CHAPTER 2

MODIFICATIONS AND CORRECTIONS

This chapter contains specific modifications and corrections to the Genesis Project Draft EIS published in February 2010 and released for public review and comment by a Notice of Availability printed in the *Federal Register* on April 30, 2010. These revisions were made in response to comments received during the public comment period ending on June 14, 2010. **Table 2-1** identifies the text revisions. Where text has been modified or added, the new text appears in bold italic print. Deletions appear with a strikeout line through the text. Revised tables and figures are presented in their entirety following **Table 2-1**. In response to issues and concerns raised by the agencies, several modifications and revisions have been made to the Adaptive Management Plan for Waste Rock. An updated Adaptive Management Plan for Waste Rock is included in **Appendix A** at the end of this document.

TABLE 2-1
Modifications and Corrections
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Page	DEIS Section Number	Paragraph[1]	Line	Revised Text
S-12		6	2	The general area is located in ***transitional*** range used by mule deer migrating between high-elevation summer range (Tuscarora Mountains) to the north and low-elevation winter range to the south (Dunphy Hills and southern end of Tuscarora Mountains).
S-14	Pref. Alt	1	15	***The proposed Genesis Project would not likely result in hiring many new employees, but would extend employment for approximately 687 of Newmont's existing Carlin Trend work force over the life-of-mine.***
2-13	2.2.1.5	Figure 2-4 Photo 1	1	Photo No. 1 Caption – Regraded/***Recontoured*** Slopes in Genesis-Bluestar Operations Area.
2-27	2.3.1	Table 2-3	1	Insert footnote to Total Waste Rock in Year 1of 19,700,000[1] to read: ***This material would be managed, in accordance with the Interim Waste Rock Management Plan, as PAG rock.***
2-35	2.3.5.3	Figure 2-10		See revised Figure 2-10 in Chapter 2 – *Modifications and Corrections*
2-37	2.3.5.4 Beast Pit	2/3	New	***Total waste rock tonnage to be placed as backfill into the Beast Pit under the current Genesis Project POO is 95.4Mt (91.6Mt Non-PAG and 3.8Mt PAG). Production of waste rock in the first year of mining would be approximately 20Mt (21 percent of the total amount to be placed as backfill in the Beast Pit). Results from the SWRC program may require several months up to a year to complete. To eliminate the potential for rehandling any portion of the 20Mt of waste rock backfilled in the Beast Pit in the first year, the entire 20Mt of waste rock would be managed as PAG.*** ***The pit walls and bottom of the Beast Pit where the 20Mt of PAG waste rock would be placed is comprised of Roberts Mountain Formation limestone. The ANP:AGP ratio of the Beast Pit benches and pit wall materials on which the first 20Mt of waste rock would be placed would be at least 3:1 or that a 10-foot thick layer of Encapsulation Material would be placed where pit bench and wall rock does not meet the 3:1 criteria. Waste rock produced after SWRC test results have been confirmed would be managed as determined by the testing results.***
2-39	2.3.5.4	Figure 2-11		See revised Figure 2-11 in Chapter 2 – *Modifications and Corrections*
2-51	2.3.14.2	6	4	These reports are submitted periodically to NDWR/State Engineer, NDEP, BLM, and ***Elko and Eureka counties***.
2-53	2.3.14.2	1	2	Where possible, land clearing and surface disturbance would be avoided during the avian breeding season (***March 15 to July 31***, annually) to comply with the Migratory Bird Treaty Act.
2-53	2.3.14.2	2	3-4	The working group ***has drafted*** habitat management practices to ensure maintenance and improvement of mule deer health, including herd migration capability and vegetation composition, in portions of NDOW Wildlife Management Units 067 and 068.
2-53	2.3.14.2	2	6 New	***Objectives of the group are to develop strategies that to the degree practicable provide the following:***

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				• ***Maintain currently undisturbed migration corridors;*** • ***Modify existing migration impediments to facilitate deer movement;*** • ***Incorporate reclamation measures that reduce or eliminate impacts to migration corridors and habitat;*** • ***Develop stable landform designs that complement surrounding topography and support mule deer habitat requirements;*** • ***Enact fire management strategies to protect deer habitat, with an emphasis on crucial mule deer winter range, after each new fire;*** • ***Rehabilitate burned areas as quickly as possible;*** • ***Rehabilitate historic burns that do not currently provide adequate deer habitat; and,*** • ***Ensure that there is sufficient forage and cover for mule deer.***
3-6	3.3.2.1	Table 3-1		See revised Table 3-1- Chapter 2 – *Modifications and Corrections.*
3-16	3.3.5.2	2	New	***Eureka County population would likely remain stable over the next several years (Eureka County 2010). Mining activity will be the primary cause for increased or decreased growth within the county. Smaller gains could occur as a result of migration to the County for retirement and quality of life. Agriculture remains a mainstay in the economy providing stable employment and income base for Eureka County.***
3-24	3.4.1.1	2	New	***Monitoring data for $PM_{2.5}$ in the Carlin Trend are limited. $PM_{2.5}$ air quality monitoring data were collected on six days in the summer of 1996 from the same Gold Quarry mine site location as the PM_{10} air quality monitoring stations (iml Air Science 1996). The PM_{10} and $PM_{2.5}$ data collected on the same days are presented in Table 3-4a.***

TABLE 3-4a
South Operations Area (Gold Quarry) $PM_{2.5}$/PM_{10} Monitoring Data

Sample Date	*Filter $PM_{2.5}$ ($\mu g/m^3$)*	*Filter PM_{10} ($\mu g/m^3$)*
26-Jul-96	***11***	***27***
01-Aug-96	***10***	***32***
07-Aug-96	***11***	***30***
13-Aug-96	***36***	***83***
19-Aug-96	***15***	***32***
25-Aug-96	***16***	***28***
Averages	***16***	***39***

Note: mg/m^3=micrograms per cubic meter
Source: iml Air Science 1996.

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				The anomalous values for particulate matter recorded on August 13, 1996, indicate an approximate two hour period, during the evening, of windy conditions, with steady wind speed near 20 mph and gusts over 35 mph. In addition, 1996 was categorized as a drought year in Nevada and the number of wildfires exceeded the previous five years in terms of number of fires and acreage affected (NOAA 1997). Drought conditions and high wind gusts likely contributed to the measured PM_{10} and $PM_{2.5}$ data for that day.

With the exception of data gathered on August 13, 1996, the values for PM_{10} and $PM_{2.5}$ were below the applicable standards as shown in Table 3-4b:

TABLE 3-4b
Applicable Time Periods for Nevada First-High Standards

Pollutant	Averaging Period	Applicable Standard ($\mu g/m^3$)
Particulate Matter - 10 Microns in Aerodynamic Diameter (PM_{10})	24-Hour	150
	Annual	50
Particulate Matter – 2.5 Microns in Aerodynamic Diameter ($PM_{2.5}$)	24-Hour	35
	Annual	15

Note: $\mu g/m^3$ = micrograms per cubic meter
Source: EMA 2007a.

$PM_{2.5}$ and PM_{10} ambient air concentration data have also been collected from two monitoring sites in northern Nevada that were part of the national Interagency Monitoring of Protected Visual Environments (IMPROVE) program (UC Davis 1995). The IMPROVE program stations were designed to collect data at national parks and wilderness areas to study and protect visibility in these areas Class I airsheds. These two northern Nevada IMPROVE $PM_{2.5}$ and PM_{10} monitoring sites are the nearest source of long-term cumulative $PM_{2.5}$ and PM_{10} ambient air concentration monitoring data to the Carlin Trend. The IMPROVE Jarbidge Wilderness site (JARB1), located approximately 85 miles north-northeast of the of the Carlin Trend area, collected ambient air data from collocated $PM_{2.5}$ and PM_{10} monitoring stations from 1988 through 2004 (Colorado State University 2004). The IMPROVE Great Basin National Park site (GRBA1), located approximately 161 miles southeast of the Carlin Trend area, collected ambient air data from collocated $PM_{2.5}$ and PM_{10} monitoring

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				stations from 1992 through 2004. For these two periods of record, the Jarbidge Wilderness and Great Basin National Park sites had average $PM_{2.5}$ concentrations of 2.62 and 2.68 micrograms per cubic meter ($\mu g/m^3$); and average PM_{10} concentrations of 6.54 and 5.97$\mu g/m^3$. The data demonstrate that air quality for both airsheds is good.
3-26	3.4.1.2	3	New	***Modeling results for $PM_{2.5}$ emissions associated with a total of 337 regulated emission sources from five mining and power generation operations in the cumulative effects study area were modeled consistent with the cumulative assessment modeling conducted in 2007. The results indicate that the maximum modeled first high 24-hour ambient $PM_{2.5}$ concentration is 13.74 $\mu g/m^3$, less than 40 percent of the $PM_{2.5}$ ambient standard of 35 $\mu g/m^3$, and less than 60 percent of the $PM_{2.5}$ ambient standard with the addition of the 6.79 $\mu g/m^3$ background concentration. (The background concentration was determined following EPA guidelines for the three-year average of the 98th percentile of the 24-hour $PM_{2.5}$ measurements from Great Basin National Park). The maximum first high ambient $PM_{2.5}$ concentration from the North Operations Area (NOPA) facility emission sources (which included the Genesis Project sources) alone are 4.15 $\mu g/m^3$, less than 12 percent of the $PM_{2.5}$ ambient standard of 35 $\mu g/m^3$, and less than 32 percent of the $PM_{2.5}$ ambient standard with the addition of the assumed 6.79 $\mu g/m^3$ background concentration (EMA 2010).*** ***For the points representing impacts to the Class I Airshed at the Jarbidge Wilderness Area (about halfway between the Genesis Project and the wilderness) the predicted $PM_{2.5}$ modeled concentrations for all sources (which represents cumulative impacts) are 0.438 $\mu g/m^3$ for the 24 hour period and 0.0558 $\mu g/m^3$ for the annual period. These values are less than 6 percent of the Class I PM_{10} increment standards (there are no applicable $PM_{2.5}$ PSD increments). Modeling indicates that the Genesis Project combined with other Carlin Trend mining, considering the $PM_{2.5}$, as well as the PM_{10} issues, as a whole would result in minimal impacts to the Jarbidge Class I Airshed.*** ***In view of the existing data, as described above, which demonstrates that $PM_{2.5}$ concentrations remain within applicable standards both near the mine and in the directions of the nearest Class I Airsheds, and modeling results which indicate that $PM_{2.5}$ can be expected to remain within applicable standards, BLM has concluded that the existing analysis of $PM_{2.5}$ as presented in the Genesis Draft EIS and in this Final EIS is sufficient and that no additional analysis is necessary.***

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Page	DEIS Section Number	Paragraph[1]	Line	Revised Text
3-26	3.4.1.2	3	New	***No peer-reviewed method of modeling for mercury emissions from mine components other than stationary process facilities is currently available. Recent studies concerning fugitive mercury emissions from waste rock disposal facilities, leach pads, and tailing storage facilities have been conducted by staff and students associated with the University of Nevada-Reno (UNR) (Eckley et.al 2009). The UNR research focused on mercury emissions from a variety of land surfaces disturbed by mining activities at Newmont's Twin Creeks Mine northeast of Winnemucca, Nevada and Cortez Pipeline, a Barrick Gold property located south of Battle Mountain, Nevada. (Due to data gathering problems at the Barrick Cortez site, the study was only able to complete the assessment for the Twin Creeks Mine). The study concluded that mercury emissions from mining facilities other than ore processing at the one mining site, accounted for about 20 percent of the total mercury emissions from that site. The study cautioned that the results were solely applicable to the Twin Creeks Mine site and were not necessarily appropriate for other mines. The study also noted that reclamation brought mercury emissions down to background levels.*** ***Using a figure of 20 percent identified above, additional emissions of mercury would raise the maximum direct deposition from the Genesis Project from 0.01 to 0.12 micrograms per square kilometer per year (µg/km^2/yr). The amount of mercury deposition in cumulative deposition centers would increase from 2.0 to 2.4 and from 3.0 to 3.5 µg/km^2/yr, applying the same 20 percent figure to all sources in the cumulative deposition analysis. Therefore, mercury emissions associated with Genesis Project would equate to approximately 1 percent of the total deposition and the cumulative impact remains at less than 35 percent of the total deposition from all sources. In addition, the continuing monitoring of surface water in the Genesis Project area does not indicate detectable mercury.***
3-51	3.4.3.2	3	New	***As described in Chapter 2 - Proposed Action, Newmont would implement an Adaptive Management Plan (AMP) for waste rock should results of supplemental waste rock testing indicate that an additional amount of waste rock to be mined during the Genesis Project is to be managed as PAG (Appendix A). Pursuant to the AMP, the same total volume of waste rock would be managed in the designed waste rock disposal facilities; however, an additional volume of this rock would be placed within the encapsulation cells that would be constructed in these facilities. The concentration of constituents that would be released from waste rock under the AMP is projected to be similar to that modeled in previous geochemical testing due to the low concentrations of sulfide in waste rock that could be reclassified as PAG and the buffering capacity that would be provided by the expanded encapsulation cells. Implementation of any portion of the AMP (including the Interim Waste Rock Management Plan) would not result in any substantive differences in impacts.***

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3-77	3.4.6.3	Figure 3-12		See revised Figure 3-12 in Chapter 2 – *Modifications and Corrections*
3-84	3.4.6.3	3	2	NDOW, with support from Newmont and Barrick, has begun to collect monitoring data using radio collars to identify migration routes ***and habitat use*** of mule deer in this area.
3-84	3.4.6.3	4	New	***NDOW, with the support of Newmont and Barrick, began in 2007 to collect monitoring data of mule deer in the Carlin Trend area. To date, approximately 20 deer have been collared in the area to determine habitat use in relation to recent wildfires. Some of the telemetry data can be used to determine deer migration routes through the Carlin Trend. NDOW has been able to track 10 deer through the mining area. The movements of these deer demonstrate the use of two key migration routes. Four deer moved through the Pete migration corridor and three have moved through the Carlin Mine migration corridor. The three remaining deer moved through either Maggie Creek or Upper Rock Creek (NDOW 2010, Area 6 Mule Deer Working Group Habitat Management Plan, 2010).*** ***An additional study was initiated by Newmont in December 2007 to determine seasonal mule deer movements within the Carlin Trend. The study included radio telemetry from collared deer, ground observations, and ten aerial surveys conducted between October 2008 and April 2009. Conclusions based on observations made during the short study period are limited. Initial results indicate that three corridors are used: Maggie Creek, East and West Flank of the Tuscaroras, and the Santa Renia. Within the Carlin Trend mining area, movements are limited to two key migration routes: the Pete migration corridor and the Carlin Mine migration corridor (GBE 2009).***
3-87	3.4.6.4	3	1	Annually, Newmont will prepare a written report and will meet with BLM, NDOW, ***and respective County Advisory Boards*** to discuss deer migration issues in accordance with the Carlin Trend Herd Management Plan.
3-92	3.4.7	6	3	Many Spring ***Creek*** subdivision residents use individual septic systems.
3-93	3.4.7.1	3	1, 4, & 7	The Nevada Highway Patrol, Elko ***and Eureka*** counties Sheriff's Department, Elko City Police, Carlin City Police, and Bureau of Indian Affairs Police provide law enforcement services to community residents. The Highway Patrol is responsible for law enforcement activities on state highway systems. The Sheriff's Departments are accountable for ***Elko and Eureka*** counties including the unincorporated towns and are aided in search and rescue operations and emergency situations by the Sheriff's Posse and Reserves. The Elko County Jail, operated by Elko County Sheriff's Department, is located in Elko. ***The Eureka County Jail, operated by Eureka County Sheriff's Department, is located in Eureka.***
3-93	3.4.7	2	New	***The City of Carlin is serviced by Wells Rural Electric.***
3-94	3.4.7	6	3	Residents in the Spring ***Creek*** Association elect a Board of Directors to manage the area.

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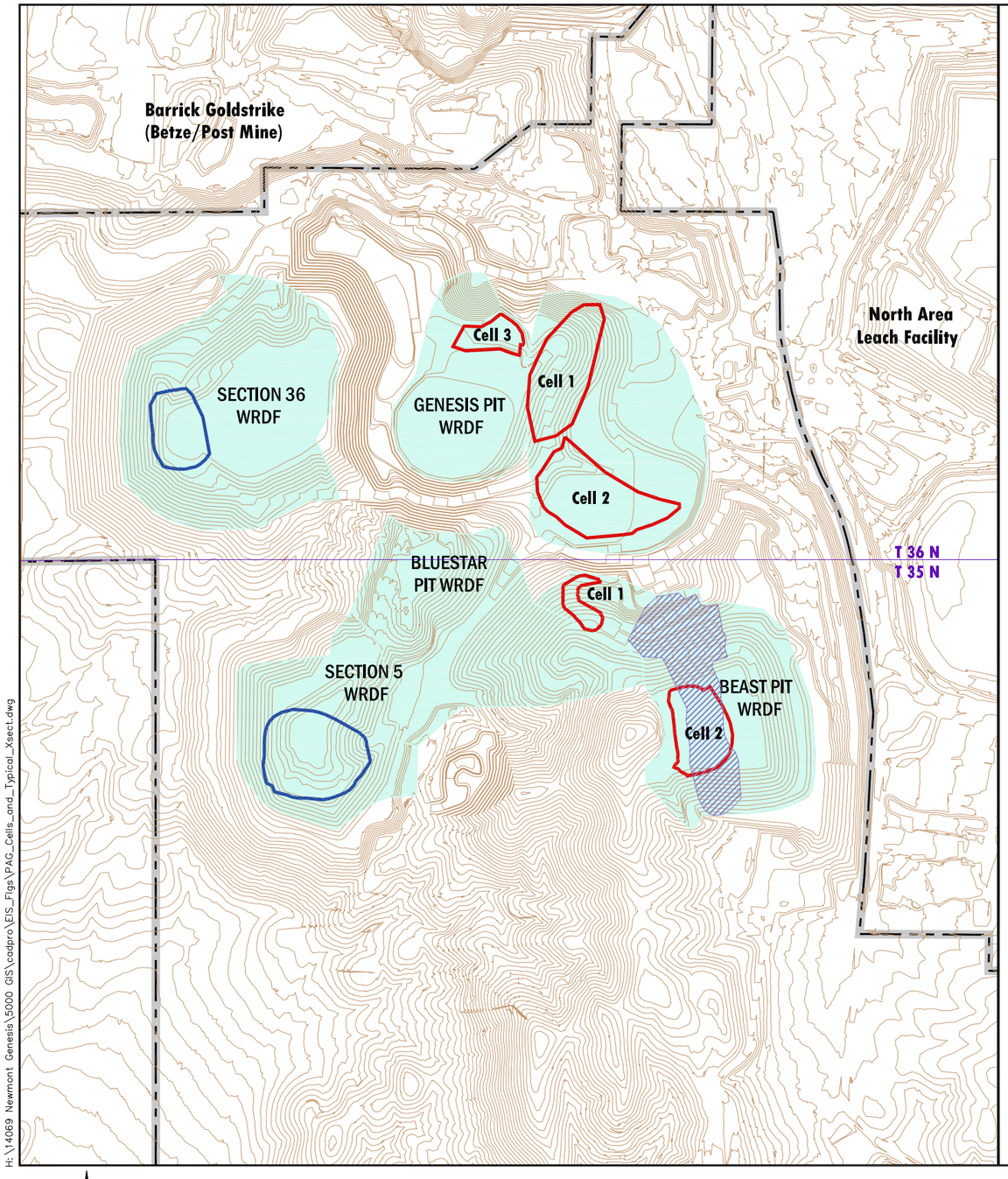
3-95	3.4.7	2	8	Since most companies providing services to the mines are located in Elko County and the majority of mining ***employees live*** and purchase products and services in Elko County, the county receives substantial mining related tax revenue.
4-4	1st column	2	2	***Dept. of Natural Resources should be listed as Dept. of Conservation and Natural Resources (Eureka County) under"Local Government"***
4-4	1st column	4	1	***Companies and Organizations***
4-4	2nd column	1	1	~~Local Government (continued)~~ ***Companies and Organizations (continued)***
6-3	6.0	10	New	***Eureka County. 2010. Eureka County Master Plan. Eureka County Commission. Eureka, Nevada.***
6-4	6.0	5	New	***Great Basin Ecology (GBE), Inc. 2009. Draft Carlin Trend Mule Deer Migration Corridor Survey Report. May***
B-8	App. B	Figure B-1	Legend	Legend revised: Q_r = ***Ground volume*** revised to Q_{gw} = ***Groundwater volume***
B-10	App. B	2	3	Solubility controls or equilibrium phases incorporated into the geochemical model include carbon dioxide (CO_2), oxygen (O_2), barite ($BaSO_4$), calcite ($CaCO_3$), ferrihydrite ($Fe(OH)_3$), gibbsite ($Al(OH)_3$), gypsum (***$CaSO_4 \cdot 2H_2O$***), manganite (MnO(OH)), and otavite ($CdCO_3$).
B-11	App. B – Proposed Action	4	3	The bottom elevation***s*** of the Genesis and West Genesis pits are planned to be 4640 and 4829 feet above mean sea level (amsl), respectively.
B-13	App. B HYDRUS 1D	2	2	The model domain was given an atmospheric boundary condition with ponding for the upper boundary, and a free drainage or unit gradient boundary (dh/dz = ***1***) for the lower boundary condition.
B-15	App. B Oxid. Modeling Results	3	5	Sulfide ~~***oxidation***~~ in the subsequent deeper layers (layers 9, 10, 11, and 12) remained unoxidized.

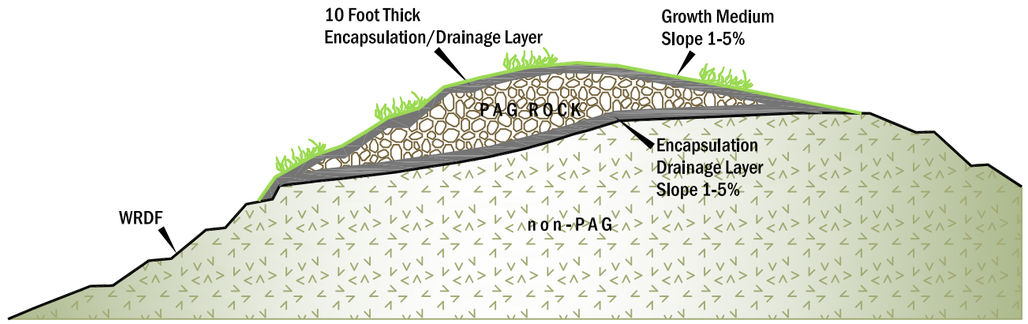
[1] Paragraph number includes first partial paragraph at top of page, if applicable.

TABLE 3-1
Past, Present, and Reasonably Foreseeable Future Mining Related Disturbance[1]
Carlin Trend

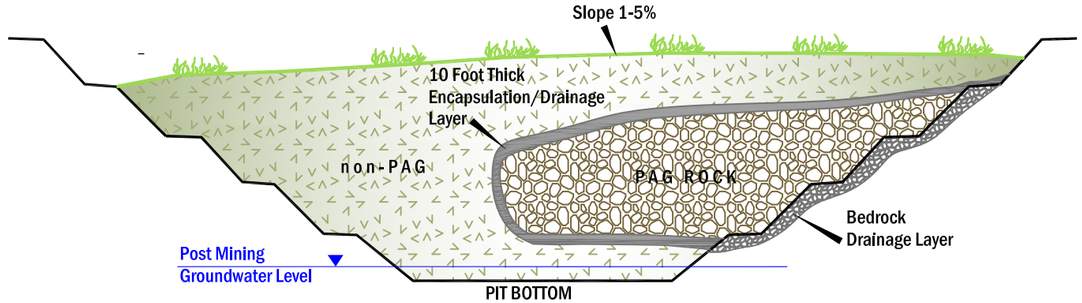
Map[2] Reference No.	Facility	Existing Disturbance (acres)	Future[3] Disturbance (acres)	Comment
1	Newmont/Rodeo Creek Gold-Hollister	283	100	Foreseeable underground gold mine. Same location as the Hollister Development Block Project.
2	Hecla - Hollister Development Block	***66***		
3	Halliburton-Rossi	373	***590***	Rossi mine expansion of Queen Lode and Sage Hen areas and may include expansion of open pits and waste rock dumps.
4	Trio Gold Corp-Rodeo Creek	42		
5	Barrick-Meridian JV-Rossi	51		
6	Barrick-Storm Underground	***194***		
7	Barrick-Arturo		2,347	Foreseeable future open pit gold mine at the existing Dee Gold Mine.
8	Marigold – Dee Mine	802		
9	Centerra -Ren	30	100	Foreseeable underground mine.
10	Newmont-Bootstrap	***1,271***		
11	Barrick-Betze/Post-Meikle , Rodeo,Goldbug, (Mill & TSF transferred from Newmont)	***9,016***		Mine expansion. Expansion includes enlargement of open pit and construction of tailing impoundment.
12	Newmont-Genesis-Bluestar, Section 36, Deep Star, Lantern, North Lantern, Bullion Monarch	***3,910***	100	Foreseeable future open pit gold mine. Expansion of the Lantern Mine in the Genesis-Bluestar Operations Area.
	Newmont Genesis		43	Continued mining of the Genesis Area. Project includes open pit mining, sequential backfill and increased height of existing external waste rock facilities.
	Newmont-North Area Leach	***1,454***	100	Expansion of the existing heap leach pad.
	Newmont Post	***1,179***		
	Newmont-Carlin Mine/Mill 1, Pete	***2,910***		
13	Newmont- Leeville	566		
14	Newmont- Chevas	168		
15	Newmont-High Desert	164		
16	Newmont -Mike	48	100	Foreseeable future gold mine project.
17	Newmont- Gold Quarry/SOAP, MC Reservoir, N-S Haul Road	***9,878***	100	Expansion of Non-property Leach Pad and construction of Property Pad 2 in Section 18.
	Greater Gold Quarry	-	1,424	
	5/6 TSF East Expansion	-	782	
18	Newmont- Woodruff Creek	66		
19	Newmont-Rain	961		
20	Newmont-Emigrant	***163***	***1,468***	Proposed open pit mine, heap leach facility and waste rock dump; permitting in progress.
TOTAL		***33,595***	***7,254***	

[1] Projects permitted by BLM as of April 2007. [2] See **Figure 3-1** for disturbance sites. [3] Reasonably foreseeable assumes 100 acres disturbance per plan or plan amendment. Actual disturbance will vary as plans are developed. Source: BLM 2010.





TYPICAL EXTERNAL WRDF PAG CELL CROSS SECTION
Not To Scale



TYPICAL PIT BACKFILL WRDF PAG CELL CROSS SECTION
Not To Scale

N

0 Feet 2000

Genesis-Bluestar Operations Area

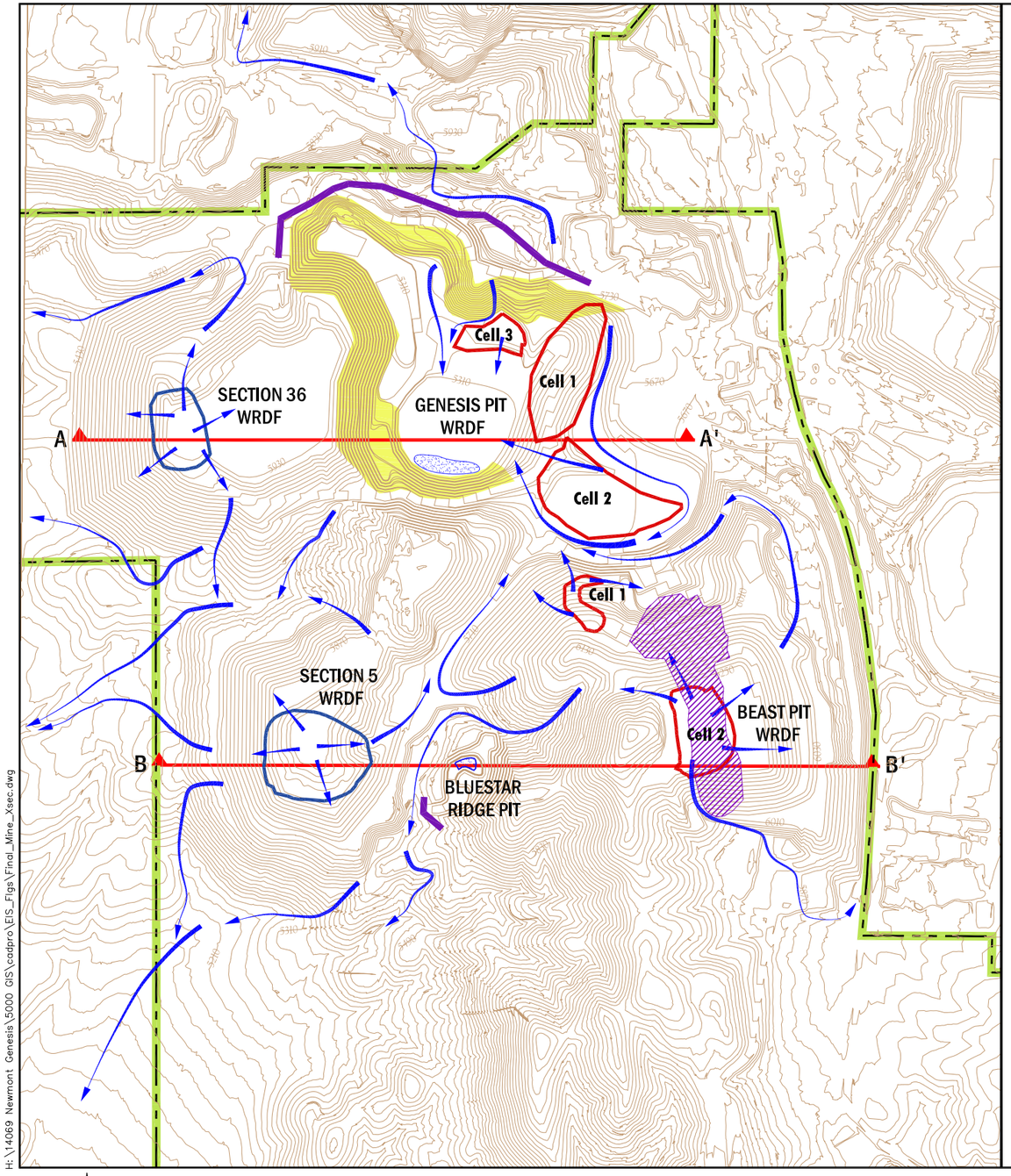
Proposed Waste Rock Disposal Facilities (WRDF)

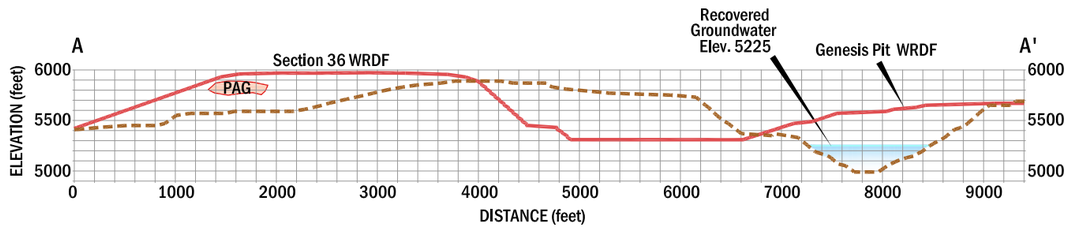
Encapsulated PAG Cells

External PAG Cells

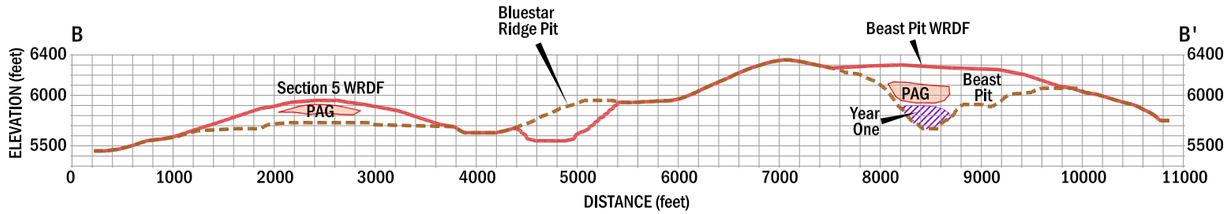
Year One Waste Rock Placement (Managed as PAG)

PAG Encapsulation Cells and Typical PAG Cell Cross Sections
Genesis Project
Eureka County, Nevada
FIGURE 2-10





CROSS SECTION A-A'



CROSS SECTION B-B'

0 Feet 1500
Horizontal/Vertical Scale

No Action
Reclamation Surface

Proposed Action
Reclamation Surface

N

0 Feet 2000

Genesis-Bluestar
Operations Area

Remaining Highwall Area

Safety Berms

Backfill PAG Cells

External PAG Cells

Flow Direction of Surface Runoff

Seasonal Ponded Areas

Year One Waste Rock Placement
(Managed as PAG)

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Post Closure Contours - Proposed Action
Genesis Project
Eureka County, Nevada
FIGURE 2-11