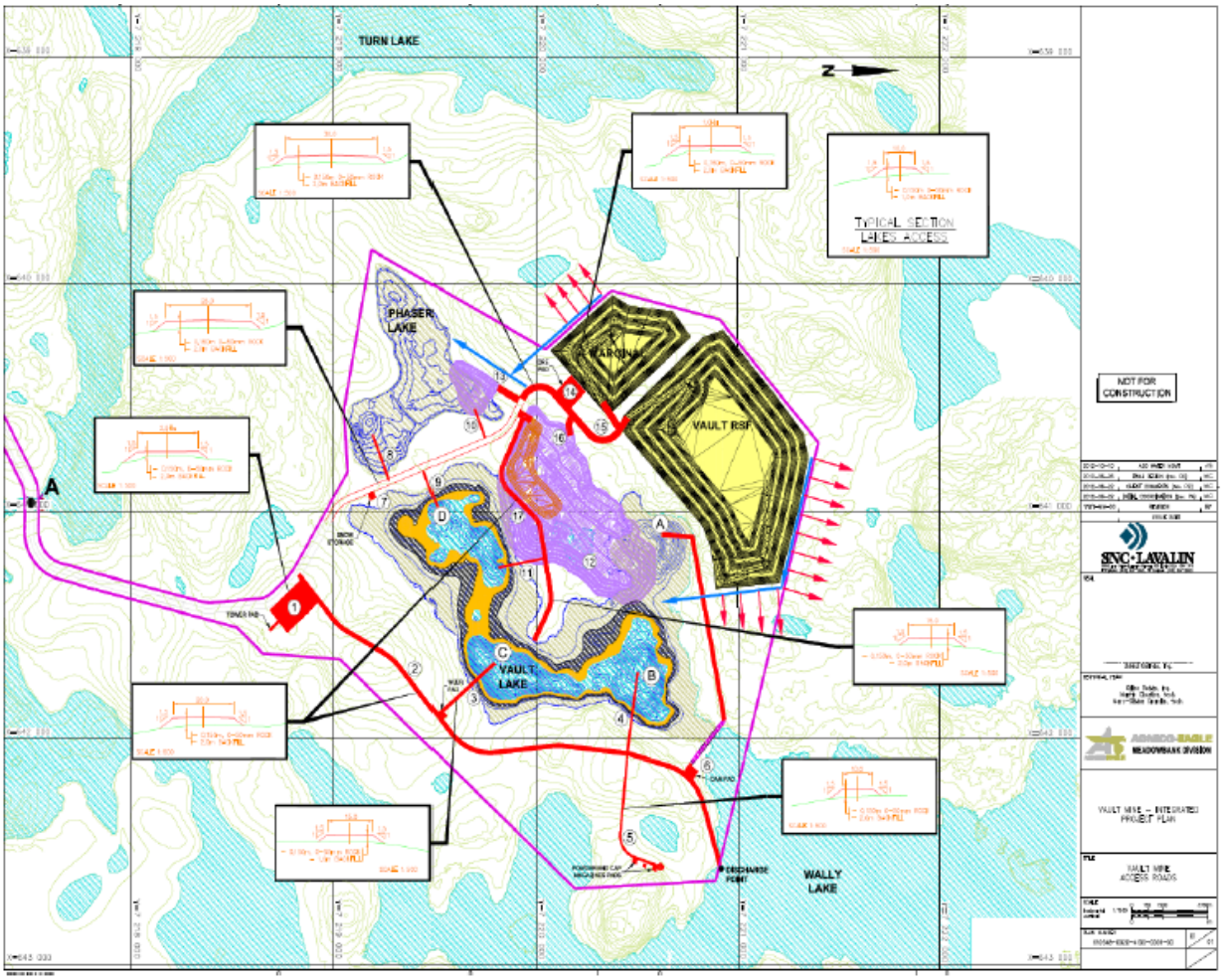
3.1 DIKE CONSTRUCTION

In 2013, dike construction and water management activities will include the following:

- Construction of Central Dike – Phase 2 (to El. 125m);
- Construction of Vault Dike;
- Raise of Stormwater Dike (to El. 150m);
- Placement of the thermal capping on Bay Goose Dike;
- Mine dewatering installation for Vault Pit;
- Dewatering of Vault Lake.

3.2 VAULT PIT PREPARATION

The construction of the infrastructures for the Vault mine development project will be completed during 2013. The main access roads between the Meadowbank plant and Vault Lake as well as local roads have been completed. The next step in the road construction is the access road for the dike construction.



The Vault dike construction will begin in February 2013 and extend to April 2013.

At the same time, the dewatering piping will be used by the piping team in order to prepare pipeline for the spring thaw. In May 2013, the modification and construction of the coveralls for the Water Treatment Plant (WTP) and heated truck shelter on the main infrastructure pad will be executed. The relocation of the Actiflow® unit from the Portage site will be initiated when the WTP coverall construction has been completed. This completes the construction that can be done at the site prior to the arrival of the sea lifts in August 2013.

The Vault Lake dewatering requires that the lake level be lowered to a specific level. At this specific level Vault Lake divides in to four separate sections. Therefore, the Vault Lake dewatering strategy will require water removal from these four sections to complete the dewatering plan.

Table 3.3.1 presents the water volume and elevation for each section of the Vault Lake as a function of time. This schedule was competed following the volume estimate from each section and the pumping rate using Godwin HL250 pumps. A 15% safety factor has been applied on the volume estimate and the duration has been rounded up to the next day to maximize the duration. In the schedule, no additional time was allocated for relocating the pumps. There are five HL250 pumps on site and dewatering can be done without movement delay provided that everything is well planned.

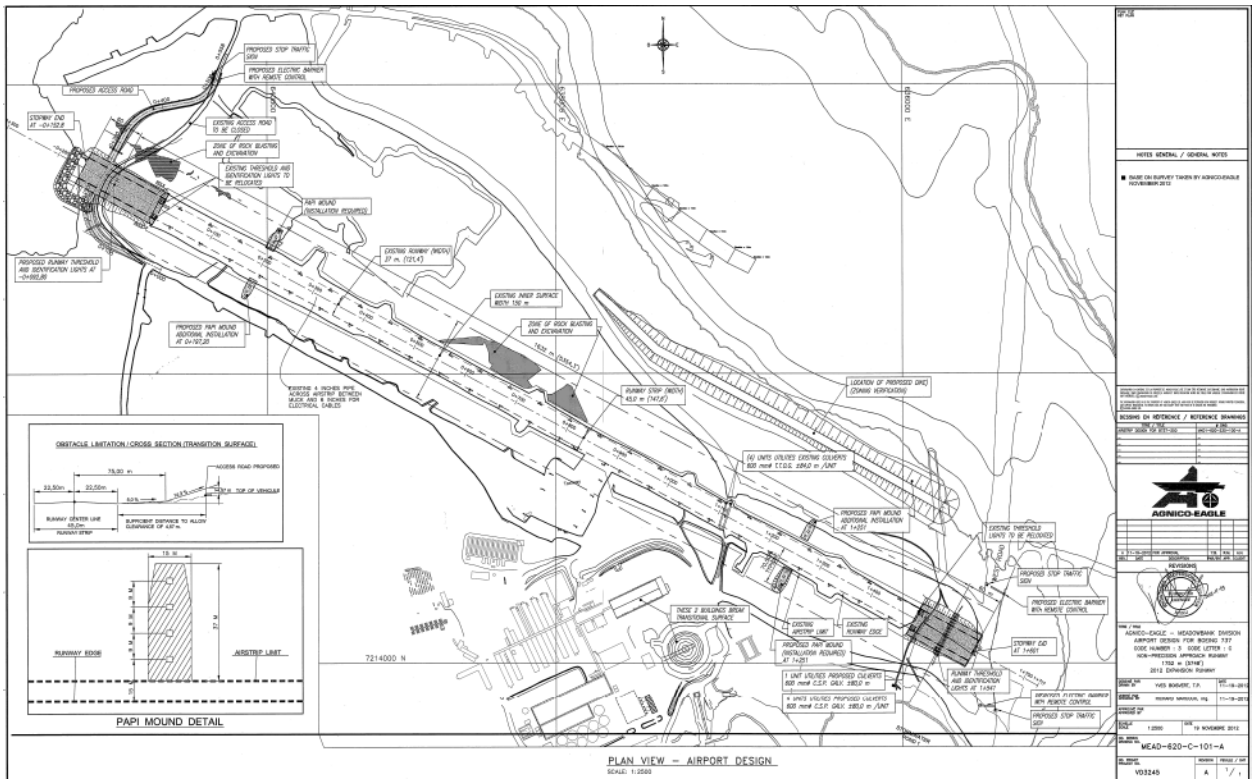
The dewatering of section B will be done using 2 pumps until the section is empty. When this is complete water will be pumped from section D to C. At the same time, dewatering of section C will be done using only a single pump in pond C. The Water Treatment Plant will certainly be required during this part of the Vault Lake dewatering.

3.3. 1 : Vault Lake Dewatering Schedule

Day	Duration	Pump location and volume pumped out (m^3)				Water level by section (m)			
		A	B	C	D	A	B	C	D
0	16		759631			138.4	138.4	138.4	138.4
16	4	68389	195840			134.4	137.9	137.9	137.9
20	13		638 110			**Empty**	135.9	135.9	136.9
33	5		198176	127059		-	130.4	133.9	136.9
38	6			119090	97879	-	**Empty**	133.9	132.4
44	4			78199		-	-	129.9	**Empty**
48	-					-	-	**Empty**	-

3.3 AIRSTRIP EXTENTION

AEM is proposing to expand the size of the airstrip (1500m to 1750 m) in order to accommodate a Boeing 737 jet. In a remote work environment such as Meadowbank, an expanded airstrip and the ability to use larger aircraft will ultimately reduce the number of flights per week (10 to 6) and the hours per flight, while increasing the capacity to transport personnel and essential cargo to site. The expanded airstrip will also offer an improved safety measure for greater accessibility and evacuation potential to and from the Meadowbank site. The work should be complete in June 2013.



SECTION 4 • 2013 PLANNED OPERATION ACTIVITIES

4.1 MINIG PLAN

In 2013, AEM mining plan is to operate Portage and Goose Pits at the Meadowbank operation. A total of 35.4M tonnes of rock will be hauled from these two pits during the year. The Mine Plan consists of moving some 32.1M tonnes of Waste Rock and 3.3M tonnes of ore from the Open Pits. Meadowbank started a new development phase during the 4th Quarter of 2012 as the Ore from Phase 1 of Portage South was depleted in September 2012. In order to feed the mill at its maximum capacity during that development period, the cut-off grade of the Ore coming from the Pit has been reduced to 1.05 gr./tonne and Processing of Low-grade material from the stockpiles became necessary during this period. Additional to mining, AEM will need to move an additional 0.9M tonnes from the Low Grade Stockpiles to the Mill to maximize the Process Plant of Meadowbank. This development period will last until commercial production of Vault (will start in early 2014 which mean no more Stock Pile will be required to feed Meadowbank Mill as sufficient Ore will be coming from the 3 Pits in operation).

4.1.1 Portage Pit

The Mine Plan for next year in Portage is to move some 23.8M tonnes of rock from which, 21.4M tonnes will be Waste and 2.4M tonnes will be Ore. This translates to a stripping ratio of 8.9 to 1. As mentioned earlier, the new development phase is taking place in Portage South Area which has a higher stripping ratio (Waste to Ore) compared to the current Life of Mine ratio of 6.2 for Portage.

In the first Quarter of the year, the Ore will be depleted in the Central portion of Portage. After that, mining will take place in both extremities of the Pit; in the second Phase of mining for the remainder of the year.

4.1.2 Goose Pit

The Mine Plan for 2013 in Goose is to haul approximately 11.6M tonnes of rock from which, 10.7M tonnes will be Waste and 0.9M tonnes will be Ore. The stripping ratio in Goose is expected to be of 12.5 to 1.

4.1.3 Vault Pit

There is no mining activity planned in 2013 other than the waste removed from pre-stripping used to build the infrastructure of the future Pit. In addition a Bulk test of Ore of 41k tonnes is planned in the 2nd Quarter of the year. Some 1M tonnes will be required to build the Roads, different Pads and Dikes in the Vault Area. The Mine is located approximately 8 km North East of the Portage Pit Area. The Infrastructure of the Mine will be built in the first 3 Quarters of the year. After completion of the Dike construction, fish out of the Vault Lake will be done around the end of the summer and dewatering will be carried out at the end of the year.

Table 4.1 shows the 2013 Mine production Schedule of Meadowbank on a monthly basis.

Table 4.1: Mine Production Schedule

Open Pit Production		January	February	March	April	May	June	July	August	September	October	November	December	2013
Portage Pit											0.163783078	0.171317642	0.283577794	
Total Ore mined from the pit (+1.1 g/t)	t	200 412	202 965	234 679	143 474	233 585	201 717	200 518	219 657	160 794	205 723	246 527	160 427	2 410 478
Ounces	oz.	17 044	12 949	21 461	13 280	26 083	17 934	18 621	20 117	14 039	25 246	24 158	18 984	229 917
Grade	(g/t)	2.65	1.98	2.84	2.88	3.47	2.77	2.89	2.85	2.72	3.82	3.05	3.68	2.97
Overburden	t	24 080	-	-	-	-	108 898	121 386	55 875	10 710	17 570	-	-	338 519
Waste	t	1 777 854	1 590 594	1 752 833	1 780 191	1 684 764	1 673 884	1 793 843	1 840 216	1 875 996	1 806 721	1 712 735	1 790 667	21 080 297
Total		2 002 345	1 793 558	1 987 512	1 923 665	1 918 349	1 984 500	2 115 747	2 115 747	2 047 500	2 030 014	1 959 261	1 951 095	23 829 294
Goose Pit														
Total Goose														
Total Ore mined from the pit (+1.1 g/t)	t	24 943	26 263	64 900	36 738	90 990	76 776	57 236	114 760	82 521	93 918	77 775	112 494	859 312
Ounces	oz.	4 084	2 077	5 726	4 706	8 500	6 464	6 866	13 456	7 884	14 585	12 699	14 027	101 074
Grade	(g/t)	5.09	2.46	2.74	3.98	2.91	2.62	3.73	3.65	2.97	4.83	5.08	3.88	3.66
Overburden	t	-	-	-	-	-	-	-	-	-	-	-	-	-
Waste	t	727 700	650 191	702 594	1 084 597	1 035 660	1 088 724	1 082 014	1 024 490	1 019 979	776 082	762 225	757 506	10 711 763
Total		752 643	676 454	767 494	1 121 335	1 126 650	1 165 500	1 139 250	1 139 250	1 102 500	870 000	840 000	870 000	11 571 075
Vault Pit														
Total Ore mined from the pit (+1.22 g/t)	t	-	-	-	40 955	-	-	-	-	-	-	-	-	40 955
Ounces	oz.	-	-	-	3 634	-	-	-	-	-	-	-	-	3 634
Grade	(g/t)	-	-	-	2.76	-	-	-	-	-	-	-	-	2.76
Waste Soft Rock	t	-	-	-	-	-	-	-	-	-	-	-	-	-
Waste Hard Rock	t	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		-	-	-	40 955	-	-	-	-	-	-	-	-	40 955
Total Mined from the Pits														
Ore mined from the pits	t	225 354	229 227	299 578	221 167	324 575	278 493	257 754	334 416	243 315	299 642	324 301	272 921	3 310 745
Ounces	oz.	21 128	15 027	27 187	21 620	34 583	24 398	25 487	33 572	21 924	39 831	36 858	33 011	334 626
Grade	(g/t)	2.92	2.04	2.82	3.04	3.31	2.72	3.08	3.12	2.80	4.13	3.53	3.76	3.14
Waste Soft Rock	t	24 080	-	-	-	-	108 898	121 386	55 875	10 710	17 570	-	-	338 519
Waste Hard Rock	t	2 505 554	2 240 785	2 455 428	2 864 788	2 720 424	2 762 608	2 875 857	2 864 706	2 895 975	2 582 802	2 474 960	2 548 174	31 792 060
Total	**t**	**2 754 988**	**2 470 012**	**2 755 006**	**3 085 955**	**3 044 999**	**3 150 000**	**3 254 997**	**3 254 997**	**3 150 000**	**2 900 014**	**2 799 261**	**2 821 095**	**35 441 324**
Stripping Ratio	W/O	12.2	10.8	9.2	14.0	9.4	11.3	12.6	9.7	12.9	9.7	8.6	10.3	10.7
From Stockpiles														
Stock Piles (HG + LG East and West)	T	140 803	119 059	53 417	136 373	3 060	79 047	105 846	29 184	77 865	70 018	17 761	3 320	835 753
Ounces	oz	9 460	6 814	3 057	7 804	175	4 913	6 000	1 629	4 336	3 900	993	190	49 272
Grade	g/t	2.09	1.78	1.78	1.78	1.78	1.93	1.76	1.74	1.73	1.73	1.74	1.78	1.83
Recovery @ 94%		8 893	6 405	2 874	7 336	165	4 618	5 640	1 531	4 076	3 666	934	179	46 315
Total Ore Milled	t	366 158	348 287	352 995	357 540	327 635	357 540	363 600	363 600	321 180	369 660	342 062	276 241	4 146 498
Total Waste Hauled	t	2 529 634	2 240 785	2 455 428	2 864 788	2 720 424	2 871 507	2 997 243	2 920 581	2 906 685	2 600 372	2 474 960	2 548 174	32 130 579
Total Material Hauled	**t**	**2 895 791**	**2 589 071**	**2 808 423**	**3 222 328**	**3 048 059**	**3 229 047**	**3 360 843**	**3 284 181**	**3 227 865**	**2 970 032**	**2 817 023**	**2 824 415**	**36 277 078**

4.2 WASTE MANAGEMENT PLAN

The Waste Management Plan for 2013 is to maximize Waste Storage Facility (WSF) utilization and minimize Haulage Cycle times which will, in turn, minimize the greenhouse gas emissions and impact on the environment. During the first Quarter of the year, all the Potentially Acid Generator (PAG) material from both Pits in operation will be moved to the PAG Rock Storage Facility (PRSF) and the Non Acid Generator (NAG) will be hauled to place as a a 4m layer of NAG cover on top of the finalized PRSF or will be stored at the the NAG Rock Storage Facility (NRSF) to build a NAG inventory for the Closure Plan of the Mine. Some construction projects will also require NAG material such as the airstrip extension which will take place in the First quarter of 2013.

Near the end of the first Quarter, a portion of Portage Pit will be completed and become available for dumping Waste. At this stage, PAG rock will be placed at that location as a first priority to fill the available area up to level 126.5 or 3m below the future water level after the Mine operation.

During the summer of 2013, some PAG and some NAG will be required to build the Central Dike on the West side of Portage Pit.

4.2 EQUIPMENT

Table 4.2 lists the equipment currently at Meadowbank.

Manufacturer	Product Model	Description
CATERPILLAR	307	BACKOE CATERPILLAR 307
CATERPILLAR	330	BACKOE CATERPILLAR 330D
CATERPILLAR	345D	BACKOE CATERPILLAR 345DQ
CATERPILLAR	345D	BACKOE CATERPILLAR 345DL
KOMATSU	PC1250	BACKOE PC1250 KOMATSU
CATERPILLAR	390	BACKOE 390DL CATERPILLAR
TEREX	RH120	BACKOE TEREX O&K RH120-E
TEREX	RH120	BACKOE BUCYRUS RH120-E
TEREX	RH120	BACKOE TEREX O&K RH120-E
CATERPILLAR	D8T	DOZER D8T CATERPILLAR
CATERPILLAR	D9T	DOZER D9T CATERPILLAR
CATERPILLAR	D8R	DOZER D8R CATERPILLAR
CATERPILLAR	D9T	DOZER D9T CATERPILLAR
CATERPILLAR	D9T	DOZER D9T CATERPILLAR
CATERPILLAR	D9T	DOZER D9T CATERPILLAR
CATERPILLAR	834H	DOZER 834H CATERPILLAR
CATERPILLAR	16H	MOTOR GRADER 16H CAT
CATERPILLAR	160H	MOTOR GRADER 160H CAT
CATERPILLAR	16M	MOTOR GRADER 16M CAT
CATERPILLAR	16M	MOTOR GRADER 16M CAT
CATERPILLAR	16M	CATERPILLAR GRADER 16M
CATERPILLAR	777F	HAUL TRUCK 100T CATERPILLAR
CATERPILLAR	777F	HAUL TRUCK 100T CATERPILLAR
CATERPILLAR	777F	HAUL TRUCK 100T CATERPILLAR
CATERPILLAR	777F	HAUL TRUCK 100T CATERPILLAR
CATERPILLAR	777F	HAUL TRUCK 100T CATERPILLAR
CATERPILLAR	777F	HAUL TRUCK 100T CATERPILLAR
CATERPILLAR	777F	HAUL TRUCK 100T CATERPILLAR
CATERPILLAR	773E	HAUL TRUCK 50T CATERPILLAR
CATERPILLAR	777B	TOW HAUL 120T
CATERPILLAR	777F	HAUL TRUCK 777F CATERPILLAR
CATERPILLAR	777F	HAUL TRUCK 777F CATERPILLAR
CATERPILLAR	777F	HAUL TRUCK 777F CATERPILLAR

CATERPILLAR	777F	HAUL TRUCK 777F CATERPILLAR
CATERPILLAR	785B	HAUL TRUCK 150T CATERPILLAR
CATERPILLAR	785B	HAUL TRUCK 150T CATERPILLAR
CATERPILLAR	785B	HAUL TRUCK 150T CATERPILLAR
CATERPILLAR	785D	HAUL TRUCK 150T CAT 785D
CATERPILLAR	785D	HAUL TRUCK 150T CAT 785D
CATERPILLAR	785D	HAUL TRUCK 150T CAT 785D
CATERPILLAR	785C	HAUL TRUCK 150T CAT 785C
CATERPILLAR	785C	HAUL TRUCK 150T CAT 785C
CATERPILLAR	785C	HAUL TRUCK 150T CAT 785C
CATERPILLAR	785D	HAUL TRUCK 150T CAT 785D 2011
CATERPILLAR	785D	HAUL TRUCK 150T CAT 785D 2011
CATERPILLAR	IT14G	LOADER IT14G CAT
CATERPILLAR	IT14G	LOADER IT14G CAT
CATERPILLAR	992G	LOADER 992G CATERPILLAR
CATERPILLAR	992G	LOADER 992G CATERPILLAR
CATERPILLAR	420EIT	LOADER 420E IT CAT (PEPINE)
CATERPILLAR	966H	LOADER 966H CATERPILLAR
JOHN DEERE	TC44H	LOADER TC44H JOHN DEERE
CATERPILLAR	966H	LOADER 966H CATERPILLAR
CATERPILLAR	980H	LOADER 980H CATERPILLAR
CATERPILLAR	420E	LOADER 420E CATERPILLAR
CATERPILLAR	980H	LOADER 980H CATERPILLAR
CATERPILLAR	992K	WHEEL LOADER 992K CATERPILLAR
ATLAS COPCO	DM45	ROTARY BLAST DRILL 6" ATLAS
ATLAS COPCO	DM45	ROTARY BLAST DRILL 6" ATLAS
ATLAS COPCO	DM45	ROTARY BLAST DRILL 6" ATLAS
ATLAS COPCO	DM45	ROTARY BLAST DRILL 6" ATLAS
ATLAS COPCO	CM785	LONG HOLE DRILL CM785
ATLAS COPCO	DML	DML DRILL 6" ATLAS
ATLAS COPCO	DML	DML DRILL 6" ATLAS
ATLAS COPCO	DML	DML DRILL 6" ATLAS

SECTION 5 • WILDLIFE MONITORING

5.1.1 Harvest Study (Condition of Project Certificate)

The hunter harvest study is becoming increasingly successful each year, with approximately 70 participants in 2012. The increased success is due to regular visits and building of strong relationships with local participants. The purpose of the hunter harvest study is to monitor and document the spatial distribution, seasonal patterns, and harvest rates of hunter kills and angler catches within the Meadowbank LSA. The hunter harvest study monitoring program will continue on an annual basis.

5.1.2 Breeding Bird Plot Surveys (Condition of Project Certificate)

The breeding bird PRISM plot monitoring program has been designed to evaluate potential project-related changes in breeding bird species abundance, richness and diversity over time and is one component of the larger monitoring strategy to evaluate the success of mitigation measures to minimize the amount of vegetation that is removed or degraded by the project.

In accordance with the TEMP, breeding bird plot monitoring is to continue for at least the first three years of mine operation (2010 to 2012). The next PRISM plot survey will be conducted in 2015, after which a detailed analysis will be conducted to determine whether significant changes have been identified between mine site and control plots and that impact prediction thresholds have not been exceeded. This strategy will allow for continued monitoring of potential mine related effects.

5.1.3 Raptor Nest Surveys (Condition of Project Certificate)

The raptor nest survey monitoring program has been designed to confirm that mine-related activities do not result in inadvertent negative effects on nesting raptors. Visits to known to nests to determine breeding success will be conducted in conjunction with AWPAR and waterbird nest surveys.

5.1.4 Waterfowl Nesting Surveys (Condition of Project Certificate)

The waterbird nest survey monitoring program has been designed to evaluate potential changes in nesting distribution and success of waterbirds utilizing ponds, wetlands, lake shorelines and islands within 200 m of mine facilities.

The waterbird nest survey monitoring program duration is not explicitly stated in the TEMP. Results in 2012 suggest that successful breeding is occurring; therefore, this program has been suspended indefinitely.

5.1.5 Caribou Satellite-Collaring Program

Agnico-Eagle is assisting the GN in a Caribou satellite-collaring program within the Meadowbank Regional Study Area (RSA). Information on the status and location of various herds that use the RSA at different times of the year is an important component of on-going monitoring and management efforts at the mine site and along the AWPAR. The collaring program was initiated in

May 2008 with subsequent deployments in November 2009 and April 2011. Collaring of additional caribou is being considered for April 2013.

The satellite-collaring program was initially designed to continue for five (5) consecutive years in accordance with the TEMP. In April 2011, five (5) Agnico-Eagle collars were deployed and another five collars are being considered for April 2013. The total number of collars supported by Agnico-Eagle in the study to date is 25 (in addition to 18 collars supported by other companies). Coordination of the program will be conducted by AEM personnel in 2013. The program is ongoing.

5.1.6 Checklist Surveys and Wildlife Logs

At the mine site, noteworthy wildlife sightings are recorded in an on-site wildlife log, which is tabulated at the end of each year and included in the annual wildlife monitoring summary report. Meadowbank employees are also encouraged to record wildlife sightings on a daily basis

5.1.7 AWPAR Road Surveys

The AWPAR survey monitoring program has been designed to evaluate sensory disturbance to wildlife, particularly Caribou and Muskox, utilizing habitats adjacent to the road. Road kill information and large Caribou herds are also documented to facilitate the implementation of adaptive management strategies. The terrain on both sides of the road (to a maximum horizontal distance of 1 km) is surveyed as the vehicle progresses at a maximum speed of 30 km/hr. For each sighting, the vehicle is safely parked in a road pullout and UTM coordinates are recorded along with estimated distance of animals from the road, habitat type and direction of movement.

The AWPAR survey monitoring program duration will continue on an annual basis.

5.2 AQUATIC EFFECTS MONITORING PROGRAM

5.2.1 Core Receiving Environment Monitoring (CREMP)

The CREMP (formerly called the AEMP) has been implemented every year since 2006, with some modifications (e.g., station additions, parameter deletions/additions, sampling frequency and intensity), to improve the program or to comply with regulatory requirements (e.g., the NWB Type A water license). This monitoring program will continue throughout the operations and closure phases of the mine project. Monitoring in 2013 will continue to be conducted at 12 sampling stations (6 near field; 2 far-field; 4 reference) for limnology, water and sediment chemistry, phytoplankton and benthic invertebrate community.

5.2.2 Metal Mining Effluent Regulations (MMER) Monitoring

As of January 1, 2010, the Meadowbank mine became subject to the MMER regulations at the discharge of the dewatering process. Consequently, AEM is monitoring this discharge in accordance with the MMER requirements. This included daily sampling for TSS, weekly sampling for metals, monthly toxicity testing, and monitoring water quality in the release and control areas of Third Portage Lake.

5.2.3 Water Quality and Flow Monitoring

All water sampling conducted at the mine site and along the AWPAR designed to monitor the performance of the waste and water management systems for the project fall into this category. In

2013, AEM will continue to monitor the performance at the Sewage Treatment Plant, Tailings Reclaim pond, Portage Attenuation Pond, pit sumps, seeps, bulk fuel storage facilities, freshwater usage volumes, water quality along the AWPAR, and all other monitoring requirements stipulated in NWB Type A water license 2AM-MEA0815.

5.2.4 Blast Monitoring

The blast monitoring program will continue during 2013 in Second and Third Portage Lakes. The program will monitor blasting peak particle velocity and overpressure in the receiving environment and ensure that AEM uses the specific charge weight/delay/set back necessary to meet DFO requirements.

5.3 GROUDWATER MONITORING PROGRAM

The groundwater monitoring program was conducted in July 2012. Monitoring well MW08-02 was successfully sampled in triplicate. Monitoring well MW08-03 could not be sampled because of an ice bridge inside the well pipe that could not be removed. This prevented formation groundwater from entering the well. Monitoring well MW11-01 was damaged in spring 2012 and was deemed inoperable, therefore no groundwater samples were collected and the well was subsequently decommissioned in July 2012. Monitoring well MW11-02 located east of the tailings storage facility could not be sampled due to a blockage comprised of well development tubing which prevented access to the formation groundwater.

Collecting groundwater samples from monitoring wells only partially achieves the purpose of monitoring of salinity and quality of open pit seepage. Monitoring wells provide groundwater information at one specific location that represents one or a small set of more less impermeable fractures in rock at a distance from where seepage will daylight in the Goose or Portage open pits. Given the very low hydraulic conductivity of the bedrock at 150 meters (2×10^{-8} m/s in the bedrock mass, and up to 10^{-6} m/s in the Second Portage Fault; Golder, 2004), the groundwater sampled in the wells is far in distance and time from reaching the open pit.

The advantage of the well, being the ability to repeatedly sample a same location, is undermined by its fragility in an arctic environment where frost action can damage even robust wells. At Meadowbank, monitoring of talik water means the well collars must be positioned close to the open pit crest to reach the talik. Vehicular traffic and blasting pose both a constant threat to equipment (like well MW11-01 damaged in 2011) and to the safety of personnel carrying out the monitoring program.

AEM is committed to recovering operable wells that are blocked (monitoring wells MW11-02 and MW08-03) in 2013. However, instead of replacing the wells that have been destroyed, AEM is considering using alternate methods to more effectively achieve the purpose of condition 8 of the NIRB certificate for salinity of water reporting to the open pit. Methods currently being considered include, but may not be limited to, the following:

- Collecting samples from the groundwater that infiltrated into production holes at the base of open pits (Goose, North Portage, Third Portage);
- Collecting samples of groundwater from horizontal boreholes that could be drilled at the base of open pit walls where seeps are observed, and/or from groundwater seeps into open pits;

- Measuring conductivity of groundwater in-situ (without sampling groundwater) through the installation of conductivity probes in boreholes drilled to the talik. These probes measure water conductivity (and therefore salinity) in real time.
- Collecting samples from pit wall seepage at depths greater than 130m and conducting a comparative analysis to historical data

Production holes are used for blasting and drilled to approximately 8.5 metres depth with a 0.17 metre diameter bore. A groundwater sample could be collected from a production hole that contains water prior to the addition of explosives in the hole. Instrumenting the horizontal borehole with a piezometer could also facilitate monitoring of inflow to the open pit, although this may not be needed if groundwater is flowing in the horizontal borehole. If water is flowing into the horizontal borehole, a sample would be collected after an adequate volume of water has been flushed out of the borehole. The location of horizontal boreholes would need to be designed to target locations and geological features that augment the likelihood of encountering water. For both production holes and horizontal boreholes, new holes would be drilled as the pit expands.
The installation of conductivity probes can be an effective method of monitoring the in-situ groundwater salinity in real time in arctic environments (Martin *et al*., 2013).

5.4 NOISE MONITORING PROGRAM

The Noise monitoring will continue in 2013 with sampling twice a year at the five monitoring locations established at the mine site.

5.5 AIR MONITORING PROGRAM

Air monitoring commenced in 2011. Two (2) passive NO2 sampler and four (4) dustfall collectors were installed on site in November 2011, with the first result received in December 2011. This air monitoring will continue on a monthly base in 2013.

SECTION 6 • LOGISTICS

Fuel, bulk goods and construction materials will be transported to site overland via the All Weather Private Access Road. Charter flights carrying cargo and personnel will be routed directly to the mine site via the Meadowbank airstrip.