

## SECTION C: IMPACT ASSESSMENT

### CHAPTER C12: COMMUNITY HEALTH, SAFETY AND SECURITY

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## 12 COMMUNITY HEALTH, SAFETY & SECURITY

### 12.1 INTRODUCTION

This Chapter of the ESIA describes the potential impacts on community health, safety and security (CHSS) associated with the construction, operation and decommissioning phases of the Oyu Tolgoi Project. The Chapter considers direct impacts on local communities as a result of Project hazards and activities, as well as indirect impacts on community health, safety and security as a result of influx.

The Chapter also reflects the concerns raised by local communities during consultation undertaken by Oyu Tolgoi. As the Project is already in the advanced stages of construction, some impacts have already taken place for which mitigation measures have been employed. Long-term management and monitoring measures are described in *Chapter D18: Community Health, Safety and Security Management Plan*.

### 12.2 SCOPE OF THE ASSESSMENT

#### 12.2.1 Spatial Scope

The assessment focuses on Khanbogd *soum*, the *soum* in which the Project is located. Due to the overall scale of the Project, however, impacts may also be experienced in the remainder of the Project Area of Influence (namely: Manlai, Bayan-Ovoo, Dalanzadgad, and Tsogttsettii *soums*).

#### 12.2.2 Temporal Scope

The temporal scope covers the construction phase, the operational life of the mine and the decommissioning phase.

### 12.3 IMPACT ASSESSMENT

#### 12.3.1 Summary of Impacts

CHSS impacts arising from the construction, operations and decommissioning are likely to be as follows:

- Increased risk of traffic hazards and incidents associated with the use of the concentrate road from site to the Chinese border, use of access roads, the link road between Oyu Tolgoi and Khanbogd Soum Centre and the road from the airport to Oyu Tolgoi;
- Exposure to Project-related hazards associated with construction, operational and decommissioning activities;
- Increased incidence of communicable disease;
- Community health impacts related to dust that will exacerbate existing or cause new conditions (e.g. respiratory, eye, skin diseases);
- Risks associated with the presence of security personnel on site (within the Mine Licence Area) and at offsite operations and activities (within the community); and
- Personal safety and well-being impacts associated with influx.

The following sections describe each of these impacts in terms of the nature of the impact arising, the actual or proposed mitigation measures and the residual impact post-mitigation. A summary table (*Table 12.1*) is included at the end of the Chapter.

#### 12.3.2 Road Safety and Increased Traffic Incidents

##### *Description of the Impact*

The Oyu Tolgoi Project is located in a sparsely-populated *soum* of the South Gobi, Mongolia. The majority of roads within the *soum* are earth roads (i.e. without a tarmac or asphalt surface). Where road improvements have been made, these consist of rock compaction. The *aimag* and local government do not have sufficient capacity to do road upgrades, so the only known improvements on roads in the *soum* have been made by Oyu Tolgoi (the road from site to Khanbogd *soum* and the road from Khanbogd to Manlai *soum*) or Energy Resources (the coal transportation route).

During construction, materials will be delivered to the Oyu Tolgoi site from China through the Gashuun Sukhait border crossing on the Oyu Tolgoi to Gashuun Sukhait road. This is an existing road route of approximately 100 km length, through Khanbogd *soum*, and is being upgraded to a high-specification sealed road by Oyu Tolgoi, with a 2012 scheduled completion date. Current traffic levels (all vehicles including Oyu Tolgoi related traffic<sup>1</sup>) on the *Oyu Tolgoi to Gashuun Sukhait* road have been recorded at an average of 143 heavy goods vehicle (HGV) movements per day and 108 light vehicle movements per day (in 2011) (see *Chapter B11: Transport and Infrastructure*).

During operations, concentrate shipments on the *Oyu Tolgoi to Gashuun Sukhait* road will build up to approximately 80 loads per day (approximately 8 trucks per hour) by Year 4 which equates to approximately 160 truck movements per day including the empty trucks returning to Oyu Tolgoi. Projections of future traffic volumes for the *Oyu Tolgoi to Gashuun Sukhait* road (including traffic flow transiting from other roads after the completion of the road, and traffic generated following the commencement and implementation of Oyu Tolgoi and Tavan Tolgoi projects) show an estimated 19% traffic increase over the period of 2011-2015 (i.e. during the peak construction period and early into operations), which will gradually reduce to a 12% increase as the Project reaches a steady state.

Transportation will be scheduled for daytime hours whenever possible due principally to safety reasons, but with the secondary benefit of noise reduction through the night.

The customs post at the border crossing can only process inert materials, and as a result of this any hazardous materials imported from China and elsewhere needs to be brought in on the Trans-Mongolian railway and cleared in Ulaanbaatar. These other materials are trucked to Oyu Tolgoi from Ulaanbaatar, on a route which passes through Choir and the Manlai *soum* centre before reaching site. Fuels for the Project are delivered by tanker from a depot located to the east of the Mine Licence Area adjacent to the Trans-Mongolian railway.

Current levels of use on the supply transport route between Oyu Tolgoi, Khanbogd and Manlai *soums* have been recorded at an average of 178 heavy vehicle movements per day and 165 light vehicle movements per day (in 2011).<sup>2</sup> About 140 of these heavy vehicle movements and 38 of the light vehicle movements are attributed to Oyu Tolgoi; therefore the Project has already increased traffic significantly on this route. Traffic on local roads (i.e. earth roads) will also increase as a result of population influx and commercial activity associated with the Project.

Upgrading of the *Oyu Tolgoi to Gashuun Sukhait* road will have some positive effects for *soum* residents since they will have better access to market for goods and services. An improved road system may also increase access to some services for rural residents, including herder families, such as access to health facilities in the *soum* centre. A second positive effect will be the reduction in dust generation associated with the use of a single, sealed road rather than multiple unsealed tracks. This benefit will only be realised once the *Oyu Tolgoi to Gashuun Sukhait* road is surfaced. A general increase in dust can be expected during the construction phase.

The introduction of increased HGV traffic and general increasing traffic volumes presents a safety risk to both the urban and rural communities, particularly where roads pass close to herder camps or *ger* settlements. There were 9 recorded traffic incidents in 2009 and 8 in 2010 involving road users (non Oyu Tolgoi-related traffic), according to the Khanbogd *soum* Governor's Office.<sup>3</sup> Low numbers of recorded incidents are arguably due to many incidents going unreported and low population numbers. Participants in the field studies conducted for the Oyu Tolgoi Community Health, Safety and Security Impact Assessment<sup>4</sup> were of the view that traffic injuries are increasing, particularly in Khanbogd *soum*. Respondents also noted the rapid increase in motorcycle ownership and the increasing number of accidents involving motorcycles.

Traffic accidents are increasing, according to local people, due to the following reasons:

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<sup>1</sup> Oyu Tolgoi related traffic accounts for approximately 72% of all heavy vehicles and 30% of light vehicles on this road.

<sup>2</sup> *Ibid*, Traffic Census, 2011.

<sup>3</sup> Khanbogd *Soum* Governor's Office, obtained by Oyu Tolgoi, 2011.

<sup>4</sup> Community Health, Safety and Security (CHSS) Impact Assessment of the Oyu Tolgoi Project, Khukh Tenger Khujil Konsortium (KTKK), 2011 (KTKK Field studies conducted in 2010).

- Higher volumes of traffic overall;
- Driver fatigue;
- Environmental factors such as dust (which affects visibility);
- Increased alcohol consumption;
- Poor roads;
- Increased speeds on improved roads; and
- Holes left by road builders.

Herders in Khanbogd *soum* are particularly vulnerable to impacts generated by new roads and increased heavy truck traffic. Herder winter camps have been identified along a number of the roads used by the Project, as have animal crossing points most commonly used by herders to take their animals to wells and grazing areas (see *Chapter B10: Land Use*). Roads may pass between family winter camp sites and animal shelters and their water sources, causing danger for both people and livestock when crossing. Whenever herders and their animals cross the road there is a potential risk of an incident, particularly if roads are crossed at dusk or night.

Furthermore, emergency response capacity in Khanbogd and other *soums* is limited (lack of responders, transportation and equipment etc); Oyu Tolgoi has a medical emergency response team at site but there is no emergency provision for herders. Hence, response time to potential accidents is likely to be slow.<sup>5</sup>

As described above, the transport route for supplies from Ulaanbaatar passes through a number of communities, increasing traffic risks to those local residents. Any accidents along transportation supply routes could also result in the spillage of process chemicals and/or hazardous materials. Drivers have also been reported to discard garbage, tyres and oil along roads which are potentially hazardous to other road users, herders, flora and fauna.<sup>6</sup>

### **Mitigation Measures**

Oyu Tolgoi will upgrade and seal the existing *Oyu Tolgoi to Gashuun Sukhait* road with works due to be completed in 2013. This will provide a designated route for the road and minimise any off-road driving and dust. The road will be suitable for the safe operation of predicted traffic volumes and the size of trucks (in terms of capacity and load-bearing).

Oyu Tolgoi will also contribute to the maintenance of other roads that are heavily used by the Project such as the *Oyu Tolgoi to Khanbogd* road. This road is used by workers to commute between site and Khanbogd – Oyu Tolgoi plan to upgrade this road in 2012.

As described in *Chapter A6: Community Consultation*, extensive consultation has been conducted with herder households to identify safe crossing points for herders, animal crossing points and appropriate road safety features including traffic-calming measures, safety signage and speed restrictions. These safety features have now become an intrinsic part of the *Oyu Tolgoi to Gashuun Sukhait* road design.<sup>7</sup>

Where roads in Khanbogd *soum* intersect with the *Oyu Tolgoi to Gashuun Sukhait* road, road junctions will be constructed, with road markings to clearly demonstrate the right-of-way. The road junctions will allow vehicles to cross the *Oyu Tolgoi to Gashuun Sukhait* road quickly and smoothly, with clear lines of sight along the road. Road safety features are described in detail in *Chapter D11: Transport Management Plan*. Key safety features of the plan include:

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<sup>5</sup> Community Health, Safety and Security (CHSS) Impact Assessment of the Oyu Tolgoi Project, Khukh Tenger Khugjil Konsortium (KTKK), 2011 (KTKK Field studies conducted in 2010).

<sup>6</sup> Community Health, Safety and Security (CHSS) Impact Assessment of the Oyu Tolgoi Project, Khukh Tenger Khugjil Konsortium (KTKK), 2011 (KTKK Field studies conducted in 2010).

<sup>7</sup> In July and August 2010, herders were consulted to identify animal crossings and potential road sign locations along the road. Consultation was conducted by the Communities & Social Performance Department team with 12 herders closest to the *Oyu Tolgoi to Gashuun Sukhait* road and with the Javkhlant *bagh* governor. A total of 11 animal crossing points were identified and these have been mapped and included in the detailed engineering design for the road.

- Speed limits will be enforced in relation to road conditions and the location of sensitive receptors including en-route communities; and
- All Oyu Tolgoi vehicles and contractor vehicles will have a speed limit set for travel through settlements and areas where there are no posted speed limits. Speed limits will be determined on the basis of Oyu Tolgoi's consultation with local Police Departments and town/village administrators.

Oyu Tolgoi will put in place a number of traffic safety initiatives such as signage and speed limits to minimise traffic incidents involving people and animals.

In addition to the measures described above, Oyu Tolgoi has commenced a *Community Health, Safety & Security Programme* which is designed to continue work in relation to health and safety aspects through the operational phase of the Project. Phase II of the *Community Health, Safety & Security Programme*<sup>8</sup> will include traffic safety awareness and related measures for local communities. The programme will include:

- A comprehensive community safety awareness campaign working with an experienced Non-Government Organisations (NGO) such as the Global Road Safety Partnership. Herders and local soum residents in at least Khanbogd and Manlai will be provided with comprehensive traffic safety briefings;
- Oyu Tolgoi will provide capacity-building to applicable service providers to support traffic safety and emergency response, e.g. ambulance, trauma centre/care facilities etc;
- First Aid and Safety training will be provided to local residents; and
- Community Emergency Response Plans will be developed and tested by Oyu Tolgoi with residents in the vicinity of Project-related traffic. These will include emergency response related to traffic accidents and potential releases of chemicals and other hazardous materials.

### **Impact Significance**

Community safety incidents from increased roads and traffic are **likely**, and will be **long-term** but **localised**. Herders, children, other vulnerable people and livestock may not be experienced in road crossing. With the road safety measures described above, and continuous work with the community on road safety aspects, the residual significance is expected to be **moderate adverse**. In the long-term, impacts are expected to decrease to **minor adverse** or better as residents get used to increased traffic levels within the *soum* and become more familiar with road safety issues.

### **12.3.3 Exposure to Project Hazards for Communities**

#### **Description of the Impact**

The mine site and associated facilities are located in a sparsely populated area of Khanbogd *soum*. However, the Project Area is used by rural herders as traditional grazing land for livestock. Major construction activity as well as large-scale mining are both new to Khanbogd *soum*, and therefore pose potential safety hazards to people from a largely rural environment. Specific risks associated with the construction phase include:

- Accidents, fire, and nuisance noise from the airport;
- Blasting from construction activities and open-pit mining operations;
- Exposure to hazardous materials and wastes;
- Dust and gaseous chemicals from plant/site emissions;
- Physical safety issues from heavy equipment and construction features; and
- Community fire hazards from fuel, electricity, and open fire sources.

Herder households residing and grazing livestock in the vicinity of the Project facilities are at the greatest risk, as their daily herding practices will bring them into contact with people and heavy equipment. Injuries to herders and/or the loss of their animals could occur in the absence of effective security and

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<sup>8</sup> Phase I of the CHSS Programme was the CHSS Impact Assessment as described in this chapter.

safety measures. For example, livestock may fall into open trenches or similar, which has already occurred at some Oyu Tolgoi construction sites. Small ponds of water used during construction may also pose a hazard to adults, children and animals.

The operation of Project facilities is expected to present much less risk to residents, as all hazardous operational areas will be fenced and members of the public will be restricted from access to these sites. However, herders report that fencing can present a hazard to livestock, and there are reports of livestock getting trapped in the Mine Licence Area and airport area fencing.

Through the herder relocation programme and alignment of Project linear features, the risk to herders of fire, explosion and other hazards is minimal; for example, there are no herders resident within the 10km Exclusion Zone. Similarly, dust and chemical risk is minimal due to appropriate management measures and the distance of herders from the plant site. Dust risk along the *Oyu Tolgoi to Gashuun Sukhait* road remains a hazard until the upgrading of the road has been completed and this is discussed further in *Section 12.3.7*.

During decommissioning and closure, the key activities and areas that may give rise to public safety issues relate to dismantling of the processing plant and removal of equipment, and permanent features that will remain in place after closure, including open pit areas, waste rock dumps and subsidence zones associated with underground mining.

### **Mitigation Measures**

Control measures to minimise public safety risks during construction and operations will include a combination of physical/engineering controls, safe work procedures and community awareness training.

Controls for accidents and emergencies are set out in the *Emergency and Preparedness Response Plan*.

During decommissioning, all equipment and potentially hazardous materials will be removed from the site, open pits will be secured and any other potentially unsafe areas guarded against access by people or animals. CHSS impacts, including safety hazards, are expected to be minimal during decommissioning.

### **Impact Significance**

Although any community safety impacts would potentially be very significant, it is **unlikely** that serious injury or worse will occur to local people, as long as proper controls are in place at all work sites and given the Exclusion Zone around the Mine Licence Area. Any impacts on individual or community health or safety would be permanent (**long-term**) but **highly localised**. Therefore exposure to Project hazards can be categorised as **moderate adverse**. In the long-term, impacts are expected to decrease to **minor adverse** or better as residents get used to industrial activity in the community and related safety procedures and apply them in their daily lives.

## **12.3.4 Increased Incidence of Communicable Diseases**

### **Description of the Impact**

Communicable diseases of concern in Mongolia include tuberculosis, sexually transmitted infections (STIs) and brucellosis (as cited in *Chapter B13: Community Health, Safety and Security*). In Omnogovi *aimag*, the rate of reported infectious disease per 10,000 population increased from 41.3 in 2005 to 58.8 in 2009.<sup>9</sup> In Khanbogd *soum* the rate per 10,000 people was 11 in 2005, 21 in 2006, 11 again in 2007, 20 in 2008 and 22 in 2009.

The peak total workforce for the Oyu Tolgoi Project during construction (including all Oyu Tolgoi employees and contractors) was approximately 14,800 in December 2011, making the project the largest employer in Mongolia at that time., Almost 10,000 workers, equalling 67% of the total workforce were Mongolian citizens. <sup>10</sup> During operations the workforce will be between 3,000 to 4,000 people, of which over 75% will be Mongolian. An influx of workers, as well as other in-migrants as a result of the Project,

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<sup>9</sup> Oyu Tolgoi Community Health Safety and Security Impact Assessment 2011, KTKK, 2011

<sup>10</sup> Oyu Tolgoi Workforce Database 19<sup>th</sup> December 2011

is anticipated to increase the population of Khanbogd *soum* from 3,500 people in 2010 to 20,000 by 2020<sup>11</sup> (see also *Chapter C8: Population and Influx*).

The arrival of several thousand workers and other in-migrants to the Project Area is likely to increase the risk of transmission of STIs and other communicable diseases. STIs are the most prevalent infectious disease in Mongolia (40%). While there are no reported cases of HIV/AIDS in Omnogovi *aimag*, cases in Mongolia are reportedly rising rapidly, and although testing is available in the region it is reportedly not commonly undertaken.<sup>12</sup> If HIV/AIDS increases in the region, there is a high probability that the risk of tuberculosis will increase, as HIV/AIDS and tuberculosis are common co-infections. As described in *Chapter B13: Community Health, Safety and Security*, reported cases of syphilis, gonorrhoea, and shigella have all increased over the past five years in the *aimag*. The local health system, underfunded and unable to provide adequate services even before the influx, will face a major increase in demand as a result of the influx.<sup>13</sup>

Miners, truck drivers and the commercial sex workers that the mining and transport industries attract, are also known high-risk groups for the transmission of STIs. The future improved transport corridor linking Tavan Tolgoi, Oyu Tolgoi and the Chinese border will be a focus for informal businesses and sex workers, thus a potential conduit for the transmission of STIs and HIV/AIDS across the region.<sup>14</sup> During consultation for the CHSSIA, local communities also reported that there was an increasing level of commercial sex and higher rates of STIs. In Khanbogd *soum* in 2009 there were three cases of STIs recorded, and another three cases in 2010.<sup>15</sup> The key informant interviews and focus group discussions attributed these increases to a “non-family oriented environment” with workers living in camps and working far from their families.<sup>16</sup> Reported case numbers are very low (to date) however this may be partly due to the lack of testing as described above and/or low population numbers.

Close living conditions, and large numbers of workers and in-migrants sharing sanitation and other facilities, as well as potentially poor hygiene practices, could also increase the risk of respiratory disease, as well as food and water-borne diseases (e.g. cholera, typhoid). If unplanned settlement is allowed to occur in Khanbogd or Dalanzadgad, this will significantly increase the risk of these diseases increasing among the local population.

### **Mitigation Measures**

Oyu Tolgoi is aware of the risk of increase in communicable diseases in the *soum* and *aimag*, and will address this risk through a number of mechanisms. An important aspect of minimising the spread of communicable diseases within the community is worker health screening, particularly as many workers are local people

Oyu Tolgoi employs strict control measures of its own personnel through the Oyu Tolgoi Project *Camp Policy and Code of Behaviour* (2009) which includes sign-in/sign-out policies and guidance on visits to the *soum* centre. The observance of the Code of Conduct is ensured through regular refresher training, control by responsible supervisors and application of the prescribed disciplinary measures in case of breaches, as well as by investigating the information supplied through the Project’s *Grievance Procedure* included in *Chapter D14: Stakeholder Engagement Plan*. The *Camp Policy and Code of Behaviour* is included in *Annex B* of *Chapter D17: Labour Management Plan*.

### **Impact Significance**

Some increases in communicable diseases are **likely**, and would be **long-term** but **localised**. Communicable disease impacts are classified as **moderate adverse** since any illness of local community members would be significant. In the long-term, impacts are expected to decrease to **minor adverse** or

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<sup>11</sup> Based on Asian Development Bank estimates made in 2009, modified by Oyu Tolgoi for Khanbogd in 2010 based on observed Tsogttsetsii influx and updated census data from 2010.

<sup>12</sup> Community Health, Safety and Security (CHSS) Impact Assessment of the Oyu Tolgoi Project, Khukh Tenger Khugjil Konsortium (KTKK), 2011.

<sup>13</sup> *Ibid*, CHSS Impact Assessment, KTKK, 2011.

<sup>14</sup> Oyu Tolgoi Influx Risk Assessment, Barclay & Associates, October 2007.

<sup>15</sup> *Aimag* Health Department 2011 *Health Indicators*.

<sup>16</sup> *Ibid*, CHSS Impact Assessment, KTKK, 2011.

better as residents benefit from improved local and regional health care capacity and increased public awareness about communicable and sexually transmitted diseases.

### 12.3.5 Presence of Security Personnel

#### **Description of the Impact**

Security personnel to patrol/manage construction areas, as well as the mine site, will be essential to ensure the safety and security of employees, the public and Project equipment and supplies. The Oyu Tolgoi site currently subcontracts security services to a Mongolian security company. The hiring point for the security guards is Ulaanbaatar. The guards provide security for the site as well as the various satellite camps to the north and south of the main project area. A second Mongolian security company, provides contract services and security advice for building and expatriate safety specifically for operations in Ulaanbaatar. Both security companies are certified by the Mongolian government. All guards are unarmed apart from those guarding the explosives area.

The presence of security personnel in the local area could result in conflict between local residents and security personnel. Oyu Tolgoi's policy is not to prohibit herders and livestock from any land within temporary work areas except where construction works are ongoing or other hazards exist and/or the worksite is within the Exclusion Zone. Permanent fencing has been constructed around the Mine Licence Area; all sites will have security personnel. Some local herders and other residents have expressed frustration at being prevented access to prohibited areas. Some local herders, for example, have reported that they are unhappy when security personnel discourage animals from being near the fence line or entering areas where construction activities are occurring, even though they have received compensation for loss of access.

Other risks to community safety may also occur if there is excessive use of force by Project security, especially if rules in relation to Project boundaries, infrastructure (e.g. crossing the Project fence line etc) are not clear or respected. The use of security personnel can sometimes lead to abuses against members of the public under the appearance of Project security requirements.

#### **Mitigation Measures**

Oyu Tolgoi is committed to ensuring that people and property are safeguarded in compliance with international good practice, including the Voluntary Principles on Security and Human Rights<sup>17</sup> the IFC Performance Standard 4 and EBRD Performance Requirement 4 on Community Health, Safety & Security. Specific measures to achieve this include:

- The security company providing services to the Project is a Mongolian security firm. All guards are Mongolian and are not linked to the military and are not armed, apart from those guarding the explosives area. The agreement between Oyu Tolgoi and its security firm requires that security guards will be well trained and that none will have a criminal record;
- Oyu Tolgoi and contractors will require a full security assessment prior to engagement of any security providers for the Project. Oyu Tolgoi will audit security contractors to ensure that they are operating in accordance with contractual and other requirements;
- Oyu Tolgoi will provide Human Rights induction training to its own employees and contractors and to the security contract, based on the *Universal Declaration of Human Rights*. The Communities and Social Performance Department at Oyu Tolgoi, in cooperation with the National Committee on Human Rights<sup>18</sup>, has initiated human rights training for its employees and contractors; and
- Oyu Tolgoi will involve external stakeholders (i.e. police, *soum/aimag* authorities) in any off-site security incidents and ensure that appropriate incident response procedures are implemented (see *Chapter D20 Emergency Preparedness and Response Plan*).

These measures are described in further detail in *Chapter D18 Community Health, Safety and Security Management Plan*. The community *Grievance Procedure* is being used to monitor if any issues related to

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<sup>17</sup> For more information consult [www.voluntaryprinciples.org](http://www.voluntaryprinciples.org)

<sup>18</sup> The National Committee on Human Rights is a state institution that aims to foster a human rights culture in Mongolia.

security personnel issues arise during construction and operations. The procedure categorises different types of complaints, including a category for any grievances related to security arrangements. *Chapter D14: Stakeholder Engagement Plan* includes a copy of this procedure and different categories of complaints recorded. This procedure is being implemented with local residents. The Communities team shall be involved in any issues related to Project security and local communities.

### **Impact Significance**

Some herders have reported that security personnel have scared away animals from the site perimeter or have prohibited local people from entering a construction area, so the impact is **certain**, and **long-term**, however, impacts are expected to be **highly localised**. As long as appropriate assessment, control and monitoring of security personnel and arrangements are in place, any impacts are expected to be **minor adverse**. In the long-term, impacts are expected to decrease to negligible as local residents become used to the presence of the Project and security requirements lessen as the mine proceeds to a steady state of production.

## **12.3.6 Reduced Personal Safety and Well-Being**

### **Description of the Impact**

An influx of workers and other people into local communities, as well as changes to the traditional land-based way of life, could result in a number of potential personal safety and well-being impacts, including:

- Increased crime;
- Increased alcohol related illnesses and incidents;
- Pressure on police and public services;
- Reduction in well-being of herders; and
- Human trafficking.

Personal safety issues have been identified as a concern by local communities during consultation, and these include threats to personal security and property as a result of unruly or disruptive behaviour by workers or other individuals new to the local area.<sup>19</sup> Crime in Khanbogd and neighbouring *soums* has previously been very low. The total number of crimes recorded in the *soum* in 2009 and 2010, were 41 and 38 respectively – however, the perception is that this situation is changing.<sup>20</sup> Herders are reported to feel particularly vulnerable to theft and other property and personal crimes; theft was never an issue in the past, and herders rarely locked anything. Now there is increased contact with strangers - and young motorbike riders for example, can ride right up to the *ger*.<sup>21</sup> Impacts from increased crime may include loss of property and livelihood, assault (physical/sexual) and perceived loss of personal freedom. The community perception is that workers and contractors may be willing to commit petty crimes, such as theft, following the consumption of alcohol.

Diseases and injury related to changes in lifestyle (trauma, violence-related, traffic accidents and alcohol-related disease) have shown a marked increase in Mongolia in the past five years.<sup>22</sup> In 2007 in Omnogovi *aimag* alone, 3,076 people were treated in alcohol rehabilitation centres. This was a 16% increase compared to the previous year. Alcohol has become such a social problem in the *aimag* (as elsewhere in Mongolia) that every Wednesday is designated an “alcohol free” day when there is a ban on buying or selling alcohol anywhere. Health staff in *soums* in the Project Area of Influence also reported to the CHSSIA field study team that they are seeing more acute alcohol intoxication and alcohol related

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<sup>19</sup> Oyu Tolgoi Project Socio-Economic Impact Assessment, Final Report, September 2009. Centre for Policy Research, Population Training and Research Centre, School of Economic Studies, Mongolia National University. p67.

<sup>20</sup> Khanbogd *soum* Governor's Office, obtained by Oyu Tolgoi in 2011, cited in *B15: Community Health, Safety & Security (baseline conditions)*.

<sup>21</sup> Community Health, Safety and Security (CHSS) Impact Assessment of the Oyu Tolgoi Project, Khukh Tenger Khugjil Konsortium (KTKK), 2011 (specifically KTKK Field studies conducted in 2010).

<sup>22</sup> World Health Organisation, Country Cooperation Strategy, Mongolia 2006, cited in *B15: Community Health, Safety & Security (baseline conditions)*.

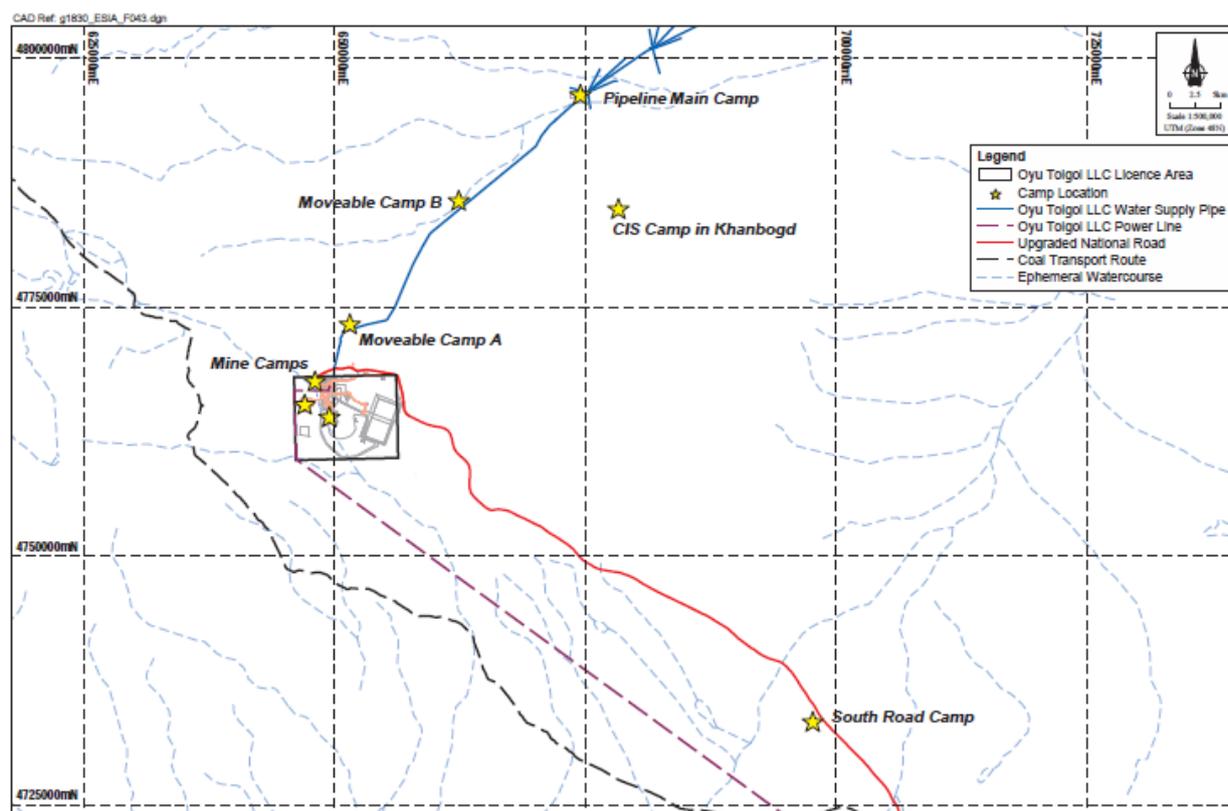
injuries.<sup>23</sup> Increased crime and anti-social behaviour would stretch the limited capacity of police units at Khanbogd, Tsogttsetsii, and Bayan-Ovoo *soums*.

There is also a potential risk that Oyu Tolgoi and other mining activities in the region could contribute to increased human trafficking, due to the growing presence of outsiders, extensive transport movements and the prospective extended opening of the China border. The CHSSIA conducted for Oyu Tolgoi in 2010, concluded that potential human trafficking risks currently remain low, although new problems may emerge as the local population grows and mining activities increase in the region (related both to Oyu Tolgoi and other projects).

Local project workers may also experience threats to safety and well-being associated with work schedules and potential workforce conflicts. Typically, the working parent (usually male) goes away for 3 weeks (working a 3 weeks on 1 week off roster), and the other parent may have other daily work, resulting in both parents being absent. Many pre-school and school age children have no or limited child care because of their parents' work commitments. There are no suitable childcare facilities available, and kindergarten facilities are over-capacity (see Chapter B13: Community Health, Safety and Security). Family separation, limited access to money, and increasing use of alcohol are reported to be leading to stress and relationship breakups.<sup>24</sup>

During 2010 a number of security incidents arose relating to the construction workforce, and in particular in relation to the CIS<sup>25</sup> camp. The CIS camp is located next to Khanbogd *soum* centre and is one of a number of construction camps operated by Oyu Tolgoi. The location of the camps relative to the Oyu Tolgoi mine is illustrated in Figure 12.1.

**Figure 12.1: Location of Construction Camps**



<sup>23</sup> Community Health, Safety and Security (CHSS) Impact Assessment of the Oyu Tolgoi Project, Khukh Tenger Khugjil Konsortium (KTKK), 2011 (specifically KTKK Field studies conducted in 2010).

<sup>24</sup> *Ibid*, CHSS Impact Assessment, KTKK, 2011.

<sup>25</sup> CIS stands for Catering International and Services (a French based multinational company).

These included conflicts between construction workers of different nationalities, conflicts between people of the same national group, as well as reports of harassment of local female Mongolian workers.

The Rio Tinto Global Security and Communities functions conducted a *Workforce Conflict Assessment of the Oyu Tolgoi Project in November 2010*<sup>26</sup>, including the potential impact such conflicts could have on both the Project and the community. The assessment team met with a broad range of internal and external stakeholders and identified risks and potential conflicts. In order to prevent these conflicts from happening and escalating into violence, the assessment team presented a series of recommendations. These workforce issues are of significant concern to Oyu Tolgoi. Following the Workforce Conflict Assessment, Oyu Tolgoi finalised its *Site Security Response Plan: Workforce Violence* in January 2011<sup>27</sup>. The objective of this plan is to protect the people, reputation and assets of Oyu Tolgoi.

A series of follow-up meetings were also held in 2011<sup>28</sup> have included a *Community Open Day* where grievances were raised at a meeting with Oyu Tolgoi staff and the Khanbogd *soum* Governor, and a meeting between community representatives and CIS management which was held to clarify concerns regarding CIS operations and to provide updated information on grievances. Specific grievances included:

- Violation of Labour Code:
  - Long working hours;
  - No extra pay for night shifts, public holidays or sick days;
  - Medical leave and payment for absenteeism;
  - Unequal treatment of staff;
  - Family bias in the hiring process; and
  - Low salary level for staff.
- Poor living conditions in Khanbogd camp: no food;
- Work place harassment;
- Limited Khanbogd people recruited for professional positions despite their higher education status;
- Poor quality uniforms;
- Unequal treatment of foreign and local staff;
- Inadequate treatment of CIS employees by kitchen staff;
- Lack of facilities for housekeeping staff to have short break;
- Many school and kindergarten students are children of CIS employees, they need parental attention and care; and
- Possible activities – small community projects – with Khanbogd educational institutions.

Since the late 2010 assessment and further 2011 consultation, Oyu Tolgoi has undertaken a range of measures together with CIS to improve the self-sufficiency of the camp and to reduce the risk of conflicts within the workforce. These are summarised below:

- Wastewater from the camp is now being taken daily to the North Camp for treatment in their sewage treatment plant (STP);
- CIS management conducted a review of salaries including analysis of wages at other companies and discovered that parity on wages was essential. With almost 1,000 staff CIS is one of the

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<sup>26</sup> Oyu Tolgoi Conflict Assessment. Rio Tinto Oyu Tolgoi Internal document. December 2010.

<sup>27</sup> Oyu Tolgoi Security Response Plan January 2011.

<sup>28</sup> The dates of these meetings and other related consultations are summarised in *Chapter A6: Community Consultation*.

largest employers in the Omnogovi region as well as one of the largest employers from the local community. Key measures taken include:

- A full salary review of all CIS staff was undertaken and completed during April 2011 as assured during the meetings;
- A complete overhaul of the CIS salary system was introduced to the Union representatives in the second week of May 2011;
- All staff are being incorporated into a salary structure that guaranteed an incremental rise dependant on length of service as well as performance; and
- The minimum salary for staff was increased by a significant percentage.
- To further ensure a fair introduction of the new structure all staff disciplinary records were cleared so all staff started equally;
- Community engagement has been improved through the nomination of community liaison officers from the local residents employed at CIS, English language training, small business development (i.e. tailoring facility) and regular community meetings;
- The needs of the community and staff have been communicated to the highest levels of CIS including the Managing Director and CEO of the company to highlight those actions we are seeking to undertake;
- Housekeepers at the Oyu Tolgoi site have been moved from the Consolidated Contractors Camp as a result of several complaints, to the Construction Camp for their well-being and safety. CIS is also working with Oyu Tolgoi to arrange suitable rest areas for staff where required;
- It was discovered that some staff issues were overlooked or not brought to the attention of senior management quickly enough to assist with situations arising that affect the wellbeing of staff. As a result, CIS has increased the Human Resources department on site, and accommodation permitting shall continue to do so to ensure quick and effective response times to staff needs and concerns. A clear grievance procedure where staff now have clear lines for communication with guaranteed confidentiality about any issues they may have with Oyu Tolgoi's staff or CIS personnel is in place;
- CIS is implementing English language training for employees. Other training programmes in areas of pest control, food hygiene and human resources are also being implemented;
- In terms of recreational facilities CIS has already provided proper kettles for all our ger accommodation as well as introduced volley ball and improved basketball areas. We are looking to improve the ablution blocks and rectify the problems with the quantity of hot water available throughout the day. We recently recruited (June) an experienced Maintenance Manager from Australia and a priority for him is to investigate the faults and submit a plan for rectifying them;
- CIS provided proper cooking equipment for Khanbogd school and provided training in equipment use for the school cook; and
- Oyu Tolgoi site administration is conducting an assessment of CIS uniforms as there have been mixed reports about uniform quality during 2011 staff negotiations. Any recommendations for improvement will be implemented by early 2012.

### **Mitigation Measures**

Mitigation measures include:

- Oyu Tolgoi employs strict control measures of its own personnel through the Oyu Tolgoi Project *Camp Policy and Code of Behaviour* (2009) which includes sign-in/sign-out policies and guidance on visits to the *soum* centre. The observance of the *Code of Conduct* is ensured through regular refresher training, control by responsible supervisors and application of the prescribed disciplinary measures in case of breaches, as well as by investigating the information supplied through the Project's *Grievance Procedure*;
- Construction camps are sited in areas away from herder winter shelters and access to and from all camps will be controlled. Employees require special permission to leave the site after 6pm or during their days off;

- All Project workers work long hours (up to 10-12 hours/day), some on night shifts, and they have days off in accordance with their employment contract. The supply of recreational facilities (e.g. a gym, sports fields, and entertainment facilities) are being used to encourage workers to stay on site as well as promote a safe, healthy and inviting worker environment at the construction camps and for long-term accommodation arrangements;
- Oyu Tolgoi has implemented a Healthy Workplace Programme to promote healthy approaches to alcohol consumption and other personal behaviour that can contribute to poor social conduct outside of the work environment. There is a bar selling alcohol at Oyu Tolgoi although workers, and only workers, are allowed to drink at site. Alcohol consumption, is tightly controlled and no hard liquor is available. No take-out sales of alcohol are permitted and the mess closes at 9pm. No intoxication at all is tolerated at the workplace. The bar on site is closed on Wednesdays in accordance with aimag regulations;
- Oyu Tolgoi human resources policies are family-orientated and suited to local employees. Oyu Tolgoi has already modified the roster system for local workers in accordance with requests raised, so that they can spend more time with their families;
- A cultural integration programme for Mongolian and non-Mongolian workers will be implemented that ensures all workers and visitors are fully briefed and informed of their obligations towards local communities. Oyu Tolgoi will require contractors to implement these requirements and will monitor workforce behaviour in the community;
- To prevent sexual harassment of female cleaning staff, staff will be accompanied by a security guard when the risk is considered to be high, cleaning will take place when facilities are empty if possible, and information will be provided about a zero tolerance approach including possible termination of employment for those found to be guilty of harassment;
- The *Grievance Procedure* is being used to monitor issues of personal safety within the community that arise as a result of Project workers.<sup>29</sup> All measures are underpinned by ongoing consultation with local residents and *soum* and *aimag* authorities. Oyu Tolgoi will respond to any community concerns related to the behaviour of members of its workforce, including key suppliers. Oyu Tolgoi will support local authorities to ensure that new settlement areas, particularly in Khanbogd *soum*, have provisions for safe housing, security, adequate lighting, and other applicable safety measures;
- The Project is promoting culturally-acceptable behaviour by all workers;
- In order to prevent possible tensions between workers and the local community, Oyu Tolgoi aims to reduce non-local worker/community interaction. The main camps are located away from the town and leisure facilities are provided to enable workers to remain on site during their free time. Interaction is more common for the CIS staff living nearer to Khanbogd. The CIS camp is approximately 500 m from Khanbogd *soum* centre. Workers, many of whom are Khanbogd residents, can walk into Khanbogd during their free time, however there is security on the camp gate to prevent any unauthorised entry into the camp, and workers are still bound by the *Code of Conduct*, and
- Controls for accidents and emergencies are set out in the *Emergency and Preparedness Response Plan*.

Further information on workforce management is included in *D17: Labour Management Plan*.

Oyu Tolgoi will partner with local health services to support/facilitate a range of campaigns including responsible alcohol consumption, mental health and suicide prevention programmes, nutrition, physical activity and human trafficking. Attention will be given to ensuring that herders are included in campaigns to promote health and well-being in Khanbogd *soum* as well as other vulnerable groups, including women and youth.

Estimates of Project-related in-migration suggest that additional medical personnel will be required particularly in Khanbogd and Dalanzadgad *soums* during the construction phase. Oyu Tolgoi is in discussion with local government about how best to meet these increased needs and has provided a

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<sup>29</sup> The Grievance Procedure is appended to *Chapter D14: Stakeholder Engagement Plan*.

range of local medical initiatives including the establishment of a medical scholarship programme that has led to an additional fourteen trained doctors coming to work in Omnogovi *aimag*, the establishment of a dental surgery in Khanbogd, the establishment of Health Consultancy Centres across the *aimag* and the planned establishment of a trauma centre at Javkhlant *bagh* centre.<sup>24</sup> Increases in population and alteration in the population age profile will also create an increased demand for acute medical services provided by hospitals, together with emergency aid that may be required in case of major incidents.

Oyu Tolgoi will also monitor issues associated with human trafficking through its local government and non-governmental and community-based partners. If any issues begin to arise related to influx or other indirect consequences of the Project, Oyu Tolgoi will identify specific actions that can be contributed by the Company to minimise risks of both internal (national) and cross-border human trafficking.

### **Impact Significance**

Some increases in crime and personal safety risks are **likely** due to the expected population influx. While many increases may not be easily attributable to Oyu Tolgoi, any impacts would be **medium-term** and **localised**. As long as workforce management and other measures are implemented, personal safety and well-being impacts are expected to be **moderate adverse**. In the long-term, impacts are expected to decrease to **minor adverse** or better as regional social services improve, particularly policing, and residents get used to the new way of life in the region.

### **12.3.7 Community Health Construction and Operations Impacts: Dust**

#### **Description of the Impact**

The most prevalent illnesses in Khanbogd *soum* in 2007 were respiratory diseases, digestive system diseases, genital-urinary diseases and circulatory system diseases.<sup>30</sup> Herders are particularly affected by dust from unpaved roads and explained during consultation with Oyu Tolgoi that they needed to move livestock in response to road building and dust. The lungs of slaughtered animals, as reported by key informants to the field study team, were found to be in poor condition.<sup>31</sup> As respiratory disease is already high within the *soum*, additional construction works and traffic in Khanbogd could exacerbate existing respiratory illnesses or create new conditions (e.g. skin, eye irritation etc).

Existing emission sources near to the Mine Licence Area are limited to road vehicles and some construction generated dust. A 10km residential exclusion zone for herder winter shelters is in place around the Mine Licence Area, but community health impacts from dust due to mine site activities may still arise as the exclusion zone may be used for summer camps (see also *C10: Land Use & Displacement Impacts*).

Dust from construction activities sites including the Mine Licence Area, airport sites and Gunii Hooloi pipeline will be temporary and are being managed through watering and other engineering controls on site. Herders are being notified of construction activities in new areas by the Communities & Social Performance Department team, so they can avoid dust and noise impacts wherever possible while construction activities are being conducted.

The construction and operation of Oyu Tolgoi roads in addition to other roads within the south Gobi is a potential source of cumulative dust and to a much lesser degree vehicle emission impacts. In Khanbogd *soum*, the coal transportation route was a source of considerable dust until it was upgraded in 2011, and resulted in complaints from herders. This route is now a paved/sealed road. The use of unpaved multiple tracks (by other users) is also a source of dust in Khanbogd. Construction and use of the unsealed Oyu Tolgoi to Gashuun Sukhait road prior to surfacing has contributed to the existing dust levels in Khanbogd, however this road is being upgraded in 2011/12 and any additional dust impacts will be temporary. Herders along the Oyu Tolgoi road to the border have been extensively consulted about dust and other road impacts and are being supported to be able to maintain their livelihoods and avoid dust and noise impacts during construction.

Use and operation of the unsealed power line service road and the Gunii Hooloi pipeline service road that will be built as part of the Project will be a source of minor ongoing dust generation, but as vehicles will be limited to 1-2 per day, additional dust levels are expected to be low.

<sup>30</sup> *Ibid*, CHSS Impact Assessment, KTKK, 2011.

<sup>31</sup> *Ibid*, CHSS Impact Assessment, KTKK, 2011.

The existing road to UB via Mandalgovi, which will be used for logistics and supplies, will also be a source of dust during construction and operations, although this impact will be mitigated through good traffic management measures. The volume of non-Project traffic on this route is limited and therefore there will be a limited cumulative impact which will be most pronounced through communities such as Manlai. Enforcing appropriate speed limits through these communities and on the route will serve to mitigate this impact.

#### **Mitigation Measures**

Oyu Tolgoi will upgrade and seal the *Oyu Tolgoi to Gashuun Sukhait* road. This will provide a designated route for the road and minimise any off-road driving, hence dust emissions. The road will be suitable for the safe operation of predicted traffic volumes and the size of trucks. Oyu Tolgoi will also contribute to the maintenance of other roads that are heavily used by the Project such as the Oyu Tolgoi to Khanbogd road. Specific dust control mitigation measures are outlined in *Chapter D2: Atmospheric Emissions Management Plan*.

#### **Impact Significance**

Increases in dust levels are **certain** due to the construction of the *Oyu Tolgoi to Gashuun Sukhait* road, construction of the water pipeline, soil stripping and other land clearance activities. These impacts are likely to be **short-term** and **localised**. Due to the existing high incidence of respiratory disease, the impact is expected to be **moderate adverse** until the *Oyu Tolgoi to Gashuun Sukhait* road is sealed. In the long-term, impacts are expected to decrease to **minor adverse** or better as borrow pits are rehabilitated, the *Oyu Tolgoi to Gashuun Sukhait* road is sealed and construction activities are completed.

### **12.3.8 Community Health Construction and Operations Impacts: Noise**

#### **Description of the Impact**

Noise from construction of the site and roads, as well as blasting activities will have an impact on herders and wildlife in the area.

#### **Mitigation Measures**

Oyu Tolgoi will work to reduce the impact of construction and operation noise on the local population. A range of noise suppression techniques will be used to reduce noise levels. Local people will be warned well in advance and times for blasting will be selected when the community is least sensitive to blasting impacts (e.g. day time hours). Full details of mitigations measures are set out in *D18: Community Health, Safety and Security Management Plan*.

#### **Impact Significance**

Increases in noise levels are certain due to the mine construction and blasting activities. These impacts are likely to be long-term but localised. Due to the very small population within 35k m of the mine, the impact is expected to be minor adverse.

### **12.3.9 Community Health Construction and Operations Impacts: Water access and quality**

#### **Description of the Impact**

There are many possible impacts on water access and quality which may affect the community. These include:

- De-watering of the Gunii Hooloi aquifer;
- De-watering of herder wells;
- Early drying up of springs; and
- Contamination of groundwater from the Tailings Storage Facility and Waste Rock Dump or spills and other accidents.

There is a full discussion of impacts in *Chapter C5 Water Resources*.

#### **Mitigation Measures**

Oyu Tolgoi will work to reduce the impact of any reduction on water quality or access for the local population through initial design as well as the Water Resources Management Plan and the Hazardous

Materials Management Plan. The Participatory Monitoring Programme is the programme which Oyu Tolgoi will implement with local potentially affected herders to ensure that monitoring of herder well water levels and quality is undertaken in a transparent manner that builds and maintains trust between the Project and local herders. If issues are identified, Oyu Tolgoi will work with local potentially affected herders to develop, implement and monitor a mutually-acceptable solution (such as the provision of an alternative water supply through the construction of a new water borehole). Such mitigation measures are simple and achievable.

Full details of mitigations measures are set out in *C5: Water Resources*.

### **Impact Significance**

Changes in water supply are complex and depend upon each of the water bodies in question. Impacts range from **certain** to **unlikely**, from **short-term** to **permanent**. All are **localised**. The significance ranges from **negligible** to **moderate adverse**. Changes in water quality are **unlikely, localised, short-term** with a **minor adverse** significance. For full detail see *Chapter C5: Water Resources Impacts*.

## **12.4 SUMMARY OF RESIDUAL IMPACTS**

The residual community health, safety and security impacts of the Oyu Tolgoi Project can be described as follows:

- Road safety hazards and the potential increases in traffic incidents to nearby neighbours and other road users in Khanbogd *soum*, particularly on the *Oyu Tolgoi to Gashuun Sukhait* Road. Road safety will be managed through a range of driver training and public awareness campaign, as outlined in the *D11: Transport Management Plan*;
- Project hazards to nearby herders during construction activities at Project facilities, including the Airport Sites, Gunii Hooloi Water Pipeline and Borefield and Transmission Line, although these hazards will be temporary and restricted to the construction phase;
- Some increase in the incidence of communicable diseases is possible as a result of the large construction workforce, although workers are predominantly housed in camps with strict controls on interaction with local communities;
- Personal safety and well-being impacts for local residents as a result of an influx of people could occur, such as increased crime; increased alcohol related illnesses and incidents etc, but are expected to be managed by capacity building for local service providers, awareness training for local communities and workforce rules and controls; and
- Dust generated during construction activities could cause some short-term impacts to nearby neighbours, and exacerbate existing respiratory or other conditions. In the long-term dust impacts from the Project will be minimised by the use of a sealed road for the transport of concentrate and the maintenance of appropriate separation distances between Project activities and local communities.

Other community health, safety and security aspects will be managed and monitored, through the implementation of the long-term Community Health, Safety & Security Programme (CHSSP) which includes public awareness campaigns, social infrastructure supports and capacity-building for applicable service providers.

Oyu Tolgoi has also developed *Chapter D16: Influx Management Plan* and a range of supporting strategies and programmes to mitigate the effects of a large construction workforce on local community health and safety, and to limit other induced migration.

Dust management represents a trade-off for the Project as effective dust management requires large quantities of water which is a scarce and valuable commodity within the Project Area. As a result, the Project has sought to balance the need to mitigate the impacts of dust emissions (through the imposition of a 10km Residential Exclusion Zone around the Project) with the need to conserve water resources.

*Table 12.1* below provides a summary of likely impacts on Community Health, Safety and Security.

**Table 12.1: Summary of Community Health, Safety & Security Impacts**

Impact	(1) Receptor	(2) Phase	(3) Impact Categorisation	(4) Potential Significance	Design, Enhancement or Mitigation Measures	Management Plans, Policies and Procedures	Residual Significance
Increased traffic incidents	Herders; local and regional residents	Construction Operations	<b>Duration</b> Long-Term <b>Extent</b> Localised <b>Likelihood</b> Likely	Major adverse	<ul style="list-style-type: none"> <li>■ Upgrade and seal <i>Oyu Tolgoi to Gashuun Sukhait</i> road. Design road for appropriate truck size and traffic volume.</li> <li>■ Maintenance of road quality and related safety signage on roads heavily used by Project.</li> <li>■ Satellite tracking and speed monitoring devices wherever possible to enforce driver compliance.</li> <li>■ Driver safety training including training in procedures for driving when animal observed on or near road.</li> <li>■ Driver training will include clear procedures for driving when animals (herd or wild) are observed close to or on the road.</li> <li>■ Drivers' training will address community risks and speed limits are enforced.</li> <li>■ All drivers must abide with limitations for trip duration and enforced rest periods. Including:               <ul style="list-style-type: none"> <li>○ A maximum daily driving limit of 9 hours (up to 10 hours 2 times per week);</li> <li>○ Maximum driving hours of 56 hours per week (and less than 90 hours for 2 weeks); and</li> <li>○ A rest break every 4.5 hours.</li> </ul> </li> <li>■ The Project will implement a strict zero alcohol policy for all drivers.</li> <li>■ Oyu Tolgoi will ensure that all drivers are trained in the emergency response procedures.</li> <li>■ Transportation will be scheduled for daytime hours whenever possible. Animal crossings will be identified and signage erected to alert drivers. Road junctions constructed with clear markings of right of way.</li> <li>■ Procedures for safe transport of hazardous materials, including emergency response requirements.</li> </ul>	Transport Management Plan Community Health, Safety & Security Plan Community Health, Safety & Security Programme Stakeholder Engagement Plan	Moderate adverse

Impact	(1) Receptor	(2) Phase	(3) Impact Categorisation	(4) Potential Significance	Design, Enhancement or Mitigation Measures	Management Plans, Policies and Procedures	Residual Significance
					<ul style="list-style-type: none"> <li>Transport contractors will have emergency response plans; Oyu Tolgoi will conduct regular safety audits of transport contractors.</li> <li>Comprehensive Traffic Awareness Programme in local communities and along transport supply route.</li> <li>Capacity building and investment in emergency/medical service providers, e.g. ambulance, trauma centre etc.</li> </ul>		
Exposure to Project hazards for communities	Herders; other local residents	Construction Operations Mine Closure	<b>Duration</b> Long-Term <b>Extent</b> Highly Localised <b>Likelihood</b> Likely	Moderate adverse	<ul style="list-style-type: none"> <li>All activities conducted in agreed areas only and construction sites clearly demarcated and secured.</li> <li>Construction camps sited in areas away from rural herders' winter shelters and access to and from camps controlled.</li> <li>Access routes/crossing points through construction areas identified, safe and clearly signposted.</li> <li>Chain link fence around operational sites, and security personnel to control ingress/egress where feasible.</li> <li>Community relations staff will provide regular updates to herders and other residents about potential Project hazards and changing activities.</li> <li>Prior notice given to all nearby neighbours for all construction works in an area.</li> <li>Equipment and hazardous materials will be removed as part of mine closure, and open pits/other hazards secured against public access.</li> </ul>	Community Health, Safety & Security Plan Community Health, Safety & Security Programme. Stakeholder Engagement Plan Mine Closure & Rehabilitation Framework Emergency Preparedness and Response Plan	Minor adverse
Increased incidence of communicable diseases	Local and regional residents	Construction Operations	<b>Duration</b> Long-Term <b>Extent</b> Localised <b>Likelihood</b> Likely	Moderate adverse	<ul style="list-style-type: none"> <li>Most workers will live in camps during construction and interaction with the community controlled. No non-employees in camps.</li> <li>Implement worker Code of Conduct to include community interactions, rules on drug use, prostitution, etc.</li> <li>Comprehensive worker health screening programme and regular health checks.</li> <li>Comprehensive STI/HIV awareness programme for workers and local communities.</li> </ul>	Community Health, Safety & Security Plan Community Health, Safety & Security Programme Worker Health & Safety Management Plan	Minor adverse

Impact	(1) Receptor	(2) Phase	(3) Impact Categorisation	(4) Potential Significance	Design, Enhancement or Mitigation Measures	Management Plans, Policies and Procedures	Residual Significance
					<ul style="list-style-type: none"> <li>Contribute to national control programmes for communicable diseases in Project Area of Influence.</li> <li>Investments in medical services, health facilities, equipment, and training of medical staff.</li> </ul>		
Risks associated with presence of security personnel	Herders; other local residents	Construction Operations Mine Closure	<b>Duration</b> Short-Term <b>Extent</b> Highly Localised <b>Likelihood</b> Likely	Minor adverse	<ul style="list-style-type: none"> <li>Conduct security activities in accordance with Voluntary Principles on Security and Human Rights.</li> <li>Conduct full assessment of security personnel/providers. Oyu Tolgoi to audit security personnel.</li> <li>Human rights induction for Oyu Tolgoi employees and contractors. Support security providers to offer training in human rights to their personnel.</li> <li>Establish dedicated team to manage security and implement Security Management Plans. Ensure senior Mongolian representing Oyu Tolgoi in all security related matters with local communities and workforce.</li> <li>Develop and implement procedure on control of the use of force by security personnel.</li> <li>Involve external stakeholders (e.g. police/authorities) in security incidents.</li> </ul>	Community Health, Safety & Security Plan Security Management Plans Procedure on control of use of force by security personnel	Negligible
Reduced personal safety and well-being	Local residents	Construction Operations	<b>Duration</b> Medium-Term <b>Extent</b> Localised <b>Likelihood</b> Likely	Moderate adverse	<ul style="list-style-type: none"> <li>Implement recruitment and other procedures to minimise influx of speculative job seekers.</li> <li>Housing for operations will be designed to promote families to reside in Khanbogd with workers.</li> <li>Continue to provide security at main camp and CIS camp.</li> <li>Enforce Camp Policy and Code of Behaviour.</li> <li>Implement Code of Conduct in the community for workers including rules about anti-social and illegal behaviour.</li> <li>Cultural integration programme for Mongolian and non-Mongolian workers. Audit behaviour in community of Oyu Tolgoi and contractor employees.</li> </ul>	Influx Management Plan Camp Management Procedures and other human resources policies e.g. Camp Policy and Code of Behaviour Stakeholder Engagement Plan Emergency Preparedness and Response Plan	Minor adverse

Impact	(1) Receptor	(2) Phase	(3) Impact Categorisation	(4) Potential Significance	Design, Enhancement or Mitigation Measures	Management Plans, Policies and Procedures	Residual Significance
					<ul style="list-style-type: none"> <li>Implement community grievance mechanism.</li> <li>Monitor issues related to human trafficking through local government and non-government partners.</li> </ul>		
Increased dust: effects on community health	Local residents	Construction Operations	<b>Duration</b> Short-Term <b>Extent</b> Localised <b>Likelihood</b> Certain	Moderate adverse	<ul style="list-style-type: none"> <li>Seal <i>Oyu Tolgoi to Gashuun Sukhait</i> road.</li> <li>Implement regular dust suppression spraying.</li> <li>Control vehicle loads during construction.</li> <li>Conduct dust monitoring.</li> </ul>	Air Quality Management Plan	Minor adverse
Increased noise: effects on community health	Local residents	Construction Operations	<b>Duration</b> Long-Term <b>Extent</b> Localised <b>Likelihood</b> Certain	Minor adverse	<ul style="list-style-type: none"> <li>Apply noise suppressions techniques.</li> <li>Warn local population of all construction works such as blasting.</li> </ul>	Noise Management Plan	Minor adverse
Changes in access to water or water quality	Local residents	Construction Operations	<b>Duration</b> Short-term to permanent <b>Extent</b> Localised <b>Likelihood</b> Certain to unlikely	Moderate adverse to negligible	<ul style="list-style-type: none"> <li>Use of appropriate storage, of hazardous materials and regular disposal of wastes to Oyu Tolgoi's waste management facility.</li> <li>Detailed engineering solutions to the diversions to ensure that they are robust and sustainable, and ensure that surface water resources are not degraded, but passed effectively around Oyu Tolgoi's operations.</li> <li>Ensure that groundwater abstraction is from aquifers deeper than those used by the herders. * Conserve water wherever possible to make.</li> </ul> <p>For full list see <i>Chapter C5 Water Resources</i></p>	Water Resources Management Plan (Chapter D7) Hazardous Materials Management Plan (Chapter D12) and Waste Management Plan (Chapter D8)	From moderate adverse to negligible

**Notes:**

**(1) Primary Receptors:** Defines the Affected or Other Interested Parties

**(2) Project Phase:** Construction, Operations, Mine Closure

**(3) Impact Categorisation:**

**Duration:** Short-term, Medium-term, Long-term

**Extent:** Highly Localised; Localised; Widespread

**Likelihood:** Highly Unlikely; Unlikely; Likely; Certain

**(4) Potential Significance:** Major Adverse; Moderate Adverse; Minor Adverse; Negligible; Positive