

Sunnyside Coal Mine Community Consultative Committee Meeting #13

Environmental Monitoring Report December 2011 – February 2011

Noise Monitoring

The noise limits applicable to operations on the Sunnyside Coal Mine, as prescribed in the Project Approval and Environment Protection Licence, are as follows:-

Day/Evening LAeq(15 minute)	Land
35	Any residence on, or more than 25% of, any privately owned land, except "Lilydale". Impact Assessment Criteria dB(A).

Monitoring was undertaken on the 7th February 2012 with results outlined below:

Noise Monitoring Results – 7 th February 2012 (Day)				
Location	Time	dB(A),Leq (15 min)	Wind speed/ direction	Identified Noise Sources as dB(A) Leq (15 min)
Illili	4:19 pm	47	2m/s SW	Traffic (45), Birds (38), wind (38), SCM inaudible
Ferndale	5:05 pm	46	1-2m/s SW	Birds (45), domestic noise (35), SCM inaudible
Plain View	4:21 pm	42	1-2m/s SW	SCM (38) , wind (38), Birds & insects (33)
Lilydale	3:55 pm	44	2m/s SW	Birds & insects (40), Traffic (38), SCM (31)

Noise Monitoring Results – 7 th February 2012 (Evening)				
Location	Time	dB(A),Leq	Wind speed/ direction	Identified Noise Sources
Illili	8:19 pm	44	2-3m/s SW	Birds & insects (42), wind (36), SCM (30)
Ferndale	8:44 pm	50	2-3m/s SW	Birds & insects (50), SCM (28)
Plain View	8:31 pm	54	2-3m/s SW	Birds & insects (53), traffic (42), SCM inaudible
Lilydale	8:09 pm	45	1-2m/s SW	Traffic (43), Birds & insects (36), SCM (<30)

The results indicate compliance at all non-project related receivers, except "Plain View" where a 3 dB exceedance occurred during the daytime monitoring. The primary cause of this exceedance was truck noise from the mine. As a previous exceedance occurred in August 2011, a private agreement may be sought with the residents of "Plain View" to address any potential noise exceedances in future. The landholders, Department of Planning and Infrastructure and the Office of Environment and Heritage were all notified of the exceedance.

Monitoring was also conducted at the "Glendower" residence on the 7th February 2012 to confirm if mine noise remained within compliance limits at that residence, with results confirming compliance as per the following table.

Noise Monitoring Results – 7 February 2012 - Glendower				
Date	Time	dB(A),Leq (15 min)	Wind speed/ direction	Identified Noise Sources as dB(A) Leq (15 min)
7 February	4:39 pm	47	2m/s SW	Birds (44), traffic (41), wind (41), SCM inaudible
7 February	7:58 pm	49	1-2m/s SW	Insects (48), wind (40), SCM (32)

Road noise monitoring was undertaken on the 7th February 2012 for a one hour period from 5:00pm. A total of 6 heavy vehicles travelled along Torrens Lane during the monitoring period, consisting of 3 full and 2 empty coal haulage trucks entering and leaving the CHPP and one fuel truck leaving site. The measured Leq noise level from all vehicles on Torrens Lane was of 49.8 dB(A) Leq (1 hour). This is in compliance with the noise criterion for a local road of 55 dB(A) Leq (1 hour).

Air Quality Monitoring

Deposited Dust

Deposited dust levels for the site for the last 12 months are shown in the following table.

Sunnyside Mine – Deposited Dust

Month	SD1 Ferndale	SD3 Plainview	SD4 Lilydale	SD5 Ivanhoe	SD6 Illili	SD7 Innisvale	SD8 Woodlawn
March 2011	2.7	0.8	1.1	0.6	0.8	0.7	0.5
April 2011	0.7	0.8	0.8	1.0	0.6	2.1	0.7
May 2011	0.5	0.7	1.1	5.5	0.6	0.7	1.5
June 2011	0.5	1.6	0.7	0.3	0.4	1.6	0.5
July 2011	0.5	1.0	0.2	0.5	0.5	0.7	0.3
August 2011	0.4	0.9	0.4	2.7	0.5	0.8	0.5
September 2011	0.9	0.6	0.3	0.7	0.3	0.6	0.3
October 2011	0.6	0.7	0.4	1.7	0.8	0.5	0.7
November 2011	3.7	0.7	1.9	2.6	1.4	1.2	0.9
December 2011	0.7	1.4	1.0	1.5	1.2	3.3	1.3
January 2012	1.6	3.8	6.8	6.0	1.8	4.3	1.9
February 2012	0.8	1.6	10.2	13.6	2.8	1.2	3.7
Annual Average	1.1	1.2	2.1	3.1	1.0	1.5	1.1

Deposited dust rates over the last three months have generally been at low levels, with the exception of the “Lilydale”, “Ivanhoe” and “Innisvale” monitors.

“Lilydale”, which is project related, recorded results of 6.8 and 10.24g/m²/month during January and February 2012. Upon review of the chain of custody documentation, plant and insect matter was present in both samples and may have contributed to the results.

The “Ivanhoe” monitor recorded results of 6.0 and 13.6g/m²/month during January and February 2012, again with chain of custody documentation revealing that insect and plant material was present in the samples.

The “Innisvale” monitor recorded 4.3g/m²/month during January 2012. This minor exceedance is considered an anomaly, as “Innisvale” rarely records any elevated results. The chain of custody also revealed that plant and insect material was present.

These three monitors have not exceeded the 4g/m²/month annual average limit, although they will be closely monitored in the coming months to ensure compliance is met. The annual average dust levels at all other monitors have continued to remain very low.

PM₁₀ Data

Compliance with the 24hr criterion of 50µg/m³ has been maintained during the reporting period.

PM₁₀ measurements taken for the “Illili” High Volume Air Sampler (HVAS) are returning a running annual average of 9.62µg/m³, which is well below the annual average limit of 30µg/m³.

PM₁₀ measurements taken for the “Lilydale” HVAS are returning an annual average of 8.48µg/m³, which is also well below the annual average limit of 30µg/m³.

Blast Monitoring

Since the first blast there have been 47 blasts. On the 18th January 2012, during blast 43, an exceedance of the overpressure criteria (120.0dB_L) was recorded at monitoring point “Plain View” (122.2dB_L). An investigation into the cause of the overpressure exceedance was carried out by the blasting contractor Orica.

After a review of blast design, loading data, video and photographic evidence as well as environmental monitors, the root cause of the overpressure exceedance was the reinforcement of blast hole signals arriving at the monitor at the same time. Upon reviewing the initiation sequences, up to 19 holes would have arrived at the “Plain View” monitor within an 8ms window. This was caused by a deficiency in the blast timing design. Other factors including vertical movement, due to inadequate stemming and survey may have contributed to the exceedance.

The following recommendations were made by Orica:

1. Use hole arrival predictive tool for all Sunnyside blasts, with all blast and initiation designs to be sent off site for review until consistent results can be generated.
2. Wherever possible all blasts should be marked out using survey to ensure that adequate and appropriate face burdens are achieved, with no pattern drilled without clear drill patterns being issued.
3. Increase the stemming length in holes to 4m when heavier burdens are present.

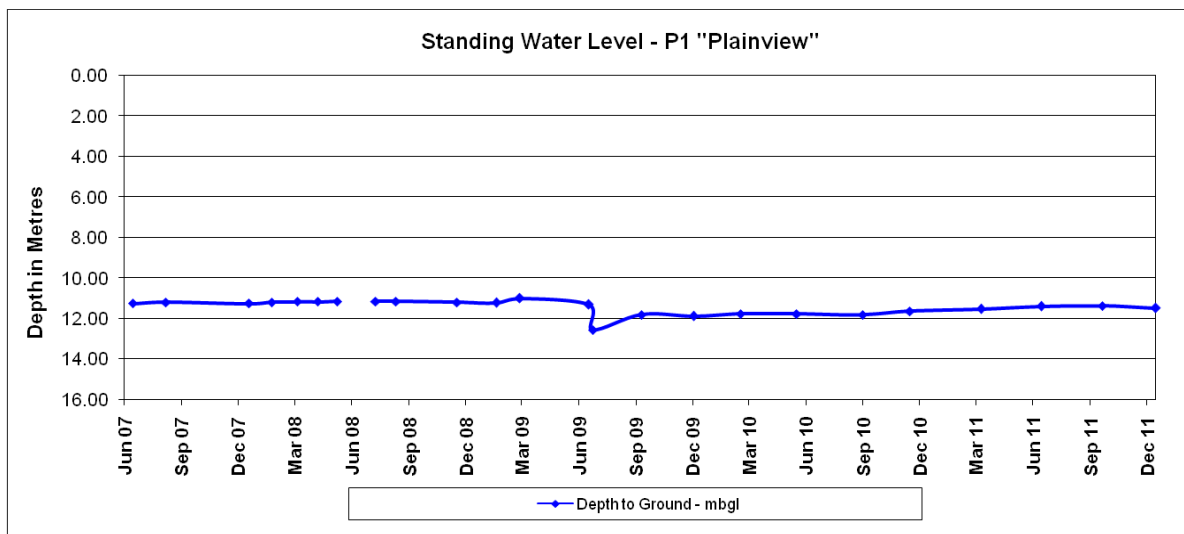
Whitehaven are closely working with Orica with the intention of achieving compliance of all future Sunnyside blasts.

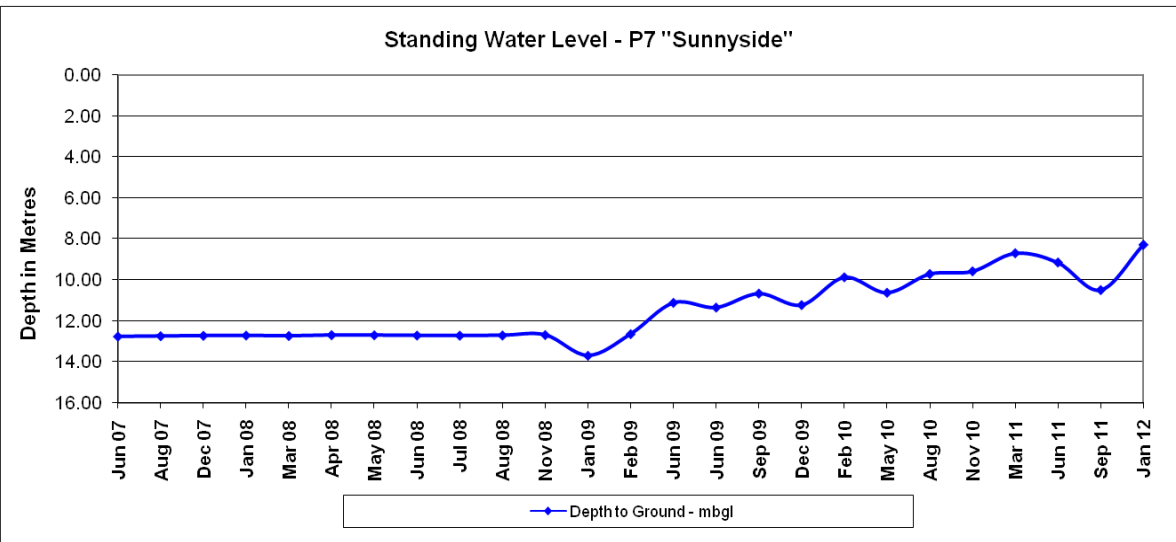
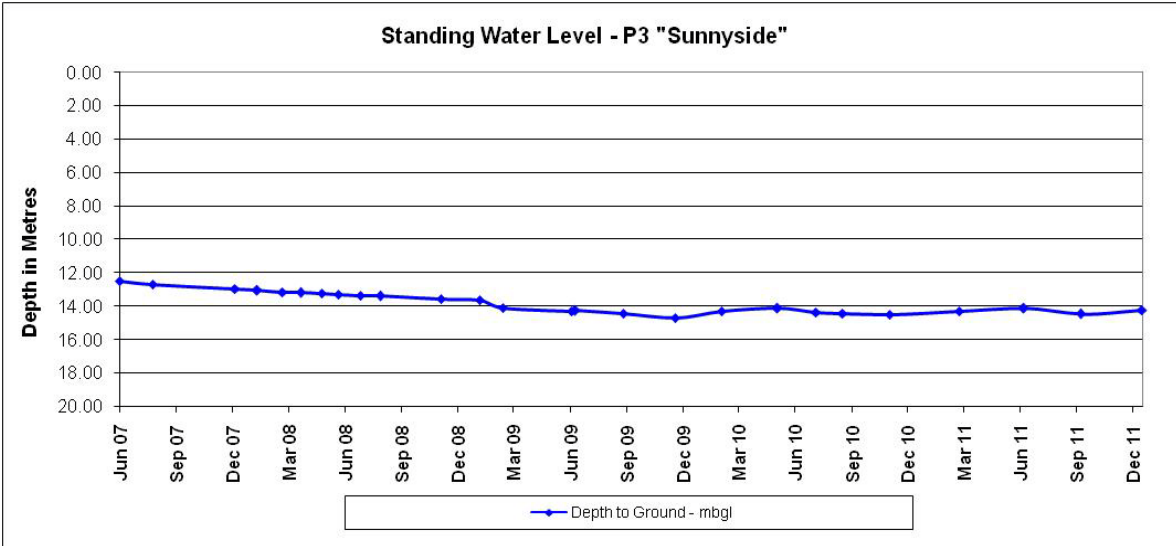
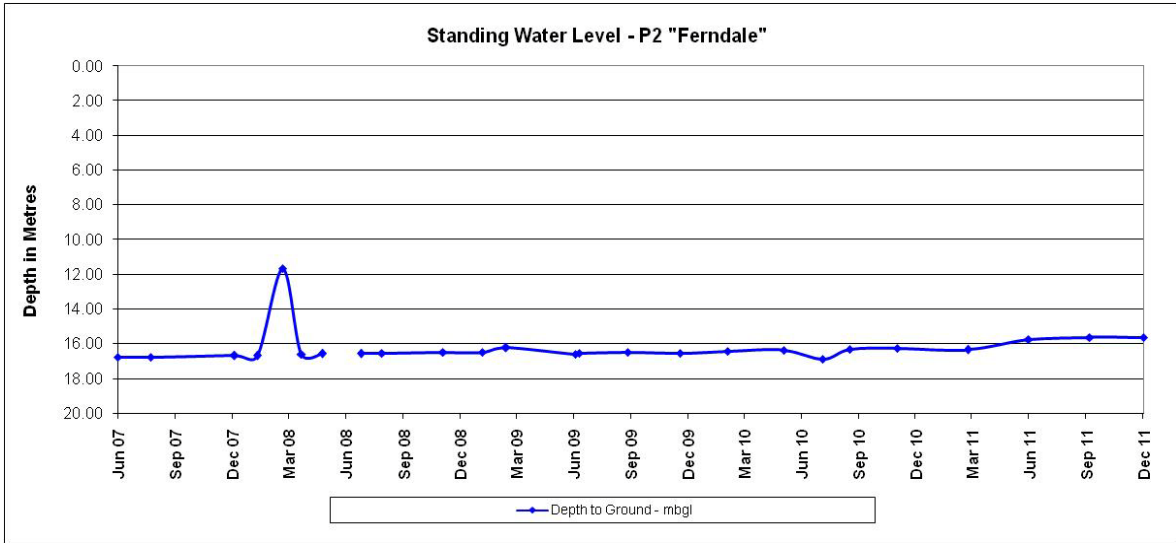
Since blasting commenced, the highest recorded overpressure was 128.8 dBL recorded at "Innisvale" on the 3rd May 2011. The highest ground vibration recorded is 2.39mm/s recorded at "Plain View" on the 17th April 2009.

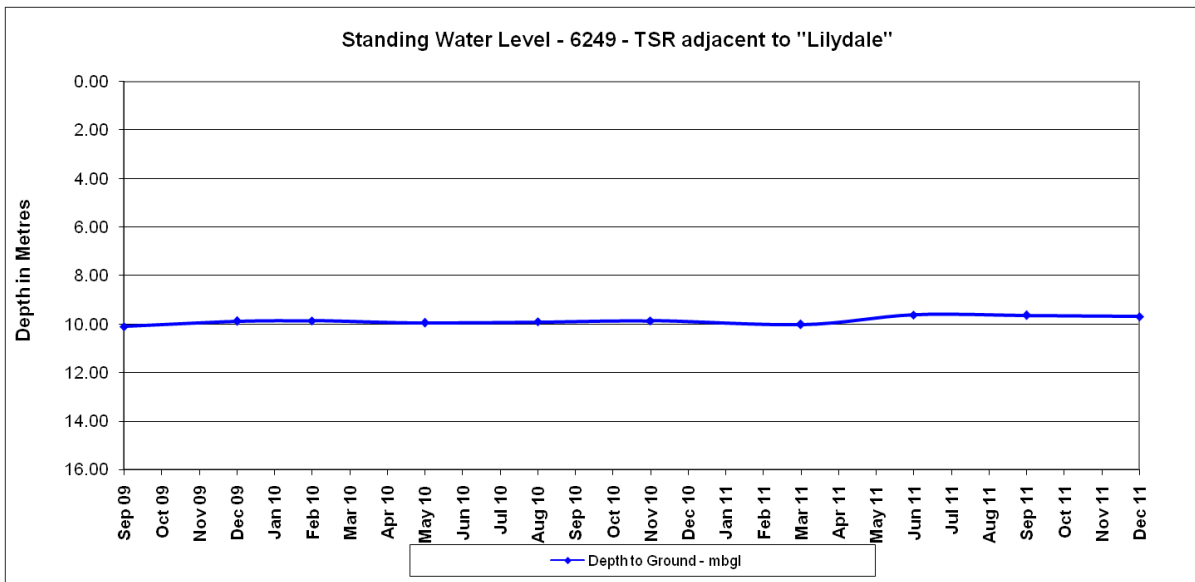
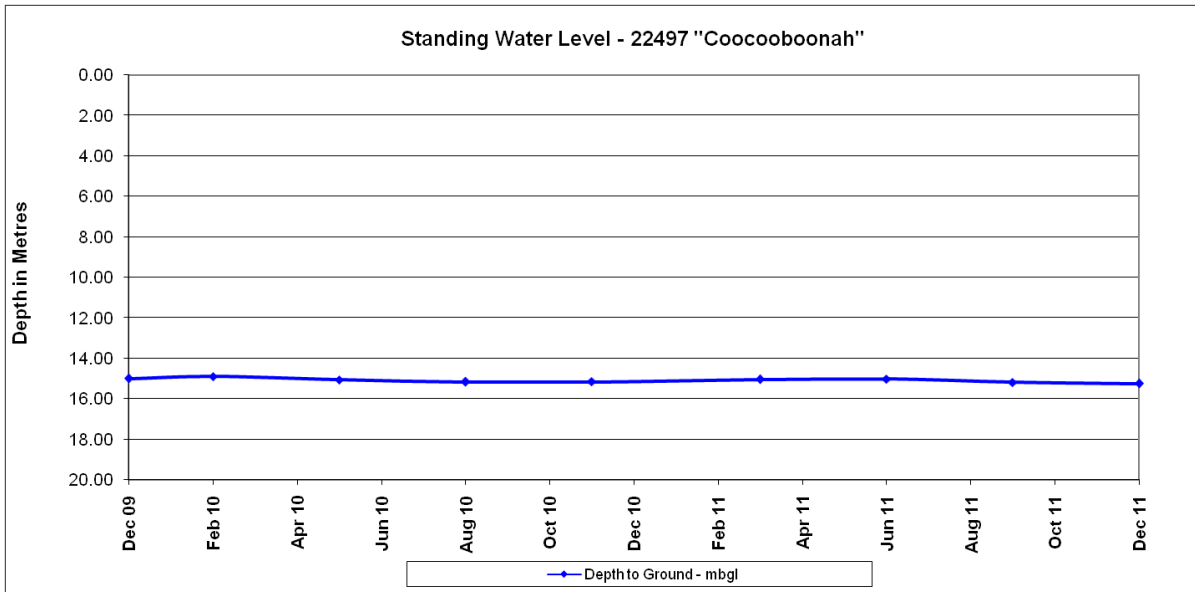
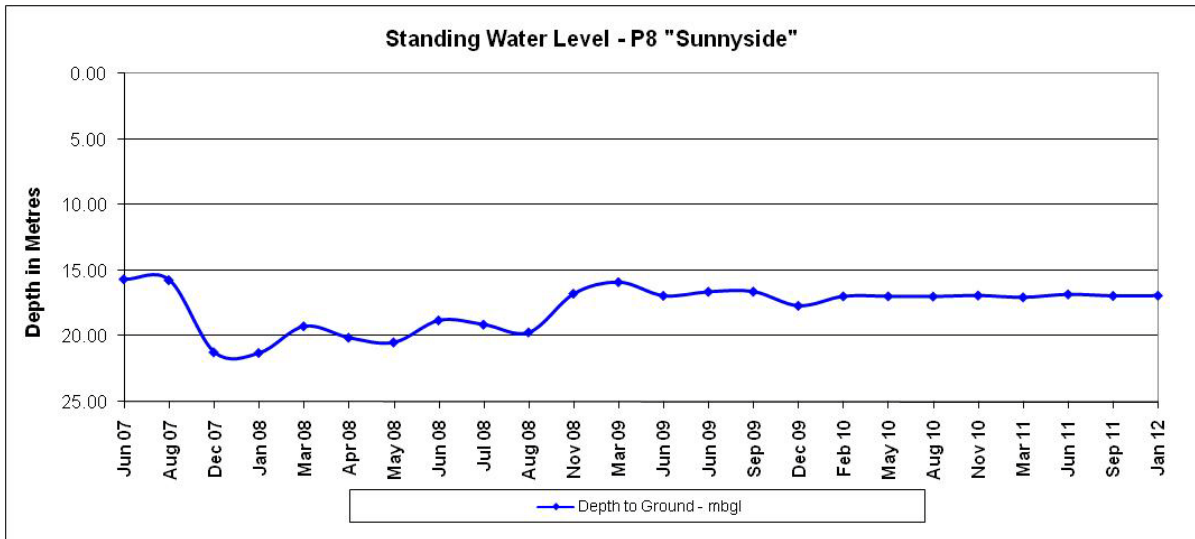
Groundwater Monitoring

Groundwater monitoring is undertaken from a range of monitoring piezometers and water bores both within and surrounding the mine site. Standing Water Level (SWL) checks are undertaken on a quarterly basis, with full water quality sampling undertaken on a 6 monthly basis.

Monitoring was undertaken on the 15th December 2011 and 6th January 2012. Results for SWL are shown below with no significant impact/trend indicated from mining operations, other than at monitoring point P7, where recharge is occurring. This recharge is due to the bore's stand pipe being broken at ground level, accepting inflow from rainfall and as a result recharging. This stand pipe is expected to be repaired in the coming month. These graphs represent water bores and piezometers which are currently accessible for monitoring. Monitoring Piezometer 4 (P4) is now in the production area and will no longer be monitored. The next round of monitoring is expected to be conducted during March 2012.







Surface Water

Surface water sampling was carried out in February 2012. Results from the sampling were generally good with some elevated Total Suspended Solids (TSS) detected in some of the site's sediment basins. These sediment basins will continue to be utilised over the coming weeks for site dust suppression to ensure they have sufficient capacity for further inflow, thereby reducing potential overflow into the final discharge dam. The final discharge dam, Storage Dam 4 (SD4), returned good results with low sediment levels.

Two wet weather discharge events have occurred since the last CCC meeting. The first discharge occurred from SD4 after 65mm of rain on the 11th December 2011. All parameters were compliant with EPL thresholds, including a TSS level of 48mg/L (compliance threshold – 50mg/L). Coocooboonah Creek upstream (CCUS) and downstream (CCDS) samples were also taken at the time of discharge. Low TSS was recorded at both locations, being 46mg/L at CCUS and 34mg/L at CCDS.

The second discharge, also from SD4, occurred on the 6th February 2012 after 111.6mm of rain during the five days leading up to the event. SD4 recorded results which were compliant with EPL thresholds, including a TSS level of 16mg/L. A sample from CCDS was also taken at the time of discharge, with a low TSS of 36mg/L recorded. No upstream sample was taken due to inaccessibility due to regional flood waters.

Complaints

One complaint has been received since the last CCC meeting. The complaint was made on the 25th January at 11:48am, via text message to the Sunnyside Complaints Line. The complaint was in relation to the blast conducted on that day and impacts on the complainant's residence. The complainant described the blast as a significant explosion, which shook the complainant's house.

The complaint was raised with the Sunnyside Project Manager. Review of blast monitoring results at monitors in closer proximity to the blast site indicated compliance with both overpressure and ground vibration at all points. Cloud conditions may have exacerbated overpressure impacts however at the time it was deemed appropriate to proceed with the blast. Delaying the blast may have resulted in worse conditions due to predicted rain and the potential for post blast fume that this would create. The complainant advised no requirement to respond to the complaint but requested that the complaint be placed on the public record.

Rehabilitation

No rehabilitation has occurred since the last CCC meeting. Previous rehabilitation outlined in the last CCC meeting has produced good results.



Developed pasture on newly rehabilitated waste emplacement area