



Dominion Gold Operations

Challenger Gold Project 2006-07 Annual Environmental Report

April, 2007



**Dominion Gold Operations
Pty. Limited**

Challenger Gold Project 2006-07 Annual Environmental Report

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Appendix B - Health Safety Environment Australia 2006 Challenger Noise Survey.

Appendix C - Badman Environmental Executive Summary of the Challenger 2006 Annual Spring Flora Survey.

Appendix D - 2005-06 Challenger Vegetation Photographic Monitoring Points.

Appendix E - Resource and Environmental Management (REM) Consultants 2006-07 Challenger Groundwater Review.

Appendix F - Outback Ecology Executive Summary of Challenger's 2006 Tailings Capping Trial.

Appendix G – Outback Ecology 2006 Ecosystem Function Analysis – Executive Summary on the Rehabilitation at the Challenger Gold Mine.

Appendix H - Greenbase Consultants Summary of Challenger's 2005-06 National Pollutant Inventory.

Appendix I - Integrated Waste Landform Environmental Data Sheets (2006).

1.0 INTRODUCTION

1.1 Outline

This Annual Environmental Report (AER) has been prepared by Outback Ecology on behalf of Dominion Mining Limited (Dominion) - Dominion Gold Operations Pty Ltd (DGO) - for the Challenger Gold Project (Challenger). The AER covers the period from the 1st April 2006 to 31st March 2007 (the reporting period) and is lodged to comply with the Department of Primary Industries and Resources South Australia (PIRSA) requirements associated with Mining Lease (ML) 6103 and Miscellaneous Purpose Leases (MPL) 63, 65 and 66. As stipulated with condition seven (7) of the second schedule of ML6103 -

“The lessee shall provide the Minister with an annual environmental report detailing the following –

- *Operations undertaken during the (reporting) period;*
- *Progressive rehabilitation undertaken during the period; and,*
- *An environmental report on the progress and monitoring which has been carried out in accordance with the site’s Environmental Management and Monitoring Program (EMMP) previously submitted to PIRSA ”*

1.2 Summary of operations

1.2.1 Mining Overview

Mining operations throughout the reporting period were focused primarily on underground development of the Jumbuck decline and stoping activities along the M1 ore-body. Limited development and stoping operations were also completed in the upper sections of the M2 ore-body. Decline development to the 1st March 2007 had exceeded RL700m (surface RL1195m, Jumbuck portal RL1120m).

Gold production for the 2005-06 financial year had increased by 150% compared to 2004-05 with 108,080 ounces produced at a cash operating cost of \$280/ounce. This was indicative of the substantial increase in average ore grade up from 3.12gm/t (2005) to 9.52gm/t (2006). The production performance underpinned a \$17.7 million turnaround in Dominion’s financial results, with a net profit of \$9.0 million for the 2005-06 financial year (Dominion, 2006). For the 2006-07 financial year to the end of February 2007, 242,235 dry tonnes of ore has been processed producing 69,738 gold ounces.

Challenger's exploration strategy was focused toward replacing reserves depleted by ongoing mine production, with the target being to maintain reserves around 300,000 ounces (approximately three years production). Deep surface diamond drilling had defined the M1 lode to at least RL480m and this lodes remains open at depth.

In June 2006 a Tailings Storage Facility (TSF) embankment uplift was completed to facilitate tailing's disposal for a further two years. Oxide waste material was utilised during the downstream construction to lift the TSF from RL1208.25m to RL1211.50m.

Refurbishment of Challenger's Carbon in Pulp (CIP) processing plant was continued throughout the reporting period. This included reinforcement of leach and absorb-portion tanks, installation of a Acacia reactor (August 2006) to enhance gold recovery.

1.2.2 *Environmental Overview*

The annual TSF audit was conducted by Coffeys Geosciences in October 2006. A copy of this report has been presented in **Appendix A**.

A noise survey was undertaken by Health Safety Environment (HSE) Australia in August 2006. The executive summary of this report is presented in **Appendix B**, and discussed in further detail in **Section 4.7 Noise**. Results from routine dust sampling are presented in **Section 4.8 Inhalable and Respirable dust**.

The site's annual flora survey was completed by Badman Consultants in October 2006 and discussed in **Section 4.3.2 Flora Report**. A copy of this report's executive summary is provided in **Appendix C** and photographic monitoring plates of the SA vegetation monitoring points for 2005 and 2006 are provided in **Appendix D** for comparison.

On-going minesite and regional groundwater monitoring continued throughout the reporting period. All collated water data was forwarded to Resource and Environmental Management (REM) hydrologists for compilation of Challenger's annual groundwater report. Recommendations and findings stated in this review are discussed in **Section 4.2 Water Monitoring** and a complete hardcopy of this report has been presented in **Appendix E**.

The TSF capping trial was sampled and analysed for the second year. However, below-average rainfall has inhibited vegetation development of this investigation. The findings of this trial to date are discussed in **Section 4.6 Tailings Capping Trial** and a copy of the trial's executive summary is provided in **Appendix F**.

Challenger's third Ecosystem Function Analysis (EFA) monitoring was undertaken on the Integrated Waste Landform (IWL) batters in October 2006. The results of this survey are discussed further in **Section 4.3.3 Ecosystem Function Analysis** and a copy of the EFA's executive summary is presented in **Appendix G**. A complete digital copy of the EFA report has been provided on the CD associated with this AER.

Challenger's fourth National Pollutant Inventory (NPI) was completed and submitted in September 2006. All previous year's emission values are presented in **Section 5.3 National**

Pollutant Inventory, a digital copy of the 2006 NPI report has been provided on the CD associated with this AER and a hardcopy of this document has been presented in **Appendix H**.

The 2006-07 Integrated Waste Landform (IWL) data sheets are presented in **Appendix I**. These sheets outline the construction materials used throughout the landform's construction, in addition to the rehabilitation and monitoring activities undertaken during the reporting period.

In July 2006, Dominion commissioned Outback Ecology to compile Challenger's Progressive Rehabilitation System (PRS). The PRS assesses Challenger's legal obligations for closure, compiles rehabilitation/closure task sheets and estimated decommissioning costs (+/- 30%). The PRS is discussed in further detail in **Section 6.0 Progressive Rehabilitation System**.

No fauna survey was conducted at site during the 2006-07 reporting period. It is proposed that two fauna surveys will be undertaken during 2007 during April and October, respectively. Copies of these fauna reports will be forwarded to all relevant Regulators within one-month of completing each survey.

1.3 Location

Challenger is located approximately 225 NNE of Ceduna, South Australia (**Figure 1**). The main project area covers approximately 3 square-kilometers between Latitudes 29°52'45"S and 29°53'15"S and Longitudes 133°34'45"E and 133°36'30"E.

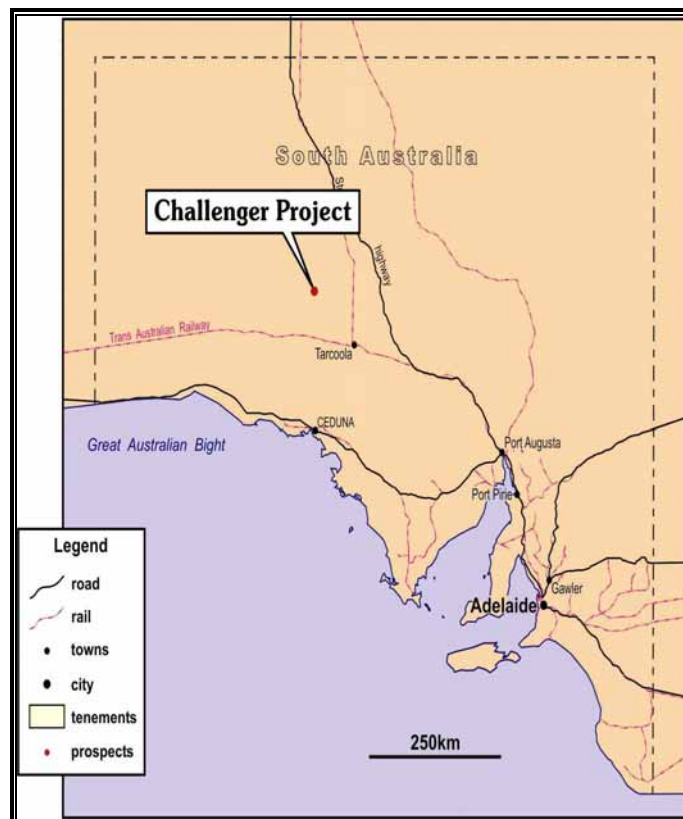


Figure 1 – Locality plan for Challenger

1.4 History

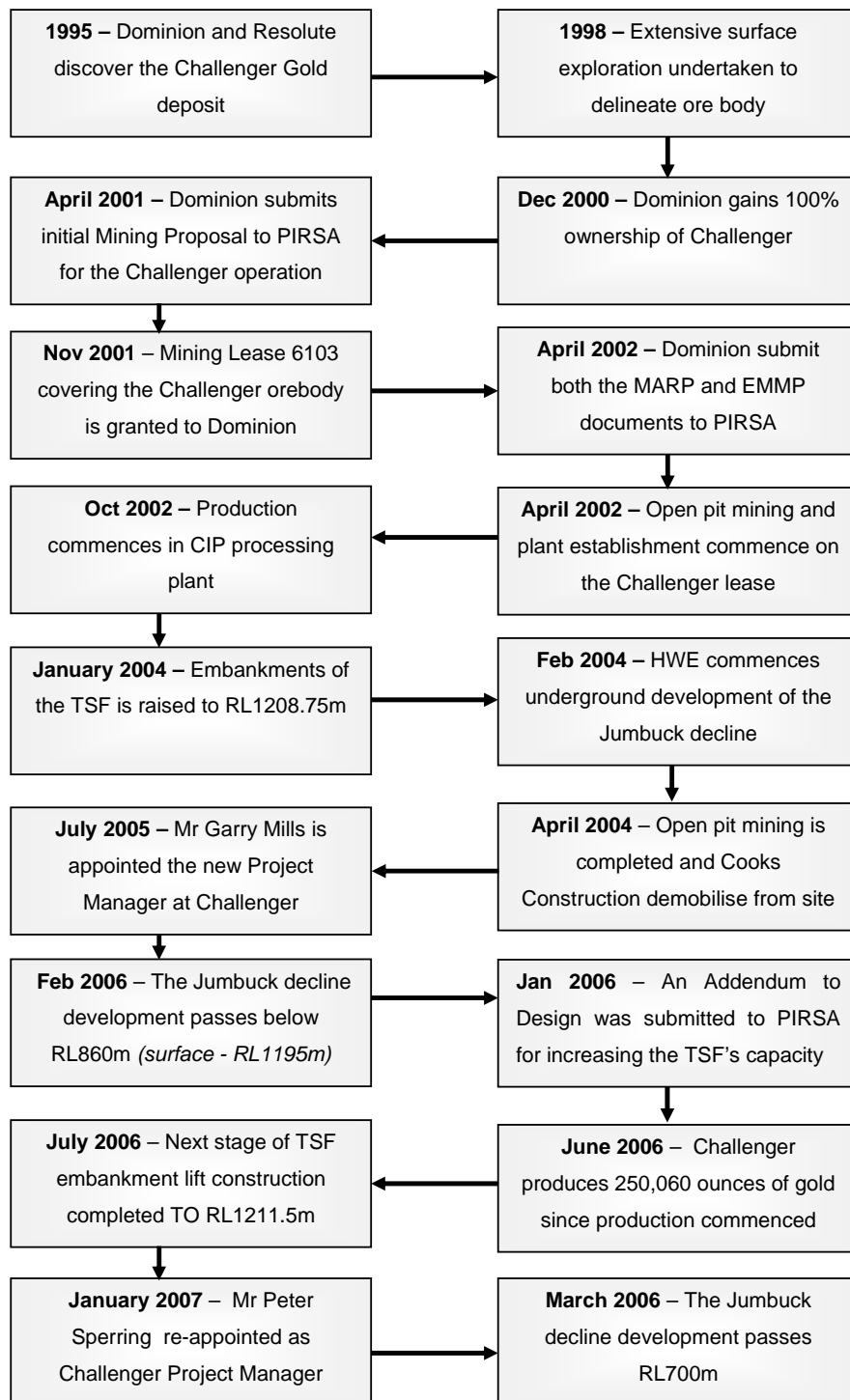


Figure 2 - Timeframe of Challenger's development

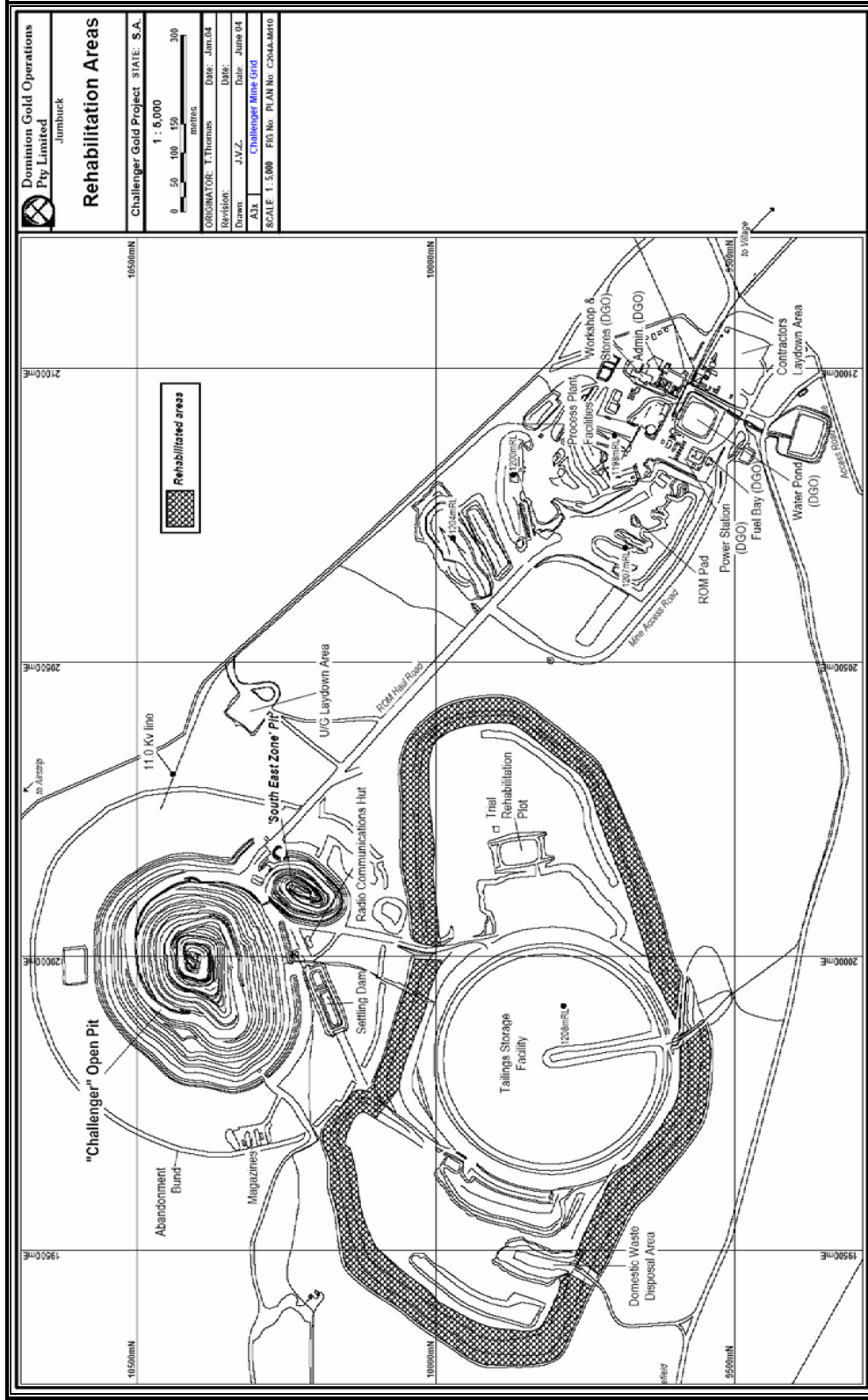


Figure 3 - Site layout of Challenger's operations

2.0 PROJECT ACTIVITY

2.1 *Mining Operations*

Underground development continued along the Jumbuck decline to RL700m with stoping activities focused primarily on the M1 ore-body. No open pit excavations were undertaken during the reporting period (**Figure 4**). Gold production for the 2006/07 financial year has been forecast to be in order of 100,000 ounces at an average site cash operating cost of \$335/ounce with capital development expenditure of approximately \$128/ounce. Details of Challenger's production to date for the 2006-07 financial year are presented in **Table 1**.

Underground conditions so far were generally considered very good, with the gneiss host rock and quartz veins commonly requiring minimal support. Thus far, minimal water inflows have been experienced underground with drainage pipelines returned to the surface holding tanks and utilised for underground equipment. Only three of the four primary fans have so far been required to adequately ventilate the underground mine workings, and no substantial upgrades are planned during 2006-07 financial year (Dominion, 2006).

The CIP processing plant performed well through the 2005-06 financial year averaging 96.6% availability. Mill throughput averaged 1,027 tonnes per day or 44.4 tonnes per hour during operation. Overall processing recovery was 94.3%. Significant recovery of gold from the gravity circuit continued at about 60% total recovery. An Acacia reactor was installed in August 2006, and it is expected that this will reduce the grade in the leach circuit and should increase the overall recover by about 1.5%, as well as increasing the capacity for further gold recovery.

Reagent consumption for treating the primary Challenger ore was reasonably consistent, requiring approximately 1.0kg of cyanide, 2.3kg of lime and 2.5kg of grinding media to treat one tonne of ore. Power consumption averaged 51.9 kWhr per tonne of ore, providing all power used underground, at the processing plant and village camp.

Table 1 - Challenger production details from 1st July 2006 to 28th February 2007

PRODUCTION PHYSICALS		
	Tonnes Mined	Average Grade (g/t)
Total Ore Mined Open Pit and Underground (exc LG)	227,284	10.36
Low Grade (LG) Tonnage	44,200	1.37
Ore crushed (inc LG)	249,045	-
Total Tonnes Processed (Dry tonnes)	242,235	9.62
GOLD PRODUCTION		
	Ounces Produced	% Recovery
Gold Production (oz)	69,715	93.1

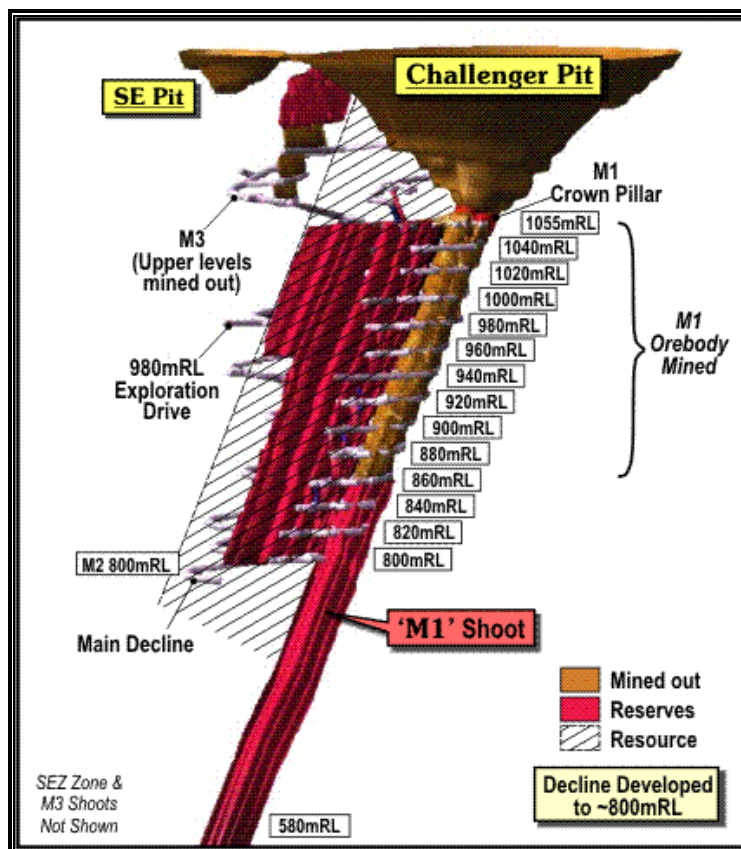


Figure 4 - Challenger shoots: resources and reserves (Nov, 2006)

2.2 Exploration Programmes

Exploration is predominately conducted underground utilising both diamond, sludge and RC drilling methods to define resources. Challenger's exploration objective in designing programs targeting the established M1, M2 and M3 orebodies, and defining reserves to replace current gold production. The Challenger geological team has recently been expanded with two additional geologists to assist in further exploration program development and defining additional reserves for both open pit and underground mining in and around the current operation.

Two surface drilling programs were completed during the reporting period and one additional programme was commenced in late January 2007 which remains on-going. All three programs were conducted at previously disturbed exploration areas within ML6103 in the following areas -

- Program 1 - Challenger deep diamond (A);
- Program 2 - Surface projection of the M1 Footwall (FW) 1, Challenger 3 prospect, Challenger North, Challenger West; and,
- Program 3 - Challenger deep diamond (B).

Program 1 was conducted in July 2006 by Coughlan drilling and utilised a surface diamond rig to collect deep diamond hole cores. The two drill collars and associated four daughter off-shoots were designed to target the M1 lode at depth. Preliminary logging of cores from this program had observed visible gold at depth within the target zone.

Program 2 was completed by Bullion Drilling in August/September 2006 and comprised four small RAB exploration sub-programs at a number of sites. A total of 1,800m was drilled consisting of -

- 1,100m targeting the Challenger 3 prospect;
- 550m aimed at the near surface projection of Challenger West and M1 FW Orthogonal; and,
- 150m at Challenger North.

Program 3 commenced on the 29th January 2007 by Major Drilling. It incorporates deep diamond drilling and associated daughter holes targeting the M1 orebody at depths between the 400mRL and 0mRL. Drilling of the initial deep diamond hole 07CDDH0076 is currently active.

A summary of all surface drill holes completed at Challenger from 1997 to February 2007 is presented in **Table 2**.

Table 2 - Surface drill hole summary for Challenger's operations

DATA SET	HOLE TYPE	No OF HOLES	METRES
Atlantis	RAB	42	1,815
	RC	10	996
Atlantis East	RC	13	1,465
Challenger	AC	5	290
	DDH	129	39,188
	RAB	1,699	79,901
	RC	631	63,136
	WB	8	731
Challenger 2	RAB	20	988
Challenger 3	RAB	51	2,498
Challenger FW	RAB	124	4,991
Challenger GC	BH	559	3,053
	OHP	904	10,812
	RC	2,204	36,358
Challenger North	RAB	4	157
Challenger SEZ	RAB	16	465
Challenger West	RAB	20	1,006
	RC	38	3,723
Enterprise	RAB	4	199
TOTAL		6,481	251,772

3.0 DISTURBANCE SUMMARY

Limited disturbance activities were undertaken within Challenger's ML6103 and MPL63, 65 and 66 during the reporting period. Disturbance was limited to three minor exploration programmes described in **Section 2.2 Exploration Programmes**. All exploration activities were conducted in previous disturbed areas near the Challenger pit and previous deep diamond drill hole sites located north of the pit.

As part of Challenger's PRS a full review of the site's disturbance area was completed. The disturbance areas presented in **Tables 3** (ML6103) and **Table 4** (MPL63, 65 and 66) are the results of this review.

Table 3 - Summary disturbance table for Challenger's ML6103

	LAST REPORTING PERIOD All disturbance 2001 - Feb 2007				CURRENT REPORTING PERIOD				PROPOSED NEXT 12 MONTHS				
	Disturbed (ha)	Rehabilitated (ha)		Disturbed (ha)	Rehabilitated (ha)		Disturbed (ha)	Rehabilitated (ha)					
		E	R		E	R		E	R				
Mining Lease (ML) ML6103													
Challenger Pit	9.6	0	0	0	0	0	0	0	0	0	0	0	0
South East Zone Pit	1.1	0	0	0	0	0	0	0	0	0	0	0	0
Integrated Waste Landform Total (TSF, Waste Landforms and Landfill)	49.03	14.4	14.4	0	0	0	0	0	0	0	0	0	0
Minesite Infrastructure (Plant, Crusher, All Laydown Areas, ROM, Magazine, Hazard Storage Areas, Fuel Farm, Ore Stockpile, Turkeys Nest, Containment and Process Water Dams and all administration buildings)	17.81	0	0	0	0	0	0	0	0	0	0	0	0
Camp Site and Sewage Ponds	3.56	0	0	0	0	0	0	0	0	0	0	0	0
Airstrip	9.06	0	0	0	0	0	0	4.0 (Extension)	0	0	0	0	0
Haul Road, Roads, Borrow Pit, Trenches, Topsoil Stockpiles and Sewage / TSF Pipelines	25.03	0	0	0	0	0	0	0	0	0	0	0	0
Exploration Camp and bag farm	2.2	1.55	0	0	0	0	0	0	0	0	0	0	0
TOTAL	117.39	15.95	14.4	0	0	0	0	4.0	0	0	0	0	0

Table 4 - Summary disturbance table for Challenger's MPL63, 65 and 66

	LAST REPORTING PERIOD All disturbance 2001- Feb 2007				CURRENT REPORTING PERIOD				PROPOSED NEXT 12 MONTHS				
	Disturbed (ha)	Rehabilitated (ha)		Disturbed (ha)	Rehabilitated (ha)		Disturbed (ha)	Rehabilitated (ha)					
		E	R		E	R		E	R				
Miscellaneous Purpose Lease (MPL) 63/65/66													
Pits	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Dumps/Heap Leach	0	0	0	0	0	0	0	0	0	0	0	0	0
Tailings Dams	0	0	0	0	0	0	0	0	0	0	0	0	0
Minesite Infrastructure	0	0	0	0	0	0	0	0	0	0	0	0	0
Camp Site	0	0	0	0	0	0	0	0	0	0	0	0	0
Roads, Borefield, trenches and Pipelines	6.74*	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	6.74*	0	0	0	0	0	0	0	0	0	0	0	0

* Indicates that all roads within the Miscellaneous Purpose Leases were allocated a nominal 15m width.

4.0 ENVIRONMENTAL MONITORING

4.1 Climate

Throughout the 2006-07 reporting period, a total of 126mm rainfall and 3,860mm of evaporation was recorded at Challenger. Monthly rainfall and evaporation rates for the reporting period is presented in **Table 5**.

Table 5 – Summary of Challenger climatic data from March 2006 to February 2007

Month	Year	Challenger Rainfall (mm)	Challenger Evaporation (mm)
March	2006	22.3	375
April	2006	4.5	232
May	2006	1.0	160
June	2006	1.5	124
July	2006	29.3	121
August	2006	3.5	188
September	2006	0.0	295
October	2006	4.5	376
November	2006	9.0	553
December	2006	1.8	493
January	2007	42.5	484
February	2007	5.8	459
	Total	125.7	3,860

4.2 Water Monitoring

On-going regional and minesite water monitoring data was collected at regional and local observation wells, monitoring and production wells, pastoralist bores and various minesite potable water locations. All water samples were periodically analysed at a Nationally Accredited Testing Authority (NATA) or routinely tested with a site based TPS WP-81 meter for pH, electrical conductivity and salinity. Results were entered in to various databases and cross-referenced against water monitoring guidelines and recommended trigger limits. All groundwater data was collated and forwarded to REM hydrologists for compilation of the annual groundwater review. A copy of the REM groundwater review is presented in **Appendix E** with an electronic version provided on the CD associated with this AER.

An overview of the wells and bores regularly monitored at Challenger are detailed below. Well and bore locations are depicted in **Figure 5** –

- Seven TSF Monitoring Wells (MW) MW02, 03, 04, 05, 06, 07 and 08b located around the IWL;

- Two Challenger Observation Wells (COW) COW1 and COW2 which monitor shallow pastoralist aquifers;
- Challenger Production Wells (CPW) consisting of 3-production bores. CPW1 and CPW2 supply the plant’s raw water to the processing pond and Turkey’s Nest stand pipe. CPW03 is at present non-functional;
- Challenger Production Observation Well (CPOW) CPOW3 which monitors Challenger’s production palaeochannel at CPW03 (two additional CPOWs have recently been installed in Feb 2007);
- MW01 “Gusher” suppling water to the Reverse Osmosis (RO) treatment plant for the site/camp’s potable water supply;
- Pastoralist Bores (Dead Finish and Bluff Bore); and,
- Potable water samples collected from various site/camp locations.

Watson’s Drilling in conjunction with an REM hydrogeologist were on site during January/February 2007 for construction of two additional CPOWs within the production palaeochannel (**Plate 1**). These wells were located in close proximity to Challenger’s production wells and will allow greater assessment of the palaeochannels standing water levels and sustainability. All palaeochannel production wells are located within Challenger’s MPLs. The two CPOWs have not been depicted on **Figure 5**.

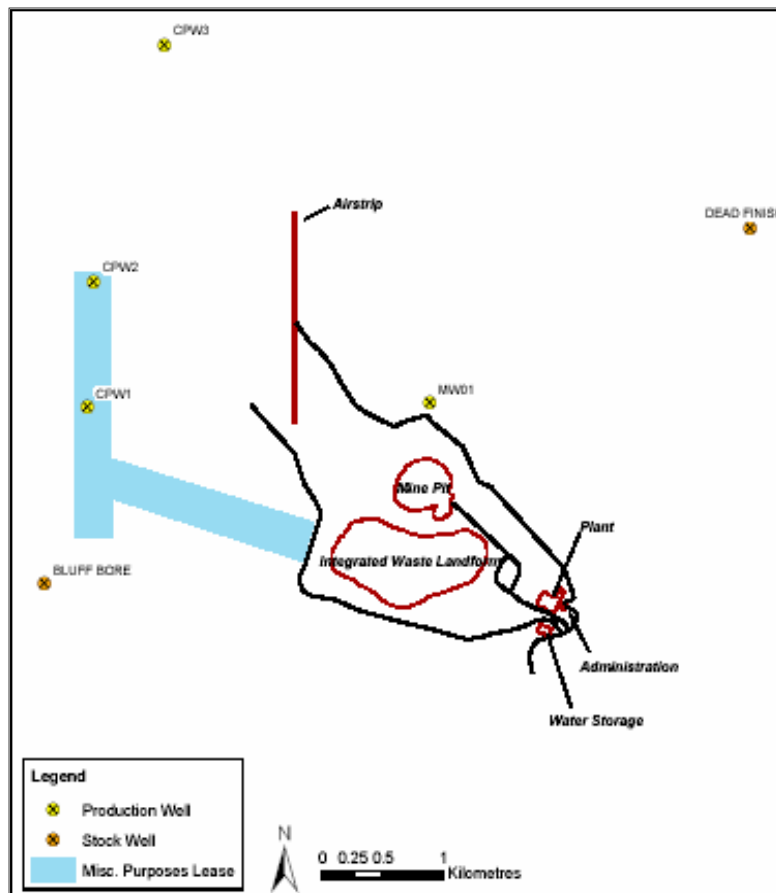


Figure 5 - Challenger production well, monitoring wells and pastoral bores location plan



Plate 1 - Walsh Drilling constructing Challenger Production Observation Well 02 (CPOW02) next to Challenger Production Well (CPW02) (February, 2007)

Challenger's 2006-07 groundwater review compiled by REM stated that the existing water monitoring program at Challenger mine site continues to meet the environmental monitoring requirements of the Challenger Project. The following represents a summary of the findings relating to the 2006-07 and earlier reporting periods:

Mine site

Groundwater drawdowns around the mine, in response to mine pit and decline inflows, appear to have stabilised over the 2006-07 reporting periods. The important analytes tested for in groundwater samples collected from the mine site groundwater monitoring network (CNWAD, and metals) all occur below the relevant guideline, and in many instances near or below the LOR. The very low concentrations of CNWAD in groundwater samples collected from around the mine site suggests that the fractured rock aquifer is currently not adversely impacted by mine site activities, and that process water and tailings containment strategies are performing as designed. Salinity concentration trends in groundwater sampled from the mine site monitoring network appear stable.

Challenger Wellfield mine & process supply

Groundwater level data from production wells screening the palaeochannel aquifer are no longer collected as they are dependent on the operational status of the production wells. Historically, only one observation well (CPOW) has been utilised to monitor the confined palaeochannel aquifer, and data for this well show relatively stable aquifer water levels. The newly installed observation wells (CPOW1 and 02) will aid in future monitoring of the confined palaeochannel aquifer response to pumping and in assessing the sustainability of the water supply.

Reverse osmosis (RO) plant feed supply

Pumping yields from well MW01 have declined by around 25% since the 2004-05 reporting period. A large component of this decline in water use is linked to the fact that laundry of sheets and towels etc is now undertaken off-site.

Stockwater supply aquifer(s)

It is apparent, from the groundwater level data recorded at COW1, that groundwater pumping from the deeply buried palaeochannel aquifer continues to have no measurable effect on the shallow (stockwater supply) water table aquifer. Reported salinity levels in this aquifer remain suitable for stockwater supply, and appear unaffected by mining operations. Salinity concentrations appear to fluctuate at COW1 possibly in response to climatic events.

Regional fractured rock aquifer

It is apparent from COW2 groundwater level data that mine operations (groundwater pumping and pit dewatering) have no measurable effect on the regional fractured rock aquifer outside the immediate mine area. The distinct difference between salinity levels in the fractured rock aquifer and groundwater sourced for stockwater supplies suggests the regional fractured rock and shallow stockwater supply aquifers are poorly connected, and remain so.

A full hardcopy of this review is presented in **Appendix E** and an electronic version provided on the CD associated with this AER.

4.3 Flora

4.3.1 Land Units and Vegetation Associations

Challenger is located in the northwest of the Gawler Craton in the eastern region of the Great Victoria Desert. The area is comprised of undulating and flat terrain consisting of aeolian sand and pedogenic calcrete which dominates the surface. According to Jensen and Wilson (1980) Challenger is located within the brown calcareous earth's region of the Central Tablelands of South Australia. The general area was classified by the Warrida Environmental Association as a gently undulating gibber plain with low silcrete capped rises. These following four land units were identified by OES (2002) –

- *Calcrete Platforms* – gently undulating low rises with 1 to 2m of relief, sheeted with calcrete and ironstone gravels and occasional calcrete rubble, occupying approximately 14.5% of the project.
- *Sand Sheets and Banks* – undulating deep red or shallow sands overlaying calcrete and often fringing calcrete platforms, occupying approximately 45.5% of the project area.
- *Stony Slopes and Platforms* – very gentle slopes with mantles of siliceous or ironstone cobbles and gravels, occupying 33% of the project.
- *Drainage Lines* – sluggish drainage tracts 150 to 400m wide, lacking defined channels. Red and brown clay soils with gravel scree, overlay calcrete at depth. Small drainage foci and claypans areas situated within the drainage systems occupying 7% of the project area.

A baseline and additional annual flora studies have been undertaken at Challenger by independent consultants since mining commenced. A summary of the Outback Ecology baseline survey (2002) for each landform unit type is presented below -

- *Calcrete Platforms* – the predominant vegetation was sparsely distributed low shrubs with virtually no taller shrubs or trees.
- *Sand Sheets and Banks* – the predominant vegetation was scattered tall perennial shrubs to 2m, with mid and low shrubs sparse in density and scattered between the taller shrubs. Grazing pressure had resulted in the generally scarcity of grasses.
- *Stony Slopes and Platforms* – had the lowest species diversity of the four land units described. The vegetation comprised scattered taller shrubs and trees up to approximately 5m with the smaller mid-sized shrubs. Annuals and grasses were scarce due to grazing.
- *Drainage Lines and Foci* – the vegetation comprised low woodland with scattered mid and tall shrubs under the canopy. Weed species and annuals were also present.

4.3.2 Flora Survey

Challenger's annual flora survey was undertaken by Badman Consultants in early October, 2006.

The survey consisted of re-assessing twelve monitoring locations situated in the following areas:

- Four sites situated near mining operations;
- Four sites at intermediate locations between mining operations and the mine lease boundary;
- Four sites outside the mine lease within the Mobella Station pastoral lease.

The four sites within each monitoring area represented a differing land unit, these being:

- calcareous platforms;
- sand sheets;
- rocky sheets; and,
- drainage lines.

Data was accumulated for species richness and mean cover values for each site then compared against the differing areas and land units to assess if mining activities were having any impact on the local flora communities.

The 2006 flora report stated that the poor seasonal conditions during the 2006 reporting period was reflected in the survey's results (Badman, 2006). Other findings of the survey included:

- Mean cover values were the lowest recorded with species richness also comparatively low compared to previous surveys;
- Some small tree and shrub deaths near one transects may require further investigation to establish the cause of their decline;
- The occurrence of naturalised weeds continued to be low compared to other parts of South Australia; and,
- No threatened species were identified on or adjacent to the mining lease during the survey.

The flora report noted that changes had been uniform in all different land-use areas with all zones showing similar trends. It concluded, that to date, that there has been no changes in vegetation condition, either from the baseline to 2006, that can be attributed to the mining operations or ancillary activities.

The 2006 flora report executive summary is presented in **Appendix C**. The 2005 and 2006 plates from the vegetation monitoring points are also provided in **Appendix D**. A complete digital copy of this document is provided on the CD associated with this AER.

4.3.3 Ecosystem Function Analysis

Ecosystem Function Analysis (EFA) was conducted for the third time on previously-established monitoring sites at Challenger. Data trends from the assessment indicated that despite below-average rainfall received throughout the 2005-06 reporting period, the marginal improvements in analogue EFA landscape indices were also evident at the 2004 rehabilitation. These slight increases were associated with minor improvements in the levels of organic material and the retention of this material within the respective systems. Resource retention was aided by relatively intact bank/trough systems at both rehabilitated areas, and enhanced at the Eastern Wing due to the short batter length and low batter angle on this landform.

Perennial plant canopy cover at both rehabilitated sites indicated marginal improvements compared to the 2005 assessment. However, much of the perennial vegetation was starting to show signs of drought stress. Perennial plant densities remained comparable to 2005 values. It is suggested that the exclusion of domesticated grazing pressure from the mining lease has aided revegetation. The Eastern Wing continued to record an absence of erosion features within transect boundaries, although some rilling was evident on the northern batter face. The Western Wing recorded two additional rills at **CHL06** and this was a consequence of the steep batter angle at this section of the landform. **CHL05** located on the southern Western Wing batter recorded an absence of rills or gullies (**Plate 2**). Habitat complexity ratings for both the Eastern and Western Wing had improved slightly compared to the 2005 assessment.

A copy of the 2006 EFA executive summary is presented in **Appendix G** and a full digital copy of this document provided on the CD accompanying this AER.



**Plate 2 - EFA transect CHL05 located on the southern batter of the Western wing IWL,
Oct 2006**

4.4 Fauna

DGO postponed the November 2006 fauna survey until April 2007 due to contractor personnel and logistic scheduling constraints. As the timing of the rescheduled fauna survey is after the submission of this AER no fauna report is included within this document. A copy of the April 2007 fauna report will be forwarded to PIRSA and Department for Environment and Heritage (DEH) within one month of the completion of the survey. It is proposed that two fauna surveys will be conducted at Challenger during April and November 2007, respectively.

Challenger will continue to liaise with the South Australia Museum (SAM) and lodge voucher specimens with the museum, as required under Scientific Research Permit and Ethics Committee Approval licence conditions, at the completion of all fieldwork.

4.5 Environmental Incidents

A total of eight environmental incidents were recorded during the reporting period in Challenger's incident register. These incidents have been briefly described in Table 6.

Table 6 - Summary of reportable environmental incidents at Challenger

Incident Number	Date	Incident Description	Nature of Pollutant	Area Affected
1	3/08/2006	Smashed the tilt cylinder transfer pipe whilst bogging/loading truck	120L hydraulic oil - cylinder transfer pipe repaired	Underground
2	15/08/2006	When changing steering pump oil spilt onto ground	Hydraulic oil - contaminated soil moved to rehab area	HWE workshop
3	25/08/2006	Remote loader overturned resulting in diesel and transmission oil spill	Emission of approximately 40L diesel & transmission fluid 30L	Underground
4	14/09/2006	A seal on hydraulic pump on a bogger failed overfilling transmission	20L hydraulic oil	Underground
5	5/10/2006	Hydraulic oil filter came loose on new charge up truck spitting oil out	Hydraulic oil	Underground
6	4/11/2006	Bogger blew a hose at main implement valve which caused ~40l of oil to leak out	40L hydraulic oil - the area was banded with rags and put in hydrocarbon bin	HWE workshop
7	10/11/2006	Nitric acid leaked from the container bulky in the hazardous goods storage area	~200L Nitric acid - Lime was applied and following solidification the material was deposited in the TSF	DGO/Bemex hazardous goods storage area
8	11/12/2006	Immature wedge-tail eagle became stuck in the TSF near a spigott discharge point	Wedge tail was retrieved from TSF, cleaned down and released	Tailings dam

4.6 Tailings Capping Trial

The objective of the tailings capping trial was to determine a cost-effective capping/rehabilitation material for the TSF which would provide a suitable plant-growth medium for revegetation. Sampling and analysis methods were similar to those used previously, with analyses including moisture content, pH and electrical conductivity.

Findings from the 2006 assessment indicated that the pH in each treatment has remained relatively stable since the initial May 2005 assessment and are likely to be suitable for plant growth in rehabilitation. However, vegetation had still not established on the trial plots (**Plate 3**). It is likely that the lack of vegetation is related to the minimal rainfall that fell in 2006 and the increasing electrical conductivity values of the capping materials. The electrical conductivity has increased in all treatments since the last assessment, and values in the surface of treatments T2 to T5 are likely to be too high to support plant growth.

The report indicated that further monitoring should only occur after a substantial rainfall event, in which it may then be advantageous to ascertain the extent of any increases in EC and assess which plant species, if any, will survive in the plots. The study also recommended sampling and characterise all available rock and capping materials on the mine site that could be used to cap the TSF. This data would provide information on which materials were best suited for use in capping layers and would assist in better defining the inherent salinity in the rocky waste in this trial. The executive summary of the tailings capping trial is presented in **Appendix F**, and a complete digital copy provided on the CD associated with AER.



Plate 3 - Looking west on to Challenger's tailings capping trial which shows limited vegetation establishment (Feb, 2007)

4.7 Noise Survey

A noise survey was conducted at Challenger by HSE Australia in July 2006. The report identified a number of areas at surface and underground areas that exceeded the occupational exposure level of 85dB(A). A summary of HSE Australia recommendations for both these areas has been provided below:

Surface operations - Noise emissions and dosimetry undertaken indicated that employees at the Mill, Sample Preparation/ Laboratory, Crusher and Workshop areas are exposed to levels above the recommended 85dB(A). Noise reduction measures were observed at site, although implementation of further controls would be limited to administrative actions and the mandatory use of PPE in specific sites. Additional mandatory hearing protection signage conforming with AS1319 has been erected since this survey.

Underground operations - Underground operations indicated that noise levels were generally well in excess of 85db(A). Noise control devices such as silencers were observed to be installed to single and two-stage fans, and that these items require regular maintenance. The current Hearing Protection Devices (HPDs) provided for underground employees attenuate noise for the majority of situations, although it was recommended that drill jumbo operators and samplers may need to consider the use of (Class 5) ear muffs in addition to ear plugs. The report also stated that the use of I-Pods (or similar devices) should be prohibited from use underground. An electronic copy of the report has been provided on the CD associated with this AER and a copy of the report's executive summary is presented in **Appendix B**.

4.8 Respirable and Inhalable Dust

Respirable and inhalable dust monitoring samples were collected by Mr R Jones (OHS Nurse) during the reporting period. Sampled personnel were required to wear an AirChek 2000 personal sampler containing polycarb filters to ascertain the volume of dust each person was exposed to during their work-shift. Dust-filters were weighed pre/post-sampling with the amount of dust collected divided by the volume of air sampled. These calculations established exposure dust levels as a Time Weighted Average (TWA) on a per cubic-meter (m³) basis.

Due to the extended working hours at Challenger an exposure reduction factor was calculated and applied to the standard respirable and inhalable exposure levels. These exposure reduction calculations were based on the West Australian DEM (1999) guideline and are shown below. Exposure Reduction Factor was calculated using the following formulae –

- Shift Roster >170h/mth, therefore 170/X (X= Ave hours worked per month)
- 21 days worked on average per month * 12hr shifts = 252hr
- 170/252 = **0.67**

Therefore, the revised Inhalable and Respirable exposure levels as calculated are –

Inhalable	$10.0\text{mg/m}^3 * 0.67 = $	<u>6.7mg/m³</u>
Respirable	$3.0\text{mg/m}^3 * 0.67 = $	<u>2.01mg/m³</u>

The 2006 results for TWA respirable and inhalable dust readings are shown in **Figures 6 and 7**, respectively. Results for the 2006 assessment followed similar trends to the 2004 and 2005 dust readings with no sites recording respirable readings above the recalculated exposure levels. The lab splitter area was the only site during the 2006 sampling to record inhalable dust readings above the recommended 6.7mg/m³ level. This sample area has consistently recorded above the recommended limit and is already a designated compulsory dust-mask wearing area. An automatic splitter was installed in the lab in early 2006 to prepare RAB samples, although manual hand splitting is still required for sludge sample preparation.

Figure 6 - Respirable dust levels for 2006

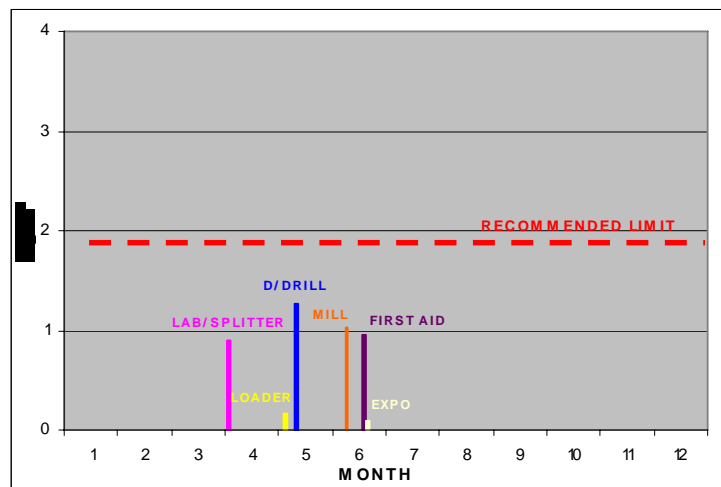
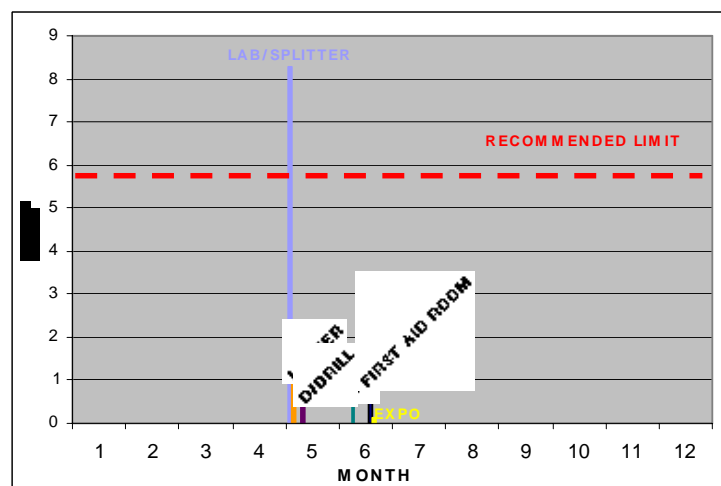


Figure 7 - Inhalable dust levels for 2006



4.9 Outback Ecology Site Audit

An environmental site audit was undertaken by Mr S. Mackenzie (Outback Ecology) between the 16-17th August 2006. The objectives of this inspection include, but were not limited to, the following:

- To assess the environmental performance of all aspects of the operation to date;
- To identify areas of concern and areas where improvements could be made;
- To assess Challenger's performance in light of commitments made to PIRSA via Challenger's MARP and EMMP;
- To ensure mine planning has taken into account operational aspects and impacts and adequately implement control measures which minimise or prevent environmental harm; and,
- To develop a task register which can be used by the site's EO as a tool for continual environmental improvement at Challenger.

A total of 27 environmental task sheets were developed from the site inspection. The task sheets outlined the Project Area concerned, the current environmental status of the area and compliance criteria required to ensure environmental conformance is achieved.

Specific tasks that are to be completed in order to achieve environmental compliance are set out along with the work methods, resources and materials required for each task. A photograph of the area and related non-conformance is included for visual reference and future records. These tasks have been undertaken progressive since the site inspection.

5.0 WASTE MANAGEMENT

5.1 Industrial and Domestic Waste

In November 2006, Riverland Scrap-Metal and Salvage (Waikerie) collected various materials from the DGO laydown area. Scrap metals, old batteries and remnant waste oil were removed from site. It is envisaged that these merchants will periodically visit and remove salvageable scrap metal to minimise the amount of scrap stored in lay-down areas.

Bottles and cans continued to be recycled and backloaded to Augusta Bottling and Can Recycling, Port Augusta (**Plate 4**). Proceeds from these activities are to be divided between the Challenger social club and the Royal Flying Doctor Service.

HWE Leightons have installed an oil-filtration vacuum system in their workshop area during the reporting period. The vacuum system eliminates persons having to handle waste oil by piping recovered sump oil directly in to a doubled skinned 20,000 litre waste oil tank. The tank will be backloaded to Mulherns Recyclers as required. HWE continued to use Wren oil services for recycling of their old oil filters and waste hoses. General site rubbish was deposited within the IWL landfill and was progressively backfilled as required. Emu bobbing was periodically conducted around the entrance of the landfill to retrieve any wind-blown rubbish.



Plate 4 - Recycling bins located around the camp area

5.2 Process Waste

From October 2002 to February 2007 a cumulative total of 1,832,105 tonnes (dry) of tailings, or 1,368,767m³ (at 1.35t/m³), has been deposited into the TSF. The capacity of the TSF was increased during the reporting period with an additional lift constructed in July 2006. Oxide material was utilised to raise the TSF embankments from RL1208.20m to RL1211.5m (**Plate 5**). All embankment earthworks were conducted by Buttrose Earthworks under the supervision of Coffey Geosciences. A copy of the TSF audit is presented in **Appendix A** and the IWL environmental data sheets are provided in **Appendix J**.



Plate 5 - Challenger pit (foreground) and the IWL in the background (Oct, 2006)

5.3 National Pollutant Inventory

This is the fourth year that Challenger has compiled its National Pollutant Inventory (NPI) emission data. Information from a wide range of variables has been collected for each financial year since 2002 and sent to Greenbase Consultants in Perth to calculate the project's emissions into water, land and air. An inventory table comparing the quantities of consumables used for each NPI reporting period between 2002-06 is presented in **Table 7**. A hardcopy of Challenger's 2005-06 NPI report is presented in **Appendix H** and a digital copy of this report provided on the enclosed CD.

Table 7 – NPI consumables used at Challenger during 2002-03 to 2005-06

Product Used	Units	2002-03	2003-04	2004-05	2005-6
Hydrochloric Acid	litres	36,000	54,500	50,500	26,000
Sodium Cyanide	tonnes	240	369	405	420
Nitric acid	litres	-	4,400	6,000	8,000
Sodium cyanide tablets - PAL	kilograms	800	1,590	1,270	150
AvGas	litres	26,000	26,400	8,600	7,995
ULP	litres	2,800	3,000	4,160	4,160
Lime	kilograms	463,100	463,100	1,533,631	994,800
Caustic - liquid	litres	34,000	57,000	8,000	7,000
Caustic - pearl	tonnes	12	13	7	11
Diesel	litres	-	5,400,000	5,333,518	6,515,804

5.4 Hazardous Materials

Listed below are the main hazardous materials at site and a brief description is given to how the materials are used and stored at Challenger.

5.4.1 Sodium Cyanide

Sodium cyanide arrives at site in the form of pure briquettes and packed in a single plastic bag inside 1t bulk boxes. Bags are off loaded by forklift and stored in a lockable and solely designated cyanide yard. Cyanide is withdrawn as required from the yard and transported to the mixing area by the IT machine.

Cyanide bags are lifted from the boxes with a 1t overhead gantry crane and then dropped onto the bag splitter. The pillow cyanide falls into a tank below which has already been filled with water and made alkaline with caustic (added from 25kg bags manually). The cyanide is mixed for one hour in the agitator in the tank and then transferred to the holding tank. The mixing tank mixes 2t of cyanide at a time to make a 10% w/v solution.

5.4.2 Caustic Soda

Caustic is added to the cyanide mixing tank manually from 25kg bags as required. Caustic is added to the eluate tank from 1m³ bulki boxes.

5.4.3 Lime

Quick lime is delivered in powdered form by tankers and pneumatically transferred into a silo. Lime is kept fluid by an activator and fed onto CV05 via a screw feeder. The screw feeder has a variable speed drive, regulated by a feed back loop from the pH probe in leach tank 1. Slaking occurs within the ball mill.

5.4.4 Hydrochloric Acid

Acid is delivered to site at a strength of 32.0% in 1m³ bulki boxes and pumped into the elution circuit acid wash column as required.

5.4.5 Carbon

Carbon is stored in bulk bags and used as required. All new carbon is washed and screened before addition to the circuit.

5.4.6 Diesel Fuel

Diesel fuel is stored in the diesel fuel farm located east of the plant site. The fuel farm consists of 3 x 55kL, 1 x 70kL tank and one 10kL day tank. The tanks are inter-connected and have feeds to the power station and three fillers (1 x light vehicle bowser, 2 x quick fill bowser). Light vehicle fuelling is conducted at a separate location to the fast fuel facility bowser and both systems operate under a security arrangement to limit fuel use to authorised vehicles.

5.4.7 LPG Gases

There are six inter-connected bulk LPG tanks on site. These tanks are located near the workshop and are surrounded by suitable bollards for safety. The tanks supply the elution heater, gold furnace and regeneration kiln.

6.0 PROGRESSIVE REHABILITATION SYSTEM

Outback Ecology was commissioned by Dominion during 2006-07 to compile a Progressive Rehabilitation System (PRS) for Challenger. The objectives for the PRS are listed below -

- Draft a legal compliance register of all legally binding conditions and commitments relating to closure rehabilitation at Challenger as a precursor to establishing rehabilitation objectives and standards;
- Review all available documents that may assist in rehabilitation planning and identify any 'knowledge gaps' hindering rehabilitation planning;
- Define closure rehabilitation tasks for each project area (will be undertaken with some input from a site engineer or sub-consulting engineer);
- Establish a schedule for closure rehabilitation tasks, including straight-forward rehabilitation tasks that can be undertaken immediately and also for additional investigations required for rehabilitation planning. The schedule will extend over a number of years and will take into account site objectives; and,

- Calculate provisional costs for undertaking closure rehabilitation tasks (+/- 30%). Having an understanding of closure rehabilitation costs will allow for financial provisioning during operation.

7.0 RESEARCH

To date, limited recommendations have been drawn from Challenger's tailings capping trial. The three sets of sampling results have shown little trends for a preferential tailings capping treatment. The trial has been impeded by the limited vegetation development due to the below average-rainfall received since the trial was initiated. This was compounded by the initial impact of heavy traffic over the treatments during trial establishment which may have pushed tailings material up through the profile in effect limiting the trial's integrity. The trial will only be resampled following a heavy rainfall event otherwise an alternative and smaller scale trial may be established at a later date. A copy of the 2006 Outback Ecology tailings trial executive summary is presented in **Appendix F** and a full digital copy provided on the CD associated with this AER.

Research to be undertaken at Challenger in the 2007-08 reporting period include –

- The annual flora and fauna surveys will continue to be conducted in order to comply with MARP and EMMP commitments;
- Two fauna surveys will be conducted in April and September 2007. Voucher specimens collected during these surveys will be logged with the SAM;
- Photographic plates of the PIRSA vegetation monitoring points will be taken throughout the reporting period and presented in the corresponding AER document; and,
- Continued annual EFA assessments of transects on the IWL batters will be conducted.

As previously noted, Dominion commissioned Outback Ecology to compile a PRS for Challenger. The scope and outcomes of this process are described in **Section 6.0 Progressive Rehabilitation System**.

8.0 HERITAGE MANAGEMENT AND COMMUNITY LIAISON

8.1 *General*

Mr G. Mills resigned from the Project Manager's position at Challenger in mid-January 2007. This position has now been filled by Challenger's former Project Manager Mr P. Sperring.

8.2 *Pastoral*

Contact was made with Mr H. MacLachlan of Commonwealth Hill Pty Ltd prior to the raising of the TSF embankments. All TSF earthworks were completed in July/August 2007 which increased the height of the TSF from RL1208.25m to RL1211.50m.

8.3 Indigenous

Indigenous personnel currently comprise approximately <10% of the site workforce. Suitable indigenous applicants are sought as positions become available or vacant. Throughout the reporting period limited communication has been undertaken between DGO and the council members of the Antakirinja Land Management Corporation (ALMAC).

8.4 Safety

Three Limited Time Injuries (LTI) were recorded at Challenger during the reporting period –

- 1) A BeMeX employee sustaining a broken thumb;
- 2) A HWE employee sustained a back injury; and,
- 3) A Bemex employee sustained a knee injury.

Throughout the reporting period the Emergency Response Teams (ERT) continued to train under the supervision of Mr M. Brown who started with Dominion in October 2006 as Challenger's OH&S Coordinator. Both Mr M. Brown and Mr G. Mills (ex-Challenger PM) visited Olympic Dam and Prominent Hill minesites to instigate preliminary negotiations regarding a Memorandum of Understanding (MoU) with regards to the sharing ERT in the event of a catastrophic event.

Three site safety visits by PIRSA were undertaken during the reporting period with Mr M. Wilson (Inspector of Mines) visiting during September 2005 and February 2006, and Mr S. Caplygin (PIRSA Inspector) visiting site during March 2006.

8.5 Mining

An overview of all mining activities undertaken during the 2006-07 reporting period has been presented in Section **1.2.1 Mining Operations**.

8.6 Visitors

A number of site visits were completed throughout the reporting period, these included -

- Mr M. Wilson (PIRSA Mines Inspector) completed quarterly safety audits to assess underground mining operations;
- Mr S. Caplygin (PIRSA Inspector) visiting site during March 2006;
- Mr P. Howe, REM, water resource review (April 2006);
- Mr D. Cooper (HSE Australia) visited site between the 26th July - 1st August 2006 to complete Challenger's noise survey. Details and recommendations provided in the HSE report are discussed in **Section 4.7** and a copy of the executive summary is presented in **Appendix B**;
- Natural Resources Committee including several members of the SA parliament (August).
- Mr F. Badman (Badman Consultants) undertook Challenger's annual flora survey in September 2006;

- Mr S. Mackenzie (Outback Ecology Services) visited site in October 2006 to undertake a preliminary site investigation in preparation for compiling Challenger's PRS, and complete an environmental site audit; and,
- Mr Z. Adizes (Belminco) visited site between 7-10th November 2006 to assist in civil infrastructure removal costings as part of Challenger's PRS.

9.0 FUTURE WORK PROGRAM

An overview of the proposed environmental work to be undertaken during the 2007-08 reporting period is presented below -

- The annual flora monitoring will again be assessed during spring. This survey will be undertaken by an independent consultant to monitor the potential impacts of mining operations on the local environment;
- Two fauna surveys will be conducted in April and September 2007. Voucher specimens collected during these surveys will be lodged with SAM;
- EFA on the IWL batters will be conducted in November 2006 with copies of these reports will continue to be included in the AER;
- The annual TSF audit will be undertaken by Coffeys Geosciences in 2007 as per conditions set out in ML6103. A complete copy of the TSF audit report will be included in the AER;
- Implementation of Challenger's PRS were practicable;
- There is a potential for small satellite open-pit(s) development within ML6103. Following exploration activities and results, if these operations appear viable an Addendum MARP and SEB applications will be submitted where required to PIRSA prior to any open-pit earthworks commencing;
- On-going monitoring and reporting to State Regulators will continue in accordance with mining lease, EMMP and MARP conditions; and,
- Challenger's water monitoring programme will continue to be implemented to assess an potential impacts that mining operations could be having on the local environment.

10.0 REFERENCES

- Badman Environmental (2004) Challenger Gold Mine – 2004 Annual Spring Flora Survey
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- Outback Ecology Services (2006) Challenger Gold Project – Site audit Visit for the Dominion's Challenger Gold Project
- Outback Ecology Services (2006) Challenger Gold Project – Study into the most effective and cost efficient material for capping Dominion's Challenger Gold Project Integrated Waste Landform
- Primary Industry and Resources (2004) Guidelines for the Preparation of an Annual Environmental Report for Mining Operations (Draft)
- Jensen and Wilson (1980) Flora Data

11.0 LIST OF ACRONYMS

AC	Air Core
AER	Annual Environmental Report
ALMAC	Antakirinja Land Management Corporation
AS	Australian Standard
BB	Bluff Bore (Pastoralist Bore)
CD	Compact Disc
CHA#	Challenger Flora/Fauna Survey Point
CHL#	Challenger Ecosystem Function Analysis Transect
CIP	Carbon in Pulp
COW	Challenger Observation Well
CPOW	Challenger Production Observation Well
CPW	Challenger Production Well
DDH	Deep Diamond Hole
DEH	Department for Environment and Heritage (<i>now Department of Environment and Water Resources</i>)
DEP	Department of Environmental Protection
DF	Dead Finish (Pastoralist Bore)
DGO	Dominion Gold Operations
DML	Dominion Mining Limited
EC	Electrical Conductivity
EFA	Ecosystem Function Analysis
EMMP	Environmental Management and Monitoring Program
EMP	Environmental Management Program
ERT	Emergency Response Team
FW	Foot Wall
GPS	Global Positioning System
HSE	Health Safety Environment
HWE	Henry Walker Eltin
IT	Integrated Tool
KM	Kevin M ^c Cormick
IWL	Integrated Waste Landform
LG	Low Grade
LOR	Limits of Results
LTI	Lost Time Injury
MARP	Mining and Rehabilitation Program
ML	Mining Lease
MoU	Memorandum of Understanding
MPL	Miscellaneous Purpose Lease
MRT	Mines Rescue Team
MW	Monitoring Well
NATA	National Association of Testing Authorities
NNE	North north east
NOHSC	National Occupational Health and Safety Commission
NPI	National Pollutant Inventory
OES	Outback Ecology Services
OHP	Open Hole Percussion
OP	Open Pit
PAL	Pulp and Leach
PDF	Portable Document Format
PIRSA	Primary Industries and Resources South Australia
PPE	Personal Protective Equipment
PRS	Progressive Rehabilitation System
RAB	Rotary Air Blast
RC	Reverse Circulation
REM	Resource and Environmental Management
RL	Reduced Level

RO	Reverse Osmosis
ROM	Run of Mine
S	South
SA	South Australia
SAM	South Australian Museum
SEB	Significant Environmental Benefit
SEZ	South East Zone pit
TSF	Tailings Storage Facility
TWA	Time Weighted Average
UG	Underground
WB	Water Bore

11.1 Units of Measurement

BCM	Bank Cubic Meters
db(A)	decibel
g/t	grams per tonne
ha	hectare
kWhr	kilowatts per hour
$L_{Aeq,7t}$	averaged 'A' weighted measurement over time
m	metre
m^3	cubic metre
mg/m^3	milligrams per cubic metre
Pa^2	pascal-squared value
pH	pH
ppK	parts per thousand
mS/cm	milli-Siemens/centimetre
t/m^3	tonnes per cubic metre

Appendix A

**COFFEYS GEOSCIENCES TAILINGS STORAGE AUDIT, INSPECTION AND
MANAGEMENT REVIEW, TAILINGS STORAGE FACILITY N° 1 – SEPT 2006**

Appendix B
HEALTH SAFETY ENVIRONMENT AUSTRALIA
2006 CHALLENGER NOISE SURVEY

DOMINION GOLD OPERATIONS

CHALLENGER GOLD MINE

NOISE ASSESSMENT REPORT

Project No HJ.105013.SA

Health Safety Environment Australia were requested by Mr. Ralph Jones of Dominion Gold Operations to undertake a noise assessment at the Challenger Gold Mine, South Australia, and report on the findings.

This report presents the results and findings arising from the assessment, which was undertaken by Mr. David Cooper, Occupational Hygienist of Health Safety Environment Australia from 26th July to 1st August 2006.

EXECUTIVE SUMMARY

The noise assessment measured noise emissions from equipment and machinery throughout both the underground and surface operations at the Challenger Gold operations. Noise dosimetry was also undertaken to assess personal exposures to noise, and to ensure that the current type(s) of hearing protectors supplied by the company are providing sufficient attenuation from noise emissions occurring at the site.

Findings – Surface Operations

The results of measurement of noise emissions and dosimetry undertaken at the surface operations at the Challenger Gold Mine indicate that employees in the Mill, Sample Prep. / Laboratory, Crusher and Workshop areas are exposed to noise levels above the occupational exposure standard of 85 dB(A).

Noise reduction methods were observed at the site, although implementation of further controls would be limited to administrative actions and the mandatory use of PPE in specific areas. The presence of mandatory hearing protection signage in the majority of areas was either limited or non-existent.

A review of the Hearing Protection Devices (HPDs) currently supplied by the company for use on the surface operations were found to be adequate, although they may cause some difficulties with verbal instructions or audible warning signals when worn. Class 3 HPDs should provide suitable attenuation for the noise levels throughout the surface operational areas.

Findings – Underground Operations

The results of measurement of noise emissions and dosimetry undertaken throughout the Jumbuck Decline operations of the Challenger Gold Mine indicate that employees in the underground operations are exposed to noise levels well in excess of the occupational exposure standard of 85 dB(A).

Noise control devices such as silencers were observed to be installed to single and two-stage fans, although the silencers fitted to the two-stage fan installed at the 820 level appeared to be ineffective, and may require servicing.

The current Hearing Protection Devices (HPDs) provided for underground employees attenuate exposure to noise for the majority of situations, although, the drill jumbo operators and samplers may need to consider the use of (Class 5) ear muffs to be worn in addition to the ear plugs. It may also be prudent to consider the provision of helmet-mounted muffs for underground employees. The observed use of I-Pods should be discouraged.

Summary of Recommendations

From the noise monitoring undertaken at the Challenger Gold Mine operations, the following general recommendations are provided:

- All employees to be instructed to use hearing protection when working in designated areas that require mandatory hearing protection.
- Consider training for employees required to use hearing protection. Employees should undergo suitable training in the proper fit, care and maintenance of HPDs, with particular attention to the correct fit of ear plugs.
- Ensure that pre-employment audiometric testing is undertaken, with records retained by the company. It may also be prudent to consider post-employment tests and re-tests at appropriate intervals (1 - 3 years).
- Advise employees that hearing protection should be used on the flights, and advise against the use of I-Pods (and similar devices).
- Consider the implementation of a "Buy Quiet" policy.

Specific Recommendations - Surface Operations:

- Consider replacement of Class 4 HPDs to Class 3 units. Different types of ear plugs and ear muffs should also be available for employees, to allow a greater choice and improved comfort of fit.
- Ensure that signage (conforming to AS1319) indicating the mandatory use of hearing protection is installed at the following locations:
 - Crusher area (all access stairways)
 - Ball Mill area and Grease Shed (Shed, east and west sides of Ball Mill)
 - Tails Pumps area
 - Cyclone and Trash Screens (at access points)
 - Maintenance Workshop
 - Powerhouse (all areas)
 - Bore Field pumps (to entry gate)
 - Standpipe generator
 - Core Cutting area at Expo Camp (improved signage required).

Specific Recommendations - Underground Operations:

- Consider undertaking maintenance or replacing the silencers of the two-stage fans in the decline at the 820 level.
- Consider future installation of secondary fans within the decline (at least five metres from the junction). This action will assist in containing noise emissions to the decline area, as well as ensuring that return air from the heading does not re-circulate.
- I-Pods (or similar devices) should be prohibited from use underground.

Appendix C

**BADMAN ENVIRONMENTAL CONSULTANTS EXECUTIVE SUMMARY OF THE 2006
CHALLENGER ANNUAL FLORA SURVEY**

CHALLENGER MINE
ANNUAL SPRING FLORA SURVEY:
OCTOBER 2006

Prepared for

Dominion Gold Operations Pty Ltd,
Challenger Gold Mine

By

F.J. Badman
Badman Environmental

Adelaide
January 2007

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Executive Summary

A vegetation survey was carried out at the Challenger Mine site in early October 2006. Seasonal conditions were poor and the vegetation reflected this. Both mean species richness and cover values for landforms and land use areas were well below the mean values derived from previous years' data. Mean cover values were the lowest yet recorded, while mean species richness was similar to that recorded during 2002. Rainfall during the year since the last survey produced some increase in species richness at many sites, but cover values fell at all line transects. The increase in species richness was identified mainly in the one hectare quadrats.

The findings of this survey confirmed statements made in all previous reports that the type of landform has more influence on vegetation than whether a monitoring site is near the mine or distant from it. The mean cover at sites in all different land-use areas is now almost equal, as it was in 2005. The differences are not significant. Mean cover values for drainage-foci sites are similar to those recorded in 2002, but the mean cover at sand sheet sites is now lower than at any time since monitoring began. Cover values at drainage foci sites are still higher than those for other landforms, although the differences between the different landforms are now much less than they were in the wetter years of 2003 and 2004. These differences are not significant.

Mean species richness was lower at line transects than it was in 2005. It was highest at intermediate sites, as it was in 2005, although the differences between all land use areas are not significant. Species richness at drainage foci sites was once again higher than at other sites, but the difference is no longer significant.

Species richness data collected from the one hectare quadrats show higher values than those from the line transects, which is to be expected given that these data are collected from much larger areas. They show almost the same trends as the line transect data. All of these data suggest that there is little difference between areas with different land uses. The mine and ancillary activities are not having a greater affect on the vegetation than activities on adjacent pastoral land. The intermediate mine sites also have vegetation that exhibits similar trends to the other areas.

The largest decreases in both mean cover and mean species richness was recorded at sand sheet sites, particular at the near-mine and pastoral sites. These two sites had the lowest cover and species richness values of all sites.

The near-mine site CHA04, which is adjacent to a laydown area and was heavily impacted by exploration activities, dust caused by these activities and by a large rabbit warren in the centre of the transect, has the next lowest cover value of any site after the two sand sheet sites mentioned above. This is the last year in which this site will be monitored because in 2007 three year's data will be available for analysis from a replacement site in an undisturbed area to the west of the mine.

The photographic evidence from the monitoring sites generally shows an almost total loss of ephemeral species at all sites, although some low shrubs appear to be slightly healthier. There are no obvious changes to trees and tall shrubs.

The occurrence of naturalised species (weeds) continues to be very low at the Challenger Mine. A dedicated weed survey was carried out in 2004 and several new

naturalised species were recorded then, both on the mine lease and on nearby pastoral land. Seasonal conditions have generally been below average since that time and no new weed species were recorded in 2006. Only two alien species were recorded at monitoring sites in 2006. None of the weed species recorded at or adjacent to the Challenger mine is a proclaimed species in South Australia. The most significant weed found is probably *Solanum nigrum* (Black Nightshade), which was common around the sewage ponds in 2004, but has not been found elsewhere on the mine lease. Several other naturalised species are much more common at nearby pastoral watering points than any weed species on the mine lease. The weed survey carried out in 2004 confirmed that the incidence of weed species at the Challenger Mine is still lower than in most other parts of South Australia.

Appendix D

2005-06 CHALLENGER VEGETATION PHOTOGRAPHIC MONITORING POINTS



Plate 6 - Monitoring site CHA01B, October, 2005



Plate 7 - Monitoring site CHA01B, October, 2006



Plate 8 - Monitoring site CHA02, October, 2005



Plate 9 - Monitoring site CHA02, October, 2006



Plate 10 - Monitoring site CHA03, October, 2005



Plate 11 - Monitoring site CHA03, October, 2006



Plate 12 - Monitoring site CHA04, October, 2005



Plate 13 - Monitoring site CHA04, October, 2006



Plate 14 - Monitoring site CHA05, October, 2005



Plate 15 - Monitoring site CHA05, October, 2006



Plate 16 - Monitoring site CHA06, October, 2005



Plate 17 - Monitoring site CHA06, October, 2006



Plate 18 - Monitoring site CHA07, October, 2005



Plate 19 - Monitoring site CHA07, October, 2006

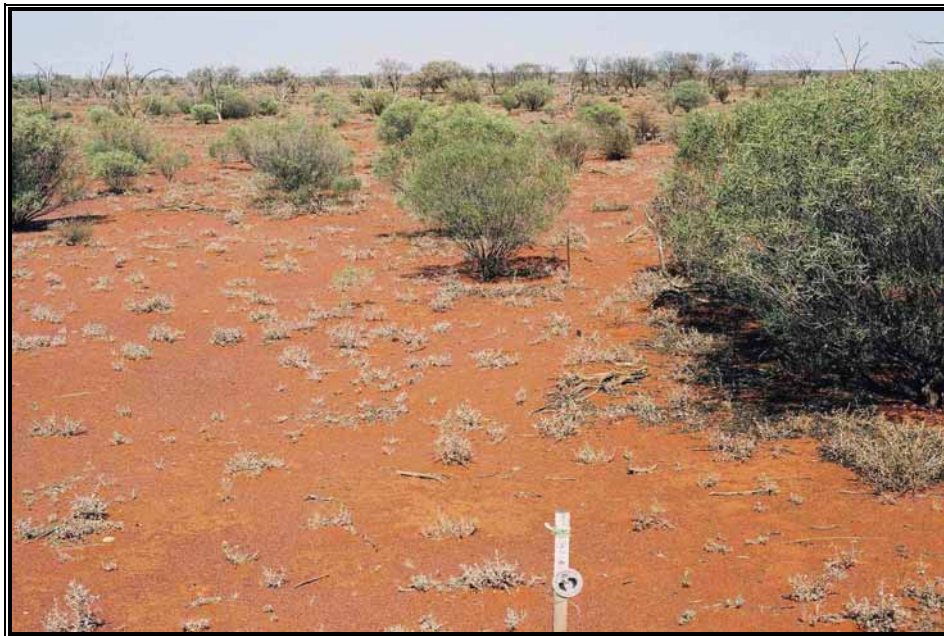


Plate 20 - Monitoring site CHA08, October, 2005



Plate 21 - Monitoring site CHA08, October, 2006



Plate 22 - Monitoring site CHA09, October, 2005



Plate 23 - Monitoring site CHA09, October, 2006

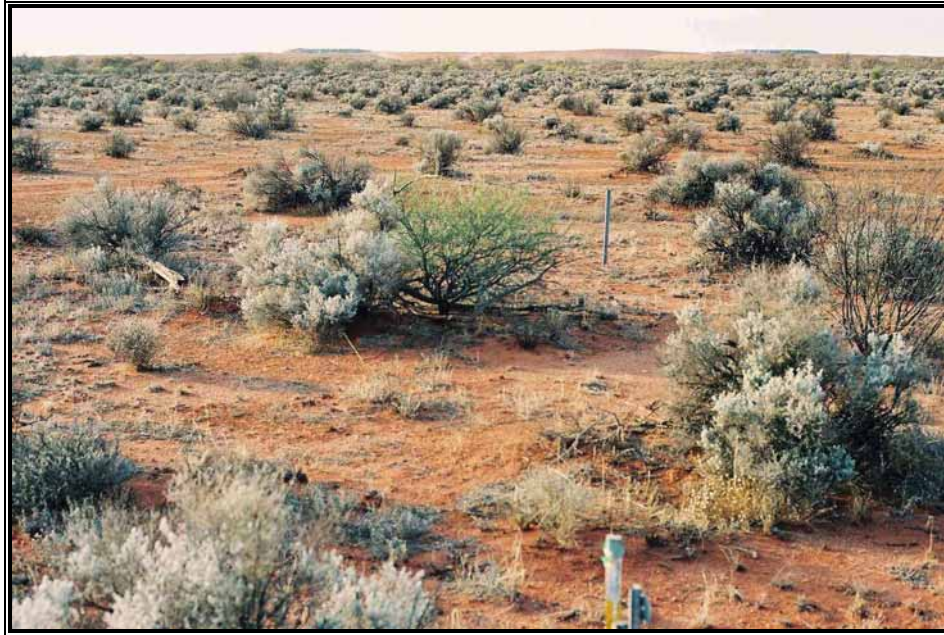


Plate 24 - Monitoring site CHA10, October, 2005



Plate 25 - Monitoring site CHA10, October, 2006



Plate 26 - Monitoring site CHA11, October, 2005



Plate 27 - Monitoring site CHA11, October, 2006



Plate 28 - Monitoring site CHA12, October, 2005



Plate 29 - Monitoring site CHA12, October, 2006

Appendix E

**RESOURCE AND ENVIRONMENTAL MANAGEMENT (REM) CONSULTANTS 2006- 07
CHALLENGER GROUNDWATER REVIEW**

Appendix F
OUTBACK ECOLOGY EXECUTIVE SUMMARY OF
CHALLENGER'S 2006 TAILINGS CAPPING TRIAL



Challenger Gold Project

Tailings research field trials to determine
cost effective rehabilitation strategies –

Year 2

October 2006



**Dominion Gold Operations
Pty. Limited**

Tailings research field trials to determine cost effective rehabilitation strategies – Year 2

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Receiver(s):	Copies	Contact Name
Dominion Gold Operations		

Document Control for Job Number:

Document Status	Reviewer	Signature	Date of Issue
Draft Report	David Jasper	DJ	26/10/06
Final Report			

Executive Summary

Outback Ecology Services was commissioned by Dominion Gold Operations in April 2004 to design and manage a tailings capping trial at their Challenger Gold Operations. The objective of the trial was to determine a cost effective capping/rehabilitation material for the TSF, which would provide a suitable plant-growth medium for revegetation. This report describes the results of the second year of monitoring, and the third set of sampling.

Sampling and analysis methods were similar to those used previously, with analyses including moisture content, pH and electrical conductivity.

The pH in each treatment has remained relatively stable since the initial May 2005 assessment, and these pH values were similar to those recorded in local topsoil, hence are likely to be suitable for plant growth in rehabilitation.

Vegetation had still not established on the trial plots. It is likely that the lack of vegetation is related to the minimal rainfall that fell in 2006 and the increasing electrical conductivity values of the capping materials. The electrical conductivity has increased in all treatments since the last assessment, and values in the surface of treatments T2 to T5 are likely to be too high to support plant growth.

In terms of EC, treatment T1 (10cm topsoil over 50cm rock) was the most suitable plant-growth medium for revegetation. However, this level of salinity still may not be conducive to the growth of many of the native species seeded, as it is substantially greater than that found in local topsoil.

Further monitoring of this trial is not recommended until after a substantial rainfall event, in which it may then be advantageous to ascertain the extent of any increases in EC and assess which plant species, if any, will survive in the plots.

It would be beneficial to sample and characterise all available rock and capping materials on the mine site that could be used to cap the TSF. The characterisation may primarily include EC, pH, texture, and stability of the soil aggregates such as slaking and dispersion properties. This data would provide information on which materials were best suited for use in capping layers and would assist in better defining the inherent salinity in the rocky waste in this trial.

Appendix G

OUTBACK ECOLOGY 2006 ECOSYSTEM FUNCTION ANALYSIS - EXECUTIVE SUMMARY OF THE REHABILITATION AT THE CHALLENGER GOLD PROJECT



Challenger Gold Project

Ecosystem Function Analysis (EFA) of the Rehabilitation of the Integrated Waste Landform (IWL) at the Challenger Gold Project

October, 2006



**Dominion Gold Operations
Pty. Limited**



Ecosystem Function Analysis (EFA) on the Rehabilitation of the Integrated Waste Landform (IWL) at the Challenger Gold Project

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Distribution:

Receiver(s):	Copies	Contact Name
Challenger Gold Project	One hardcopy and a PDF version on CD	Challenger Acting Environmental Officer
	EFA Executive Summary appended to Challenger's 2006-07 Annual Environmental Report (AER)	Various AER Receivers (DGO, PIRSA, DoE, OES)

Document Control for Job Number:

Document Status	Reviewer	Signature	Date of Issue
Draft Report	Kevin M ^c Cormick		October, 2006
	Trinity File		October, 2006
Final Report	Kevin M ^c Cormick		October, 2006

EXECUTIVE SUMMARY

Ecosystem Function Analysis (EFA) was conducted on previously-established monitoring sites at the Challenger Gold Project. EFA provides data relating to landscape functioning, vegetation establishment and habitat development. The data has been compared to local analogue sites which were re-assessed to reflect any changes resulting from natural climatic fluctuations. In successful rehabilitation, steady improvements should be expected in; soil structure and soil protection, vegetative cover and development, and stability of erosion features. Therefore, EFA data should gradually trend upward and plateau as the ecosystem becomes stable and self-sustaining. Results over time will verify if the ecosystems have achieved these self-sustaining levels and can withstand climatic fluctuations.

Despite below-average rainfall received throughout the 2005-06 reporting period, the marginal improvements in analogue EFA landscape indices were also evident at the 2004 rehabilitation on the Eastern Wing (transects **CHL03** and **04**) and Western Wing (transects **CHL05** and **06**) Waste Landforms. Slight increases for landscape indices on the rehabilitated batters were associated with minor improvements in the levels of organic material and the retention of this material within the respective systems. Resource retention was aided by relatively intact bank/trough systems at both rehabilitated areas, and enhanced at the Eastern Wing due to the short batter length and low batter angle on this landform. In addition, the above-average perennial plant density recorded on the Eastern Wing had contributed higher levels of organic material into this system, resulting in slightly higher stability and nutrient-cycling values compared to the Western Wing.

Perennial plant canopy cover at both rehabilitated sites indicated marginal improvements compared to the 2005 assessment. Perennial plant densities remained comparable to 2005 values. The Eastern Wing continued to record the highest perennial plant density of all rehabilitated and analogue sites, with a relative perennial plant cover twice that of the Western Wing. Perennial plant diversity on both the Eastern and Western Wings declined slightly to four species, with both areas dominated by *Maireana villosa* and *Atriplex vesicaria*. The majority of perennial vegetation was fruiting at the time of assessment, although some plants were starting to show signs of drought stress. A moderate abundance of annual species were observed across both rehabilitated areas and this could be attributed to the exclusion of domesticated grazing pressure from Mining Lease 6103.

The Eastern Wing continued to record an absence of erosion features within transect boundaries, although some rilling was evident on the northern batter face. The Western Wing recorded two additional rills at transect **CHL06**, a consequence of the steep batter angle at this section of the landform. Transect **CHL05** located on the southern Western Wing batter recorded an absence of rills or gullies. Habitat complexity ratings for both the Eastern and Western Wing had improved slightly compared to the 2005 assessment. These increases were attributed to the presence of mid-storey vegetation at transects **CHL03**, **04** and **06** and the observed ant activity at **CHL04** for the first time.

Appendix H

**GREENBASE CONSULTANTS SUMMARY OF CHALLENGER'S 2005 - 06 NATIONAL
POLLUTANT INVENTORY**

REPORTING PERIOD: Start Date: 01/07/2005 End Date: 30/06/2006

Section B: Substance Emission Information

PART 1: NPI THRESHOLD DETERMINATION

Category 1 Threshold

In the "Usage" column of Part 2 below, enter your usage of Cat 1 or 1a substances applicable to your operation. The thresholds for these are 10 tonnes/yr (Cat 1), except for Total Volatile Organic compounds, which is 2.5 tonnes/yr (Cat 1a).

Category 2 Threshold

In the following table, enter quantity and type of fuel consumed in tonnes per year and the total of these amounts.

Fuel Type	Natural Gas	LPG	Distillate /Diesel	Fuel Oil	Waste Oil	Brquettes	Brown Coal	Black Coal	Wood or Wood Waste	Bagasse	Other (Vehicle Fuel)	TOTAL
Annual Usage (t/yr)	0	5420									0	5420

Q a) Is one tonne or more of fuel burnt in any one-hour during the reporting period?

NO

Q b) Is the total fuel used in the table above in excess of 400 tonnes?

YES

If you answered yes to Q(a) or Q(b), you have tripped the Category 2a threshold and must report emissions of: Carbon monoxide, Fluoride compound, Hydrochloric Acid, NOx, PM10, PAHs, SO2, Total VOC.

Q c) Is 60000 megawatt hours or more of energy consumed in the reporting period?

NO

Q d) Is the maximum potential power consumption of the facility rated at 20 megawatts or more?

NO

Q e) Does the total fuel used exceed 2000 tonnes?

YES

If you answered yes to Q(c), Q(d), or Q(e), you have tripped the Category 2b threshold and must report emissions of: Category 2a (listed above) substances, plus Arsenic, Beryllium, Cadmium, Chromium (II), Chromium (VI), Copper, Lead, Mercury, Nickel, their compounds, Magnesium oxide fume, Nickel carbonyl, Nickel subsulphide, Polychlorinated dioxins and furans.

Category 3 Threshold (Total N and Total P only)

If you emit to water 15 tonnes per year (or more) of Total Nitrogen, or 3 tonnes per year (or more) of Total Phosphorus, you are required to report this these emission(s).

EET Codes	EET Description
1	Mass Balance
2	Engineering Calculations
3	Direct Measurement
4	Emission factors
5	Approved alternative EET

PART 2: SUBSTANCE USAGE AND EMISSIONS

SUBSTANCE	CASR No	USAGE (t/yr)	EMISSIONS TO AIR (kg/yr)						EMISSIONS TO WATER (kg/yr)						EMISSIONS TO LAND (kg/yr)					
			From Stock or Point Sources		From Fugitive or Non-Point Sources		EET Code(s)		Total Emission		EET Code(s)		Total Emission		EET Code(s)					
			Amount	EET Code(s)	Amount	EET Code(s)	Amount	EET Code(s)	Amount	EET Code(s)	Amount	EET Code(s)	Amount	EET Code(s)	Amount	EET Code(s)				
1) Aromatic compounds	7440-58-2	157	1 2 3 4 5	80.5	1 2 3 4 5	116	1 2 3 4 5	200	1 2 3 4 5	0.182	1 2 3 4 5									
14 Beryllium and compounds	7440-41-7	3.05	1 2 3 4 5	0.440	1 2 3 4 5	1.18	1 2 3 4 5	1.62	1 2 3 4 5											
15 Boron and compounds	7440-42-8	26.1	1 2 3 4 5	2.16	1 2 3 4 5	7.07	1 2 3 4 5	9.23	1 2 3 4 5											
18 Cadmium and compounds	7440-43-9	0.0848	1 2 3 4 5	0.00433	1 2 3 4 5	0.0142	1 2 3 4 5	0.0185	1 2 3 4 5	0.0158	1 2 3 4 5									
20 Carbon Monoxide	630-56-0	0	1 2 3 4 5	80100	1 2 3 4 5	10900	1 2 3 4 5	90400	1 2 3 4 5											
26 Chromium (II) and compounds	7440-47-3	27.7	1 2 3 4 5	19.3	1 2 3 4 5	69.0	1 2 3 4 5	85.3	1 2 3 4 5	0.0797	1 2 3 4 5									
27 Chromium (VI) compounds	7440-47-3	0	1 2 3 4 5		1 2 3 4 5		1 2 3 4 5		1 2 3 4 5		1 2 3 4 5									
28 Cobalt and compounds	7440-48-4	24.8	1 2 3 4 5	4.85	1 2 3 4 5	9.46	1 2 3 4 5	14.3	1 2 3 4 5											
29 Copper and compounds	7440-50-8	105	1 2 3 4 5	6.34	1 2 3 4 5	27.0	1 2 3 4 5	33.4	1 2 3 4 5	0.0769	1 2 3 4 5									
30 Cumene (1-methylbenzene)	98-32-8	105	1 2 3 4 5		1 2 3 4 5		1 2 3 4 5		1 2 3 4 5		1 2 3 4 5									
31 CH (propene)		401	1 2 3 4 5	3510	1 2 3 4 5		1 2 3 4 5	3510	1 2 3 4 5	0.07	1 2 3 4 5									
42 Ethylbenzene	100-41-4	10.3	1 2 3 4 5	0.107	1 2 3 4 5		1 2 3 4 5	0.107	1 2 3 4 5		1 2 3 4 5									
46 Fluoride and compounds	N/A	0	1 2 3 4 5		1 2 3 4 5		1 2 3 4 5		1 2 3 4 5		1 2 3 4 5									
50 Hydrochloric acid	7647-01-0	0	1 2 3 4 5		1 2 3 4 5		1 2 3 4 5		1 2 3 4 5		1 2 3 4 5									
52 Lead and compounds	7439-02-1	36.9	1 2 3 4 5	2.77	1 2 3 4 5	10.2	1 2 3 4 5	13.0	1 2 3 4 5	0.0769	1 2 3 4 5									
53 Magnesium oxide fume	1300-49-4	0	1 2 3 4 5		1 2 3 4 5		1 2 3 4 5		1 2 3 4 5		1 2 3 4 5									
54 Manganese and compounds	7439-06-5	201	1 2 3 4 5	41.6	1 2 3 4 5	77.2	1 2 3 4 5	119	1 2 3 4 5		1 2 3 4 5									
55 Mercury and compounds	7439-97-6	0.0621	1 2 3 4 5	0.000433	1 2 3 4 5	0.00147	1 2 3 4 5	0.00185	1 2 3 4 5	0.0158	1 2 3 4 5									
64 Nickel and compounds	7440-02-0	140	1 2 3 4 5	5.03	1 2 3 4 5	32.2	1 2 3 4 5	37.3	1 2 3 4 5	0.227	1 2 3 4 5									
65 Nickel carbonyl	13463-39-3	0	1 2 3 4 5		1 2 3 4 5		1 2 3 4 5		1 2 3 4 5		1 2 3 4 5									
66 Nickel subsulfide	12035-72-2	0	1 2 3 4 5		1 2 3 4 5		1 2 3 4 5		1 2 3 4 5		1 2 3 4 5									
69 Oxides of nitrogen	N/A	0	1 2 3 4 5	18300	1 2 3 4 5	34400	1 2 3 4 5	19700	1 2 3 4 5		1 2 3 4 5									
70 Perfluorinated ether (PFMf)	N/A	0	1 2 3 4 5	57500	1 2 3 4 5	101000	1 2 3 4 5	158000	1 2 3 4 5		1 2 3 4 5									
75 Polychlorinated dioxins and furans	N/A	0	1 2 3 4 5		1 2 3 4 5		1 2 3 4 5		1 2 3 4 5		1 2 3 4 5									
74 Polycyclic Aromatic Hydrocarbons	N/A	22.8	1 2 3 4 5	0.0200	1 2 3 4 5	0.598	1 2 3 4 5	0.610	1 2 3 4 5		1 2 3 4 5									
77 Sulfur dioxide	7446-09-5	0	1 2 3 4 5	4270	1 2 3 4 5	907	1 2 3 4 5	5260	1 2 3 4 5		1 2 3 4 5									
85 Total Volatile Organic Compounds (VOC)	N/A	413	1 2 3 4 5	6590	1 2 3 4 5	2680	1 2 3 4 5	9710	1 2 3 4 5		1 2 3 4 5									
86 Xylenes (individual or mixed isomers)	1330-20-7	21.2	1 2 3 4 5	19.4	1 2 3 4 5	100	1 2 3 4 5	19.4	1 2 3 4 5		1 2 3 4 5									
89 Zinc and compounds	7440-66-6	574	1 2 3 4 5	16.2	1 2 3 4 5	131	1 2 3 4 5	147	1 2 3 4 5	0.662	1 2 3 4 5									

Appendix I

INTEGRATED WASTE LANDFORM ENVIRONMENTAL DATA SHEETS (2006)

WASTE DUMP ENVIRONMENTAL DATA SHEET
--

PROJECT:	Challenger Gold Mine	TENEMENTS:	ML6103
SITE:	Challenger	REVIEW:	February 2007
WASTE DUMP:	Integrated Waste Landform - Eastern, Western Wing Waste Landforms and Tailings Storage Facility		

A. DESIGN

Year of Construction: **2002/2003**

Ht between berms: **N/A**

Total Ht: **RL1211.5m**

Cumulative tonnes (TSF): **1,832,105 t (dry) or 1,368,767m³ (at 1.35t/m³) - Feb, 2007**

Main Waste Rock Mineralogy (types): **Predominantly an Oxidised Christie Gneiss variant**

Hostile Material Involved (eg. ARD, Saline): **No**

Is it isolated: **N/A**

Type: **N/A**

Volume (if known): **N/A**

Angle of batters (outslopes): **1:20 (18°)**

Design Criteria (for water management): **Back sloping berms of minimum 5m width where necessary. Berms and Waste Dump to eventually have compacted bunds on outer edge to prevent overtopping. Catchment areas to be compartmentalised where required to assist infiltration at final decommissioning.**

Method of construction: **Paddock dump**

B. EROSION MANAGEMENT

Berms: **Finished** Width: **5 m** Backsloped: **N/A** Surveyed in: **N/A**

Top of Dump: **Unfinished** Vertical Drains: **N/A**

Signs of erosion: **Slight** Type: **Small rills**

Severity (subjective): **2-3** 0 none to 6 severe (1 metre deep)

Overall Water Management: **Adequate, although further crest bunds required**

Outslopes: **Deep Ripped** Surveyed in: **N/A** When: **NA**
Moonscaped: **No** Rock Mulched: **Sections of IWL**

C. REHABILITATION

Year Rehab Commenced: **2004** Year Completed: **On-going**

Progressive Rehabilitation: **Yes** % of Dump Active (approx.): **70 %**

Surface Material (if known): **Gneiss/Oxide**

Topsoil replaced: **On batters** Average Depth: **30cm**

Vegetation replaced: **Developing** Seeded: **Yes**

Seedlings: **Yes** Provenance Seed: **Yes**

Seed Treated: **Yes** Weed Control Required: **No**

D. MONITORING

Monitoring Systems in place: **Yes, four Ecosystem Function Analysis transects (Two on the Eastern and Western Wings respectively) with two years of monitoring undertaken**

E. COMPLETION CRITERIA

Criteria developed: **To Be Developed** Accepted by PIRSA: **TBC**

Does it allow for changes in knowledge/requirements over time?: **Yes**

What are the criteria based on:

- 1) Department of Primary Industry and Resources South Australia Regulations,**
- 2) Department of Industry and Resources (Western Australia) Regulations/Guidelines,**
- 3) Industry Best Practice and knowledge**

What assessment basis is used: **To Be Established**

F. OVERALL COMMENTS

No waste was hauled and deposited on either the Eastern or Western Wing waste landforms during the reporting period. Underground development material was redistributed back into previously stoped drives or into the Challenger pit.

Tailings continued to be deposited into the centrally located TSF. A TSF lift embankment was constructed during June 2006 and raised the existing embankments from RL1208m to RL1211.5m. Oxide waste was utilised during the downstream construction of the embankment.

The annual TSF audit was compiled by Coffeys Geosciences in October 2006. A full copy of this audit report has been presented to **Appendix A** of this AER.

EFA monitoring on four transects located around the IWL was completed in September 2006. A copy of this report's executive summary is provided in **Appendix G**, with a complete digital copy presented on the CD associated with this AER.

The landfill constructed into the Eastern Wing Landform was periodically compacted and backfilled to minimise rubbish blown from the facility.

Appendix J