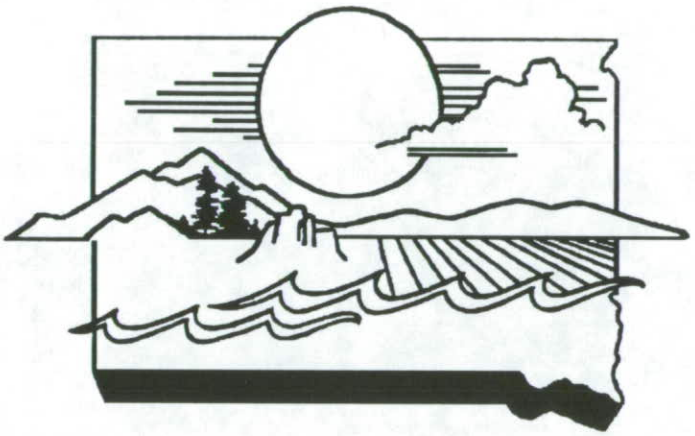
SUMMARY OF THE STATUS OF THE LARGE SCALE GOLD AND SILVER SURFACE MINING INDUSTRY IN THE BLACK HILLS FOR THE YEAR 1993



Protecting South Dakota's Tomorrow... Today

PREPARED BY THE OFFICE OF MINERALS AND MINING
S.D. DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
FEBRUARY, 1994

TABLE OF CONTENTS

INTRODUCTION 1

MAJOR EVENTS 2

ACREAGE AND PRODUCTION TABLES 6

PERMITTED AFFECTED AND AFFECTED ACREAGE 7

SURFACE MINING DISTURBED ACREAGE 8

INTERIM RECLAIMED ACREAGE 9

FINAL RECLAIMED ACREAGE FOR PAST YEAR 10

TOTAL FINAL RECLAIMED ACREAGE 11

RECLAMATION ACREAGE GOAL AND CREDITS 12

PRODUCTION FIGURES 13

GOLD AND SILVER PRODUCTION 14

WATER AND CYANIDE USE 15

OPERATIONAL PLANS FOR 1994 16

PERMITTED AFFECTED ACREAGE GRAPH ..... APPENDIX I

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INTRODUCTION

Pursuant to SDCL 45-6B-93, the Department of Environment and Natural Resources is required to publish an annual summary of the status of the large scale gold and silver surface mining industry in the Black Hills of South Dakota. This summary, which covers the period January 1 to December 31, 1993, is based on annual reports submitted by permitted large scale gold and silver mine operators.

Summary

1993 was a busy and productive year for the large scale gold and silver mining industry in South Dakota. An inventory of abandoned mined lands in the Black Hills was initiated. When the inventory is completed, the next step will be to determine the risks posed to the environment by abandoned mines. Also in 1993, Brohm Mining, Wharf Resources, and Golden Reward reclaimed historic mine tailings. This should eliminate erosion of the tailings and help improve the water quality in Strawberry, False Bottom, Fantail, and Stewart Gulches.

Two major permit amendments were submitted by Richmond Hill, Inc. and Brohm Mining in 1993 to initiate long term mitigation of acid mine drainage at these mines. Both plans include capping areas where there is acid mine drainage. Richmond Hill's application was approved by the Board of Minerals and Environment at its February 16, 1994, meeting. Brohm's application is currently incomplete, and additional information will be submitted by April 1, 1994. A hearing on Brohm's application is tentatively scheduled for this summer.

The large scale gold mines are making progress toward reclaiming 500 acres of surface mining disturbed land that must be completed by September 1, 1997. Approximately 231 of the 1,473 acres of surface mine disturbed land have been reclaimed to date as defined in SDCL 45-6B-90. Also, approximately 300 of the 1,941 acres of affected land have been reclaimed and can be considered for reclamation credit as defined in SDCL 45-6B-97.

Progress will continue this year, as a large amount of reclamation on surface mined disturbed land is planned for 1994. Homestake will continue reclaiming the East Waste Rock Disposal Facility. Golden Reward will reclaim the backfilled Pet Hill pit. Wharf Resources will reclaim a portion of the Ross Valley Spent Ore Depository. Richmond Hill will reclaim the waste dump and pit areas upon approval of their permit amendment.

\S/

Russell L. Stone
Acting Secretary

MAJOR EVENTS IN 1993

ABANDONED MINED LANDS INVENTORY

In early 1993, the South Dakota Legislature established a requirement for an inventory of abandoned mined lands in the Black Hills and an abandoned mine inventory fund. An Abandoned Mined Lands Advisory Committee was also established to oversee the abandoned mine inventory work. Governor Walter D. Miller appointed seven members to this committee which consists of representatives from state government, the mining industry, the environmental community, the U. S. Forest Service, the S.D. School of Mines, and the public at large. The purpose of this committee is to:

- Develop a format for recording existing information on abandoned mined lands;
- Develop criteria for verification, validation, and objective interpretation of recorded information;
- Provide a method for systematically identifying the location of abandoned mined lands; and
- Act as a steering committee for the inventory work.

TAILINGS RECLAMATION

1993 proved to be a big year for historic mine tailings reclamation projects near and within the permit boundaries of three large scale gold mines. Brohm Mining removed approximately 110,000 cubic yards of the old Gilt Edge Mine tailings. The tailings were mixed with fly ash from the Ben French Power Plant in Rapid City to buffer any acid generation. They were then deposited on the upper benches of the Sunday and Dakota Maid Pits. A capping system consisting of (from bottom to top) a clay liner, a thermal aggregate layer, and topsoil will be placed over the tailings in 1994. A leak detection system was also placed in the tailings to monitor any leachate and to check the success of the fly ash mix and the clay liner. Topsoil will be placed over the area where the tailings were removed, and seeding will be completed this spring.

Wharf Resources reclaimed the Bald Mountain Tailings by placing approximately two to three feet of rock and soil from adjacent borrow areas over the tailings. The old Bald Mountain Mill was demolished and buried during the project. The area was then seeded. Wharf plans to use this area as a waste dump in the future as part of its Clinton Expansion Project.

The Golden Reward Mining Company began reclamation work on the Lundberg, Dorr, and Wilson tailings along Fantail Creek and the Horseshoe Mill tailings in Stewart Gulch. The site of the old Horseshoe Mill will also be buried during this project. Since these tailings

are located along intermittent streams, French drains have been installed to carry low flow water. High flow water will be carried along riprapped channels. Golden Reward will place approximately two feet of waste rock from the operation over the French drain system. Topsoil will then be placed over the waste rock, and both areas will be seeded sometime this year.

NEW PERMITS

No new permits were issued for any large scale gold and silver mines in 1993. Wharf Resources did plan to submit a permit application for its proposed Clinton project north and east of the present Annie Creek mine. However, submission of the application has been delayed.

PERMIT AMENDMENTS

Brohm Mining submitted a permit amendment application on June 30, 1993, to initiate a long term acid mine drainage mitigation plan. In the amendment, Brohm plans to place impermeable caps over the Ruby Waste Dump, the Sunday Pit, and the leach pad. The Department found that the application was procedurally incomplete. Brohm is planning to submit additional information to complete the application by April 1, 1994. A hearing on the application is tentatively scheduled for this summer.

Richmond Hill submitted supplemental information to its permit amendment application in January and December of 1993. The amendment application was originally submitted in December 1992, and outlined a long term acid mine drainage mitigation plan. Richmond Hill plans to remove all reactive waste rock from the waste dump and move it to the pit. A low permeable cap will be placed over the waste rock in the pit. The non-reactive waste rock will be graded to a 2.5:1 (horizontal:vertical) slope and will be revegetated. Reactive spent ore on the leach pads will either be treated or capped.

The amendment application was considered procedurally complete on December 17, 1993. The Board of Minerals and Environment approved the application on February 16, 1994.

MAJOR TECHNICAL REVISIONS CONDITIONALLY APPROVED BY DEPARTMENT

January 11	Richmond Hill - Mine limestone within the permit boundary for acid mine drainage mitigation.
February 22	Golden Reward - Expansion of the Liberty Hill Pit near the Terry Cemetery.
May 24	Golden Reward - Add 5 acres of contiguous affected land to the Pet Hill Pit.

June 4	Brohm - Construct an additional sediment pond below the existing lower sediment pond in Ruby Gulch.
June 22	Golden Reward - Use liquid sodium cyanide as a leaching agent.
June 25	Brohm - Transport and store alkaline material on site for future use in acid mine drainage mitigation.
September 28	Brohm - Remove, amend with base additions, and relocate the relic Gilt Edge Mine tailings.
November 8	Brohm - Construct a second tailings depository on the upper benches of the Dakota Maid Pit.
December 28	Wharf Resources - Remove Monitor Well (MW-21) from groundwater sampling program and add the US Geologic Survey sampling station on Annie Creek to surface water sampling program.

SPECIAL, EXCEPTIONAL, CRITICAL, OR UNIQUE LAND DETERMINATIONS

The Department received no Requests for Determination of Special, Exceptional, Critical, or Unique Lands for potential large scale gold mines in 1993. However, the Department did make determinations on two potential large scale gold mines that submitted Requests in October 1992. Wharf Resources submitted a Request for the proposed Clinton Project immediately east and northeast of the current Wharf Mine. The Tinton Partners submitted a Request for a proposed placer mine near Tinton. At this time, it is uncertain whether this placer mine will be a small or a large scale operation. On January 4, 1993, the Department determined that neither project exhibited special, exceptional, critical, nor unique lands characteristics, and these areas were not placed on the preliminary list.

Also, the Department received no petitions in 1993 to add lands to the preliminary list of special, exceptional, critical, or unique lands. The Board of Minerals and Environment met on July 15, 1993, to clarify its earlier decision on the Dome Mountain - Lost Gulch and Anchor Hill Lookout area. They reaffirmed that three exposed laccolithic features along Two Bit Creek within the area should be added to the preliminary list.

NOTICES OF VIOLATION

Acid Mine Drainage at Brohm's Gilt Edge Mine. On April 9, 1993, a pH of 3.4 was detected in the flow from the toe of the Ruby Gulch Waste Rock Dump at Brohm Mining's Gilt Edge Mine. Subsequent sampling by Department personnel showed that acid mine drainage (AMD) was being generated by sulfide rock in the waste rock dump. Brohm Mining Corporation was issued a notice of violation and order on April 19, 1993 for permit and water quality violations resulting from acid mine drainage at the Gilt Edge Mine. The Department ordered Brohm to prevent any discharge of acid mine drainage into surface water and to minimize impacts to groundwater. The Department also required Brohm to

submit a long term acid mine drainage mitigation plan by June 30, 1993.

Brohm submitted the mitigation plan to the Department on June 30, 1993, through a permit amendment (see "Permit Amendments"). The plan was procedurally incomplete. Brohm is hoping to submit additional information by April 1, 1994.

Wharf Resources reclaimed buckwalls at the Reliance Waste Rock Dump in the center of the photo. Also, a portion of the Ross Valley Spent Ore Depository in the foreground has been reclaimed.

ACREAGE AND PRODUCTION TABLES

The following tables were developed by compiling information from annual reports submitted to the Department by the large scale gold mines. The Department also used inspection reports and other records in compiling these tables.

Since the annual reports for these operations were required to be submitted to the Department by January 1, 1994, some information in those reports was either estimated for the month of December or included information up through mid-December only. This information has since been updated, and this updated information is included in these tables.

TABLE 1 - PERMITTED AFFECTED AND AFFECTED ACREAGE				
Permit Number	Operator	Permitted Affected Acres	Additional Acres Affected Past Year	Total Acres Affected as of Dec. 31, 1993
439	Brohm Mining Corp.	406.00	0.00	184.90
208	Dakota Placers, Inc.	81.00	0.00	12.00
450	Golden Reward Mining Co.,L.P.	477.35	15.25	402.25
332 & 456	Homestake Mining Company	651.40	16.00	455.40
416	Minerva Explorations, Inc.	122.00	0.00	0.00
445	Richmond Hill, Inc.	431.80	7.40	304.70
356, 434, & 435	Wharf Resources	684.70	28.85	581.85
TOTALS		2,854.25	67.50	1,941.10

DEFINITIONS:

PERMITTED AFFECTED ACRES - As defined in SDCL 45-6B-3(1), permitted affected land involves all lands permitted to be affected by a mining operation, including land from which overburden is to be or has been removed; land upon which overburden, waste rock, mine spoil, or mill tailings is to be or has been deposited; land which is disturbed by the building of access roads, railroad loops, warehouses, storage areas or other support facilities for the purpose of mining; and land affected by surface subsidence, unstable slopes, and other surface effects caused by underground mine workings.

ADDITIONAL ACRES AFFECTED PAST YEAR - Previously unaffected acres disturbed from January 1 to December 31, 1993. This acreage is included in "Total Acres Affected As Of Dec. 31, 1993".

TOTAL ACRES AFFECTED AS OF DEC. 31, 1993 - All land currently affected by the large scale gold and silver operations under permit as of December 31, 1993. This includes all lands described above in "Permitted Affected Acres".

TABLE 2 - SURFACE MINING DISTURBED ACREAGE			
Permit Number	**Operator**	**Additional Surface Mining Acres Disturbed Past Year**	**Total Surface Mining Disturbed Acres as of Dec. 31, 1993**
439	Brohm Mining Corp.	0.00	161.80
208	Dakota Placers, Inc.	0.00	4.05
450	Golden Reward Mining Co.,L.P.	15.25	220.55
332 & 456	Homestake Mining Company	16.00	432.20
416	Minerva Explorations, Inc.	0.00	0.00
445	Richmond Hill, Inc.	2.40	190.40
356, 434, & 435	Wharf Resources	28.58	463.58
TOTALS		62.23	1,472.58

DEFINITIONS:

ADDITIONAL SURFACE MINING ACRES DISTURBED PAST YEAR - Previously unaffected surface mining land disturbed from January 1 to December 31, 1993. This acreage is included in "Total Surface Mining Disturbed Acres As Of Dec. 31, 1993".

TOTAL SURFACE MINING DISTURBED ACRES AS OF DEC. 31, 1993 - As defined in SDCL 45-6B-3(15), surface mining disturbed land is land from which overburden has been removed; land upon which overburden, waste rock, mine spoil, or mill tailings have been deposited; land mined which has no overburden; heap leach pads; and process ponds. Surface Mining Disturbed Lands include overburden and waste rock dumps, spent ore dumps, tailings impoundments, heap leach pads, open pits, process ponds, and haul roads in pit areas or constructed largely of waste rock, spent ore, or overburden.

Surface Mining Disturbed Lands **do not** include access roads, haul roads constructed from normal cut and fill methods, railroad loops, utility corridors, buildings including process plants, land application areas, topsoil stockpiles, ore stockpiles, crusher areas, storage areas, sediment and erosion control structures, and land affected by surface subsidence, unstable slopes, and other surface effects caused by underground mine workings.

TABLE 3 - INTERIM RECLAIMED ACREAGE			
Permit Number	Operator	Additional Interim Reclaimed Acres Past Year	Total Interim Reclaimed Acres as of Dec. 31, 1993
439	Brohm Mining Corp.	0.00	0.55
208	Dakota Placers, Inc.	0.00	0.00
450	Golden Reward Mining Co.,L.P.	0.16	2.43
332 & 456	Homestake Mining Company	1.50	62.90
416	Minerva Explorations, Inc.	0.00	0.00
445	Richmond Hill, Inc.	6.50	30.80
356, 434, & 435	Wharf Resources	1.00	41.80
TOTALS		9.16	138.48

DEFINITIONS:

INTERIM RECLAMATION - As defined in ARSD 74:29:01:01(17), interim reclamation is reclamation performed during a mining operation or between mining phases to stabilize affected land by regrading and revegetating to control erosion, improve aesthetics, and minimize hazards. It can be construed to be temporary reclamation or soil stabilization for affected land that will be disturbed again.

ADDITIONAL INTERIM RECLAIMED ACRES PAST YEAR - Acres under interim reclamation from January 1 to December 31, 1993. These acres are included in "Total Interim Reclaimed Acres".

TOTAL INTERIM RECLAIMED ACRES AS OF DEC. 31, 1993 - The total amount of acres under interim reclamation as of December 31, 1993. This is only a cumulative total of interim reclaimed acres since the permits were issued. Some of these acres have already been redisturbed or have been counted as final reclamation.

TABLE 4 - FINAL RECLAIMED ACREAGE FOR PAST YEAR			
Permit Number	Operator	Final Reclaimed Acres Past Year that Meet Post Mine Land Use	Final Reclaimed Acres Past Year that Do Not Meet Post Mine Land Use
439	Brohm Mining Corp.	0.00	0.00
208	Dakota Placers, Inc.	0.00	0.00
450	Golden Reward Mining Co.,L.P.	0.00	1.94
332 & 456	Homestake Mining Company	0.00	14.70
416	Minerva Explorations, Inc.	0.00	0.00
445	Richmond Hill, Inc.	0.00	0.00
356, 434, & 435	Wharf Resources	0.00	7.41
	TOTALS	0.00	24.05

DEFINITIONS:

FINAL RECLAIMED ACRES PAST YEAR THAT MEET POST MINE LAND USE - Affected land under final reclamation from January 1 to December 31, 1993, which has a permanent, self-sustaining vegetative cover that meets the requirements of the approved reclamation plan and meets the reclamation requirements of SDCL 45-6B and ARSD 74:29. These acres can be considered for bond release.

FINAL RECLAIMED ACRES PAST YEAR THAT DO NOT MEET POST MINE LAND USE - Affected land under final reclamation from January 1 to December 31, 1993, which may have a permanent, self-sustaining vegetative cover that does not meet the requirements of the approved reclamation plan and does not meet the reclamation requirements of SDCL 45-6B and ARSD 74:29.

TABLE 5 - TOTAL FINAL RECLAIMED ACREAGE As of December 31, 1993			
Permit Number	**Operator**	**Final Reclaimed Acres that Meet Post Mine Land Use**	**Final Reclaimed Acres that Do Not Meet Post Mine Land Use**
439	Brohm Mining Corp.	0.00	5.30
208	Dakota Placers, Inc.	0.00	0.00
450	Golden Reward Mining Co.,L.P.	0.00	27.74
332 & 456	Homestake Mining Company	8.50	132.60
416	Minerva Explorations, Inc.	0.00	0.00
445	Richmond Hill, Inc.	10.00	31.40
356, 434, & 435	Wharf Resources	39.00	45.18
TOTALS		57.50	242.22

DEFINITIONS:

FINAL RECLAIMED ACRES THAT MEET POST MINE LAND USE - Affected land under final reclamation as of December 31, 1993, which has a permanent, self-sustaining vegetative cover that meets the requirements of the approved reclamation plan and meets the reclamation requirements of SDCL 45-6B and ARSD 74:29. These acres can be considered for bond release.

FINAL RECLAIMED ACRES THAT DO NOT MEET POST MINE LAND USE - Affected land under final reclamation as of December 31, 1993, that does not meet the requirements of the approved reclamation plan and the reclamation requirements of SDCL 45-6B and ARSD 74:29. These acres also include areas that have been graded and seeded that may or may not have a vegetative cover.

TABLE 6 - RECLAMATION ACREAGE GOAL AND CREDITS
As of December 31, 1993

Permit Number	Operator	Surface Mined Acres Reclaimed that Apply Toward Sept. 1, 1997 500 Acre Reclamation Goal (SDCL 45-6B-90)	Total Affected Acres Reclaimed that Apply as Reclamation Credit in 1992 Mining Initiative (SDCL 45-6B-97)
439	Brohm Mining Corp.	4.00	5.30
208	Dakota Placers, Inc.	0.00	0.00
450	Golden Reward Mining Co.,L.P.	12.85	27.74
332 & 456	Homestake Mining Company	141.10	141.10
416	Minerva Explorations, Inc.	0.00	0.00
445	Richmond Hill, Inc.	16.90	41.40
356, 434, & 435	Wharf Resources	56.50	84.18
TOTALS		231.35	299.72

DEFINITIONS:

SURFACE MINED ACRES RECLAIMED THAT APPLY TOWARD SEPT. 1, 1997 500 ACRE RECLAMATION GOAL - Total amount of surface mining disturbed acres under final reclamation as of December 31, 1993. These acres can be counted toward the 500 acres that are required under SDCL 45-6B-90 to be reclaimed by September 1, 1997. Final grading, topsoil replacement, erosion and drainage control, and seeding have been conducted on these acres.

TOTAL AFFECTED ACRES RECLAIMED THAT APPLY AS RECLAMATION CREDIT IN 1992 MINING INITIATIVE - Affected land under final reclamation as of December 31, 1993, that does and does not meet the requirements of the approved reclamation plan and the reclamation requirements of SDCL 45-6B and ARSD 74:29. These acres can be considered for reclaimed acreage credit as provided under SDCL 45-6B-97. Final grading, topsoil placement, erosion and drainage control, and seeding have been conducted on these acres.

TABLE 7 - PRODUCTION FIGURES January 1 to December 31, 1993				
Permit Number	**Operator**	**Tons of Ore Mined Past Year**	**Tons of Ore Processed Past Year**	**Tons of Waste Rock and Overburden Mined Past Year**
439	Brohm Mining Corp.	1,978.00	6,837.00	706.00
208	Dakota Placers, Inc.	0.00	210.00	0.00
450	Golden Reward Mining Co.,L.P.	1,516,527.00	1,513,098.00	3,125,698.00
332 & 456	Homestake Mining Company	1,048,272.00	1,223,485.00	10,516,898.00
416	Minerva Explorations, Inc.	0.00	0.00	0.00
445	Richmond Hill, Inc.	92,650.00	92,650.00	21,750.00
356, 434, & 435	Wharf Resources	3,908,500.00	3,997,800.00	4,667,000.00
TOTALS		6,567,927.00	6,834,080.00	18,332,052.00

DEFINITIONS:

TONS OF ORE MINED PAST YEAR - Tons of ore mined at each operation from January 1 to December 31, 1993.

TONS OF ORE PROCESSED PAST YEAR - Tons of ore processed at each operation from January 1 to December 31, 1993.

TONS OF WASTE ROCK AND OVERBURDEN MINED PAST YEAR - Tons of waste rock and overburden mined at each operation from January 1 to December 31, 1993.

TABLE 8 - GOLD AND SILVER PRODUCTION January 1 to December 31, 1993			
Permit Number	**Operator**	**Ounces of Gold Produced Past Year**	**Ounces of Silver Produced Past Year**
439	Brohm Mining Corp.	9,421.00	18,130.00
208	Dakota Placers, Inc.	0.00	0.00
450	Golden Reward Mining Co.,L.P.	35,551.00	29,385.00
332 & 456	Homestake Mining Company	106,265.00	38,083.00
416	Minerva Explorations, Inc.	0.00	0.00
445	Richmond Hill, Inc.	9,841.00	15,518.00
356, 434, & 435	Wharf Resources	102,381.00	26,328.00
SUBTOTAL		263,459.00	127,444.00
N.A.	Homestake Underground	341,328.00	67,747.00
TOTALS		604,787.00	195,191.00

DEFINITIONS:

OUNCES OF GOLD PRODUCED - Ounces of gold produced at each operation from January 1 to December 31, 1993.

OUNCES OF SILVER PRODUCED - Ounces of silver produced at each operation from January 1 to December 31, 1993.

TABLE 9 - WATER AND CYANIDE USE January 1 to December 31, 1993				
Permit Number	Operator	Gallons Ground Water Withdrawn Past Year	Gallons Surface Water Withdrawn Past Year	Pounds of Cyanide Used Past Year
439	Brohm Mining Corp.	4,954,000.00	0.00	504,340.00
208	Dakota Placers, Inc.	2,100,000.00	0.00	0.00
450	Golden Reward Mining Co.,L.P.	21,576,000.00	2,520,000.00	334,800.00
332 & 456	Homestake Mining Company	0.00	5,500,000.00	916,623.00
416	Minerva Explorations, Inc.	0.00	0.00	0.00
445	Richmond Hill, Inc.	3,100,000.00	23,428,500.00	231,000.00
356, 434, & 435	Wharf Resources	28,070,000.00	0.00	942,040.00
TOTALS		59,800,000.00	31,448,500.00	2,928,803.00

NOTE: Water and cyanide use by Homestake's underground mine is not included in this table.

DEFINITIONS:

GALLONS GROUNDWATER WITHDRAWN - The amount of groundwater withdrawn by each operation from January 1 to December 31, 1993.

GALLONS SURFACE WATER WITHDRAWN - The amount of surface water withdrawn by each operation from January 1 to December 31, 1993.

POUNDS OF CYANIDE USED - The amount of cyanide used at each operation from January 1 to December 31, 1993.

OPERATIONAL PLANS FOR 1994

BROHM MINING CORPORATION

Brohm Mining plans to temporarily cease mining operations in January. However, leaching and neutralization of crushed ore will continue throughout 1994. Revisions to Mine Permit No. 439 may be necessary to achieve compliance with NPDES permit requirements.

Brohm will proceed with plans to obtain a mine permit for the Anchor Hill oxide deposit. Since part of the oxide project is on U.S. Forest Service land, an environmental impact statement will be required. Also, Brohm intends to continue work on obtaining a mine permit for the sulfide ore reserve. This is contingent on satisfactory results from the sulfide heap leach test currently being conducted.

DAKOTA PLACERS, INC.

Due to full production funding delays, Dakota Placers will complete the mining and reclamation planned for 1993 in 1994. Mining operations in Block Number 1 of the placer mining operation will be completed in 1994. Approximately 450,000 tons of ore will be mined and processed. Also, approximately 18 acres will be reclaimed in this block in 1994 and will be conducted in compliance with the approved reclamation plan for Mine Permit No. 208.

GOLDEN REWARD MINING COMPANY, L.P.

Golden Reward will continue mining in the Harmony and East Liberty Pits in the south end of its mine in 1994. Prestripping for the West Liberty Pit will begin in the same area. The Bonanza Pit in the northeast corner of the mine will be completed, and backfilling and reclamation will begin. Reclamation of the backfilled Pet Hill Pit in the north portion of the mine will also be started in 1994. Golden Reward plans on mining approximately 2,082,000 tons of ore and 4,887,000 tons of waste rock.

HOMESTAKE MINING COMPANY

Homestake Mining plans to continue development of the Open Cut Expansion Project which was permitted in March 1992. Mining activities will continue on the west and south sides of the Open Cut, and the pit will be deepened. Approximately one million tons of ore will be mined, and approximately 125,000 ounces of gold will be produced from the Open Cut in 1994.

Construction of the Sawpit Haul Road will continue. The remainder of the fill material will be placed over the Highway 14A and Deadwood Creek archways. Sediment control structures will be constructed at the Deadwood Creek valley crossing.

Approximately 60 acres of permitted affected land will be disturbed during the construction of the waste rock disposal facility in Sawpit Gulch. Temporary diversion channels will be constructed and sediment control structures will be put in place before grubbing and removing topsoil in the lower portion of the gulch. The underdrain will be constructed as lifts are placed on the waste rock disposal area. Phase I on the Sawpit construction will be completed by mid-1994 and Phase II will be well underway by the end of the year.

Reclamation plans include completing reclamation of the East Waste Rock Disposal Area and reclamation associated with the Sawpit haul road construction. Homestake also plans to reclaim the lower east faces of the Sawpit Waste Rock Disposal Facility in the fall of 1994.

MINERVA EXPLORATIONS, INC.

Minerva Exploration is in the process of developing a joint venture with Richmond Hill, Inc. Minerva is planning to process ore mined under Mine Permit No. 416 at the Richmond Hill processing plant which is covered under Mine Permit No. 445. This joint venture was contingent on Minerva successfully obtaining a Conditional Use Permit from Lawrence County. However, on January 4, 1994, the Lawrence County Commission voted 3 to 2 to deny the Conditional Use Permit. Minerva has decided to appeal the Commission's decision. If the Commission's decision is overturned in court, Minerva is hoping to start mining activities sometime in 1994.

RICHMOND HILL, INC.

Acid mine drainage mitigation measures at the Richmond Hill mine will continue in 1994. Richmond Hill plans to start final reclamation of the pit and waste dump to help mitigate the acid mine drainage problem. The Board of Minerals and Environment approved the amendment application at the February 16, 1994, hearing. Richmond Hill will remove all reactive waste rock from the waste dump and move it to the pit. A low permeable cap will be placed over the waste rock in the pit. The non-reactive waste rock will be graded to a 2.5:1 (horizontal:vertical) slope and will be revegetated. Reactive spent ore on the leach pads will either be treated or capped.

Richmond Hill will also apply for a mine permit to mine clay just north of the current mine permit boundary. The clay is needed for the cap design for the pit impoundment.

Pads 1, 2, and 3 will be neutralized in 1994. Also, an NPDES permit for discharge of water from a treatment plant will be obtained. A technical revision will also be submitted for the treatment plant.

WHARF RESOURCES

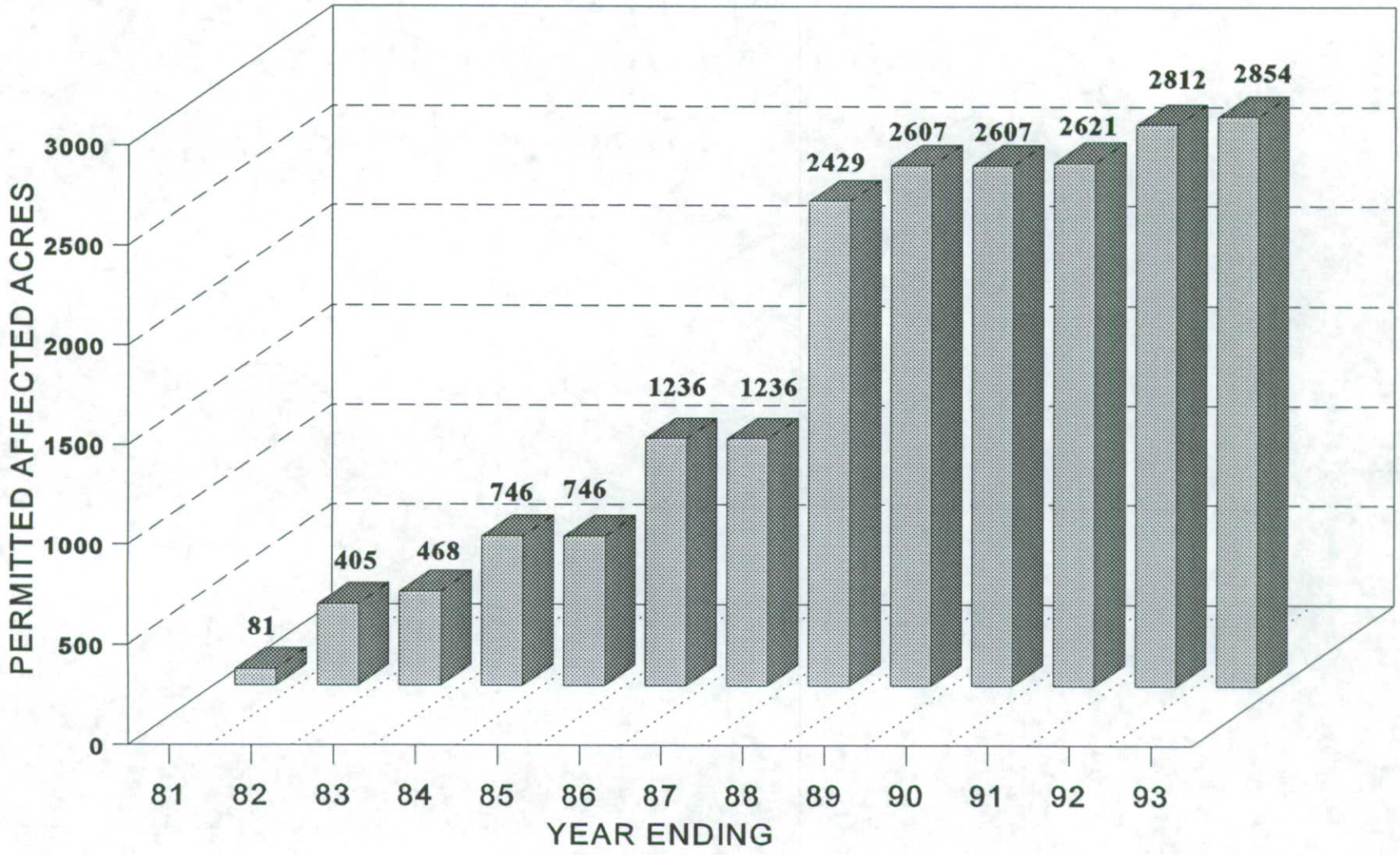
Wharf Resources plans to initiate mining in the 4A and Dakota Shaft Pits in 1994. Other areas to be mined include the Annie Arm, Juno, and North Foley pits and the low grade stockpile in Ross Valley.

The majority of the Ross Valley Spent Ore Dump will be completed in 1994. Final reclamation of this dump will be concurrent with its progress. Wharf Resources is also planning to reclaim another buckwall on the Reliance Waste Dump.

Plans to submit a permit application to mine the Clinton Expansion Project, which is immediately northeast of the current Wharf Mine, have been delayed.

Reclaimed Highland Waste Rock Depository just west of the Open Cut. The area was seeded by Homestake Mining in 1986.

APPENDIX I

PERMITTED AFFECTED ACREAGE GRAPH (1981 - 1993)

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