Broken Hill Operations Pty Ltd – Rasp Mine
Community Lead Management Plan
BHO-ENV-PLN-008

Rasp Mine
Zinc – Lead – Silver Project
Project Approval No. 07-0018
January 2011

Community Lead Management Plan V2

Updated August 2016
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1. Introduction

1.1 Purpose

The purpose of the Community Lead Management Plan (the Plan) is to outline:

- The management measures, including contingency measure, undertaken by the Rasp Mine to minimise the impact of lead contamination and, in particular its potential impact on blood lead (Pb) levels, in the community from mining activities;
- How these measures will be assessed, monitored and communicated to the community; and,
- The arrangements for reasonable contributions by Broken Hill Operations Pty Ltd towards the cost of public health monitoring and public education campaigns about the health risks associated with lead.

1.2 Scope

This Plan applies to the mining activities undertaken by the Rasp Mine which is operated by Broken Hill Operations Pty Ltd (BHOP), Broken Hill.

1.3 Definitions and Acronyms

Definitions

Environment Surrouding in which BHOP operates including air, water, noise, land, flora, fauna, natural resources, humans and their interactions.

Sensitive Receptor Residence on privately owned land.

Acronyms

BHCC Broken Hill City Council
BHOP Broken Hill Operations Pty Ltd
CLMP Community Lead Management Plan
EPA Environment Protection Authority
HHRA Human Health Risk Assessment

1.4 Project Approval Conditions

This Plan has been developed in accordance with the Project Approval 07_0018 MOD3 (Table 1-1) and has been prepared in consultation with the Broken Hill Lead Reference Group, whose
members include the NSW Department of Health (Far West Local Health District) and the Broken Hill City Council.

**Table 1-1 Summary of Project Approval MOD3 Conditions**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Referred in this Plan</th>
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<tbody>
<tr>
<td><strong>Schedule 3</strong></td>
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<tr>
<td><strong>Condition 12</strong></td>
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<tr>
<td>BHOP to make a reasonable contribution towards the cost of: (a) public health monitoring, particularly in relation to child blood lead levels; and (b) public education campaigns about the health risks associated with lead.</td>
<td>Section 8</td>
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<tr>
<td><strong>Schedule 3</strong></td>
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<td><strong>Condition 13</strong></td>
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<td>BHOP to prepare and implement a Lead Management Plan for the project to the satisfaction of the DP&amp;E Secretary. This plan must: (a) be prepared in consultation with the Lead Reference Group, including the NSW Department of Health (Western Area Health Service) and Council; (b) be submitted to the DP&amp;E Secretary for approval; (c) outline the proposed commitment towards the cost of: • public health monitoring, particularly in relation to child blood lead levels, and tracking of this data over time; and • public education campaigns about the health risks associated with lead, including lead hygiene, lead and children, tank water lead risks and soil lead contamination risks. (d) identify additional reasonable and feasible measures that could be implemented either on site or in the areas adjoining the site to minimise the potential lead impacts of the project and &quot;free areas&quot;; (e) include a program for the staged implementation of the measures identified in above in the event that dust emissions are higher than predicted or the public health monitoring suggests further action is required to reduce blood lead levels in the environment surrounding the site; and (f) include a detailed communication strategy, that outlines how the relevant dust and blood level monitoring data would be reported on the Proponent's website along with any relevant public education material.</td>
<td>Sections 9 &amp; 11.2; Section 11.2; Section 8</td>
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<tr>
<td><strong>Schedule 3</strong></td>
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<td><strong>Condition 14</strong></td>
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<td>BHOP to provide a Human Health Risk Assessment within one year of the commencement of operation of the project, and every five years thereafter, unless otherwise agreed by the Secretary. The updated risk assessment shall: (a) be prepared by a suitably-qualified expert whose appointment has been endorsed by the Secretary; (b) take into account monitoring data collected under this approval, and such other information as may be relevant to the assessment; and (c) be submitted to the Secretary, EPA and the NSW Department of Health within one month of its completion.</td>
<td>Section 4</td>
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1.5 **Referenced Documents**

- Revised Statement of Commitments, BHOP, 2015
- Rasp Mine Health Risk Assessment Report, Toxikos Pty Ltd, 2010 (HHRA1)
• Health Risk Assessment Rasp Mine Broken Hill, Toxikos Pty Ltd, 2014 and updated September 2015 (HHRA2)
• Air Quality Management Plan, BHOP, (BHO-PLN-ENV-001)
• Air Quality Monitoring Program, BHOP, (BHO-PLN-ENV-010)

As per the Project Approval the CLMP must be written in consultation with the Lead Reference Group (LRG). Evidence of correspondence with the LRG is provided in Appendix D. Applicable matters raised have been edited in this version of the management plan.

2. Roles and Responsibilities

2.1 BHOP Responsibilities

2.1.1 General Manager to:-

• Provide resources to support the implementation of this Plan.
• Participate in audit reviews of this Plan and approve actions / amendments, as required.

2.1.2 Environment & Community Liaison Officer to:-

• Maintain and update this Plan.
• Provide information in relation to blood Pb monitoring levels reported in the community to senior management.
• Communicate the Plan to Rasp Mine personnel.
• Attend Broken Hill Lead Reference Group meetings.
• Maintain information on the Rasp Mine web site.
• Arrange budgets for reasonable cost contributions.
• Review and proposals for financial contributions and provide to senior management with recommendations.
• Audit BHOP performance against this Plan.
• Assess investigations as required by this Plan.
• Provide reports as required under this Plan.

2.1.3 Managers

• Implement air quality control measures in their areas of responsibility including those designed to prevent / minimise lead dust exposure to the community.

2.1.4 Supervisors and Superintendents

• Implement air quality control measures in their areas of responsibility including those designed to prevent / minimise lead dust exposure to the community.

2.1.5 Employees
• Implement air quality control measures in their work areas including those designed to prevent / minimise lead dust exposure to the community.

2.2 External Responsibilities

2.2.1 Child and Family Health (Broken Hill)

- Provide requested information (Appendix C) when submitting a proposal for financial contribution funding from BHOP.
- Direct BHOP financial contributions to expenditures consistent with the BHOP Project Approval 07_0018 MOD3 conditions.
- Provide details on funded items to BHOP for auditing purposes.

2.2.2 Broken Hill Lead Reference Group

- Review and provide feedback to BHOP on this Plan (Appendix D).

3. Blood Lead Risk Levels

In 2015 the National Health and Medical Research Council of Australia (NHMRC) determined “that a blood lead level greater than 5 micrograms per decilitre (µg/dL) suggests that a person has been, or continues to be, exposed to lead at a level that is above what is considered the average ‘background’ exposure in Australia”. And it recommended that the source of exposure should be investigated and reduced, particularly if the person is a child or pregnant woman.

BHOP has an extensive range of measures in place to minimise potential exposure to Pb dust from the Rasp Mine. These are summarised in Section 8 with contingency measures outlined in Section 7.

4. Human Health Risk Assessments

BHOP engaged Toxikos Pty Ltd (Toxikos) to undertake a Human Health Risk Assessment (HHRA1) of its proposed activities for the recommencement of mining on Consolidated Mine Lease 7 (CML7), the Rasp Mine. This report was presented as Annexures I(A) and I(B) of the Rasp Mine Environmental Assessment Report July 2010.

Toxikos was accepted by the DP&E to undertake the HHRA1 and the subsequent updated HHRA2.

HHRA1 identified sensitive receptors (Appendix A) and estimated changes in blood Pb levels at these locations from predicted air emissions using various modelling techniques and assumptions. A copy of this study and the HHRA2 report, have been posted on the CBH Resources Ltd / Rasp Mine Operations web site.

Toxikos updated the HHRA based on actual air quality data collected post the commencement of mining operations. Toxikos compared this new data to their original predictions applying the same modelling techniques, Health Risk Assessment Rasp Mine Broken Hill (HHRA2) (2015).
The original predictions were based on the processing plant and the run of mine (ROM) pad being located at the south western end of CML7 near South Road and Headframes Nos 4 and 7. At this location Receptor 8 was identified as the most affected location with the highest changes to blood Pb levels. The Preferred Project Report relocated these facilities to the north east of CML7 away from the more populated areas of south Broken Hill. At this new location Receptor 27 was identified as the most affected location. Appendix A provides a figure detailing all receptor locations.

Rasp Mine commenced operations in April 2012 however a slow start-up resulted in spasmodic production until early 2013. The HHRA2 was commissioned in early 2014 and was completed in November 2014. The Report was distributed to the EPA, NSW Department of Health in April 2015 and submitted to the DP&E in the same month.

In the HHRA2 study Toxikos used data collected from the Rasp Mine air quality monitoring program for the 2013 / 2014 period. The method used in the original HHRA1 was applied using the same IEUBK model adopted in the original HHRA1 to enable comparison of results. Toxikos assessed the same age groups over the same life of mine period, 15 years.

The HHRA2 shows that the incremental increase in blood Pb levels arising from the current mine operations is lower than that predicted in the original HHRA1.

In the original study (HHRA1) it was predicted that at the most affected receptor, Receptor 8, an increase ranging between 0.53 µg/dL to 0.75 µg/dL (and a mean of 0.63 µg/dL) could occur for children under 10 years of age. With the relocation of the processing plant the most affected receptor is now Receptor 27. The results in HHRA2 for Receptor 27 saw an increase ranging between 0.0 µg/dL to 0.1 µg/dL (and a mean of 0.08 µg/dL). For the most affected age group, 1 to 2 year olds, the current assessment indicates values 7.5 times lower than those originally predicted.

This is primarily due to the use in the model of actual dust emissions (monitored results between July 2013 and June 2014) being lower than those predicted in 2010. These dust levels are used to estimate soil concentrations and the soil component used in the calculations of blood Pb from ingestion which is the most significant exposure pathway.

| Table 4-1 Comparison of Human Health Risk Assessment Studies 1 & 2 |
|-------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Age Group | 0.6 - 1 | 1 - 2 | 2 - 3 | 3 - 4 | 4 - 5 | 5 - 6 | 6 - 7 |
| Receptor 8 | Blood Lead Concentrations (µg/dL) | Mean |
| HHRA1 | 0.61 | 0.75 | 0.69 | 0.65 | 0.61 | 0.57 | 0.53 | 0.63 |
| HHRA2 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.00 | 0.00 | 0.08 |
| Receptor 27 | Blood Lead Concentrations (µg/dL) | Mean |
| HHRA1 | NA | NA | NA | NA | NA | NA | NA | NA |
| HHRA2 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.09 |

NA – Not assessed HHRA2 – current assessment uses monitored data collected during operations.

In addition the calculations of the contribution to blood Pb from air emissions through inhalation as the exposure pathway is very low with a maximum incremental increase estimated to be 0.10 µg/dL.
The results of HHRA2 also indicate that the dust emissions from the processing plant are not making a significant contribution to ambient Pb levels in the local community.

5. **Rasp Mine Lead Dust Management**

A number of dust control measures have been identified in the Air Quality Management Plan (BHO-PLN-ENV-001) in line with Project Approval requirements.

The objective of these measures is to minimise dust and lead bearing dust generation from BHOP activities and from the general wind take up of dust across the surface areas of CML7 for which BHOP has responsibility.

The Air Quality Management Plan outlines the responsibilities and actions for managing and monitoring dust at the Rasp Mine and is available on the CBH Resources Ltd / Rasp Mine web site. BHOP has also implemented an Occupational Lead Management Plan (BHO-PLN-HLT-001) to address specific issues relating to the personal hygiene of employees, blood lead level testing together with action guidelines.

The following summarises the Rasp Mine’s main dust control measures.

5.1 **Exposed Areas - Existing and Project-related Free Areas**

Exposed areas have the potential for dust generation by wind take-up. These areas include the ‘free areas’ where there is no land disturbance from mining activities and mine areas where dust can rise from unsealed surfaces.

A dust control strategy for all exposed areas of BHOP surface areas of CML7 has been developed and lies within section 10 of the Air Quality Management Plan (BHO-PLN-ENV-001) and details the following management measures:

- application of chemical dust suppressant;
- restriction of vehicle or work access to the ‘free areas’;
- restriction of surface disturbances within the ‘free areas’;
- identification and remediation of areas where fines or silt has built up (typically after heavy rain storms); and
- remediation of any stabilised exposed area disturbed due to works carried out on site.

Stabilisation refers to the treatment of areas with chemical dust suppressants, to be applied according to the manufacturer’s specifications, with the purpose of achieving a control efficiency of at least 80%.

Remediation will include, but not be limited to, removal and burial of fine material, capping with inert waste rock, or additional use of chemical dust suppressants.

5.2 **Unsealed Roads**

Secondary service roads that receive minimal traffic have been left unsealed, and for safety reasons, an 800m section of unsealed haul road is located within Kintore Pit.
A dust control strategy for all roadways under BHOP operational control has been developed, [section 10 Air Quality Management Plan (BHO-PLN-ENV-001)]. This Management Plan includes the following strategies specific to unsealed roads:-

- chemical dust suppressant will be applied to achieve a minimum dust control efficiency of 80% to all unsealed roads on the site including the unsealed portion of the haul road;
- provision will be made, and responsibility assigned, for timely clean-up of temporary sources of dust on chemically stabilised roads; and
- speed restriction on unpaved haul roads is to be a maximum of 25 km/hour.

The periodic grading of unsealed roads has also been identified as a potential dust source unless adequately controlled. Grading of unsealed road sections may generate dust associated with the cutting of the road surface. Empirical equations relating to dust generation from graders refer to the speed of the grader as being a governing factor in determining the level of dust generation from this source (ENVIRON).

To ensure that graders are operated to minimise environmental and community impacts, control measures have been adopted:

- Grading to be avoided in dry conditions;
- Grading to occur only when necessary; and
- If an area needs grading, grade just that area and not the entire road. The rest of the road may be in good condition and this can be reversed by unnecessarily cutting the surface and disturbing the chemical dust suppressant, resulting in dust.

5.3 Sealed Roads

Consistent with the requirements of the Rasp Mine Project Approval, 4.5km of roads have been sealed, this includes all major roads; the main haul road, road to the processing plant and roads to the mechanical workshop.

The specific roads to be sealed are listed together with a dust control strategy for all roadways in the Procedure – Roadway Dust Management (BHO-PRO-ENV-007). This procedure includes the following strategies specific to sealed roads:

- all sealed areas intended to carry vehicular traffic are to be kept clean;
- use of a PM_{10}-certified street sweeper to clean sealed roads to reduce dust;
- minimum frequency of street sweeper use to be determined through visual assessment of road condition;
- regular inspections are to be made to ensure that dust suppression activities are sufficient to control dust generated from roads;
- loads of haul trucks will be tamped down to avoid spillage of material onto roadways;
• all vehicles entering beyond the boom gate will be required to be cleaned before they exit onto public roads using the site’s dedicated wheel wash;

• storm water drainage has been designed and maintained to prevent water erosion onto paved roads; and

• spillages and other temporary sources of dust on the sealed roads will be cleaned up in a timely manner, and traffic rerouted around spills until they are removed.

5.4 ROM Stockpile Wind Erosion

The ROM stockpile has the potential for dust generation from wind take up. Provision has been made within the Project design for the following engineering controls:

• Static wind breaks will be used to deflect wind to reduce dust entrainment:

• ROM stockpiles are to be kept lower than the surrounding bunds as much as practicable;

• Chemical dust suppressant to be used around traffic areas (FEL, haul trucks).

5.5 TSF Wind Erosion

The source of dust from the tailings facilities will primarily be wind-blown dust. A dust control strategy for the Tailings Storage Facility (TSF) has been developed, section 10.5 of the Air Quality Management Plan (BHO-PLN-ENV-001) details operational activities.

5.5.1 TSF1 Construction and Operation

It is not planned to construct or use TSF1.

5.5.2 TSF2 Operation

Blackwood Pit (TSF2) has been utilised as the sole deposition area for tailings. As this is a deep Pit (up to 70 m) dust suppression activities will not be implemented until tailings have risen sufficiently and dust is relevant.

Where there is the potential for dust to be generated from the tailings surface, if the tailings dry out and start creating dust, a spray system around the outside of the Pit is proposed to manage this risk. Currently the tailings are deposited at the southern end of the Pit and the supernatant water runs the course of the dam maintaining adequate moisture levels in the tailings. As an alternative control measure, manual water spraying using vehicle or mobile equipment may be applied in any of the above scenarios.

5.5.3 Use of Video Recording Equipment

The use of video recording equipment to assist in the active management of emissions from TSF1 is specified within Project Approval conditions will only be applied if TSF1 is utilised. TSF1 is not part of the current operations.

5.6 Transfer To/From Crushed Ore Storage Bin

Material handling of crushed material is potentially a major source of dust in the processing area. Provision has been made within the Project design for the following engineering controls:
• All above ground conveyors and transfer points prior to the grinding circuit (SAG and ball mills) are enclosed as required by the Project Approval.

• Conveyors are fitted with dust extraction reporting to insertable dust collectors.

• The crushed ore bin is fitted with an insertable dust collector to filter the air discharged during filling.

5.7 Ventilation Exhaust

Stack testing is conducted at the ventilation shaft against criteria listed in the Rasp Mine Environment Protection Licence. In addition water sprays have been installed at the outlet of the ventilation exhaust that are automatically triggered prior to, and during blasts, to maximise suppression of dust exhausted from the underground mine.

5.8 Unloading Ore to ROM Stockpile

The Run of Mine (ROM) stockpile areas have the potential to generate dust from vehicle movements, depositing ore and by wind take-up. A dust control strategy for the ROM stockpile area has been developed, in section 10.8 of the Air Quality Management Plan (BHO-PLN-ENV-001). This procedure includes the following dust control strategies specific to unloading ore to the ROM stockpile:

• ROM stockpile water sprays can be operated manually when ROM operator can see visible dust;

• Operators are required to visually monitor dust caused by dumping and take appropriate actions to control the level of dust (addition of a dedicated watercart/varying or ceasing operations).

• Operators are to visually monitor dust from the ROM stockpile and additional water will be applied to the stockpile to avoid wind erosion.

Chemical dust suppressant is applied as per manufacturer's specifications to all trafficked areas (FEL and dump trucks) within the ROM stockpile area, Procedure – Roadway Dust Management (BHO-PRO-ENV-007).

5.9 Front End Loader Operation/Apron Feeder Hopper at the ROM Pad

There is potential for dust to be generated from the dumping of ore onto the apron feeder and into the crusher. Ring nozzle water sprays (atomised sprays) are installed on the apron feeder hopper to the crushing circuit and negative pressure takes this airflow to the crushing circuit bag-house.

Additionally, provision is made for operational dust control measures in the Procedure – ROM Pad Area Management (BHO-PRO-MET-040), including:

• Monthly inspections of the ring nozzle water sprays to ensure effective operation.

• Cease loading to the apron feeder during adverse weather conditions (high winds).
5.10 Crusher Circuit

Material handling of crushed material is potentially a major source of dust in the processing area. Provision has been made within the Project design for the following engineering controls:

- The crusher circuit (jaw (primary) crusher) is fully enclosed within a permanent structure.
- The enclosed structure over the ROM bin extends five metres over the front end load feed area. This extension sits flush onto the steel wing walls and is designed to prevent particulate wind entrainment around the top of the ROM bin.
- This crusher circuit enclosure is kept under negative pressure (approximate airflow into the bag house of 9,700 L/s) and vented via an appropriately sized bag house which has a high (>99%) control efficiency.
- Four dust extraction points report to the bag house - two points in the roof of the crusher circuit enclosure, and two over the conveyor;
- Additionally, provision is made for operational dust control measures in the Procedure – Crusher Circuit Operation, including:
  - Consistent with Project Approval conditions the enclosure and associated emissions controls are operated and maintained to ensure that visible fugitive emissions from the enclosure are minimised.
  - In the event that sustained (>5 minutes) visible dust is observed to be emitted from the crusher circuit enclosure, crushing will be ceased, and the cause established and rectified prior to crushing activities recommencing.
  - The integrity of the crusher circuit bag house is monitored through mill control software (Scitech), and via the point source monitoring detailed within the Air Quality Management Plan (BHO-PLN-ENV-001).

5.11 Concentrate Handling

Provision has been made within the Project design for the following measures to control dust from the concentrate loading area:

- Concentrate loading takes place in an enclosed building (solid roof and side walls) with automated doors to open and close upon entry and exit;
- Once the concentrate container has reached capacity a solid lid is placed on the container to maintain moisture content of the product (tested and estimated to be approximately 9%) and eliminate any dust emissions during transport to the rail load out, and subsequently to port; and
- A concentrate container wash facility has been installed to remove and collect any potential spillage from the concentrate container trucks prior to travelling to the rail load out area. Material collected is returned to the process.

5.12 Other Measures
In addition to the above control measures BHOP also requires all vehicles that have passed the boom gate access point to be washed down prior to leaving site. This is to remove any potential lead contamination that may be on the vehicle. For this purpose a vehicle wash facility has been installed as part of the exploration decline development. It is located on the main exit road prior to the boom gate access point. The main features of this facility are:

- Fully automated wash system;
- Deluge designed to wash wheels and undercarriage of cars and trucks;
- Sediment collection and removal system.

The capacity of the facility will be in excess of 1000 vehicle movements per day.

On-site laundering facilities are provided to negate the need for work clothes to be taken off site for washing. Employees and contractors are required to change clothes prior to leaving site if they have been working on the mine site (past the boom gate). This is to prevent Pb exposure to family members.

A review of the emissions inventory and atmospheric dispersion modelling conducted for the Rasp Mine Environmental Assessment indicated that the principal meteorological factor that may lead to adverse impacts beyond the site boundary relates to the presence of high winds.

Principally, this is likely to increase particulate emissions associated with wind erodible area sources such as the existing ‘free areas’ and the ROM stockpile.

BHOP obtains daily meteorological forecasting which is presented at prestart meetings prior to commencement of each shift, additional control measures can be put in place in advance of adverse weather conditions.

6. Rasp Mine (Lead) Dust Monitoring

The Air Quality Monitoring Program (BHO-PLN-ENV-010) was initially developed by air quality specialists at ENVIRON Pty Ltd and documents the statutory conditions, standards, locations and reporting requirements for air quality monitoring undertaken by BHOP across its mining operations and neighbouring properties. It also addresses the requirements as outlined in the Project Approval and Environment Protection Licence including:

- Installation of real-time air quality monitoring to assist in the active management of emissions;
- Undertaking sampling to quantify road surface silt loadings on an ongoing basis; and
- Continuation and expansion of the existing air quality management program to include high volume samplers, dust deposition jars and real time monitors;

Data gathered through air quality monitoring demonstrates the effectiveness of the Air Quality Management Plan and evaluates performance against continual improvement objectives.

Appendix B indicates the locations of air quality monitoring units.
7. Lead Dust Management Contingency Measures

Measures to minimise Pb dust emissions from the Rasp Mine are outlined in Section 5, BHOP has instigated an extensive range of measures to prevent and minimise the generation of lead bearing dust from the Rasp Mine. BHOP has also identified contingency measures to be implemented where the above measures have also been identified to fail. These measures would be implemented where air quality trends indicate an increase in Pb emissions which can be attributed to the Rasp Mine.

7.1 Free Areas

The majority of lead bearing dust emission from the site is from the ‘free areas’ (95%). Currently chemical dust suppressants are applied to minimise dust from these areas. Where dust monitoring results indicate that dust levels have increased, a review of the chemical dust suppressant program will be instigated to investigate if methods of application and / or concentration are effective. The results of this investigation may:

- Increase the area for application of the chemical suppressant.
- Increase the concentration of the chemical suppressant.
- Investigate other newly available chemical suppressants that are more effective.
- Provide capping over sections of the ‘free areas’ with inert waste rock.

7.2 Active Mining Areas

Active mining areas, for example processing plant, crushing and roadways account for 5% of lead bearing dust emissions from the site. BHOP have proposed an extensive range of dust mitigation measures as outlined above, where dust monitoring results indicate that dust levels have increased the following measures may be implemented:

- Sealing of secondary roads.
- Ceasing of dust generation activities in specific wind conditions, for example from a particular direction and / or at particular wind speeds.
- Installing a dust tracking system to better identify dust generating sources.

7.3 Implementation of Contingency Measures

Contingency measures will be implemented following these steps:-

Step 1 There are two triggers for instigating investigations for the implementation of contingency measures:

1. Dust emissions are higher than predicted. In this case a review of dust monitoring trends indicates an increase in Pb bearing dust over a period of at least 3 months.

2. Public health monitoring suggests further action is required to reduce blood lead levels in the environment surrounding the site. In this case there has been an increase in the annual blood Pb levels of children as indicated by the NSW Department of Health data.
The Environment & Community Liaison Officer conducts monthly reviews of air quality monitoring data and will identify and alert management of any increases, where any increases have exceeded the trigger in Step 1 (1) the Environment & Community Liaison Officer shall notify management and instigate an investigation.

The Environment & Community Liaison Officer shall keep abreast of the monitoring of Broken Hill community’s blood Pb results and where these have increased shall notify management and instigate an investigation.

Step 2  If either of the triggers occurs in Step 1 BHOP will undertake an investigation to determine the source of any increase in Pb dust and any linkage to site operations.

Where it has been determined that the increase in Pb bearing dust or community blood Pb levels can be attributed to Rasp Mine activities, the Environment & Community Liaison Officer shall complete an incident report in the BHOP INX system and report the matter together with remedial measures to be undertaken to:

- Department of Planning & Environment
- Environment Protection Authority
- Western Area Health Service
- Broken Hill Environmental Lead Program
- Broken Hill City Council
- Department of Resources and Energy

Step 3  Review identified site operations linkages in Step 2 with the contingency measures listed in Sections 7.1 and 7.2 and implement as required.

Step 4  Review future data to monitor impact and if further actions are required.

8. BHOP Funding Contributions

BHOP shall make reasonable contributions to the Broken Hill Child & Family Health Centre annually for the purposes of:

- Public health monitoring, particularly in relation to child blood lead levels; and tracking this data over time; and
- Public education campaigns about the health risks associated with lead, including lead hygiene, lead and children, tank water lead risks and soil lead contamination risks.

The Broken Hill Child & Family Health Centre shall submit items for financing consideration to BHOP by the end of August each year to enable consideration in the BHOP budgetary process. Items will be in line with above criteria and consistent with the Broken Hill Lead Health Program. Appendix C outlines the information requirements to enable submissions to be assessed.

BHOP will review items against the criteria listed above and identify items for financial support. BHOP will incorporate funding support in annual budgets and provide funding to the Broken Hill Child & Family Health Centre by end of November each year.

BHOP funding will be up to $50,000 in any calendar year.
9. Consultation and Communication

9.1 Consultation

9.1.1 Broken Hill Lead Reference Group

BHOP will provide a copy of this Plan and seek feedback from the Broken Hill Lead Reference Group. Members of this Group consist of:

- Broken Hill City Council (who chair the meeting)
- NSW Department of Health Broken Hill University Department of Rural Health (UDRH) and Far West Local Health District (FWLHD)
- Environment Protection Authority
- Broken Hill Environmental Lead Program
- Department of Resources & Energy
- Appointed members of the public
- Local mining companies

Comments shall also be sought for any proposed changes to the Plan.

9.2 Communication

9.2.1 Air Quality Monitoring Data

BHOP provides summary information regarding its air quality monitoring on its web site. This includes summary data and a review of the data against relevant criteria. This data is updated monthly.

In addition BHOP provides raw air quality monitoring data to the Far West Local Health District.

Where requested this information may also be presented at meetings of the Broken Hill Lead Reference Group.

9.2.2 Lead Blood Level Monitoring Data

BHOP has provided a link from its web site to the Far West Local Health District information web site which provides independent information on Broken Hill blood Pb level monitoring data and also contains relevant information on public education material related to personal blood lead management.

10. Reporting

10.1 Incident Reporting

10.1.1 Internal

Air quality internal incidents are defined as a deviation of visible dust generation from normal operations.

All air quality incidents are recorded and reported on the BHOP system for incident reporting (INX).
The supervisor of the area where the incident occurred is responsible for investigating, reporting and remediating the incident.

10.1.2 External

For external reporting purposes an incident is defined (Project Approval) as:

“A set of circumstances that causes or threatens to cause material harm to the environment, and/or breaches or exceeds the limits or performance measures/criteria in this Approval.”

In terms of air quality an ‘incident’ is defined as any exceedence of the air quality criteria as outlined in the Project Approval.

BHOP is required to report incidents to the DP&E and any other relevant agencies (refer Project Approval Schedule 4 Condition 5) this may include:

- Environment Protection Authority
- Department of Resources and Energy
- Crown Lands
- Broken Hill City Council

Notification shall be made as soon as practicable after BHOP becomes aware of the incident and a written detailed report shall be provided within seven days of the date of the incident.

BHOP also operates a Pollution Incident Response Management Plan which outlines reporting and investigation requirements. This Plan is tested annually and amended accordingly where required. A copy can be found on the CBH Resources Ltd / Rasp Mine Operations web site.

The Environment & Community Liaison Officer is responsible for preparing reports to the relevant government agencies which are signed off by the General Manager prior to their submission.

Notification includes all contextual information relevant to the incident, such as prevailing meteorological conditions, extraordinary events (e.g. bushfires, prescribed burning, dust storms, fire incidents, illegal activities), as well as site activities and preventative action undertaken (if applicable) during the incident.

Incident reporting where appropriate contains information on diurnal trends and pollution roses (a graphical representation of wind direction plotted against concurrent particulate concentration, similar to a wind rose), as applicable.

The Environment & Community Liaison Officer is also responsible for making reports under Section 7.3.
10.1.3 Regular Reporting

*Rasp Mine Website (cbhresources.com.au/raspmine)*

The Environment & Community Liaison Officer is responsible for updating the Rasp Mine web site with the following information:

- Summary of air quality monitoring results, updated quarterly.
- Summary of community complaints, updated monthly.
- Updates of the Human Health Risk Assessments.
- A current approved copy of this Plan.
- A link to the Far West Local Health District information regarding blood lead levels and public health.

**Human Health Risk Assessments**

The Environment & Community Liaison Officer is responsible for providing copies of the Human Health Risk Assessments within one month of their completion, in line with the Project Approval to:

- Secretary – Department of Planning & Environment
- Environment Protection Authority
- Western Area Health Service

In addition BHOP provides copies to the BHCC, the Broken Hill Lead Reference Group and posts a copy of the report on the BHOP web site.

10.1.4 Air Quality Complaints Management

Any air quality related complaint will be recorded in the complaints register, entered into INX reporting system and fully investigated to find root causes and corrective actions implemented where necessary.

Additionally the following measures will be undertaken during complaint and incident investigation:

- Instigation of complaints-driven ambient air quality monitoring, as required (refer Rasp Mine Air Quality Monitoring Program); and
- Review of relevant management practices / operational procedures will be undertaken to systematically identify and implement options to modify site practices, to ensure effective control of dust-generating activities so as to achieve the air quality objectives stated in this plan.

All complaints will be documented according to the procedure for complaints handling.

The following information is recorded:

- Date
- Specific Time
- Prevailing Meteorology (wind speed / direction)
• Location of incident
• Frequency of emission
• Duration of emission
• Results of investigation, and
• Any required remedial actions.

Any complaints that are investigated and found not to be the result of activities at the Rasp Mine shall be removed from the complaints register and maintained on file for reference.

11. Auditing and Review

11.1 Auditing

BHOP will undertake an annual audit of this Plan to identify any non-compliances with performance and identify remedial actions as required. Non-compliances and remedial actions will be incorporated into the Annual Environment Management Report.

The Environment & Community Liaison Officer is responsible for completion of this audit and reporting outcomes to senior management for their review.

11.2 Review

This Plan shall be reviewed, and if necessary revised, every three years. In this review the Broken Hill Lead Reference Group (which includes BHCC, EPA, WAHS) shall be consulted.

The amended document shall then be submitted to the DP&E for approval.
Appendix A

Sensitive Receptor Locations

[Map showing various locations labeled as R1, R2, R3, etc., including Broken Hill North, Broken Hill South, and Penlyra South.]
Appendix B

Rasp Mine Air Quality Monitoring Locations

Map1: Dust and Emissions Monitoring Locations
Appendix C

Information for Financial Contribution

Broken Hill Operations Pty Ltd (BHOP) in accordance with its Project Approval PA07_0018 Schedule 2 Condition 12, is required to provide a reasonable contribution towards the cost of:

(a) public health monitoring, particularly in relation to child blood lead levels; and
(b) public education campaigns about the health risks associated with lead, to the satisfaction of the Secretary.

In consultation with the Broken Hill Lead Reference Group, BHOP developed the Community Lead Management Plan which outlines the arrangements for the contribution and states that the ‘reasonable contribution’ will be up to $50,000. Section 5 also states that the funds shall be made to the Broken Hill Child & Family Health Centre (BHCFHC) annually for the purposes as outlined above.

To obtain funding the BHCFHC is requested to submit a proposal outlining the items for expenditure consistent with the requirements of the Project Approval. This proposal is required to be submitted by August each year to enable BHOP to make budgetary provisions for the following year (BHOP operates on a calendar year) and review the proposal to check it is in line with the Project Approval.

To enable BHOP to review the proposal the following information is required:

Applicant – Department entity, name and address

Authorising Officer – Details of the person authorised to act on behalf of the applicant, name, position, contact details.

Contact Person – If different from Authorised Person.

Project Title – Succinct for reporting purposes.

Project Summary – Provide short description of the Project and its outcomes. Carefully consider the criteria outlined in the Project Approval.

Project Timetable – Include the nominated start and completion date for the Project.

Project Outcomes – Show how the project outcomes are aligned with the criteria outlined in the Project Approval.

Project Description – Provide a detailed description of the Project and its benefits. Demonstrate the feasibility of the Project and its capacity to deliver the desired outcomes.

Project Budget – Detail how the funds will be expended for the Project including detailed costs for all expenditure from internal as well as external sources. Provide quotes from third parties and/or
calculations for internal resources detailing how the contribution will be distributed and how this aligns to the Project Approval.

**Project Reporting** - Provide milestones and interim reporting against these milestones together with the submission for a final report. This final report should match the actual expenditure against the submitted budget and provide an explanation for any variations. This will confirm that the funds were expended on the items in the proposal which is in line with the Project Approval.

**Project Auditing** – Financial information will be requested to audit expenditures against Project deliverables.
Appendix D

Response to Comments
Community Lead Management Plan
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2. Project Approval Conditions ......................................................................................................................... 3
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| Table 1.1 | Summary of Written Comments and BHOP Response |

Appendices

| Appendix A | Correspondence with Lead Reference Group |
1 Purpose

Broken Hill Operations Pty Ltd (BHOP) in accordance with its Project Approval 07_0018MOD3 (PA) Schedule 3 Condition 13, developed a Community Lead Management Plan (Plan) and submitted it to the Department of Planning and Environment in February 2012. The Plan has been reviewed and, as a part of this review process, was provided to government agencies and community members for comment.

This paper outlines the comments received and the response by BHOP.

BHOP has amended the Plan, as appropriate, and submits it to the Department of Planning and Environment (DPE) for approval.

2 Project Approval Conditions

The Rasp Mine Project Approval 07_0018MOD3 outlines the following conditions for the development of a Lead Management Plan. BHOP have two plans to manage exposure to lead:

(i) Lead Management Plan which outlines the health and safety requirements for persons working at the Rasp Mine, and

(ii) Community Lead Management Plan which outlines how BHOP minimises lead dust emissions that have the potential to impact the community, its requirements for a contribution to NSW Health and addresses the requirements of the PA.

The PA requires a Lead Management Plan to be developed to the satisfaction of the Secretary of DPE. It must be developed in consultation with the Broken Hill Lead Reference Group including the NSW Department of Health and Broken Hill City Council. Version One of this Plan was developed and submitted to the DPE in February 2012, submission was delayed due to consultation with the Broken Hill Lead Reference Group which meets 4 times per year. No response was received by the DPE.

Condition 13 requires that this Plan:

(c) outline the proposed commitment towards the cost of:
   • public health monitoring, particularly in relation to child blood lead levels, and tracking of this data over time; and
   • public education campaigns about the health risks associated with lead, including lead hygiene, lead and children, tank water lead risks and soil lead contamination risks.

(d) identify additional reasonable and feasible measures that could be implemented either on site or in the areas adjoining the site to minimise the potential lead impacts of the project and “free areas”;

(e) include a program for the staged implementation of the measures identified in (d) above in the event that dust emissions are higher than predicted or the public health monitoring suggests further action is required to reduce blood lead levels in the environment surrounding the site; and

(f) include a detailed communication strategy, that outlines how the relevant dust and blood level monitoring data would be reported on the Proponent’s website along with any relevant public education material.

The Community Lead Management Plan addresses these requirements. Version Two of this Plan is now submitted for approval.
3 Broken Hill Lead Reference Group

The Broken Hill Lead Reference Group (BHLRG) was established in response to the exposure of the community to lead dust and in particular the increase in blood lead levels in children.

The Objective of the Group is to provide a coordinated whole of community approach to the management of environmental lead in the City of Broken Hill including:

- Monitor and review the effectiveness of environmental lead programs.
- Recommend coordinated strategies and priorities to manage environmental lead issues.
- Sharing of relevant data between stakeholders.
- Provide a forum for the raising of issues in relation to environmental lead.
- That the Broken Hill Lead Reference Group, meet on a quarterly basis generally on the third Wednesday of the month.

The BHCC facilitates and chairs meetings of the Group which is made up of the following representatives:

- Broken Hill City Council
- NSW Health

BHOP will provide a copy of this Plan and seek feedback from the Broken Hill Lead Reference Group. Members of this Group currently consist of:

- Broken Hill City Council (who chair the meeting)
- Far West Local Health District
- Western NSW Public Health Network
- Broken Hill Department of Rural Health (University of Sydney)
- Environment Protection Authority
- Department of Resources & Energy
- Maari Ma
- Appointed members from the public
- Perilya Broken Hill Operations Pty Ltd
- Broken Hill Operations Pty Ltd

4 Comments and BHOP Response

BHOP provided a draft of the Plan Version Two to the BHLRG and provided a presentation of its contents and changes on the 11 May 2016.

Comments provided by the Lead Reference Group were generally positive. Table 1.1 addresses formal correspondence as received.
<table>
<thead>
<tr>
<th>Group Member</th>
<th>Matters Raised</th>
<th>BHOP Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broken Hill City Council</td>
<td>Maybe add a definitions section – especially to cover all the acronyms</td>
<td>Added in Section 1.3</td>
</tr>
<tr>
<td></td>
<td>Under section 4 – what is a sensitive receptor?</td>
<td>Added in Section 1.3</td>
</tr>
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<td></td>
<td>Section 8 – since it is the second version are you able to list what has been</td>
<td>A submission was received from FWLHD for progressing works on the lead</td>
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<td></td>
<td>funded through this process to date?</td>
<td>screening database module, signed by both parties – FWLHD and Cerner (the</td>
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<td></td>
<td></td>
<td>consultant) finalised on 17 June 2016. The application for the available</td>
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<td></td>
<td></td>
<td>grant was accepted by BHOP management on the 1st July 2016, with the funding</td>
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<td>to be released on 2nd August.</td>
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<td></td>
<td>What is the life span of the chemical suppressant for the dust control?</td>
<td>18 months, the product is applied every 12 months</td>
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<td></td>
<td>For the wheel wash system – what happens to the sediment that goes into the</td>
<td>The sediment is trapped in a sedimentation pond and remains on site</td>
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<td></td>
<td>system, is it pumped out and removed from site or kept on site?</td>
<td></td>
</tr>
<tr>
<td>Broken Hill Environmental Lead Program</td>
<td>Section 7.3 Implementation of Contingency Measures Step 2 include BHELP as an</td>
<td>This has been added</td>
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<td></td>
<td>additional notification body (page 17)</td>
<td></td>
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<tr>
<td></td>
<td>Section 9.1.1 include BHELP as member of BHLRG (page 18)</td>
<td>This has been added</td>
</tr>
<tr>
<td></td>
<td>Section 9.2.2 link to “Lead Smart NSW” website formally &quot;Lead NSW” (Page 19)</td>
<td>Lead smart website is currently under construction and will be added once</td>
</tr>
<tr>
<td></td>
<td>Section 9.2.2 Health Risk Assessment copy to be provided to BHELP (Page 19)</td>
<td>available</td>
</tr>
<tr>
<td></td>
<td>Section 10.1.3 link to “Lead Smart NSW” website formally “Lead NSW” (page 20)</td>
<td>Lead smart website is currently under construction and will be added once</td>
</tr>
<tr>
<td></td>
<td>1.3 Reference to Western Area Health Service – this entity does not exist.</td>
<td>available</td>
</tr>
<tr>
<td>Western NSW Public Health Network Far West Local</td>
<td>Broken Hill is a community within Far West Local Health District. i.e NSW</td>
<td>Reference has been changed</td>
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<tr>
<td>Health District</td>
<td>department of Health (Far West Local Health District).</td>
<td></td>
</tr>
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<td></td>
<td>3 Wording should be ‘……exposed to lead at a level that is above what is</td>
<td>Wording changed</td>
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<td></td>
<td>considered the average….’</td>
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<tr>
<td>Broken Hill Department of Rural Health (University</td>
<td>No comments received</td>
<td>N/A</td>
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<td>of Sydney)</td>
<td></td>
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<td>Environment Protection Authority</td>
<td>BHOP should propose additional licence monitoring limits for the Mill Baghouse</td>
<td>Additional licence monitoring limits have been added to the licence during the</td>
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<td></td>
<td>emissions given sufficient data is now available for consideration by the EPA</td>
<td>last variation</td>
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<td></td>
<td>as per PA requirements.</td>
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<td></td>
<td>BHOP should finalise the timeframes for completion of the proposed tailings</td>
<td>Preliminary planning for a wall raise is underway, an irrigation system will</td>
</tr>
<tr>
<td></td>
<td>facility irrigation and video recording systems to ensure these control</td>
<td>be installed as part of the capital works. Exact time frame is still unknown</td>
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<td></td>
<td>measures are in place to improve dust management form the tailings facility.</td>
<td></td>
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<tr>
<td></td>
<td>BHOP should investigate installing automated and weather activated irrigation</td>
<td>BHOP have been in contact with other nearby facilities using automated systems</td>
</tr>
<tr>
<td></td>
<td>systems where practicable that can operate routinely on set programs and also</td>
<td>and will investigate their application to the current TSF</td>
</tr>
<tr>
<td></td>
<td>be triggered by meteorological conditions. This will ensure an</td>
<td></td>
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</tbody>
</table>
BHOP should develop policies and procedures for the routine activation of dust control measures including timeframes for inspections of exposed areas, sealed roads, manual irrigation systems, the use of chemical dust suppressant, street sweepers, water trucks and the stop work criteria. This will clarify the timing and frequency of these controls.

BHOP have a number of procedures outlining dust control requirements at the Rasp Mine:
- Procedure – Roadway Dust Management (BHO-PRO-ENV-007) details how dust is to be minimised on roads both sealed and unsealed. This includes the use of street sweepers, manual irrigation and the use of chemical dust suppressants and the water truck.
- Procedure – ROM Pad Area Management (BHO-PRO-MET-040) details measures to be taken by operators at the ROM Pad to minimise dust. Specific requirements for using the ROM stockpile, apron feeder hopper and crusher circuit are included in this procedure.
- Procedure – Management of Exposed Areas (BHO-PRO-ENV-003) outlines the requirements for the application of chemical dust suppressants in the 'free areas' and their inspection.
- Procedure – Application of Dust Suppression (BHO-PRO-ENV-009) details how to apply dust suppression chemicals properly as per the manufacturer's requirements.

BHOP should where practical investigate installing an automated system at the concentrate loading area to reduce possible emissions and avoid truck drivers manually opening and closing the entry/exit doors.

BHOP already have a remote door opening/closing mechanism, it is not operated manually.

BHOP should maintain stockpiles at a height below the surrounding bunding at all times.

Stockpiles are maintained at a height that sits below the bund. Surplus feed is put through the primary crusher and stored in the mill feed bin for processing.

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Maari Ma

Pg 6, 1.3: “Western Area Health Service” does not exist. It should be NSW Ministry of Health or Far West Local Health District or Western NSW LHD (also incorrect at pages 9 & 17, 18, 20) (shortened to WAHS on page 21)

Sections 4, 7.3, 9.1.1, 10.1.3 and 11.2 of the Plan have been amended.

Pg 7: Toxikos did your previous health risk assessments HHRA1 and HHRA2 and I see they have gone into insolvency in May 2015 but HHRA2 was updated in Sept 2015: has HHRA2 been reviewed by another HHRA consultant?

The same consultancy reviewed both risk assessments.

Pg 8: CBH responsibilities all relate to transmission of lead in air: what about movement off the site in water?

BHOP implement a site Water Management Plan to capture all water run-off from active areas of the Rasp Mine site.

No change to Plan.

Pg 8: Section 3 – quote from NHMRC appears to be mis-quoted/mis-typed – doesn’t quite make sense.

Typing error. The quote from the NHMRC Statement: Evidence on the Effects of Lead on Human Health) should read: “… that a blood lead level greater than 5 micrograms per decilitre suggests that a person has been, or continues to be, exposed to lead at a level that is above what is considered the average ‘background’ exposure in Australia.”

Section 3 of the Plan has been amended.

Pg 9: If the most affected receptors (as per the modelling) are located in houses at R27 and R8 which appear to be on or immediately adjacent to the mine lease, does this mean CBH manages these houses and ensures no

With the relocation of the processing plant the highest receptor that may be impacted by lead dust is R27. This building is the closest ‘residence’ to the Rasp Mine located adjacent to Proprietary Square. This is an unoccupied
| children are located here? | building owned by the Line of Lode Reserve Trust and managed by Crown Lands. Other houses in this area are owned by Perilya and during consultation Perilya advised BHOP that these properties would not be occupied by children. No change required to Plan. |

| Pg 18: Maari Ma is also a member of the Pb Ref Group (as is the Western NSW PHN). As in point 1 above, Western Area Health Service should be either FWLHD or Western NSW and far West LHDs. BH University Dept of Rural Health is a separate entity again (and also a member of the Pb Ref Grp). | Section 9.1.1 of the Plan has been amended. |
Appendix A  Correspondence with Lead Reference Group
Dear Mr Sulicich

Re Rasp Mine Community Lead Management Plan

Thank you for your electronic mail dated 13 April 2016 to the Environment Protection Authority (EPA) requesting comment on the draft Broken Hill Operations Pty Ltd (BHOP) Community Lead Management Plan prepared for the Rasp Mine in accordance with Project Approval 07_0018 MOD3.

We have reviewed the document and support the methods being implemented by the Rasp Mine to prevent lead dust emissions migrating from the site. Based on the information provided we make the following recommendations to better manage dust emissions from the site and improve environmental performance.

- BHOP should propose additional licence monitoring limits for the Mill Baghouse emissions given sufficient data is now available for consideration by the EPA as per project approval requirements;
- BHOP should finalise the timeframes for completion of the proposed tailings facility irrigation and video recording systems to ensure these control measures are in place to improve dust management from the tailings facility;
- BHOP should investigate installing automated and weather activated irrigation systems where practicable that can operate routinely on set programs and also be triggered by metrological conditions. This will ensure an immediate response to weather conditions and enable advanced preparation for extreme weather events;
- BHOP should develop policies and procedures for the routine activation of dust control measures including timeframes for inspections of exposed areas, sealed roads, manual irrigation systems, the use of chemical dust suppressant, street sweepers, water trucks and the stop work criteria. This will clarify the timing and frequency of these controls;
- BHOP should where practical investigate installing an automated system at the concentrate loading area to reduce possible emissions and avoid truck drivers manually opening and closing the entry/exit doors; and
- BHOP should maintain stockpiles at a height below the surrounding bunding at all times.
If you require any further information about this matter please contact Tansley Hill by telephoning 03 5021 8919.

Yours sincerely

[Signature]

9/5/16

DARREN WALLETT
Head Griffith Unit
Environment Protection Authority
Hey Len
I have done my homework and read through the plan for you.

I only have a few comments, nothing huge:

The new version should mention the new BHELP
Maybe add a definitions section - especially to cover all the acronyms
Under section 4 - what is a sensitive receptor? This section talks about using them but doesn't really say what they are... or did I miss this
Section 8 - since it is the second version are you able to list what has been funded through this process to date?

Couple of other - more out of curiosity
What is the life span of the chemical suppressant for the dust control?
For the wheel wash system - what happens to the sediment that goes into the system, is it pumped out and removed from site or kept on site?

See you next week

Thanks
Libby

Elizabeth Guest
Enviro, Waste & Recycling Specialist, Broken Hill City Council
240 Blende Street Broken Hill City Council NSW 2880 Australia
P. (08) 8080 3345
M. 0427 940 839
W. www.brokenhill.nsw.gov.au
E. Elizabeth.Guest@brokenhill.nsw.gov.au
The General Manager  
Broken Hill Operations Pty Ltd  
PO Box 5073  
Broken Hill NSW 2880  

Attention: Leonard Sharp  

Dear Mr Williamson  

Re Broken Hill Operations Pty Ltd – Rasp Mine Community Lead Management Plan  

Thank you for the opportunity to comment on the revised Community Lead Management Plan. Overall the plan adequately addresses the criteria nominated in the project approval. It is noted that the plan indicates that the actual lead dust emissions on site have been lower than initially predicted and therefore the contribution of mine operations to elevated blood leads is calculated to be less than originally anticipated.  

It is suggested that the following sections be modified to include references to the Broken Hill Environmental Lead Program (BHELP) for the life of the current program until June 2020.  

- Section 7.3 Implementation of Contingency Measures Step 2 include BHELP as an additional notification body (page 17)  
- Section 9.1.1 include BHELP as member of BHLRG (page 18)  
- Section 9.2.2 link to “Lead Smart NSW” website formally “Lead NSW” (Page 19)  
- Section 9.2.2 Health Risk Assessment copy to be provided to BHELP (Page 19)  
- Section 10.1.3 link to “Lead Smart NSW” website formally “Lead NSW” (page 20)  

In relation to the modelling used it would appear that the effects on blood lead levels is estimated by combining estimates of lead dust emissions from monitoring on the site with information on background lead levels in Broken Hill and decay rates in dust deposition, and inputting this into the Integrated Exposure Uptake Biokinetic Model (IEUBK) to assess how much extra effect on blood lead levels there would be for children of particular ages at the nominated sensitive receptors.  

In relation to this modelling it is requested that responses be provided in relation to the following questions  

1) Does the modelling take into account the effects of spikes in lead dust.  
2) Do average lead emission levels adequately estimate risk in an environment where lead emission levels can vary markedly due to operations or weather conditions.  
3) Is it possible to measure the actual amounts of lead dust in the air at the locations for which blood lead levels are calculated to ground truth the model?  

On behalf of the Broken Hill Community
If you have any further enquiries about this matter please contact me by telephoning 08 8080 3230.

Yours faithfully

[Signature]

PETER OLDSEN

Project Manager

Broken Hill Environmental Lead Project
Leonard Sharp

From: Dianne Johnson <Dianne.Johnson@health.nsw.gov.au>
Sent: Wednesday, 29 June 2016 9:51 AM
To: Leonard Sharp
Cc: Therese Jones
Subject: RE: Community Lead Management Plan

Hi Len

The only comments I have are as follows:

1.3 Reference to Western Area Health Service – this entity does not exist. Broken Hill is a community within Far West Local Health District. i.e NSW department of Health (Far West Local Health District.
3 Wording should be ‘……exposed to lead at a level that is above what is considered the average....’

Regards

Dianne Johnson

Manager Child and Family Health | Broken Hill Health Service
PO Box 457 Broken Hill NSW 2880
Tel (08) 8080 1100 | Fax (08) 8087 9825 | Mob 0429 871 147 | Dianne.Johnson@health.nsw.gov.au
www.fwhd.health.nsw.gov.au

---

From: Leonard Sharp [mailto:leonardsharp@cbhresources.com.au]
Sent: Tuesday, 28 June 2016 6:30 PM
To: Dianne Johnson; Therese Jones
Subject: FW: Community Lead Management Plan

Hello Dianne,

I’m in the process of finalising our Community Lead Management Plan (CLMP) and specifically the project approval requires consultation with the NSW Dept. of Health Western Area Health Service. Would you be able to provide any feedback with regard to the CLMP before the next Lead Reference Group meeting?

Regards, Len

Leonard Sharp
Environment / Community Liaison Officer.
Broken Hill Operations Pty Ltd
CBH Resources – Rasp Mine
T: 08 8088 9126 | M: 0414 347 125 | F: 08 8088 2932
130 Eyre Street | PO Box 5073 | BROKEN HILL NSW 2880
Hello Everyone,

As per our project approval BHOP is required to produce a Lead Management Plan in consultation with the Lead Reference Group. This document was originally put together in 2011 and is now under review.

Attached is a copy of the preliminary final which is subject to change based on the feedback received. I was hoping if I release the document now we can discuss it further at the next meeting in May. Feel free to send feedback at any point preferably via email as any feedback will need to be addressed in the final submission to Department of Environment and Planning. I will open the feedback period until Monday 16th of May so we have had all had a chance to discuss at the meeting and forward anything further.

Don’t hesitate to get in touch if you need anything clarified.

Regards, Len

Leonard Sharp
Environment / Community Liaison Officer.
Broken Hill Operations Pty Ltd
CBH Resources – Rasp Mine

T: 08 8088 9126 | M: 0414 347 125 | F: 08 8088 2932
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Good afternoon Len

Apologies for the delayed response to the management plan.

Please excuse any pedantry in the following comments: borne of years of habit!

Pg 6, 1.3: “Western Area Health Service” does not exist. It should be NSW Ministry of Health or Far West Local Health District or Western NSW LHD (also incorrect at pages 9 & 17, 18, 20) (shortened to WAHS on page 21)
Pg 7: Toxikos did your previous health risk assessments HHRA1 and HHRA2 and I see they have gone into insolvency in May 2015 but HHRA2 was updated in Sept 2015: has HHRA2 been reviewed by another HHRA consultant?
Pg 8: CBH responsibilities all relate to transmission of lead in air; what about movement off the site in water?
Pg 8: Section 3 – quote from NHRMC appears to be mis-quoted/mis-typed – doesn’t quite make sense.
Pg 9: If the most affected receptors (as per the modelling) are located in houses at R27 and R8 which appear to be on or immediately adjacent to the mine lease, does this mean CBH manages these houses and ensures no children are located here?
Pg 18: Maari Ma is also a member of the Pb Ref Group (as is the Western NSW PHN). As in point 1 above, Western Area Health Service should be either FWLHD or Wesren NSW and far West LHDs. BH University Dept of Rural Health is a separate entity again (and also a member of the Pb Ref Grp).

The document also says that various items will be able to be found on the website but I was unable to find any of them (HHRA, air monitoring information, air quality management plan, PbB monitoring). Despite a lot of googling, I was unable to find them!
If I understood more about the actual on-site operations I might have been able to make more helpful comments. Hope these are helpful.
Hello Everyone,

As per our project approval BHOP is required to produce a Lead Management Plan in consultation with the Lead Reference Group. This document was originally put together in 2011 and is now under review.

Attached is a copy of the preliminary final which is subject to change based on the feedback received. I was hoping if I release the document now we can discuss it further at the next meeting in May. Feel free to send feedback at any point preferably via email as any feedback will need to be addressed in the final submission to Department of Environment and Planning. I will open the feedback period until Monday 16th of May so we have had all had a chance to discuss at the meeting and forward anything further.

Don’t hesitate to get in touch if you need anything clarified.

Regards, Len

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