In the matter of the
Commissions Of Inquiry Act 1950

Commission of Inquiry Order (No. 1) 2011

QUEENSLAND FLOODS COMMISSION OF INQUIRY

Second Witness Statement of Gary Campbell

Executive General Manager Production

CS Energy Limited

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Table of Exhibits

	Description	Date
GC-12	Waterworks Licence number 45372 issued by the Queensland Water Resources Commission	12 March 1986
GC-13	Minutes of meeting between CS Energy and DERM at the Callide Power Stations on 11 October 2010	11 October 2010
CG-14	Email from CS Energy to DERM, and attached letter from CS Energy to DERM regarding status of Ash Dam B	7 January 2011
CG-15	Email from CS Energy to DERM, and attached notice pursuant to section 320 *Environment Protection Act 1994* advising of imminent release from Ash Dam B	7 January 2011
CG-16	Email from CS Energy to DERM, and attached cover letter with draft Callide Power Station Voluntary Transitional Environmental Program	7 January 2011
CG-17	Email from CS Energy to DERM, and attached Callide Power Station Voluntary Transitional Environmental Program	11 January 2011
GC-18	Certificate of Approval CA22011 from DERM and approved Callide Power Station Voluntary Transitional Environmental Program	11 January 2011

Second Statement of Gary Campbell

This written statement is provided in response to a Requirement dated 25 October 2011 to provide a written statement, under oath or affirmation, to the Queensland Floods Commission of Inquiry pursuant to section 5(1)(d) of the Commissions of Inquiry Act 1950 (Qld) (**Requirement**).

This Second Statement should be read together with my First Statement sworn on 23 September 2011 (**First Statement**).

I, Gary Campbell, Executive General Manager Production of CS Energy Limited , c/ Level 2, HQ North Tower, 540 Wickham Street, Fortitude Valley in the State of Queensland, state on oath as follows:

Position and Qualifications

1. My position and qualifications are described in paragraphs 1 and 2 of my First Statement.

Response to the Requirement

1.	**The purpose of an ash dam, including an overview of how the production of electricity creates ash.**
4.	**Elaboration of the statement 'the Ash Dam contains settled ash from lean and dense phase ash disposal and cenospheres (floating ash)" contained in paragraph 58 of the statement of Mr Campbell dated 23 September 2011, including:**
	a. a description of what 'settled ash' and 'cenospheres' are
	b. a description of the difference between lean and dense phase ash disposal.

2. It is convenient to respond to Requirements 1 and 4 together.

3. The purpose of an ash dam at a power station is to store waste ash created by burning coal in a power station boiler.

4. The ash dam is also used to store, recycle and evaporate waste water from the power station. Rain falling on the power station site and in the ash dam itself is also collected and stored in the ash dam.

5. The majority of ash created by the power station is pumped to the ash dam in the form of a slurry, after coal has been burnt in the power station boiler.

6. The consistency of the slurry is determined by the amount of water added to the ash and required to pump the ash to the ash dam:

   (a) Dense phase ash slurry is of a similar consistency to toothpaste. This is stored above the main body of water in the ash dam with residual water draining into the main water body.

   (b) Lean phase ash contains more water than dense phase ash, and is pumped to below the edge of the dense phase pile, adjacent to the main water body.

7. Lean phase ash settles to the bottom of the main water body. As the ash settles out, the residual water body in the ash dam is effectively clear of ash material.

8. Cenospheres are relatively inert alumina silicate materials also created from burning the coal and are contained within the ash slurry. Once the ash settles in the ash dam, the cenospheres float to the surface of the ash dam. Cenospheres are retained in the ash dam by a floating boom to prevent release in the event of a water release.

2. The environmental and health concerns of an uncontrolled release from an ash dam, including details as to:

a. the types of contaminants contained in ash

b. the health concerns associated with ash infiltrating groundwater aquifers

c. how ash affects aquatic plants and animals

d. how ash affects livestock if their water supply is contaminated.

9. It should be noted at the outset that since the ash dam was constructed, there has never been an uncontrolled release from the main ash dam water body through the spillway.

10. The ash dam is adjacent to the power station and contained within the footprint of the site. Where possible, water which has come into contact with ash in the Ash Dam is treated and reused onsite. The remaining water is managed in a way to promote evaporation. These measures assist in ensuring that uncontrolled flow from the ash dam does not occur, and thereby minimises environmental and health risks.

11. The Callide A and Callide B power stations are operated subject to a Development Approval (Integrated Authority No. CG0039) (**DA**). Conditions listed in Schedule 2C of the DA permit the disposal of ash, process wastewater and other listed effluents to the Waste Containment Facility (defined in Schedule 2I of the DA) which includes the ash dam.

12. Condition 2(D3) of the DA requires any spillage of wastes, contaminants or other materials to be cleaned up as quickly as possible.

13. In accordance with these conditions, in the highly unlikely event of an uncontrolled release from the ash dam, this would be cleaned up and remediated immediately by CS Energy. This may include recovery of the water where possible and dilution using flow in Callide Creek and its associated aquifer, by seeking an emergency release of water from the Callide Dam controlled by Sunwater to dilute the discharge, if required. This would minimise any risk of long term environmental exposure and mitigate any health concerns.

14. Further, in the highly unlikely event that an uncontrolled release did occur, such a release would almost certainly occur concurrently with flows in Callide Creek, which would significantly dilute the concentrations of ash water released from the ash dam.

15. Water that has come into contact with ash will contain salt and low levels of trace elements that occur naturally in coal and in the water supplied from Callide and Awoonga Dams. Some of the salts and trace elements may have environmental and health concerns if elevated concentrations are experienced over a long term exposure.

16. In the event of an uncontrolled release, an ash water discharge which is not remediated has the potential to affect aquatic plants and animals in downstream catchments, and infiltrate the groundwater aquifer which is used for irrigation and other water uses.

3. Which groundwater aquifers would be at risk in the event of an uncontrolled release from any ash dam at Callide Power Station, including an estimate of the length of time it would take for the ash released to affect groundwater.

17. Callide B is not authorised to discharge any generation process wastewater to the receiving environment.

18. As discussed in paragraph 13 above, the conditions of the DA and the general obligation to prevent environmental harm under the *Environmental Protection Act 1994* (Qld), means that CS Energy would immediately clean up and remediate any uncontrolled ash spill from the ash dam at Callide Power Station, thereby minimising any risk to the environment or health concerns caused by long term environmental exposure to water that has come into contact with power station ash waste.

19. The Callide Creek alluvial aquifer underlies and is adjacent to Callide Creek, and is the aquifer most likely to be influenced by the ash dam.

20. The risk to the environment and health in the event of an unremediated and undiluted flow of water from the ash dam to the Callide Creek would depend entirely on the volume of water released, the level of flow in the Callide Creek, the volume of water in the aquifer, the rate of aquifer recharge at various locations in the aquifer and other conditions existing in the aquifer at the time. The rate of recharge would also vary throughout any affected parts of the aquifer. The timing of any impact would also depend on the above factors.

5. How the target annual risk of discharge level, as described in condition 2(E7) on page 7 of Integrated Authority No. CG0039 dated 30 July 2004 (attachment GC-2 to statement of Mr Campbell dated 23 September 2011) was decided, and who was involved in the decision.

21. The ash dam was designed in 1984-1985 and construction was completed by 1987 under the authority of the Queensland Electricity Generating Board in accordance with the *Water Act 1926* (Qld).

22. Waterworks Licence number 45372 issued by the Queensland Water Resources Commission for the construction of the ash dam is exhibit **GC-12**. The Licence did not include specific conditions relating to spill risk.

23. The target annual risk of discharge level was first set in the 30 July 2004 amendment to the DA by the then Environmental Protection Agency, following the raising of the ash dam wall in 2003.

6. The enhanced water management and water level reduction measures implemented by CS Energy (referred to in paragraph 19 of the statement of Mr Campbell dated 23 September 2011), including:

a. a description of the purpose and functions of the blowdown water treatment plant

b. a description of the purpose and functions of evaporative sprays.

14. The purpose and functions of the reverse osmosis plant at the Callide Power Station (refer to paragraph 54 of the statement of Mr Brier dated 27 September 2011.

24. It is convenient to respond to Requirements 6 and 14 together.

25. The Blowdown Water Treatment Plant (**BDWTP**) was commissioned in 2001 with the commencement of operation of Callide C adjacent to Callide B. Its purpose and function is to treat blowdown water (waste cooling water released directly from the cooling towers) from both Callide B and Callide C for reuse and to minimise the volume of waste water entering the ash dam.

26. As of January 2011, the BDWTP also began treating water reclaimed from the ash dam for reuse in operations at Callide B and Callide C.

27. On 1 August 2011, CS Energy commissioned a hired water treatment plant (**Reverse Osmosis Plant**) to enhance the site capability to treat water from the ash dam for reuse in operations. Evaporative sprays have been installed progressively throughout 2011. Evaporative sprays work by spraying water into the atmosphere and enhancing the rate of evaporation by increasing the surface area of water that is exposed to air.

7. The relationship between electricity production and the water level of Ash Dam B, including, whether a reduction in electricity production reduces the water level, and if so, how much of a reduction would produce a significant effect.

28. The response to this query is technically complex, however in responding to the Commission's requirement, I have attempted to provide a simplified explanation of the inter-related system of raw water use and waste water generation and re-use at the power stations.

29. Segregation of water qualities means a reduction in availability of low quality water can result in increased demand for higher quality raw water. Once used, the previously raw water adds to the volume of waste water pumped to the Ash Dam.

30. At current water levels, in the absence of significantly higher than average rainfall, the effect of the water management systems for the ash dam, including the reuse of water in operations from the reverse osmosis plant and BDWTP, is that water levels in the Ash Dam generally reduce when the power station is operating, as recycled water is returned to the operating units.

31. Partial reductions in electricity production do not lead to proportionate reductions in waste water generation. Operating the power stations normally provides the best opportunity for reducing the level of water in the ash dam. However, it is not possible to identify a generalised relationship between the level of electricity generation and the volume of water used in all scenarios. This is because the water levels in the ash dam and the amount of water from the ash dam that is reused in operations depends on a number of factors, including:

(a) rainfall;

(b) the level of evaporation, which is also dependent on weather conditions;

(c) the water quality of water in the ash dam and the corresponding volume of raw water that is required for the power station operation;

(d) the function of water management systems (including the evaporative sprays).

8.	**The correspondence between the State Government and CS Energy in the lead up to the *2010/2011* wet season, with particular reference to whether:**	
	a.	**CS Energy was contacted by the Department of Environment and Resource Management (DERM) about the forecast from the Bureau of Meteorology.**
	b.	**flood preparedness was discussed with DERM in the course of other interactions in the lead up to the wet season (refer to paragraphs 10 and 15 of the statement of Mr Andrew Brier dated 27 September 2011).**
	c.	**the Department of Employment, Economic Development and Innovation (DEEDI) or DERM inquired about possible environmental implications of flooding at the Callide Power Station.**
	d.	**the Banana Shire Council, the Banana Shire Local Disaster Management Group or DERM were notified of the possibility raised in an email to DEEDI dated 1 November 2010 from Ms Brooke Johnson of CS Energy (attachment GC-7 to statement of Mr Campbell dated 23 September 2011) that 'the ash dam capacity may require an authority from the EPA to release in an extraordinary wet weather event'.**

32. Operations at the Callide Power Stations are not subject to onsite flooding due to the topography.

33. Prior to the 2010/2011 wet season, water level management was discussed with various agencies in the context of the 1 November 2010 reporting requirements under the DA. This routinely occurs as an inherent part of the DA requirements.

34. CS Energy was not contacted by the Department of Environment and Resource Management (**DERM**) about the forecast from the Bureau of Meteorology for the 2010/11 wet season. However, CS Energy actively monitors weather forecasts due to the nature of electricity demand and supply and the impact of weather patterns on the national electricity market. Further, CS Energy was contacted by DEEDI attaching a briefing provided to Government by the Bureau of Meteorology about the high probably of an active cyclone season (see Exhibit GC-7 to my First Statement).

35. CS Energy met with DERM at the Callide Power Stations on 11 October 2010. Whilst not the primary purpose of the meeting, water level of the ash dam and water management options to reduce water levels in the ash dam were discussed. The focus was on longer-term measures, not on measures leading up to the 2010/2011 wet season. Exhibit **GC-13** is a copy of the minutes of the meeting between DERM and CS Energy on 11 October 2010.

36. In relation to correspondence with DEEDI, I refer to my First Statement at paragraph 31 and Exhibit GC-7. The focus of the DEEDI request in relation to storm season preparedness was in relation to actions undertaken to prepare for the storm season, potential generation implications of a heavy storm season, management of coal stockpiles and whether there are potential coal transport issues. CS Energy

addressed these specific requests in its response of 1 November 2010. CS Energy also noted the potential for special approval to be required for release from the ash dam in an extraordinary wet weather event.

37. Neither the Banana Shire Council, the Banana Shire Local Disaster Management Group nor DERM were notified by CS Energy of the possibility raised in an email from [redacted] of CS Energy to DEEDI dated 1 November 2010, which stated that "the ash dam capacity may require an authority from the EPA to release in an extraordinary wet weather event".

38. DERM was advised of the ash dam water level and water management options to reduce water levels in the meeting on 11 October 2010, at which stage the requirement for a release approval was not considered likely. In relation to notifications to DERM with respect to water levels, I refer to my First Statement and in particular paragraph 24.

9. Any uncontrolled releases from CS Energy dams at Callide Power Station that occurred during the 2010/2011 wet season

39. There were no unauthorised releases from CS Energy Dams during the 2010/11 wet season.

40. There were releases from Ash Dam 1 and 2, and from stormwater captured by the Ash Dam B seepage collection system during the 2010/11 wet season, consistent with the DA, in response to the significant rainfall received on site.

10. CS Energy's understanding of the information required by DERM for Temporary Environmental Program (TEP) decisions, with particular reference to and (where possible) using specific examples of:

a. the consistency and clarity of the information requested

b. the usefulness of the DERM template TEP application, and whether this template was used by CS Energy during the *2010/2011* wet season

c. whether CS Energy is aware of the standard criteria in the *Environmental Protection Act* 1994 that applies to the making of a decision to grant or refuse a TEP, and if so, whether this criteria is considered useful in tailoring an application for a TEP

d. the imposition of conditions in a TEP which are impossible to comply with.

41. CS Energy has found that the information required for a draft Transitional Environmental Program (**TEP**) is clear.

42. The experience of CS Energy is that the template is useful. CS Energy referred to the DERM template whilst preparing the draft TEP for submission to DERM.

43. CS Energy is aware of the standard criteria in the *Environmental Protection Act 1994* (Qld) that applies to the making of a decision to grant or refuse a TEP and in the experience of CS Energy the criteria are useful in guiding the information that is contained in an application for a TEP.

44. CS Energy has not had experience with the imposition of any TEP conditions that are impossible to comply with.

11. The processes associated with the Voluntary TEP (VTEP) granted to CS Energy on 11 January 2011, with particular reference to:

a. whether the application was preceded by earlier discussions with DERM (refer to paragraph 23 of the statement of Mr Brier dated 27 September 2011)

b. what time of day the approval was received, and how soon after the application was lodged that CS Energy received the approval.

c. whether DERM required any further information, or suggested any changes to the draft TEP

d. whether CS Energy was advised of the reasons for the decision, and if so, in what form (verbal or written)

e. whether CS Energy purchased any water contained in Callide Dam to enable releases from Ash Dam B (refer to paragraph 39 of the statement of Mr Campbell dated 23 September 2011).

f. whether any scientific studies were completed to justify the dilution rate of Ash Dam releases approved in the VTEP (refer to paragraph 39 of the statement of Mr Campbell dated 23 September 2011).

45. In relation to whether the lodgement of the draft TEP was preceded by earlier discussions with DERM, I refer to Paragraph 24 of my First Statement.

46. On 5 January 2011, in a meeting at the Callide Power Stations between CS Energy, Sunwater and DERM representatives, DERM requested that CS Energy submit a TEP as soon as possible to facilitate possible release from the ash dam in the event of suitable flows in Callide Creek from Callide Dam releases. This meeting is referred to at Paragraph 16 of the Statement of Andrew Brier sworn on 27 September 2011.

47. On Friday 7 January 2011 at 9.25 am, CS Energy sent an e-mail to DERM with an attached letter that, amongst other things, advised that a TEP would be lodged later that day. Exhibit **GC-14** is a copy of the email and attached letter from CS Energy to DERM dated 7 January 2011.

48. On 7 January 2011 at 5.00 pm, CS Energy sent an e-mail to DERM with an attached letter lodging a Notice under Section 320 of the *Environmental Protection Act* (1994) noting the risk of an imminent spill from the ash dam. Exhibit **GC-15** is a copy of the email and attached notice from CS Energy to DERM dated 7 January 2011.

49. On 7 January 2011 at 5.43 pm, CS Energy sent an e-mail attaching a covering letter and draft TEP to DERM. Exhibit **GC-16** is a copy of the email and attached draft TEP from CS Energy to DERM dated 7 January 2011.

50. Following ongoing verbal discussions with DERM from 7 January 2011 until the TEP was approved, DERM requested further information and suggested changes to the draft TEP. On 11 January 2011 at 2.35 pm, CS Energy sent an e-mail with an updated version of the draft TEP to DERM incorporating the agreed amendments. Exhibit **GC-17** is a copy of the email and attached updated TEP dated 11 January 2011.

51. On 11 January 2011 at 4.56 pm, CS Energy received Certificate of Approval CA22011 from DERM approving the submitted TEP. Exhibit **GC-18** is a copy of the Certificate of Approval from DERM dated 11 January 2011. The Certificate of Approval does not contain written reasons. Verbal discussions were held with DERM regarding changes to the draft TEP up until the 2:35 pm submission referred to in paragraph 50 above.

52. CS Energy has a contract for raw water from the Awoonga Dam, which is pumped to the Callide Dam under a contract with Sunwater. In January 2011, CS Energy had an entitlement in the Callide Dam, and arrangements could have been made to seek release of this water from the Callide Dam to dilute releases from the ash dam. CS Energy did not seek authorisation to release its water allocation from the Callide Dam into the Callide Creek, as no additional water was required to dilute ash dam releases.

53. In terms of scientific studies to justify the dilution, CS Energy calculated the necessary dilution rate to achieve drinking water quality in Callide Creek, from an analysis of the quality of the water stored in the ash dam prior to its release. Extensive monitoring of the water in Callide Creek (consistent with the TEP) during the release confirmed that the water quality remained within drinking water quality guidelines, supporting the choice of dilution rate.

12. A description of any plans CS Energy has in place to decrease the risk of spillage below the one in 100 year event.

54. The DA conditions (together with the ash dam management plan) and water level management activities detailed above are inherently designed to reduce the risk of spillage below the 1% Annual Exceedance Probability.

13.	**Whether CS Energy is aware of any adverse effects on the aquifer servicing Biloela as a result of the discharges made under the VTEP granted on 11 January 2011 (refer to paragraph 45 of statement of Mr Campbell dated 23 September 2011), with particular reference to:**
	a. any monitoring conducted by CS Energy of the water in the aquifer servicing Biloela
	b. whether the aquifer was affected by seepage from the dam as well as releases authorised under the VTEP

55. In responding to this Requirement, I refer to paragraphs 51 to 53 and paragraph 61 of my First Statement.

56. The Callide Creek aquifer is adjacent to Callide B and Callide C generating units and ultimately intersects with the aquifer servicing Biloela. As water migrates downstream in the Callide Creek aquifer, water quality is increasingly impacted by natural influences, as well as other water users.

57. In respect of the Callide Creek aquifer as a whole, CS Energy has maintained an ash dam seepage recovery scheme, and a groundwater and surface water receiving environment monitoring program since 1996.

58. CS Energy conducted extensive monitoring of the Callide Creek aquifer prior to, during and subsequent to the releases under the VTEP granted on 11 January 2011. No adverse effects on the Callide Creek aquifer (nor therefore the aquifer servicing Biloela) were identified.

Sworn this 2nd day of November 2011 at Brisbane in the State of Queensland in the presence of:

[redacted]

Gary Campbell (Deponent)

[redacted]

Solicitor/~~Justice of the Peace~~

Exhibit GC-12

WATERWORKS LICENSE

QUEENSLAND WATER RESOURCES COMMISSION
P O Box 736
ROCKHAMPTON Q 4700

QUEENSLAND ELECTRICITY COMMISSION
G P O BOX 10
BRISBANE Q 4001

License Number 45372 Expiry Date 30/09/1988 File Number CQA 3469

Description of Works EARTH DAM

HEIGHT.....	27.3 m
LENGTH.....	3220.0 m
CREST WIDTH.....	8.0 m
BASE WIDTH.....	95.0 m
SPILLWAY WIDTH...	200.0 m
SPILLWAY HEIGHT..	25.0 m
CAPACITY.....	9650.0 ML

Location of Works — Portions: LOT 1 ON RP 15528; Parish: THALBERG; County: RAGLAN (CALLIDE 'B' POWER STATION ASH DAM)

To Supply — Portions: ; Parish: ; County:

Name of Watercourse: NOT ON A WATERCOURSE

Purpose of Works: WATER CONSERVATION FOR INDUSTRIAL USE

Crops to be Irrigated:

Date of Original Issue:

The work described hereon, and referred to in the application and plans and descriptions deposited by or on behalf of the abovenamed licensee, as finally approved, is hereby declared to be a licensed work under The Water Act 1926 — 1979 subject to the terms, limitations and conditions appearing on the Schedule hereto.

Issued at ROCKHAMPTON this TWELFTH day of MARCH 1986

[redacted]
Authorised Officer

WL003

SCHEDULE

1. The Licensee shall install the work for which the License is granted within two (2) years from the date of grant of the License.
2. The Licensee shall carry out construction of the work to the satisfaction of the Commissioner.
3. The Licensee shall maintain the work in a state of repair satisfactory to the Commissioner.
4. This License does not convey any authority for the submergence of the property or works of any other landholder. Where the construction of the work authorised by this License causes or is likely to cause such submergence the Licensee must make his own arrangements to obtain the approval of the landholder concerned.
5. It shall be incumbent upon the holder of the License to notify the Commissioner immediately of any change or divestment of interest in the land whereon the work is constructed or proposed to be constructed.
6. If there is a flow in the watercourse into the storage but there is no flow over the bywash or spillway, water must be allowed to pass downstream of the dam through the outlet pipe or siphon pipe or by any other means determined by the Commissioner or an Authorised Officer at a rate equal to the unrestricted capacity of the outlet pipe or siphon pipe (with the downstream end of the pipe at bed level) or equal to the rate at which water is entering the storage, whichever is the lesser, or at such a rate as may be determined by the Commissioner or an Authorised Officer. When directed by the Commissioner the Licensee shall install and maintain to the satisfaction of the Commissioner approved flow measuring devices for the purpose of measuring flows entering and leaving the storage.
7. The Licensee shall maintain at his own cost the bed and banks of the watercourse adjacent to the works to the satisfaction of the Commissioner.
8. The holder of this License shall pay such fees and charges as are determined by the Commissioner from time to time, such fees and charges being payable at any place specified by the Commissioner on or before a date thirty days after notification by the Commissioner of such fees or charges.
9. The works authorized by this License are not exempt from the provisions of the Water Act relating to referable dams and the Licensee shall comply with those provisions.
10. The Licensed works shall be constructed in accordance with the approved plans and specifications prepared by Macdonald Wagner Pty Ltd, Consulting Engineers. Supervision shall be provided by the Queensland Electricity Commission at all times that work is in progress to ensure conformity with the approved plans and specifcations. The supervision shall include periodical inspections by Consulting Engineers, Macdonald Wagner Pty Limited, of foundation excavations, embankment construction, results of control tests on materials and readings of embedded instruments.
11. Immediately after completion of the licensed works the Licensee shall give written notification of completion to the Commissioner.
12. Within 6 months after completion of the licensed works the Licensee shall furnish a report on the execution of the work to the Commissioner. The report shall include :-
    (a) "As built" drawings, photographs and descriptions of the works as constructed with particular reference to :
        (i) geological maps of final foundations;
        (ii) records of final foundation levels and depths of cut-off excavations;
        (iii) details of any other foundation treatments.

EXPLANATORY NOTES

The following notes set out some of the provisions of the Water Act which apply to your License.

- The Commissioner may issue a License with all terms, limitations and conditions which he considers necessary.
- When renewing a License the Commissioner may add more terms or conditions or change the existing terms and conditions.
- Where the Commissioner is satisfied a Licensee has failed to complete the licensed work within the time stated on the License he may require the Licensee to show cause why the Commissioner should not cancel the License.
- A License relates to the land on which the licensed work is constructed or is proposed to be constructed and is, at any time, held by the actual owner or occupier of that land.
- If a Licensee contravenes or fails to carry out any conditions of a License he may be liable to a penalty not exceeding $2,000 and a further daily penalty not exceeding $200 and the License may be cancelled.

Please Note: The wording used in these notes does not follow exactly the wording in the Water Act and reference should be made to the Act for precise details.

(a) "As built" drawings, photographs and descriptions of the works as constructed with particular reference to :

(i) geological maps of final foundations;
(ii) records of final foundation levels and depths of cut-off excavations;
(iii) details of any other foundation treatments.

(b) Brief descriptions of construction methods and equipment employed on the work.

(c) Summaries of results of tests on embankment materials and foundations.

(d) Records of monitoring instruments and survey control points installed in the works.

(e) Records of instrument readings and survey observations made during the construction period.

(f) Relevant reports of inspections by Consulting Engineers, Macdonald Wagner Pty Limited.

13. The Licensee shall prepare a Manual setting out all necessary information and instructions for the safe operation and maintenance of the works and monitoring by embedded instruments and surfacemovement surveys. The operation and maintenance procedures and any subsequent variations shall be determined by engineers fully conversant with the design and specification of the works. The Licensee shall issue the Manual to persons operating and maintaining the works and shall furnish a copy to the Commissioner.

14. The licensed works shall be inspected by a member of the firm of Macdonald Wagner Pty Limited, or another suitable qualified and experienced engineer approved by the Commissioner, at the following times :-

(a) During or immediately after the first substantial impounding of water by the dam.

(b) Annually for two years following the initial inspection.

(c) Thereafter at intervals not exceeding five years.

(d) At any time if alarming, unusual or otherwise unsatisfactory conditions are observed.

For each inspection a copy of the engineer's report and recommendations as to measures that should be taken to ensure the safety of the dam shall be furnished to the Commission's Regional Engineer, Rockhampton.

15. The Licensee shall maintain records of the engineering inspections and of measures taken to ensure the safety of the dam. The records shall be made available for inspection when required by the Commissioner.

Exhibit GC-13

MEETING AGENDA/MINUTES

Date of Meeting:	11 Oct 2010	**Location:**	Callide Conf Room

1. Purpose of Meeting

DERM status update of Environmental Investigation and ash dam water level management

2. Attendance at Meeting

Name	Department	Name	Department
Chris Loveday	DERM		
[redacted]	Callide		
[redacted]	Environment		
[redacted]	Tech Services		
[redacted]	WMIP		

3. Meeting Agenda

Item	*Topic*	*Duration*	*Lead*
1	Background	20	[redacted]
2	Environmental Investigation status	10	[redacted]
3	ADB water level: • Current levels and trends • Actioned & proposed remedial actions	30	[redacted]
4	DERM perspective on proposed actions	20	[redacted]

4. Meeting Notes, Decisions, Issues

1. Tasks under environmental investigation on schedule to be largely completed by early December.
2. DERM are particularly interested to see the Aurecon hydrogeological model.
3. Bore sampling scheduled for this week, ending 15 October.
4. The proposed evaporative blowers would require submission of a Transitional Environmental Plan. As this usually requires known outcomes, and with the uncertainty of salt drift, a full scale implementation in the short term is unlikely to be viewed favorably.
5. Implementation of the stack water injection option is likely to be possible by agreement only. Impacts based on original dispersion modelling would require documenting.
6. Current & ongoing operational improvements to reduce water levels in ADB discussed. Additional short term actions to reduce dam level to under the current DSA are not necessarily a priority for

4. Meeting Notes, Decisions, Issues

DERM. DERM is more interested in the medium and long term strategy that is being implemented to ensure Callide is not in the same position in five years, particularly for management of ash and salt.

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5. Action Items

Carry-over Actions	Assigned to	Due Date	Status

Actions from the current monthly meeting	Assigned to	Due Date	Status

Actions arising from interim weekly meetings	Assigned to	Due Date	Status

6. Next Meeting

Date:		Time:		Location:	

Exhibit GC-14

E-mail Message

From:	[redacted]
To:	[redacted]
Cc:	
Sent:	7/01/2011 at 9:24 AM
Received:	7/01/2011 at 9:24 AM
Subject:	Callide Ash Dam - Letter to DERM re Spill Warning Level
Attachments:	SKMBT_C25211010709190.pdf

[redacted]

Please find attached a letter confirming our various updates and conversations earlier in the week.

Latest data is that Ash Dam level is now 214.82mRL leaving head room of 133mm or approximately the equivalent of 44mm of additional rain. January MTD the site has experienced a further 131mm of rain over the large December totals.

We are finalising the VTEP which I hope to have through to you after lunch today.

My concern is that we will be into a spill situation before we have a chance for the TEP to be approved. I will have in place by late today two syphons capable we believe of 30ML/d discharge. Sunwater have advised that they expect Callide Dam to spill in the next 48hrs.

Is there any quick way that I can get approval to discharge into that spill should it occur over the weekend? I am assuming that it would need to take the form of an Emergency Direction.

Thank you for your assistance so far

[redacted]

[redacted]

Callide Site Manager

CS Energy

[redacted] [redacted] [redacted]

PO Box 392

BILOELA QLD 4715

Callide Power Station | T 07 4992 9329
CS Energy Ltd ABN 54 078 848 745 | F 07 4992 9328
PO Box 392 Biloela Qld 4715 | W www.csenergy.com.au

cs energy
generations ahead

7 January, 2011

[redacted]
Department of Environment and Resource Management
Gladstone QLD 4680
Via Email: [redacted]

Dear [redacted]

RE: CALLIDE ASH DAM B

Background

I am writing to update you on the current status of the Callide Ash Dam B as of 6 January 2011.

In summary our previous correspondence covered:

- Correspondence to DERM on20 December notifying the exceedence of the Level 1 trigger in the "Callide Power Station Ash dam – Corrective Action Plan" – MRL 213.33m.
- Correspondence to DERM on 22 December 2010 providing additional requested information as well of the increase in Ash dam water level to 213.36 m. A total of 1701 ML storage volume was available from the 213.36 level up to the spillway level, which equated to an estimated rainfall event of 540mm.
- Correspondence to DERM on 30th December 2010 noting that the ash dam water level had risen to 214.35m, a rise of 990 mm. This followed 262.5 mm of rain between the 22nd December and the 29th December – the most significant rain event was 127 mm of rain overnight from the 27th to the 28th December. The freeboard level was 690 ML equivalent to a 215mm rain event. During the period 22nd December to 29th December the water level in the Callide Dam (operated by Sunwater) also rose from approximately 30% to 88% of full supply capacity.

Based on the trigger levels in the "Callide Power Station Callide Ash Dam B Emergency Action Plan", special Dam Safety Inspections were carried out by Sunwater on 29 December (historical highest water level) and again on 5 January (water level increased by more than 0.25 m in a week). No dam safety issues have been identified.

As per discussion and presentation at the Callide site meeting with DERM and Sunwater on 5 January, it was noted that the water level had risen to 214.66 m on 4 January due to a 46.5 mm rain event. This level exceeded the Spill Warning Level of 214.45 m and as such represented a Level 3 Exceedence as per the Corrective Action Plan. Applicable Level 3 actions were initiated at the Spill Warning Level including the meeting discussion regarding a controlled release from Ash Dam B in conjunction with a release of water from Callide Dam. CS Energy is currently preparing an urgent TEP for the controlled release proposal. Local stakeholders Sunwater, The Banana Regional Council and local landholders are being briefed on the Ash dam water level status and CS Energy planned actions.

As of 6 January, due to a 41.5 mm overnight rain event, the Ash dam water level has risen to 214.77 m – representing a remaining freeboard of 180 mm to the spillway level of 214.95 m and equivalent to freeboard volume of 210 ML and a rain event of some 60mm to result in spilling of the dam. Thus spilling of the Ash Dam is imminent – management actions would be as per the "Callide Power Station Ash Dam B Spill Management Plan" and the Corrective Action Plan, noting the urgent TEP also being prepared for DERM approval. The level of 214.77 m represents a Level 4 Exceedence under the Corrective Action Plan.

CS Energy has continued to monitor appropriate water samples – the Ash Dam B water analysis for 6 January is noted below:

Measurement	Result
pH	8.18
Conductivity	6440 µS/cm
Total Dissolved Solids	4122 mg/Litre
Sulphate	1425 mg/Litre
Chloride	1436 mg/Litre

If you require any additional information, please do not hesitate to contact me.

Yours faithfully,

[redacted]

Site Manager - Callide

Exhibit GC-15

Message: B/D/2011/001528

From: [redacted]
To:
Cc:
Sent: 7/01/2011 at 5:00 PM
Received: 7/01/2011 at 5:00 PM
Subject: Section 320 Notice

Attachments: 20110107_Updated_Section 320 Notice re Imminent Ash Dam Spill.doc (46 KB)

[redacted]

Please find attached a Section 320 notice of imminent release from the Callide Ash dam.

Should an event occur over the weekend I will follow up with verbal advice.

Regards

[redacted]

[redacted]

Callide Site Manager

CS Energy

PI [redacted]

PO Box 392

BILOELA QLD 4715

Ref:

7 January 2011

[redacted]
Environmental Officer, Regional Services
Department of Environment and Resource Management
Level 3, 136 Goondoon Street
PO Box 5065
GLADSTONE 4680

By e-mail: [redacted]

Dear [redacted]

CALLIDE POWER STATION ASH DAM B
NOTIFICATION OF IMMINENT RELEASE
ENVIRONMENTAL PROTECTION ACT 1994 – SECTION 320 NOTICE

CS Energy has been in regular contact with the Department of Environment and Resource Management (DERM) in relation to the risk of an uncontrolled release from Callide Power Station's Ash Dam B as a consequence of the extreme rainfall events in the area since December 2010.

On 1 November, at the start of the wet season, the water levels in the ash dam were below the design storage allowance and mandatory reporting level (MRL) and accordingly met the requirements of the Callide Ash Dam Management Plan under CS Energy's Integrated Environmental Authority No. CG0039. Significant rainfall events since the start of December 2010 have, however, resulted in raised water levels in the ash dam.

On 20 December 2010, CS Energy notified DERM that the ash dam water level had reached the MRL of 213.33 m. On 22 December 2010, CS Energy advised DERM that the ash dam water level was 213.36 m and therefore had exceeded the MRL. Further advice was provided to DERM on 30 December 2010 that the ash dam water level had risen to 214.35 m following 262 mm of rain recorded between 22 December and 29 December 2010.

Total rainfall at Callide Power Station for December 2010 was 441 mm, the highest recorded rainfall in the area for the December period since 1973. As a result, water levels in the ash dam rose by 1.27 m during December 2010.

A further 123 mm of rain was recorded at the power station in the period 1 January 2011 to 6 January 2011. The water level reading of the ash dam on 3 January 2011 showed that the Spill Warning Level of 214.45 m had been exceeded, with the level at 214.55 m, due to a storm the previous afternoon. Since 1 January 2011, the water level of the ash dam has increased by 350 mm. The ash dam water level is now 130 mm below the spillway. A further 43 mm rainfall is likely to result in the ash dam spilling.

../2

CS Energy is assessing a range of water level management options, including the controlled release of water from the Callide Ash Dam. A controlled release would reduce the likelihood of an uncontrolled spill in the event of further heavy rain. CS Energy is working with DERM and Sunwater to ensure that should a controlled release be necessary, it would meet drinking, stock and irrigation water quality requirements.

Following a site meeting conducted with DERM and SunWater on 5 January 2011 to discuss options for managing the high water level risk, a Voluntary Transitional Environmental Program to manage controlled releases is being developed.

In the meantime, however, it is considered that while the ash dam water level is presently below the spillway, ongoing rainfall events mean that the risk of an uncontrolled release before the Transitional Environmental Program is approved is considered very high.

CS Energy is monitoring water levels on a daily basis, and conducting a detailed analysis of the risk and potential impact of the ash dam reaching or exceeding the spillway level if further significant rainfall is received. Actions being undertaken by CS Energy include the collection of water samples and assessment of water levels and flows in the surrounding area, including Callide Creek.

As part of the Ash Dam Management Plan required by Condition 2(E4) of the relevant development approval (CG0039), the Spill Management Plan and Corrective Action Plan have been implemented. CS Energy is providing regular briefs to DERM, the Banana Shire Council and SunWater, regarding the dam status. As required under the Spill Management Plan, communications with neighbouring property owners within 6 kilometres downstream of the dam and 200 metres laterally from Callide Creek commenced yesterday regarding the water levels.

In the event of an uncontrolled release, CS Energy will:

- monitor water levels and flows of the ash dam and in the surrounding area;
- collect water samples from the ash dam and in the surrounding area;
- provide advice of the uncontrolled release to DERM, the Banana Shire Council, SunWater and landowners in the vicinity of the dam, and continue to keep those entities/individuals up-to-date with developments.

CS Energy has a strong commitment to the effective management of the ash dam water levels. A series of plant improvements have been undertaken that significantly reduce the process water inflows into the ash dam on an ongoing basis. Additional irrigation and evaporative sprays are also being installed to increase site water disposal capacity. Additional measures such as alternative evaporator technology and further in-plant modifications are under investigation for technical feasibility and risk assessment.

Consistent with maintaining open communication with DERM, we wish to advise DERM of the risk of an imminent uncontrolled release from the Callide Power Station Ash Dam B. Should an uncontrolled release occur, this event is not expected to cause environmental harm.

This letter is intended to constitute a notice under Section 320 of the Environmental Protection Act 1994 (Qld) and will be referred to in the relevant annual return.

Should you have any queries in relation to this matter, please do not hesitate to contact me directly or [redacted]

Yours sincerely

[redacted]
SITE MANAGER CALLIDE POWER STATION

Enquiries: [redacted]
Environmental Coordinator
Telephone [redacted]
Mobile [redacted]

Exhibit GC-16

Message: B/D/2011/001657

From: [redacted]
To: [redacted]
Cc:
Sent: 7/01/2011 at 5:42 PM
Received: 7/01/2011 at 5:42 PM
Subject: VTEP Attached

Attachments: 20110107_Covering Letter to DERM with TEP.DOC (39 KB)
20110107_Final - Voluntary TEP for High Ash Dam Water Level.pdf (122 KB)

[redacted]

My apologies but it has taken a bit longer than planned to finalise

Regards

[redacted]

[redacted]

Callide Site Manager

CS Energy

[redacted] [redacted] [redacted]

PO Box 392

BILOELA QLD 4715

Ref:

7 January 2011

[redacted]
Environmental Officer, Regional Services
Department of Environment and Resource Management
Level 3, 136 Goondoon Street
PO Box 5065
GLADSTONE 4680

By e-mail: [redacted]

Dear [redacted]

VOLUNTARY TRANSITIONAL ENVIRONMENTAL PROGRAM
CALLIDE POWER STATION ASH DAM B – EXCESS WATER LEVEL MANAGEMENT

Further to our ongoing discussions and videoconference on 5 January 2011, enclosed please find a Voluntary Transitional Environmental Program (VTEP) covering proposed release scenarios to progressively reduce the water level in Callide Ash Dam B.

CS Energy seeks your approval of the enclosed VTEP which will facilitate releases from the ash dam whilst adequate flow is available in Callide Creek.

Thank you for your continuing assistance with this a nd other regulatory matters associated with the management of the Callide Ash Dam.

If you require any further information please do not hesitate to contact [redacted] directly.

Yours sincerely

[redacted]
SITE MANAGER CALLIDE POWER STATION

Enquiries: [redacted]
Environmental Coordinator
Telephone [redacted]
Mobile [redacted]

Encl

- Transitional Environmental Program

CALLIDE POWER STATION VOLUNTARY TRANSITIONAL ENVIRONMENTAL PROGRAM (VTEP)

DATE: 7 January 2011

LOCATION: Callide A and B, and Callide C Power Stations
Coal and Callide Roads respectively
BILOELA QLD 4715

EXISTING DEVELOPMENT APPROVALS:
Integrated Authority CG0039 issued 30 July 2004
Integrated Authority CG0117 issued 17 June 2004.

REGISTRATION CERTIFICATE HOLDERS:
CS Energy Limited ACN 078 848 745 holds ENRE 00952209
Callide Power Management Pty Ltd ACN 082 468 700 holds ENRE 00849808

ACTIVITIES:

ENRE 00952209

- ERA 8 Chemical Storage Threshold 1
- ERA 8 Chemical Storage Threshold 3(b)
- ERA 14 Electricity Generation Threshold 2(b)
- ERA 56 Regulated Waste Storage Threshold 2
- ERA 60 Waste Disposal Threshold 1(d)
- ERA 63 Sewage Treatment Threshold 2(b)

ENRE 00849808

- ERA 14 Electricity Generation Threshold 2(b)
- ERA 56 Regulated Waste Storage Threshold 2

BACKGROUND

CS Energy owns and operates Callide A and B power stations located at Coal Road, Biloela, Queensland and holds Registration Certificate ENRE 00952209.

2010 has been an exceptionally wet year, with the Power Station site recording 1,134 mm of rain, compared with a 2010 total rainfall for Thangool of 1,097 mm. Long-term rainfall

records show the 10-year average rainfall for the power station site of 584 mm, and a 79-year average rainfall for Thangool of 662 mm.

Notwithstanding, at the commencement of the nominal 4 month wet season on 1 November 2010, Ash Dam B was in compliance with the statutory 0.01 AEP (Annual Exceedance Probability) annual risk level (Design Storage Allowance) (DSA) of RL 213.37 m. The level of the dam on 1 November 2010 was RL 213.16 m.

On 20 December 2010, the dam level of 213.335 m exceeded the statutory 0.01 AEP for the 72 hour storm risk level (Mandatory Reporting Level - MRL) of 213.33 m and DERM were notified.

Significant rainfall events in the area in December 2010 have resulted in raised water levels in the ash dam. Total rainfall at Callide Power Station as at Friday 31 December 2010 was 441 mm, the highest recorded rainfall in the area for a December period. As a result of these rainfall events, water levels in the ash dam have risen by 1.27 m in December, with levels rising by 1.06 m between 22 December and 31 December. A further 131 mm of rain was recorded at the power station from 1 to 7 January 2011, increasing the water level of the ash dam by 350 mm. The water level in the ash dam is now approaching the dam's spillway level, and is likely to spill if a further 43 mm of rain is received at the Callide Power Station. in the very near future. Furthermore the current strong La Nina event continues with the Bureau of Meteorology forecasting wetter than normal conditions are likely to persist until autumn.

As at 6 January 2011, the water level in the dam was RL 214.77 m, just below the spillway level of RL 214.95 m.

Ash Dam B also receives effluent and ash from Callide C Power Station located at Callide Road, Biloela, Queensland. Callide Power Management Pty Ltd (CPM) is the holder of Registration Certificate ENRE 00849808 for Callide C Power Station. CS Energy through Callide Energy Pty Ltd is a part owner of Callide Power Management. CS Energy is also the contracted operator of Callide C Power Station.

The recent rainfall events in the region have also caused heavy sediment loads in water supplies from Callide Dam which has affected the performance of the C station cooling tower blowdown water treatment plant.

The original design basis for the dam set a risk level of 1% total (not annual) over the station life that the water level would reach the spillway level.[1] In 2003, the spillway level was raised from RL 213.55 m to RL 214.95 m. CS Energy has and continues to investigate, as part of its longer term strategy, outside the scope of this VTEP, future actions to address the spill risk from the next wet season nominally commencing in November 2011.

It is also noted that CS Energy is investigating the impact of seepage from Ash Dam B and measures to reduce it, to meet the scope of the Environmental Investigation Report to be submitted to DERM by 4 March 2011.

OBJECTIVE OF THE VTEP

The Objective of this Voluntary Transitional Environmental Program is to ensure compliance with the *Environmental Protection Act 1994* (EP Act) by implementing water management measures to avoid as far as practicable environmental harm being caused or threatened by an overflow of Ash Dam B, if the forecast cumulative rainfall events occur during the balance of the current wet season.

[1] Callide B Power Station Ash Dam - Design Report, prepared by Macdonald Wagner for QEC June 1985.

In particular, this VTEP proposes planned controlled low flow releases from Ash Dam B diluted by flow in Callide Creek, to reduce the water level in Ash Dam B to below the Spill Warning Level of RL 214.45 m, as specified in the Emergency Action Plan developed as part of the Ash Dam Management Plan documentation required by the Development Approval. The VTEP also seeks authorization for opportunistic controlled low and high flow releases from Ash Dam B diluted by flow in Callide Creek, to reduce the water level in Ash Dam B to below the Mandatory Reporting Level of RL 213.33 m.

THE PROGRAM IS REQUIRED BASED ON THE FOLLOWING GROUNDS:

This VTEP is required based on the following grounds:

- The water level in Callide Ash Dam B has risen some 3 metres from RL 211.74 m on 1 January 2010 to RL 214.77 m on 6 January 2011, as a consequence of the significantly higher than normal rainfall received during 2010 and 2011 to date due to the strong La Nina event affecting eastern Australia. The spillway overflow level is RL 214.95 m.

- Preventative measures such as a controlled release may be necessary to ensure that environmental harm is not caused or threatened, should the ash dam overflow if forecast cumulative rainfall is received. Controlled releases will aim to achieve a better environmental outcome for the receiving environment by managing water flow rates, discharge locations and quality, compared with rainfall-driven uncontrolled spills.

HOW OBJECTIVE WILL BE ACHIEVED

The Objective will be achieved by adopting the following strategy:

- Carrying out actions under the proposed scenarios and within the indicative timeframes proposed under this VTEP.

AUTHORISATION

The operation of Callide A and B stations is authorised by Integrated Authority CG0039 and Registration Certificate ENRE 00952209.

"Schedule 2 E – Land Application" of the Integrated Authority authorises the Registration Certificate Holder to release ash and effluent to the Waste Containment Facility from A, B and C stations.

"Schedule 2C - Water" of the Integrated Authority authorises the release of contaminants from the licensed place at Release Points R1 and R2 from Ash Dams 1 and 2 respectively.

The *"Waste Containment Facility"* is defined in the Integrated Authority and includes Ash Dam B.

The operation of Callide C station is authorised by Integrated Authority CG0117. *"Schedule 2E - Land Application"* authorises ash and effluent (coal material, boiler blowdown and chemical cleaning waters and treated sewage effluent) to be placed in the Waste Containment Facility.

Controlled release from the dam with concurrent flow in Callide Creek is also a listed response strategy for a Level 3 Action under the Corrective Action Plan developed as part of

the Ash Dam Management Plan documentation required by the Development Approval.

Accordingly, CS Energy is authorised to continue to operate the Callide A, B and C Stations and to continue to direct ash and effluent to the Waste Containment Facility under the terms of this VTEP. Callide Power Management as the Callide C Registration Certificate holder is authorized to continue to direct ash and effluent to the Waste Containment Facility from Callide C Station under the terms of this VTEP.

PERFORMANCE INDICATORS

The following Actions will be carried out by CS Energy with the aim of achieving the targeted water level reductions.

CS Energy will use its best endeavours to achieve the desired water level reductions within the indicative timeframe given. However, the timeframe for achieving the targeted water level reduction will be heavily influenced by:

(a) The times and durations for which the water flows and quality of water in the receiving environment in Callide Creek facilitates controlled or opportunistic releases from the Ash Dam.
(b) Operational delays, including the sourcing, delivery, commissioning and operation of plant and equipment.
(c) Inability of personnel to safely access plant and equipment due to weather conditions.
(d) Further rainfall events.

At the time of submission of this VTEP, technical investigations into the sourcing and delivery of pumps, pipes and associated plant and equipment are continuing. It is anticipated that by 8 January 2011, the power station will be capable of the controlled release of around 30 ML/day of ash dam water, and by 12 January 2011, it is hoped to have another 15 ML/day of capacity commissioned.

CS Energy will keep DERM regularly informed as to the progress with proposed actions under this VTEP.

ACTION 1 - RELEASE SCENARIOS

It should be noted that the following Scenarios and related Actions may occur simultaneously in various combinations, with Ash dam releases from separate release points, depending on the state of Callide Dam, Callide Creek, Ash Dam B, and the operability of pumping equipment.

Two final release points to Callide Creek are available for ash dam releases:

- The western route has 2 x 2.4 m diameter culverts under the Biloela-Callide Rd. It would potentially receive releases from the Western Stormwater Diversion Channel or the Western Seepage Collection Trench. This route has a high capacity flow capability.

- The eastern route has 4 x 900 mm diameter culverts under the Biloela-Callide Rd. This flow path is however currently restricted by a single 900 mm culvert below the dam access road. Flows may need to be restricted to avoid cutting the access road, or the culvert modified. It would potentially receive releases from the area of the spillway, the Eastern Stormwater Diversion Channel or the Eastern Seepage Collection Trench. This route currently has a lower capacity flow capability than the western route.

Water will be released from Ash Dam B to meet the water quality objectives for Callide Creek combined flows as specified in Table A, based on meeting the drinking water standards for those parameters influenced by the ash dam water quality and for applicable stock and irrigation water quality requirements.

SCENARIO 1: Callide Dam Not Spilling and Callide Creek Flowing

RELATED ACTION 1: Opportunistic Controlled "Low Flow" Release

Objective: Ash Dam water will be released into natural Callide Creek run-off flow to below the Mandatory Reporting Level.

Characteristics of Release

- After a moderate rain event the upper reaches of the Callide Creek above the Linkes Road culvert will be running with surface water flow rates of 100 to 350 ML/d
- Controlled release of up to 10% of this volume of ash water
- Proposed start when flows are +150 ML/d and stop when flows pass back through that figure
- Monitor release volumes and quality and match to volumes and flows at Callide Dam Road and Linkes Road culverts
- Enables some discharge capability using rain events without drawing on water reserves in Callide Dam
- Discharge ash dam down to MRL if sequence of events allows
- Will occur in a series of events
- Total release volume estimated to be 1,750 ML plus rain events

SCENARIO 2: Callide Dam Not Spilling But Releasing and Callide Creek Flowing

RELATED ACTION 2: Planned Controlled "Low Flow" Release

Objective: Ash Dam water will be released into a Callide Dam Release to below the Spill Warning Level.

Characteristics of Release

- Arrangements made with Sunwater to release water reserves at a rate that provides a creek flow of 300 ML/d at Linkes Road culvert
- Discharge 30 ML/d of ash water
- Monitor volumes and adjust release rate to maintain a creek flow of 300 ML/d at Linkes Road
- Discharge down to below Spill Warning Level
- A number of such releases may be required if subsequent rain events increase level to above the Spill Warning Level.

SCENARIO 3: Callide Dam Spilling or Releasing and Callide Creek Flowing

RELATED ACTION 3: Opportunistic Controlled "High Flow" Release

Objective: Ash Dam water will be released into a Callide Dam flood overflow or release event to below the Mandatory Reporting Level.

Characteristics of Release

- Install high capacity 80+ML/d pump plus syphons ~45 ML/d
- Assumes Callide Dam overflow rate is greater than 1,250 ML/d
- Callide Creek will be in flood
- Potential to lower level to MRL in 10 days of operation
- Maximum discharge would be around 1,750 ML plus any subsequent rain events
- A number of such releases may be required if subsequent rain events increase level to above the Mandatory Reporting Level.

ACTION 2: Landholder Consultation

CS Energy has commenced consultation with downstream landholders potentially affected by the proposed releases from Ash Dam B in accordance with the Spill Management Plan.

ACTION 3: Receiving Environment Monitoring

Monitoring of Release Volumes and Callide Creek Flows

CS Energy will use its best endeavours to regularly measure, monitor and adjust release volumes to maintain an acceptable dilution ratio with the available flow in Callide Creek.

CS Energy will adjust discharge volumes to ensure downstream property and infrastructure are protected from Ash Dam releases.

CS Energy will have no control over downstream flood events and volumes, but will endeavour to estimate these.

CS Energy anticipates being able to access release and flow data from Sunwater.

Monitoring of Callide Creek Surface Water and Groundwater Quality

CS Energy will sample and analyse the Receiving Environment (surface water sites and groundwater monitoring bores) in accordance with the Spill Management Plan developed as part of the Ash Dam Management Plan documentation required by the Development Approval:

ACTION 4: REPORTING TO DERM

Weekly summary reports of progress with the VTEP actions will be provided to DERM.

More detailed Monthly reports on the releases from the Ash Dam, and water quality of the Receiving Environment will also be submitted to DERM until the completion of releases

under this VTEP.

ACTION 5: REVIEW AND EVALUATION

Following completion of the actions identified in this VTEP, CS Energy will review whether the actions met the stated objective and will report its findings to DERM.

CLOSURE

This VTEP remains in force until such time as DERM are satisfied that the objective of the Program has been met, i.e. until the Mandatory Reporting Level of RL 213.33 m is achieved and reliably maintained beyond the current wet season.

This VTEP will target a closure date of 1 July, 4 months past the end of the nominal 4 month wet season to 1 March 2011. However, should factors such as rainfall, availability of suitable flow rates in Callide Creek and performance of pumping plant jeopardise the reliable achievement of this outcome, CS Energy will discuss with DERM the possible extension of the VTEP.

This VTEP will conclude 14 days after receipt by CS Energy of written acknowledgement by DERM that the Review Report has been received from CS Energy and the actions proposed under this VTEP have been satisfied.

RESPONSIBLE OFFICER

[redacted] Site Manager Callide Power Station
CS Energy Limited

TABLE A

WATER QUALITY PERFORMANCE INDICATORS

		Callide Creek Water Quality Objectives	Australian Drinking Water Guideline	STOCK WATER	IRRIGATION WATER
pH VALUE		6.5 - 8.5	**6.5 - 8.5**	4.5 - 9.0	6.5 - 8.5
CONDUCTIVITY @ 25 C	us/cm	1500			
TOTAL DISSOLVED SOLIDS (TDS)	mg/L	1000	**500 - 1000 acceptable**		
	mg/L				
CALCIUM	mg/L	200	**200 Aesthetic**	1000	
MAGNESIUM	mg/L				
SODIUM	mg/L	180	**180 Aesthetic**		
CHLORIDE PPM	mg/L	500	**250 aesthetic**		
SULPHATE	mg/L	500	**500 - 250 Aesthetic**	1000	
BORON	mg/L	4	**4**	5	0.5
BARIUM	mg/L	0.7	**0.7**		
CHROMIUM (as CR6)	mg/L	0.05	**0.05**		
COPPER	mg/L	1	**2 - 1 Aesthetic**		
LEAD	mg/L	0.01	**0.01**		
MOLYBDENUM	mg/L	0.05	**0.05**	0.15	0.05
SELENIUM	mg/L	0.01	**0.01**	0.02	0.05
VANADIUM	mg/L	0.01	**0.01**	0.1	0.5
ZINC	mg/L	3	**3 Aesthetic**		
MERCURY	mg/L	0.001	**0.001**		
FLUORIDE	mg/L	1.5	**1.5**	2	2
CADMIUM	mg/L	0.002	**0.002**		
NICKEL	mg/L	0.02	**0.02**		
NITRATE	mg/L	50	**50**		
SILVER	mg/L	0.1	**0.1**		
URANIUM	mg/L	0.02	**0.02**	0.2	0.01
ANTIMONY	mg/L	0.003	**0.003**		

Note; Trace element levels are measured as dissolved levels

Exhibit GC-17

Message: B/D/2011/001752

From: [redacted]
To: [redacted] vid
Cc: [redacted]
Sent: 11/01/2011 at 2:35 PM
Received: 11/01/2011 at 2:35 PM
Subject: Final Document vTEP

Attachments: 20110111 - Table B - Callide Ash Dam Water Level Management TEP.PDF (674 KB)
CALLIDE POWER STATION VTEP.pdf (818 KB)

[redacted]

Attached are the final versions agreed between yourself and Roger for approval.

Regards

[redacted]

[redacted]

Callide Site Manager

CS Energy

PI [redacted]

PO Box 392

BILOELA QLD 4715

cs energy

CALLIDE POWER STATION VOLUNTARY TRANSITIONAL ENVIRONMENTAL PROGRAM (VTEP)

DATE: 11 January 2011

LOCATION: Callide A and B, and Callide C Power Stations
Coal and Callide Roads respectively
BILOELA QLD 4715

EXISTING DEVELOPMENT APPROVALS:
Integrated Authority CG0039 issued 30 July 2004
Integrated Authority CG0117 issued 17 June 2004.

REGISTRATION CERTIFICATE HOLDERS:
CS Energy Limited ACN 078 848 745 holds ENRE 00952209
Callide Power Management Pty Ltd ACN 082 468 700 holds ENRE 00849808

ACTIVITIES:

ENRE 00952209

- ERA 8 Chemical Storage Threshold 1
- ERA 8 Chemical Storage Threshold 3(b)
- ERA 14 Electricity Generation Threshold 2(b)
- ERA 56 Regulated Waste Storage Threshold 2
- ERA 60 Waste Disposal Threshold 1(d)
- ERA 63 Sewage Treatment Threshold 2(b)

ENRE 00849808

- ERA 14 Electricity Generation Threshold 2(b)
- ERA 56 Regulated Waste Storage Threshold 2

BACKGROUND

CS Energy owns and operates Callide A and B power stations located at Coal Road, Biloela, Queensland and holds Registration Certificate ENRE 00952209.

2010 has been an exceptionally wet year, with the Power Station site recording 1,134 mm of rain, compared with a 2010 total rainfall for Thangool of 1,097 mm. Long-term rainfall

records show the 10-year average rainfall for the power station site of 584 mm, and a 79-year average rainfall for Thangool of 662 mm.

Notwithstanding, at the commencement of the nominal 4 month wet season on 1 November 2010, Ash Dam B was in compliance with the statutory 0.01 AEP (Annual Exceedance Probability) annual risk level (Design Storage Allowance) (DSA) of RL 213.37 m. The level of the dam on 1 November 2010 was RL 213.16 m.

On 20 December 2010, the dam level of 213.335 m exceeded the statutory 0.01 AEP for the 72 hour storm risk level (Mandatory Reporting Level - MRL) of 213.33 m and DERM were notified.

Significant rainfall events in the area in December 2010 have resulted in raised water levels in the ash dam. Total rainfall at Callide Power Station as at Friday 31 December 2010 was 441 mm, the highest recorded rainfall in the area for a December period. As a result of these rainfall events, water levels in the ash dam have risen by 1.27 m in December, with levels rising by 1.06 m between 22 December and 31 December. A further 131 mm of rain was recorded at the power station from 1 to 7 January 2011, increasing the water level of the ash dam by 350 mm. The water level in the ash dam is now approaching the dam's spillway level, and is likely to spill if a further 43 mm of rain is received at the Callide Power Station. in the very near future. Furthermore the current strong La Nina event continues with the Bureau of Meteorology forecasting wetter than normal conditions are likely to persist until autumn.

As at 6 January 2011, the water level in the dam was RL 214.77 m, just below the spillway level of RL 214.95 m.

Ash Dam B also receives effluent and ash from Callide C Power Station located at Callide Road, Biloela, Queensland. Callide Power Management Pty Ltd (CPM) is the holder of Registration Certificate ENRE 00849808 for Callide C Power Station. CS Energy through Callide Energy Pty Ltd is a part owner of Callide Power Management. CS Energy is also the contracted operator of Callide C Power Station.

The recent rainfall events in the region have also caused heavy sediment loads in water supplies from Callide Dam which has affected the performance of the C station cooling tower blowdown water treatment plant.

The original design basis for the dam set a risk level of 1% total (not annual) over the station life that the water level would reach the spillway level.[1] In 2003, the spillway level was raised from RL 213.55 m to RL 214.95 m. CS Energy has and continues to investigate, as part of its longer term strategy, outside the scope of this VTEP, future actions to address the spill risk from the next wet season nominally commencing in November 2011.

It is also noted that CS Energy is investigating the impact of seepage from Ash Dam B and measures to reduce it, to meet the scope of the Environmental Investigation Report to be submitted to DERM by 4 March 2011.

OBJECTIVE OF THE VTEP

The Objective of this Voluntary Transitional Environmental Program is to ensure compliance with the *Environmental Protection Act 1994* (EP Act) by implementing water management measures to avoid as far as practicable environmental harm being caused or threatened by an overflow of Ash Dam B, if the forecast cumulative rainfall events occur during the balance of the current wet season.

[1] Callide B Power Station Ash Dam - Design Report, prepared by Macdonald Wagner for QEC June 1985.

In particular, this VTEP proposes planned controlled low flow releases from Ash Dam B diluted by flow in Callide Creek, to reduce the water level in Ash Dam B to below the Spill Warning Level of RL 214.45 m, as specified in the Emergency Action Plan developed as part of the Ash Dam Management Plan documentation required by the Development Approval. The VTEP also seeks authorization for opportunistic controlled low and high flow releases from Ash Dam B diluted by flow in Callide Creek, to reduce the water level in Ash Dam B to below the Mandatory Reporting Level of RL 213.33 m.

THE PROGRAM IS REQUIRED BASED ON THE FOLLOWING GROUNDS:

This VTEP is required based on the following grounds:

- The water level in Callide Ash Dam B has risen some 3 metres from RL 211.74 m on 1 January 2010 to RL 214.77 m on 6 January 2011, as a consequence of the significantly higher than normal rainfall received during 2010 and 2011 to date due to the strong La Nina event affecting eastern Australia. The spillway overflow level is RL 214.95 m.

- Preventative measures such as a controlled release may be necessary to ensure that environmental harm is not caused or threatened, should the ash dam overflow if forecast cumulative rainfall is received. Controlled releases will aim to achieve a better environmental outcome for the receiving environment by managing water flow rates, discharge locations and quality, compared with rainfall-driven uncontrolled spills.

HOW OBJECTIVE WILL BE ACHIEVED

The Objective will be achieved by adopting the following strategy:

- Carrying out actions under the proposed scenarios and within the indicative timeframes proposed under this VTEP.

AUTHORISATION

The operation of Callide A and B stations is authorised by Integrated Authority CG0039 and Registration Certificate ENRE 00952209.

"Schedule 2 E – Land Application" of the Integrated Authority authorises the Registration Certificate Holder to release ash and effluent to the Waste Containment Facility from A, B and C stations.

"Schedule 2C - Water" of the Integrated Authority authorises the release of contaminants from the licensed place at Release Points R1 and R2 from Ash Dams 1 and 2 respectively.

The *"Waste Containment Facility"* is defined in the Integrated Authority and includes Ash Dam B.

The operation of Callide C station is authorised by Integrated Authority CG0117. *"Schedule 2E - Land Application"* authorises ash and effluent (coal material, boiler blowdown and chemical cleaning waters and treated sewage effluent) to be placed in the Waste Containment Facility.

Controlled release from the dam with concurrent flow in Callide Creek is also a listed response strategy for a Level 3 Action under the Corrective Action Plan developed as part of

the Ash Dam Management Plan documentation required by the Development Approval.

Accordingly, CS Energy is authorised to continue to operate the Callide A, B and C Stations and to continue to direct ash and effluent to the Waste Containment Facility under the terms of this VTEP. Callide Power Management as the Callide C Registration Certificate holder is authorized to continue to direct ash and effluent to the Waste Containment Facility from Callide C Station under the terms of this VTEP.

PERFORMANCE INDICATORS

The following Actions will be carried out by CS Energy with the aim of achieving the targeted water level reductions.

CS Energy will use its best endeavours to achieve the desired water level reductions within the indicative timeframe given. However, the timeframe for achieving the targeted water level reduction will be heavily influenced by:

(a) The times and durations for which the water flows and quality of water in the receiving environment in Callide Creek facilitates controlled or opportunistic releases from the Ash Dam.
(b) Operational delays, including the sourcing, delivery, commissioning and operation of plant and equipment.
(c) Inability of personnel to safely access plant and equipment due to weather conditions.
(d) Further rainfall events.

At the time of submission of this VTEP, technical investigations into the sourcing and delivery of pumps, pipes and associated plant and equipment are continuing. It is anticipated that by 8 January 2011, the power station will be capable of the controlled release of around 30 ML/day of ash dam water, and by 12 January 2011, it is hoped to have another 15 ML/day of capacity commissioned.

To meet the objective of implementing water management measures that avoid environmental harm being caused by a release from Ash Dam B, a key performance indicator will be meeting the water quality objectives shown in Appendix A for Callide Creek during any controlled release.

CS Energy will keep DERM regularly informed as to the progress with proposed actions under this VTEP, as per Action 4 of this TEP.

ACTION 1 - RELEASE SCENARIOS

It should be noted that the following Scenarios and related Actions may occur simultaneously in various combinations, with Ash dam releases from separate release points, depending on the state of Callide Dam, Callide Creek, Ash Dam B, and the operability of pumping equipment.

Two final release points to Callide Creek are available for ash dam releases:

- The western route has 2 x 2.4 m diameter culverts under the Biloela-Callide Rd. It would potentially receive releases from the Western Stormwater Diversion Channel or the Western Seepage Collection Trench. This route has a high capacity flow capability.

- The eastern route has 4 x 900 mm diameter culverts under the Biloela-Callide Rd. This flow path is however currently restricted by a single 900 mm culvert below the dam access road. Flows may need to be restricted to avoid cutting the access road, or

the culvert modified. It would potentially receive releases from the area of the spillway, the Eastern Stormwater Diversion Channel or the Eastern Seepage Collection Trench. This route currently has a lower capacity flow capability than the western route.

Water will be released from Ash Dam B to meet the water quality objectives for Callide Creek combined flows as specified in Table A, based on meeting the drinking water standards for those parameters influenced by the ash dam water quality and for applicable stock and irrigation water quality requirements.

It is proposed that water be released from Ash Dam B initially as per Scenario 1. The dynamics of Scenario 1 will be reviewed from operating experience in implementing it in terms of flow rates, dilution ratios and achievement of water quality objectives, and CS Energy will seek an amendment of this TEP as required based on that operating experience.

For each of these Scenarios, triggers for ceasing release will be as follows:

- When the water quality in Callide Creek as measured at the surface water monitoring sites reaches any of the Callide Creek Water Quality Objectives listed in Column 1 of Table A "Water Quality Performance Indicators".
- The flow in the Creek at Linkes Road is expected to fall below 300 ML/day in the next 24 hours.
- When the water level in the Ash Dam is reduced to the MRL.

For each of the Scenarios, the trigger for adjusting the dilution flow to less than 5% will be the results of the monitoring of the ash dam water release quality being unsuitable to meet the performance indicators at the authorised dilution ratio of 5%.

SCENARIO 1: Callide Dam Not Spilling and Callide Creek Flowing

RELATED ACTION 1: Opportunistic Controlled "Low Flow" Release

Objective: Ash Dam water will be released into natural Callide Creek run-off flow to below the Mandatory Reporting Level.

Characteristics of Release

- After a moderate rain event the upper reaches of the Callide Creek above the Linkes Road culvert will be running with surface water flow rates of 100 to 350 ML/d.
- This TEP authorises controlled release from the Ash Dam when the flow in Callide Creek as measured at the Linkes Road monitoring site is above 300 ML/day.
- This TEP authorises the controlled release from the Ash Dam of up to 5% of the measured flow at Linkes Road. For example, at the minimum authorised Creek flow of 300 ML/day, a maximum of 15 ML/day is authorised for releases from Callide Dam.
- Proposed start when flows are at or above 300 ML/day and stop when flows pass back through that figure.
- Monitor release volumes and quality and match to volumes and flows at Callide Dam Road and Linkes Road culverts
- Enables some discharge capability using rain events without drawing on water reserves in Callide Dam

- Discharge ash dam down to MRL if sequence of events allows
- Will occur in a series of events
- Total release volume estimated to be 1,750 ML plus rain events

SCENARIO 2: Callide Dam Not Spilling But Releasing and Callide Creek Flowing

RELATED ACTION 2: Planned Controlled "Low Flow" Release

Objective: Ash Dam water will be released into a Callide Dam Release to below the Spill Warning Level.

Characteristics of Release

- Arrangements made with Sunwater to release water reserves at a rate that provides a creek flow of 300 ML/d at Linkes Road culvert
- Discharge 15 ML/d of ash water
- Monitor volumes and adjust release rate to maintain a creek flow of 300 ML/d at Linkes Road
- Discharge down to below Spill Warning Level
- A number of such releases may be required if subsequent rain events increase level to above the Spill Warning Level.

SCENARIO 3: Callide Dam Spilling or Releasing and Callide Creek Flowing

RELATED ACTION 3: Opportunistic Controlled "High Flow" Release

Objective: Ash Dam water will be released into a Callide Dam flood overflow or release event to below the Mandatory Reporting Level.

Characteristics of Release

- Install high capacity 80+ML/d pump plus syphons ~45 ML/d
- Assumes Callide Dam overflow rate is greater than 1,250 ML/d
- Callide Creek will be in flood
- Potential to lower level to MRL in 10 days of operation
- Maximum discharge would be around 1,750 ML plus any subsequent rain events
- A number of such releases may be required if subsequent rain events increase level to above the Mandatory Reporting Level.

ACTION 2: Landholder Consultation

CS Energy has commenced consultation with downstream landholders potentially affected by the proposed releases from Ash Dam B in accordance with the Spill Management Plan.

ACTION 3: Receiving Environment Monitoring

Monitoring of Ash Dam Water Quality

Initial monitoring by CS Energy has shown that the ash dam water quality is uniform down to a depth of 3 metres adjacent to the proposed discharge point. This will be checked periodically to ensure the quality of the water is not significantly stratified.

Notwithstanding, CS Energy will monitor the quality of the water being released from the ash dam at the release point (end of pipe) or at the inlet to the pipe / pump.

Monitoring of Release Volumes and Callide Creek Flows

CS Energy will use its best endeavours to regularly measure, monitor and adjust release volumes to maintain an acceptable dilution ratio with the available flow in Callide Creek.

CS Energy will adjust discharge volumes to ensure downstream property and infrastructure are protected from Ash Dam releases.

CS Energy will have no control over downstream flood events and volumes, but will endeavour to estimate these.

CS Energy anticipates being able to access release and flow data from Sunwater.

Monitoring of Callide Creek Surface Water and Groundwater Quality

CS Energy will sample and analyse the Receiving Environment (surface water sites and groundwater monitoring bores) in accordance with the Spill Management Plan developed as part of the Ash Dam Management Plan documentation required by the Development Approval.

A copy of the proposed monitoring program is attached as Table B.

ACTION 4: REPORTING TO DERM

Weekly summary reports of progress with the VTEP actions will be provided to DERM.

More detailed Monthly reports on the releases from the Ash Dam, and water quality of the Receiving Environment will also be submitted to DERM until the completion of releases under this VTEP.

During release, daily reports will be provided to DERM of EC, DO, Cl, pH, and TDS and temperature for water released from the Ash Dam and from the Callide Creek surface monitoring sites as well as flow in Callide Creek and volume discharged from the ash dam.

When bore samples are taken, daily reports will be provided to DERM of EC, DO, Cl, pH, and TDS.

Laboratory analysis reports will be provided to DERM within 1 week of receiving laboratory results.

ACTION 5: REVIEW AND EVALUATION

Following completion of the actions identified in this VTEP, CS Energy will review whether the actions met the stated objective and will report its findings to DERM.

CLOSURE

This VTEP remains in force until such time as the Mandatory Reporting Level of RL 213.33 m is achieved and reliably maintained, or until 20 April 2011, whichever comes first.

RESPONSIBLE OFFICER

[redacted] Site Manager Callide Power Station
CS Energy Limited

TABLE A

WATER QUALITY PERFORMANCE INDICATORS

		Callide Creek Water Quality Objectives	Australian Drinking Water Guideline	STOCK WATER	IRRIGATION WATER
pH VALUE		6.5 - 8.5	6.5 - 8.5	4.5 - 9.0	6.5 - 8.5
CONDUCTIVITY @ 25 C	us/cm	1000			
TOTAL DISSOLVED SOLIDS (TDS)	mg/L	1000	500 - 1000 acceptable		
	mg/L				
CALCIUM	mg/L	200	200 Aesthetic	1000	
MAGNESIUM	mg/L				
SODIUM	mg/L	180	180 Aesthetic		
CHLORIDE PPM	mg/L	500	250 aesthetic		
SULPHATE	mg/L	500	500 - 250 Aesthetic	1000	
BORON	mg/L	4	4	5	0.5
BARIUM	mg/L	0.7	0.7		
CHROMIUM (as CR6)	mg/L	0.05	0.05		
COPPER	mg/L	1	2 - 1 Aesthetic		
LEAD	mg/L	0.01	0.01		
MOLYBDENUM	mg/L	0.05	0.05	0.15	0.05
SELENIUM	mg/L	0.01	0.01	0.02	0.05
VANADIUM	mg/L	0.01	0.01	0.1	0.5
ZINC	mg/L	3	3 Aesthetic		
MERCURY	mg/L	0.001	0.001		
FLUORIDE	mg/L	1.5	1.5	2	2
CADMIUM	mg/L	0.002	0.002		
NICKEL	mg/L	0.02	0.02		
NITRATE	mg/L	50	50		
SILVER	mg/L	0.1	0.1		
URANIUM	mg/L	0.02	0.02	0.2	0.01
ANTIMONY	mg/L	0.003	0.003		

Note; Trace element levels are measured as dissolved levels

TABLE B

WATER QUALITY MONITORING PROGRAM

Refer attached A3 Document "Table B – TEP" for details.

Table B-TEP

Sampling locations and results as stipulated in the 'Callide Power Station Ash Dam B Spill Management Plan, 27th Feb, 2009 Revision 7'.

Pre -spill - **Surface Water** - Ash Dam B Spillway, Linkes Rd Crossing, Calvale/Coal Rd crossing, Gladstone Hwy crossing, Callide Dam. If discharge occurs via Western channel then Callide Creek adjacent to Nob's bore to be added to sampling monitoring

Frequency - One sample of each is require to be conducted prior to release

Bores - 68807, 68267, 34330, 62420, 34s, Nob's, 13030283, 13030284, 13030532, 13030128 and any extraction bores landholders are utilising.

Frequency - Numbered bores to be sampled once prior to release.

During spill - **Surface Water** - Ash Dam B Spillway, Linkes Rd Crossing, Calvale/Coal Rd crossing, Gladstone Hwy crossing, Callide Dam. If discharge occurs via Western channel then Callide Creek adjacent to Nob's bore to be added to sampling monitoring

Frequency - All surface water to be sampled daily

Bores - 68807, 68267, 34330, 62420, 34s, Nob's, 13030283, 13030284, 13030532, 13030128 and any extraction bores landholders are utilising.

Frequency - Numbered bores to be sampled initially at a fortnightly interval, reduced to monthly after two sampling events. Landholders bores to be sampled prior to any extraction and every 1ML that is irrigated.

NOTE - If plume is detected within the bores then sampling frequency is to be increased to weekly with sampling locations to be both d/stream and laterally from the creek.

Post spill - **Surface Water** - Ash Dam B Spillway, Linkes Rd Crossing, Calvale/Coal Rd crossing, Gladstone Hwy crossing, Callide Dam. If discharge occurs via Western channel then Callide Creek adjacent to Nob's bore to be added to sampling monitoring

Frequency - As above until it has been been determined that the spill plume is within acceptable levels.

Bores - 68807, 68267, 34330, 62420, 34s, Nob's, 13030283, 13030284, 13030532, 13030128 and any extraction bores landholders are utilising.

Frequency - As above until it has been been determined that the spill plume is within acceptable levels.

** Note that if ash dam plume is detected then bore monitoring is required to be escalated to a weekly monitoring with sampling locations to be extended both downstream and laterally from the creek.*

Analytes	Sample container to be used	Sample size required	Preservation Methods	Maximum Storage Time
Field analytes - in field (using the YSI Field monitor	Plastic bottle - unpreserved	1000 mL	Refrigerate at 4°C	72 hours
Conductivity, TDS, SS, Alkalinity, Fluoride, Sulfate, Chloride, Boron, Silica, Hardness	Plastic bottle - unpreserved	1000 mL	Refrigerate at 4°C	24 hours
BOD	Plastic bottle - unpreserved	250 mL	Refrigerate at 4°C	24 hours
Aluminium, Arsenic, Barium, Beryliium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Sodium, Strontium, Tin, Thallium, Thorium, Uranium, Vanadium, Zinc	Plastic bottle - nitric acid supplied in bottle	250 mL	Filter on site to 0.45 µm Refrigerate at 4°C	28 days
Oil and Grease	Glass bottle - acid supplied within bottle	1000 mL	Refrigerate at 4°C	7 days

Sampling routine during and post - spill event (pre-spill sampling conducted by environment)

Sampler Enviro Chem Contractor

* Chemistry to cover environment sample during an unavailability

Daily Fortnightly Monthly

* Note that if ash dam plume is detected then bore monitoring is required to be escalated to a weekly monitoring with sampling locations to be extended both downstream and laterally from the creek.

Week 1

	Frequency	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Sampler								
Surface								
ADB	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Calv/coal crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Nob's if required	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Linke's crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Glad hwy	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Callide dam	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Bores								
68807	Fortnightly	Contractor						
68267	Fortnightly	Contractor						
34330	Fortnightly	Contractor						
62420	Fortnightly	Contractor						
Nob's	Fortnightly	Contractor						
13030283	Fortnightly	Contractor						
13030284	Fortnightly	Contractor						
13030532	Fortnightly	Contractor						
13030128	Fortnightly	Contractor						

Week 2

	Frequency	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Sampler								
Surface								
ADB	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Calv/coal crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Nob's if required	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Linke's crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Glad hwy	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Callide dam	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Bores								
68807	Not required							
68267	Not required							
34330	Not required							
62420	Not required							
Nob's	Not required							
13030283	Not required							
13030284	Not required							
13030532	Not required							
13030128	Not required							

Week 3

	Frequency	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Sampler								
Surface								
ADB	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Calv/coal crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Nob's if required	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Linke's crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Glad hwy	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Callide dam	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Bores								
68807	Monthly	Contractor						
68267	Monthly	Contractor						
34330	Monthly	Contractor						
62420	Monthly	Contractor						
Nob's	Monthly	Contractor						
13030283	Monthly	Contractor						
13030284	Monthly	Contractor						
13030532	Monthly	Contractor						
13030128	Monthly	Contractor						

Week 4

	Frequency	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Sampler								
Surface								
ADB	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Calv/coal crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Nob's if required	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Linke's crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Glad hwy	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Callide dam	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Bores								
68807	Not required							
68267	Not required							
34330	Not required							
62420	Not required							
Nob's	Not required							
13030283	Not required							
13030284	Not required							
13030532	Not required							
13030128	Not required							

Week 5

	Frequency	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Sampler								
Surface								
ADB	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Calv/coal crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Nob's if required	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Linke's crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Glad hwy	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Callide dam	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Bores								
68807	Not required							
68267	Not required							
34330	Not required							
62420	Not required							
Nob's	Not required							
13030283	Not required							
13030284	Not required							
13030532	Not required							
13030128	Not required							

Week 6

	Frequency	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Sampler								
Surface								
ADB	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Calv/coal crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Nob's if required	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Linke's crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Glad hwy	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Callide dam	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Bores								
68807	Not required							
68267	Not required							
34330	Not required							
62420	Not required							
Nob's	Not required							
13030283	Not required							
13030284	Not required							
13030532	Not required							
13030128	Not required							

Exhibit GC-18

Message: B/D/2011/001759

From: [redacted]
To:
Cc:
Sent: 11/01/2011 at 4:55 PM
Received: 11/01/2011 at 4:56 PM
Subject: TEP Certificate of approval

Attachments:
TEP_Cert of approval CA22011.pdf (149 KB)
TEP fees.pdf (79 KB)
payment by EFT.pdf (107 KB)
is-bi-review-and-appeal-court.pdf (75 KB)
20110111 - Table B - Callide Ash Dam Water Level Management TEP.PDF (674 KB)
CALLIDE POWER STATION VTEP.pdf (818 KB)

Dear [redacted],

Please find attached the Transitional environmental program certificate of approval CA22011. Also attached are other relevant documents cited in the certificate.

A hard copy will be sent tomorrow.

If you have any questions, please do not hesitate to call.

Kindest regards,

[redacted]

Environmental Officer, Regional Services
Telephone: [redacted]
Email: [redacted]
www.derm.qld.gov.au

Department of Environment and Resource Management
136 Goondoon Street, Gladstone
PO Box 5065, Gladstone QLD 4680

Nominations for the 2011 Premier's ClimateSmart Sustainability Awards, which recognise Queenslanders who are ClimateSmart champions achieving excellence in sustainability, are open until Friday 4 March

+----------+

Think B4U Print

1 ream of paper = 6% of a tree and 5.4kg CO2 in the atmosphere

3 sheets of A4 paper = 1 litre of water

+--+

Department of Environment and Resource Management

Environmental Protection Act

Transitional environmental program certificate of approval number CA22011

This certificate of approval is issued by the administering authority pursuant to section 339 of the Environmental Protection Act 1994. *A transitional environmental program is a specific program that, when approved, achieves compliance with the* Environmental Protection Act 1994 *for the matters dealt with by the program by reducing environmental harm, or detailing the transition to an environmental standard.*

Under the provisions of the *Environmental Protection Act 1994*, this certificate of approval is hereby granted to:

[redacted]
CS Energy
PO Box 392
BILOELA QLD 4715

approving the draft transitional environmental program; titled Callide Power Station Voluntary Transitional Environmental Program for management of Ash Dam B water levels at Callide Power Station.

The draft transitional environmental program, dated 11 January 2011, was received by this office on 11 January 2011.

The draft transitional environmental program is approved subject to the following conditions:

Undertaking the release of water from Ash Dam B

1. Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters except as permitted under this Transitional Environmental Approval – Certificate of Approval, unless otherwise authorised to under the *Environmental Protection Act 1994*.
2. The release of contaminants to waters must only occur from the release points specified in the Transitional Environmental Program (Western route or the Eastern route).
3. The release of contaminants to waters from the release points must be monitored at the locations specified in Water Quality Monitoring Program (Table B) for each quality characteristic and at the frequency specified in Table B of this Transitional Environmental Program.
4. Where the downstream results exceed the trigger values specified in Table A 'Water Quality Performance Indicators', for any quality characteristic, discharge from Ash Dam B must cease. The department must be notified within 24 hours of receiving the result.

Contaminant release events

5. Contaminant release flow rate must not exceed 5% of receiving water flow rate.
6. The daily quantity of contaminants released from each release point must be measured and recorded.

Erosion and sediment control

7. Release to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause material build up of sediment in such waters.

Notification of release events

8. The Transitional Environmental Program holder must notify the administering authority within 24 hours of having commenced releasing Ash Dam B water to the receiving environment. Notification must include the

submission of written verification to the administering authority of the following information:

a. release of contaminants
b. expected release cessation date/time
c. release point/s
d. release volume (estimated)
e. receiving water/s include the natural flow rate
f. any details (including available data) regarding the likely impacts on the receiving water(s).

9. The Transitional Environmental Program holder must provide daily written reports to the administering authority during the release which includes the following information:
   a. all in-situ monitoring data for that day
   b. the receiving water flow rate
   c. the release flow rate.

10. The Transitional Environmental Program holder must notify the administering authority as soon as practicable, (no later than within 24 hours after cessation of a release) of the cessation of a release notified under condition 8 and within 28 days provide the following information in writing:
    a. release cessation date/time
    b. natural flow volume in receiving water
    c. volume of water released
    d. details regarding the compliance of the release with the conditions of this Transitional Environmental Program (i.e. contamination limits, natural flow, discharge volume)
    e. all in-situ water quality monitoring results
    f. any other matters pertinent to the water release event.

Notification of release event exceedence

11. The Transitional Environmental Program holder must, within 28 days of a release that does not comply with the conditions of this Transitional Environmental Program, provide a report to the administering authority detailing:
    a. the reason for the release
    b. the location of the release
    c. all water quality monitoring results
    d. any general observations
    e. all calculations
    f. any other matters pertinent to the water release event.

Requirements to cease the release of Ash Dam B water

12. The release of Ash Dam B water must cease immediately if any water quality limit as specified in the Water Quality Performance Indicators (Table A) is exceeded.

13. The release of Ash Dam B water must cease immediately if identified that the release of mine affected waters is causing erosion of the bed and banks of the receiving waters, or is causing a material build up of sediment in such waters.

14. The release of Ash Dam B water must cease immediately if the holder of this Transitional Environmental Program is directed to do so by the administering authority.

Monitoring requirements

15. Where monitoring is a requirement of this Transitional Environmental Program, ensure that a competent person(s) conducts all monitoring.

16. All monitoring undertaken as a requirement of this Transitional Environmental Program must be undertaken in accordance with the administering authority's Monitoring and Sampling Manual 2009 Environmental Protection (Water) Policy, Version 2 September 2010.

Notification of emergencies or incidents

17. Within 24 hours of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this Transitional Environmental Program, the administering authority must be notified of the release by telephone, facsimile or email.

18. The notification of emergencies or incidents must include but not be limited to the following:
    a. the holder of the Transitional Environmental Program
    b. the location of the emergency or incident
    c. the number of the Transitional Environmental Program
    d. the name and telephone number of the designated contact person
    e. the time of the release
    f. the time the holder of the Transitional Environmental Program became aware of the release
    g. the suspected cause of the release
    h. the environmental harm caused, threatened, or suspected to be caused by the release, and
    i. actions taken to prevent any further release and mitigate any environmental harm caused by the release.

19. Not more than fourteen days following the initial notification of an emergency or incident, written advice must be provided of the information supplied to the administering authority in relation to:
    a. proposed actions to prevent a recurrence of the emergency or incident, and
    b. outcomes of actions taken at the time to prevent or minimise environmental harm.

The transitional environmental program remains in force until 30th April 2011 or when the Ash Dam B Mandatory Reporting Level of RL 213.33m is achieved, whichever comes first.

In any case where conditions are imposed upon a certificate of approval, you may apply to the administering authority for a review of the decision. You may also appeal against the decision to the Planning and Environment Court.

Information relating to a review of decisions or appeals under the *Environmental Protection Act 1994* is included with this notice. This information is intended as a guide only. You may have other legal rights and obligations.

Fees apply for the assessment of a draft transitional environmental program and any subsequent annual returns. The fees are outlines in the attached operational policy *Transitional Environmental Program (TEP) fees.*

A fee of $1 055.10 is payable.

Should you have any queries in relation to this Notice, Lisa Thompson, of the Department of Environment and Resource Management on telephone 07 4671 6528 would be happy to assist you.

[redacted]

Signature

11/01/11

Date

[redacted]

A/Manager, Environmental Services, Gladstone
Department of Environment and Resource Management

Enquiries:
Department of Environment and Resource Management
Level 3, 136 Goondoon Street,
GLADSTONE QLD 4680
Ph. 07 4971 6500
Fax. 07 49721993

ecoaccess
environmental licences and permits

Operational policy

Fees

Transitional Environmental Program (TEP) fees

Operational policies provide a framework for consistent application and interpretation of legislation by the Department of Environment and Resource Management (DERM). Operational policies will not be applied inflexibly to all circumstances. Individual circumstances may require an alternative application of policy. This policy concerns Section 140 under the Environmental Protection Regulation 2008.

Policy issue

What are DERM's fees for considering a Transitional Environmental Program (TEP)?

Background

Section 334 of the *Environmental Protection Act 1994* (EP Act) provides for the administering authority to charge a person or public authority, the fee prescribed by regulation, for submitting a draft TEP for approval.

This section applies, with any necessary amendments, to an application to amend a TEP under section 344 of the EP Act.

Section 140(1) of the *Environmental Protection Regulation 2008* (EP Reg) prescribes that the fees for consideration of draft TEPs, or an amendment of an approval for TEPs, is the amount that:

- the authority considers to be reasonable; and
- is not more than the reasonable cost of deciding the application for approval of the program or the amendment of the approval.

Section 140(3) of the EP Reg prescribes that the fees for assessing the holder's annual returns and monitoring compliance with the program is the amount that:

- the authority considers to be reasonable; and
- is not more than the reasonable cost of the assessment and monitoring.

Determination

Fees for the assessment of a draft TEP are a minimum of $351.90[1] (includes GST), plus an additional $175.80 per hour (includes GST) or part thereof, charged after the first two hours.

Fees for assessment of an TEP annual return and monitoring of a compliance program of a draft TEP are charged at a rate of $175.80 per hour (includes GST), or part thereof, plus any reasonable costs for analysis and travel.

The reasonable cost of analysis cost will be the actual cost of the analysis to the department, plus GST.

The reasonable cost of travel will be the cost of travel[2], plus GST.

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The fee for assessing an application to amend a TEP is $180.40 (includes GST).

Other issues to consider

The person having a draft TEP considered should be advised at the time of approval of the TEP that the administering authority will require payment of a fee for assessment of the annual return and monitoring compliance of the TEP.

[1] The $351.90 fee covers the administration costs incurred by the department when assessing that the TEP satisfies the criteria set by the *Environmental Protection Act 1994* and the first two hours of technical evaluation of the TEP.

[2] The reasonable cost of travel will be calculated as outlined in section 4 (Employees who choose to use their own vehicles) of the schedule in the Queensland Government's *Directive No. 8/09 Motor Vehicle Allowances* September 2009 issued by the Attorney-General and Minister for Industrial Relations. For an automobile this is set at 37.5 cents per kilometre.

Department of Environment and Resource Management

Information sheet

Electronic funds transfer (EFT)

Paying fees to the Department of Environment and Resource Management (DERM) by EFT

This information sheet provides customers of the Department of Environment and Resource Management (DERM) with information about the process for payment by EFT of fees payable under the Environmental Protection Act 1994, Sustainable Planning Act 2009, Coastal Protection and Management Act 1995 *and the* Environmental Protection (Waste Management) Regulation 2000.

Making EFT payments

DERM encourages the payment of fees by EFT. DERM needs to be satisfied that fees have been paid in order to process documentation submitted to it for consideration. To ensure that DERM can identify money paid electronically, and is able to issue a receipt to the correct person, the following process must be used:

Banking information

EFT payments are to be made to the following DERM account:

Bank:	[redacted]
Bank Account Number:	[redacted]
BSB Number:	[redacted]
Branch:	[redacted]
Account Name:	[redacted]

When transferring money your bank's system will normally allow for two sets of details to be inserted. One will appear on your receipt and the statement from your bank. The other will appear on DERM's bank statement for the account to which the money is transferred.

This Information Sheet describes the details that must be included with your bank payment for DERM to identify your payment. DERM's EFT identification code represent the type of fee being paid and a contact telephone number for the person paying the fee (or the permit number where the payment is for the annual fee for an existing registration certificate or environmental authority). The same EFT identification code must be included on the application form. Where multiple fees are included in the one payment, the EFT payment notification form (attached as the last page of this information sheet and also available separately at <www.derm.qld.gov.au> or through Permit and Licence Management by phoning 1300 130 372), which includes the EFT identification code for each individual fee, must be attached to each individual application.

The EFT identification code links the payment to the application to prove that payment has been made for the application. The fee will be considered to be unpaid if the transfer details are not sufficient to identify what the payment was for. This may result in the application being considered to be not properly made and it being returned without processing.

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Paying fees to DERM by EFT

The EFT payment notification form must also be sent to Shared Service Agency (SSA) the same day the EFT payment is made. This provides details of who made the payment so a receipt can be issued.

Determining the EFT identification code to include as transfer details

Payment of a single fee

When an applicant is paying a single fee, the applicant must include the EFT identification code for the payment when doing the transfer. The code links the payment to the application as the code is also provided with the application form. The applicant needs to ensure that they determine this code before making the electronic transfer.

The details of the EFT identification code are:

> Fee code (see Table 1 for fee codes)/ customer's permit number where available (this will only apply for the fee type italicised in Table 1); otherwise
>
> Fee code (see Table 1 for fee codes)/ customer's phone number (including area code, but excluding brackets)

Example:

NSW Dredging Pty Ltd (phone 02 9876 5432) is applying to renew their existing quarry allocation. The EFT identification code to include as transfer details would be 27/ENAQ 99999999.

This is determined as follows:

Fee code from Table 1 (Renew existing AQM) → 27 / ENAQ 99999999 ← Permit number

This would be inserted in section 1 of the *Electronic Funds Transfer (EFT) payment notification* form as:

1. Single code for details of total payment made

PAYER NAME		CONTACT NAME	
NSW Dredging Pty Ltd		Bob Jones	
CONTACT PHONE	AMOUNT PAID	DATE PAID	EFT IDENTIFICATION CODE
(02) 9876 5432	$351.90	5/9/2009	27/ENAQ 99999999

DETAILS OF WHAT THE TOTAL FEE PAID IS FOR

☐ Multiple fees — complete section 2

☒ Individual fee. Provide details of what the fee is for — see examples in section 2

Renew existing allocation of quarry material (> 10,000 m^3 of quarry material) — permit number ENAQ 99999999

Paying fees to DERM by EFT

Payment of multiple fees

When a single payment is made for several fees, an EFT identification code is required for each individual fee. This may occur when a consultant makes one payment for the fees for several applications for a number of different clients. However a single code will be included as the transfer details at the time of payment. Therefore the applicant will need to determine both the single code for the total fee paid and the codes for each individual fee that makes up the total fee. The details of the single EFT identification code are:

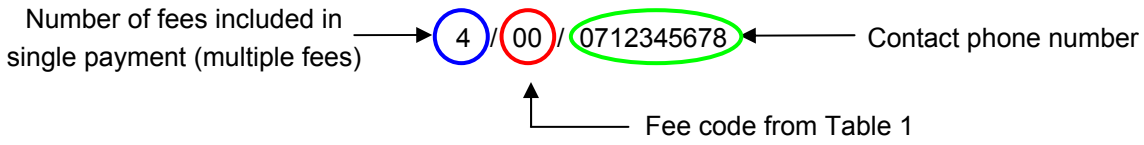
> Number of fees included in this payment/00 to indicate multiple fees/consultant's phone number (including area code)

Example:

ABC Consulting (Phone 07 1234 5678) is making a payment of $49 806 by EFT for the fees for the following four applications:

Fee	Office	Application type
$6500	Emerald	Registration certificate for ERA 7 chemical manufacturing, threshold 4(a)
$25 600	Mackay	Annual fee for annual return for an environmental authority (mining activities) for a level 1 mining project for mining black coal
$100	Rockhampton	Transfer of a environmental authority (mining activities)
$17 606	Cairns	Application for development approval for a material change of use of premises completely or partly within a coastal management district in connection with the construction of an artificial waterway

The EFT identification code to include in as the transfer details when making the EFT payment is 4/00/0712345678. This is determined as follows:



Paying fees to DERM by EFT

Table 1 — Fee code for types of application

Multiple fees in one payment	
Fee type	Fee code
Multiple fees	00
Waste regulation[ii] fees	
Way of giving information[iii]	01
Beneficial resource[iv]	02
General fees	
Copies from the EP Act register	03
TEP[v]	04
Amend TEP	05
DA searches (Coastal)[vii]	06
Chapter 4 activity[viii] fees	
Registration certificate	10
** Continuing registration*	*11*
** Annual fee (including late fee)*	*12*
DA[xi]	13
Amend DA	14
Mining fees	
** Annual fee (including late fee)*	*19*

Petroleum fees	
Fee type	Fee code
Level 1 EA[i]	20
Level 2 EA	21
** Amend EA*	*22*
** Transfer EA*	*23*
** Annual fee (including late fee)*	*24*
Coastal fees	
AQM[vi]	25
DA	26
** Renew AQM*	*27*
** Transfer all or part of an AQM*	*28*
DMP[ix]	29
** Transferring a DMP*	*30*
** Royalty (removal of quarry material[x])*	*31*
Contaminated land fee	
Assessment of site management plan	32
Fee for changing the anniversary day	
** Change of anniversary day[xii]*	*33*

***** Include permit number in EFT code for this fee type.

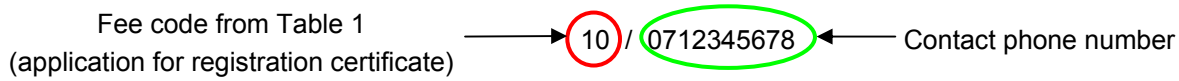
[i] Environmental authority.
[ii] *Environmental Protection (Waste Management) Regulation 2000*
[iii] Application for approval of a waste handler's way of giving information under section 37 of the *Environmental Protection (Waste Management) Regulation 2000*.
[iv] Application for approval under Part 6A of the *Environmental Protection (Waste Management) Regulation 2000* to use a resource or type of resource for a beneficial use of waste.
[v] Transitional environmental program
[vi] Allocation of quarry material.
[vii] Application for searches of development approvals (tidal works) under the *Integrated Planning Act 1997* (including approvals under the repealed section 86 of the *Harbours Act 1995*, section 66 of the *Harbour Boards Act 1892* and section 15 of the *Gold Coast Waterways Authority Act 1979*).
[viii] Chapter 4 activities are environmentally relevant activities (other than mining or petroleum) and are listed in schedule 2 of the *Environmental Protection Regulation 2008*.
[ix] Dredge management plan.
[x] Payment of royalty using the *Notice of details of quantity of quarry material removed* form.
[xi] Development approval.
[xii] Changing the anniversary day for a registration certificate or an environmental authority under section 318A of the EP Act.

Paying fees to DERM by EFT

The EFT identification codes for each of the individual fees included in the *Electronic Funds Transfer (EFT) payment notification* form would be:

10/0712345678 19/MIN200987607 23/EA456789 26/0712345678

The first code, 10/0712345678, is determined as follows:



These would be inserted in the *Electronic Funds Transfer (EFT) payment notification* form as:

1. Single code for details of total payment made

PAYER NAME		CONTACT NAME	
ABC Consulting		Helen Smith	
CONTACT PHONE	AMOUNT PAID	DATE PAID	EFT IDENTIFICATION CODE
07 1234 5678	$49 277	12/8/2009	4/00/0712345678

DETAILS OF WHAT THE TOTAL FEE PAID IS FOR

☒ Multiple fees — complete section 2

☐ Individual fee. Provide details of what the fee is for — see examples in section 2

2. Codes for each application when multiple fees are in the one payment

Amount	EFT identification code (for each fee paid)	Details of what the individual fee is for: For example: Application type, location (lot & plan or street address) and client name; or Annual fee (for annual return) and permit number (whether a mining or petroleum environmental authority, registration certificate, dredge management plan, etc.)
AMOUNT 6500	EFT IDENTIFICATION CODE 10/0712345678	INDIVIDUAL FEE DETAILS Application for registration certificate for ERA 7 chemical manufacturing — threshold (4)(a) on Lot 21 on Plan CP 654123 for ABC Biodiesel Pty Ltd
AMOUNT 25 600	EFT IDENTIFICATION CODE 19/ MIN200987607	INDIVIDUAL FEE DETAILS Annual fee for environmental authority (mining activity) MIN200987607
AMOUNT 100	EFT IDENTIFICATION CODE 23/ EA456789	INDIVIDUAL FEE DETAILS Transfer of environmental authority (petroleum activities) EA456789 from CIQ Gas Limited to BHM Pty Ltd
AMOUNT 17 606	EFT IDENTIFICATION CODE 26/0712345678	INDIVIDUAL FEE DETAILS Application for development approval for a material change of use of premises completely or partly within a coastal management district in connection with the construction of an artificial waterway on Lot 282 on Plan RP 789312 for Coastal Developments Pty Ltd

Sending the EFT identification code to SSA

Where the payment is for multiple fees, the multiple fees code is included in the EFT identification code when making the EFT payment (the single EFT identification code where the payment is for a single fee or the

multiple fees code where an EFT payment is for more than one fee). On the same day the applicant must fill out the EFT payment notification form (attached as the last page of this information sheet and also available separately at <www.derm.qld.gov.au> or through the Permit and Licence Management by phoning 1300 130 372) and send it to SSA to notify them of the individual identification codes. The completed form can be sent to SSA by email to <ar.receipting@ssa.qld.gov.au> or may fax to (07) 3006 2658.

Where an EFT payment is for more than one fee, a copy of the completed notification form must also be attached to each application posted to Permit and Licence Management in DERM for processing.

A copy of the completed notification form is not required where the EFT payment is for a single fee. Instead, the EFT notification code must be included on the application form.

When an application is accepted by DERM

Applications that do not include the required fees are not considered as being properly made and can be returned without processing. Where payment is made by EFT, fees are not considered paid until they are adequately linked to the relevant application. So applications that do not include the EFT notification code (and the completed EFT payment notification form where a single EFT payment is for multiple applications) to link the application to the EFT payment are not considered properly made and will not be processed. Once proof of payment (and anything else needed to make it a properly made application) is received, the application will be accepted and processing will commence.

Further information

Contact Permit and Licence Management for more information on:

Ph: **1300 130 372**
Fax: (07) 3896 3342
Email: palm@derm.qld.gov.au

Department of Environment and Resource Management

Form

Electronic Funds Transfer (EFT) payment notification

This form must be used where fees due under the Environmental Protection Act 1994, Sustainable Planning Act 2009, Coastal Protection and Management Act 1995 *or* Environmental Protection (Waste Management) Regulation 2000 *are paid by EFT. Its use ensures that any fees paid by EFT can be linked to the documents submitted for action by the Department of Environment and Resource Management. Use of the form allows receipts to be correctly issued in the name of the payer. Documentation that does not include this completed form and the EFT identification code to show that fees have been paid, will not be accepted and will not be processed until all outstanding issues are addressed. To assist in reconciliation of payments please attach copies of EFT transaction receipts to this form.*

1. Single code for details of total payment made

PAYER NAME		CONTACT NAME	
CONTACT PHONE	AMOUNT PAID	DATE PAID	EFT IDENTIFICATION CODE /

DETAILS OF WHAT THE TOTAL FEE PAID IS FOR

☐ Individual fee. Provide details of what the fee is for — see examples in section 2

☐ Multiple fees — complete section 2 below

2. Codes for each application when multiple fees are in the one payment

Amount	EFT identification code (for each fee paid)	Details of what the individual fee is for: For example: Application type, location (lot & plan or street address) and client name; or Annual fee (for annual return) and permit number (whether a mining or petroleum environmental authority, registration certificate, dredge management plan, etc.)
AMOUNT	EFT IDENTIFICATION CODE /	INDIVIDUAL FEE DETAILS
AMOUNT	EFT IDENTIFICATION CODE /	INDIVIDUAL FEE DETAILS
AMOUNT	EFT IDENTIFICATION CODE /	INDIVIDUAL FEE DETAILS
AMOUNT	EFT IDENTIFICATION CODE /	INDIVIDUAL FEE DETAILS

Complete this form and email it to <ar.receipting@ssa.qld.gov.au> or fax to (07) 3006 2658 on the same day that payment is made by EFT.

Attach a copy of this form together with a copy of the EFT transaction receipt to the documentation that this payment relates to.

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Department of Environment and Resource Management

Information sheet

Environmental Protection Act

Internal review (DERM), and appeal to Planning and Environment Court

This information sheet forms part of an information notice under the Environmental Protection Act 1994 *(EP Act). It gives a summary of the process for review and appeal to the Planning and Environment Court under the EP Act and subordinate legislation. Refer to sections 519–539 and schedule 2 of the EP Act for complete information about the process for internal review and appeal to the Planning and Environment Court.*

Introduction

The *Environmental Protection Act 1994* (EP Act) provides for a right of internal review and appeal against certain decisions made under the EP Act. Decisions that can be reviewed or appealed are listed in schedule 2 of the EP Act and within certain sections of the regulations and subordinate legislation[1] made under the EP Act. The EP Act also provides that a dissatisfied person for a review decision, other than those listed in part 1 of schedule 2 of the EP Act [2], may appeal the decision to the Planning and Environment Court (the Court).

Summary of the process for internal review and appeal to the Court

Chapter 11, Part 3 of the EP Act

Division 1 — Interpretation

Section 519 Original decisions

1) A decision mentioned in schedule 2 is an “original decision”.

2) A decision under an environmental protection policy or regulation that the policy or regulation declares to be a decision to which this part applies is also an “original decision”.

Section 520 Dissatisfied person

This section nominates the dissatisfied person for an original or review decision.

Division 2 — Internal review of decisions

Section 521 Procedure for review

1) A dissatisfied person may apply for a review of an original decision.

2) The application must—

   a) be made in the approved form to the administering authority within—

      i) 10 business days[3] after the day on which the person receives notice of the original decision or the administering authority is taken to have made the decision (the "review date"); or

      ii) the longer period the authority in special circumstances allows not later than the review date; and

   b) be supported by enough information to enable the authority to decide the application.

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3) On or before making the application, the applicant must send the following documents to the other persons who were given notice of the original decision—

   a) notice of the application (the "review notice");

   b) a copy of the application and supporting documents.

4) The review notice must inform the recipient that submission on the application may be made to the administering authority within 5 business days after the application is made to the authority.

5) If the administering authority is satisfied the applicant has complied with subsection (2) and (3), the authority must, within 10 business days after receiving the application—

   a) review the original decision;

   b) consider any submissions properly made by a recipient of the review notice; and

   c) make a decision (the "review decision") to—

      i) confirm or revoke the original decision; or

      ii) vary the original decision in a way the administering authority considers appropriate.

6) The application does not stay the original decision.

7) The application must not be dealt with by—

   a) the person who made the original decision; or

   b) a person in a less senior office than the person who made the original decision.

8) Within 10 business days after making the decision, the administering authority must give written notice of the decision to the applicant and persons who were given notice of the original decision.

9) The notice must—

   a) include the reasons for the review decision; and

   b) inform the person of their right of appeal against the decision.

10) If the administering authority does not comply with subsections (5) or (8), the authority is taken to have made a decision confirming the original decision.

11) Subsection (7) applies despite section *Acts Interpretation Act 1954*, section 27A.

12) This section does not apply to an original decision made by—

   a) for a matter, the administration and enforcement of which has been devolved to a local government, the local government itself or the chief executive officer of the local government personally; or

   b) for another matter — the chief executive personally.

13) Also, this section does not apply to an original decision to issue a clean-up notice.

Section 522 Stay of operation of original decisions

1) If an application is made for review of an original decision, the applicant may immediately apply for a stay of the decision to—

   a) for an original decision mentioned in schedule 2, part 1—the Land Court; or

   b) for an original decision mentioned in schedule 2, part 2—the Court.

2) The Land Court or the Court may stay the decision to secure the effectiveness of the review and any later appeal to the tribunal or the Court.

3) A stay may be given on conditions the Land Court or the Court considers appropriate and has effect for the period stated by the Land Court or the Court.

4) The period of a stay must not extend past the time when the administering authority reviews the decision and any later period the Land Court or the Court allows the applicant to enable the applicant to appeal against the review decision.

Division 4 — Appeals to court

Section 531 Who may appeal

1) A dissatisfied person who is dissatisfied with a review decision, other than a review decision to which subdivision 1[4] applies, may appeal against the decision to the Court.

2) The chief executive may appeal against another administering authority's decision (whether an original or review decision) to the Court.

3) A dissatisfied person who is dissatisfied with an original decision to which section 521 does not apply may appeal against the decision to the Court.

Section 532 How to start appeal

1) An appeal is started by—

   a) filing written notice of appeal with the registrar of the Court; and

   b) complying with rules of court applicable to the appeal.

2) The notice of appeal must be filed—

   a) if the appellant is the chief executive—within 33 business days after the decision is made or taken to have been made; or

   b) if the appellant is not the chief executive—within 22 business days after the day the appellant receives notice of the decision or the decision is taken to have been made.

3) The Court may at any time extend the period for filing the notice of appeal.

4) The notice of appeal must state fully the grounds of the appeal and the facts relied on.

Section 533 Appellant to give notice of appeal to other parties

1) Within 8 business days after filing the notice of appeal, the appellant must serve notice of the appeal on—

   a) if the appellant is the chief executive—all persons who were given notice of the original decision; or

   b) if the appellant is not the chief executive—the other persons who were given notice of the original decision.

2) The notice must inform the persons that, within 10 business days after service of the notice of appeal, they may elect to become a respondent to the appeal by filing in the Court a notice of election under rules of court.

Section 534 Persons may elect to become respondents to appeal

A person who properly files in the Court a notice of election becomes a respondent to the appeal.

Section 535 Stay of operation of decisions

1) The Court may grant a stay of a decision appealed against to secure the effectiveness of the appeal.
2) A stay may be granted on conditions the Court considers appropriate and has effect for the period stated by the Court.
3) The period of a stay must not extend past the time when the Court decides the appeal.
4) An appeal against a decision does not affect the operation or carrying out of the decision unless the decision is stayed.

Section 536 Hearing procedures

1) The procedure for an appeal is to be in accordance with the rules of court applicable to the appeal or, if the rules make no provision or insufficient provision, in accordance with directions of the judge.
2) An appeal is by way of rehearing, unaffected by the administering authority's decision.

Section 537 Assessors

The judge hearing an appeal may appoint one or more assessors to assist where the appeal involves a question of special knowledge and skill.

Section 538 Appeals may be heard with planning appeals

Where an appeal is also made under the *Integrated Planning Act 1997* for a premises, the court may order that both appeals be heard together or consecutively, or one stayed until the other is decided. This may occur even if the parties to the appeals are not the same. This ensures that needless delays are minimised.

Section 539 Powers of Court on appeal

1) In deciding an appeal, the Court may—
   a) confirm the decision appealed against; or
   b) vary the decision appealed against; or
   c) set aside the decision appealed against and make a decision in substitution for the decision set aside.
2) If on appeal the Court acts under subsection (1)(b) or (c), the decision is taken, for this Act (other than this part), to be that of the administering authority.

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[1] The original decisions under the subordinate legislation are subject to change. As at 11 May 2010 they are listed in:
- Section 110 of the *Environmental Protection Regulation 2008*; and
- Section 68C of the *Environmental Protection (Waste Management) Regulation 2000*.

[2] An appeal may be made to the Land Court for original decisions in part 1 of schedule 2.

[3] Under the *Environmental Protection Act 1994* "business days does not include a business day between 20 December and 5 January in the following year".

[4] Subdivision 1 is about appeals to the Land Court and information about this is contained in Sections 519 to 539.

cs energy

CALLIDE POWER STATION VOLUNTARY TRANSITIONAL ENVIRONMENTAL PROGRAM (VTEP)

DATE: 11 January 2011

LOCATION: Callide A and B, and Callide C Power Stations
Coal and Callide Roads respectively
BILOELA QLD 4715

EXISTING DEVELOPMENT APPROVALS:
Integrated Authority CG0039 issued 30 July 2004
Integrated Authority CG0117 issued 17 June 2004.

REGISTRATION CERTIFICATE HOLDERS:
CS Energy Limited ACN 078 848 745 holds ENRE 00952209
Callide Power Management Pty Ltd ACN 082 468 700 holds ENRE 00849808

ACTIVITIES:

ENRE 00952209

- ERA 8 Chemical Storage Threshold 1
- ERA 8 Chemical Storage Threshold 3(b)
- ERA 14 Electricity Generation Threshold 2(b)
- ERA 56 Regulated Waste Storage Threshold 2
- ERA 60 Waste Disposal Threshold 1(d)
- ERA 63 Sewage Treatment Threshold 2(b)

ENRE 00849808

- ERA 14 Electricity Generation Threshold 2(b)
- ERA 56 Regulated Waste Storage Threshold 2

BACKGROUND

CS Energy owns and operates Callide A and B power stations located at Coal Road, Biloela, Queensland and holds Registration Certificate ENRE 00952209.

2010 has been an exceptionally wet year, with the Power Station site recording 1,134 mm of rain, compared with a 2010 total rainfall for Thangool of 1,097 mm. Long-term rainfall

records show the 10-year average rainfall for the power station site of 584 mm, and a 79-year average rainfall for Thangool of 662 mm.

Notwithstanding, at the commencement of the nominal 4 month wet season on 1 November 2010, Ash Dam B was in compliance with the statutory 0.01 AEP (Annual Exceedance Probability) annual risk level (Design Storage Allowance) (DSA) of RL 213.37 m. The level of the dam on 1 November 2010 was RL 213.16 m.

On 20 December 2010, the dam level of 213.335 m exceeded the statutory 0.01 AEP for the 72 hour storm risk level (Mandatory Reporting Level - MRL) of 213.33 m and DERM were notified.

Significant rainfall events in the area in December 2010 have resulted in raised water levels in the ash dam. Total rainfall at Callide Power Station as at Friday 31 December 2010 was 441 mm, the highest recorded rainfall in the area for a December period. As a result of these rainfall events, water levels in the ash dam have risen by 1.27 m in December, with levels rising by 1.06 m between 22 December and 31 December. A further 131 mm of rain was recorded at the power station from 1 to 7 January 2011, increasing the water level of the ash dam by 350 mm. The water level in the ash dam is now approaching the dam's spillway level, and is likely to spill if a further 43 mm of rain is received at the Callide Power Station. in the very near future. Furthermore the current strong La Nina event continues with the Bureau of Meteorology forecasting wetter than normal conditions are likely to persist until autumn.

As at 6 January 2011, the water level in the dam was RL 214.77 m, just below the spillway level of RL 214.95 m.

Ash Dam B also receives effluent and ash from Callide C Power Station located at Callide Road, Biloela, Queensland. Callide Power Management Pty Ltd (CPM) is the holder of Registration Certificate ENRE 00849808 for Callide C Power Station. CS Energy through Callide Energy Pty Ltd is a part owner of Callide Power Management. CS Energy is also the contracted operator of Callide C Power Station.

The recent rainfall events in the region have also caused heavy sediment loads in water supplies from Callide Dam which has affected the performance of the C station cooling tower blowdown water treatment plant.

The original design basis for the dam set a risk level of 1% total (not annual) over the station life that the water level would reach the spillway level.[1] In 2003, the spillway level was raised from RL 213.55 m to RL 214.95 m. CS Energy has and continues to investigate, as part of its longer term strategy, outside the scope of this VTEP, future actions to address the spill risk from the next wet season nominally commencing in November 2011.

It is also noted that CS Energy is investigating the impact of seepage from Ash Dam B and measures to reduce it, to meet the scope of the Environmental Investigation Report to be submitted to DERM by 4 March 2011.

OBJECTIVE OF THE VTEP

The Objective of this Voluntary Transitional Environmental Program is to ensure compliance with the *Environmental Protection Act 1994* (EP Act) by implementing water management measures to avoid as far as practicable environmental harm being caused or threatened by an overflow of Ash Dam B, if the forecast cumulative rainfall events occur during the balance of the current wet season.

[1] Callide B Power Station Ash Dam - Design Report, prepared by Macdonald Wagner for QEC June 1985.

In particular, this VTEP proposes planned controlled low flow releases from Ash Dam B diluted by flow in Callide Creek, to reduce the water level in Ash Dam B to below the Spill Warning Level of RL 214.45 m, as specified in the Emergency Action Plan developed as part of the Ash Dam Management Plan documentation required by the Development Approval. The VTEP also seeks authorization for opportunistic controlled low and high flow releases from Ash Dam B diluted by flow in Callide Creek, to reduce the water level in Ash Dam B to below the Mandatory Reporting Level of RL 213.33 m.

THE PROGRAM IS REQUIRED BASED ON THE FOLLOWING GROUNDS:

This VTEP is required based on the following grounds:

- The water level in Callide Ash Dam B has risen some 3 metres from RL 211.74 m on 1 January 2010 to RL 214.77 m on 6 January 2011, as a consequence of the significantly higher than normal rainfall received during 2010 and 2011 to date due to the strong La Nina event affecting eastern Australia. The spillway overflow level is RL 214.95 m.

- Preventative measures such as a controlled release may be necessary to ensure that environmental harm is not caused or threatened, should the ash dam overflow if forecast cumulative rainfall is received. Controlled releases will aim to achieve a better environmental outcome for the receiving environment by managing water flow rates, discharge locations and quality, compared with rainfall-driven uncontrolled spills.

HOW OBJECTIVE WILL BE ACHIEVED

The Objective will be achieved by adopting the following strategy:

- Carrying out actions under the proposed scenarios and within the indicative timeframes proposed under this VTEP.

AUTHORISATION

The operation of Callide A and B stations is authorised by Integrated Authority CG0039 and Registration Certificate ENRE 00952209.

"Schedule 2 E – Land Application" of the Integrated Authority authorises the Registration Certificate Holder to release ash and effluent to the Waste Containment Facility from A, B and C stations.

"Schedule 2C - Water" of the Integrated Authority authorises the release of contaminants from the licensed place at Release Points R1 and R2 from Ash Dams 1 and 2 respectively.

The *"Waste Containment Facility"* is defined in the Integrated Authority and includes Ash Dam B.

The operation of Callide C station is authorised by Integrated Authority CG0117. *"Schedule 2E - Land Application"* authorises ash and effluent (coal material, boiler blowdown and chemical cleaning waters and treated sewage effluent) to be placed in the Waste Containment Facility.

Controlled release from the dam with concurrent flow in Callide Creek is also a listed response strategy for a Level 3 Action under the Corrective Action Plan developed as part of

the Ash Dam Management Plan documentation required by the Development Approval.

Accordingly, CS Energy is authorised to continue to operate the Callide A, B and C Stations and to continue to direct ash and effluent to the Waste Containment Facility under the terms of this VTEP. Callide Power Management as the Callide C Registration Certificate holder is authorized to continue to direct ash and effluent to the Waste Containment Facility from Callide C Station under the terms of this VTEP.

PERFORMANCE INDICATORS

The following Actions will be carried out by CS Energy with the aim of achieving the targeted water level reductions.

CS Energy will use its best endeavours to achieve the desired water level reductions within the indicative timeframe given. However, the timeframe for achieving the targeted water level reduction will be heavily influenced by:

(a) The times and durations for which the water flows and quality of water in the receiving environment in Callide Creek facilitates controlled or opportunistic releases from the Ash Dam.
(b) Operational delays, including the sourcing, delivery, commissioning and operation of plant and equipment.
(c) Inability of personnel to safely access plant and equipment due to weather conditions.
(d) Further rainfall events.

At the time of submission of this VTEP, technical investigations into the sourcing and delivery of pumps, pipes and associated plant and equipment are continuing. It is anticipated that by 8 January 2011, the power station will be capable of the controlled release of around 30 ML/day of ash dam water, and by 12 January 2011, it is hoped to have another 15 ML/day of capacity commissioned.

To meet the objective of implementing water management measures that avoid environmental harm being caused by a release from Ash Dam B, a key performance indicator will be meeting the water quality objectives shown in Appendix A for Callide Creek during any controlled release.

CS Energy will keep DERM regularly informed as to the progress with proposed actions under this VTEP, as per Action 4 of this TEP.

ACTION 1 - RELEASE SCENARIOS

It should be noted that the following Scenarios and related Actions may occur simultaneously in various combinations, with Ash dam releases from separate release points, depending on the state of Callide Dam, Callide Creek, Ash Dam B, and the operability of pumping equipment.

Two final release points to Callide Creek are available for ash dam releases:

- The western route has 2 x 2.4 m diameter culverts under the Biloela-Callide Rd. It would potentially receive releases from the Western Stormwater Diversion Channel or the Western Seepage Collection Trench. This route has a high capacity flow capability.

- The eastern route has 4 x 900 mm diameter culverts under the Biloela-Callide Rd. This flow path is however currently restricted by a single 900 mm culvert below the dam access road. Flows may need to be restricted to avoid cutting the access road, or

the culvert modified. It would potentially receive releases from the area of the spillway, the Eastern Stormwater Diversion Channel or the Eastern Seepage Collection Trench. This route currently has a lower capacity flow capability than the western route.

Water will be released from Ash Dam B to meet the water quality objectives for Callide Creek combined flows as specified in Table A, based on meeting the drinking water standards for those parameters influenced by the ash dam water quality and for applicable stock and irrigation water quality requirements.

It is proposed that water be released from Ash Dam B initially as per Scenario 1. The dynamics of Scenario 1 will be reviewed from operating experience in implementing it in terms of flow rates, dilution ratios and achievement of water quality objectives, and CS Energy will seek an amendment of this TEP as required based on that operating experience.

For each of these Scenarios, triggers for ceasing release will be as follows:

- When the water quality in Callide Creek as measured at the surface water monitoring sites reaches any of the Callide Creek Water Quality Objectives listed in Column 1 of Table A "Water Quality Performance Indicators".
- The flow in the Creek at Linkes Road is expected to fall below 300 ML/day in the next 24 hours.
- When the water level in the Ash Dam is reduced to the MRL.

For each of the Scenarios, the trigger for adjusting the dilution flow to less than 5% will be the results of the monitoring of the ash dam water release quality being unsuitable to meet the performance indicators at the authorised dilution ratio of 5%.

SCENARIO 1: Callide Dam Not Spilling and Callide Creek Flowing

RELATED ACTION 1: Opportunistic Controlled "Low Flow" Release

Objective: Ash Dam water will be released into natural Callide Creek run-off flow to below the Mandatory Reporting Level.

Characteristics of Release

- After a moderate rain event the upper reaches of the Callide Creek above the Linkes Road culvert will be running with surface water flow rates of 100 to 350 ML/d.
- This TEP authorises controlled release from the Ash Dam when the flow in Callide Creek as measured at the Linkes Road monitoring site is above 300 ML/day.
- This TEP authorises the controlled release from the Ash Dam of up to 5% of the measured flow at Linkes Road. For example, at the minimum authorised Creek flow of 300 ML/day, a maximum of 15 ML/day is authorised for releases from Callide Dam.
- Proposed start when flows are at or above 300 ML/day and stop when flows pass back through that figure.
- Monitor release volumes and quality and match to volumes and flows at Callide Dam Road and Linkes Road culverts
- Enables some discharge capability using rain events without drawing on water reserves in Callide Dam

- Discharge ash dam down to MRL if sequence of events allows
- Will occur in a series of events
- Total release volume estimated to be 1,750 ML plus rain events

SCENARIO 2: Callide Dam Not Spilling But Releasing and Callide Creek Flowing

RELATED ACTION 2: Planned Controlled "Low Flow" Release

Objective: Ash Dam water will be released into a Callide Dam Release to below the Spill Warning Level.

Characteristics of Release

- Arrangements made with Sunwater to release water reserves at a rate that provides a creek flow of 300 ML/d at Linkes Road culvert
- Discharge 15 ML/d of ash water
- Monitor volumes and adjust release rate to maintain a creek flow of 300 ML/d at Linkes Road
- Discharge down to below Spill Warning Level
- A number of such releases may be required if subsequent rain events increase level to above the Spill Warning Level.

SCENARIO 3: Callide Dam Spilling or Releasing and Callide Creek Flowing

RELATED ACTION 3: Opportunistic Controlled "High Flow" Release

Objective: Ash Dam water will be released into a Callide Dam flood overflow or release event to below the Mandatory Reporting Level.

Characteristics of Release

- Install high capacity 80+ML/d pump plus syphons ~45 ML/d
- Assumes Callide Dam overflow rate is greater than 1,250 ML/d
- Callide Creek will be in flood
- Potential to lower level to MRL in 10 days of operation
- Maximum discharge would be around 1,750 ML plus any subsequent rain events
- A number of such releases may be required if subsequent rain events increase level to above the Mandatory Reporting Level.

ACTION 2: Landholder Consultation

CS Energy has commenced consultation with downstream landholders potentially affected by the proposed releases from Ash Dam B in accordance with the Spill Management Plan.

ACTION 3: Receiving Environment Monitoring

Monitoring of Ash Dam Water Quality

Initial monitoring by CS Energy has shown that the ash dam water quality is uniform down to a depth of 3 metres adjacent to the proposed discharge point. This will be checked periodically to ensure the quality of the water is not significantly stratified.

Notwithstanding, CS Energy will monitor the quality of the water being released from the ash dam at the release point (end of pipe) or at the inlet to the pipe / pump.

Monitoring of Release Volumes and Callide Creek Flows

CS Energy will use its best endeavours to regularly measure, monitor and adjust release volumes to maintain an acceptable dilution ratio with the available flow in Callide Creek.

CS Energy will adjust discharge volumes to ensure downstream property and infrastructure are protected from Ash Dam releases.

CS Energy will have no control over downstream flood events and volumes, but will endeavour to estimate these.

CS Energy anticipates being able to access release and flow data from Sunwater.

Monitoring of Callide Creek Surface Water and Groundwater Quality

CS Energy will sample and analyse the Receiving Environment (surface water sites and groundwater monitoring bores) in accordance with the Spill Management Plan developed as part of the Ash Dam Management Plan documentation required by the Development Approval.

A copy of the proposed monitoring program is attached as Table B.

ACTION 4: REPORTING TO DERM

Weekly summary reports of progress with the VTEP actions will be provided to DERM.

More detailed Monthly reports on the releases from the Ash Dam, and water quality of the Receiving Environment will also be submitted to DERM until the completion of releases under this VTEP.

During release, daily reports will be provided to DERM of EC, DO, Cl, pH, and TDS and temperature for water released from the Ash Dam and from the Callide Creek surface monitoring sites as well as flow in Callide Creek and volume discharged from the ash dam.

When bore samples are taken, daily reports will be provided to DERM of EC, DO, Cl, pH, and TDS.

Laboratory analysis reports will be provided to DERM within 1 week of receiving laboratory results.

ACTION 5: REVIEW AND EVALUATION

Following completion of the actions identified in this VTEP, CS Energy will review whether the actions met the stated objective and will report its findings to DERM.

CLOSURE

This VTEP remains in force until such time as the Mandatory Reporting Level of RL 213.33 m is achieved and reliably maintained, or until 20 April 2011, whichever comes first.

RESPONSIBLE OFFICER

[redacted]
[redacted] Site Manager Callide Power Station
CS Energy Limited

TABLE A

WATER QUALITY PERFORMANCE INDICATORS

		Callide Creek Water Quality Objectives	Australian Drinking Water Guideline	STOCK WATER	IRRIGATION WATER
pH VALUE		6.5 - 8.5	6.5 - 8.5	4.5 - 9.0	6.5 - 8.5
CONDUCTIVITY @ 25 C	us/cm	1000			
TOTAL DISSOLVED SOLIDS (TDS)	mg/L	1000	500 - 1000 acceptable		
	mg/L				
CALCIUM	mg/L	200	200 Aesthetic	1000	
MAGNESIUM	mg/L				
SODIUM	mg/L	180	180 Aesthetic		
CHLORIDE PPM	mg/L	500	250 aesthetic		
SULPHATE	mg/L	500	500 - 250 Aesthetic	1000	
BORON	mg/L	4	4	5	0.5
BARIUM	mg/L	0.7	0.7		
CHROMIUM (as CR6)	mg/L	0.05	0.05		
COPPER	mg/L	1	2 - 1 Aesthetic		
LEAD	mg/L	0.01	0.01		
MOLYBDENUM	mg/L	0.05	0.05	0.15	0.05
SELENIUM	mg/L	0.01	0.01	0.02	0.05
VANADIUM	mg/L	0.01	0.01	0.1	0.5
ZINC	mg/L	3	3 Aesthetic		
MERCURY	mg/L	0.001	0.001		
FLUORIDE	mg/L	1.5	1.5	2	2
CADMIUM	mg/L	0.002	0.002		
NICKEL	mg/L	0.02	0.02		
NITRATE	mg/L	50	50		
SILVER	mg/L	0.1	0.1		
URANIUM	mg/L	0.02	0.02	0.2	0.01
ANTIMONY	mg/L	0.003	0.003		

Note; Trace element levels are measured as dissolved levels

TABLE B

WATER QUALITY MONITORING PROGRAM

Refer attached A3 Document "Table B – TEP" for details.

Table B-TEP

Sampling locations and results as stipulated in the 'Callide Power Station Ash Dam B Spill Management Plan, 27th Feb, 2009 Revision 7'.

Pre -spill - **Surface Water** - Ash Dam B Spillway, Linkes Rd Crossing, Calvale/Coal Rd crossing, Gladstone Hwy crossing, Callide Dam. If discharge occurs via Western channel then Callide Creek adjacent to Nob's bore to be added to sampling monitoring

Frequency - One sample of each is require to be conducted prior to release

Bores - 68807, 68267, 34330, 62420, 34s, Nob's, 13030283, 13030284, 13030532, 13030128 and any extraction bores landholders are utilising.

Frequency - Numbered bores to be sampled once prior to release.

During spill - **Surface Water** - Ash Dam B Spillway, Linkes Rd Crossing, Calvale/Coal Rd crossing, Gladstone Hwy crossing, Callide Dam. If discharge occurs via Western channel then Callide Creek adjacent to Nob's bore to be added to sampling monitoring

Frequency - All surface water to be sampled daily

Bores - 68807, 68267, 34330, 62420, 34s, Nob's, 13030283, 13030284, 13030532, 13030128 and any extraction bores landholders are utilising.

Frequency - Numbered bores to be sampled initially at a fortnightly interval, reduced to monthly after two sampling events. Landholders bores to be sampled prior to any extraction and every 1ML that is irrigated.

NOTE - If plume is detected within the bores then sampling frequency is to be increased to weekly with sampling locations to be both d/stream and laterally from the creek.

Post spill - **Surface Water** - Ash Dam B Spillway, Linkes Rd Crossing, Calvale/Coal Rd crossing, Gladstone Hwy crossing, Callide Dam. If discharge occurs via Western channel then Callide Creek adjacent to Nob's bore to be added to sampling monitoring

Frequency - As above until it has been been determined that the spill plume is within acceptable levels.

Bores - 68807, 68267, 34330, 62420, 34s, Nob's, 13030283, 13030284, 13030532, 13030128 and any extraction bores landholders are utilising.

Frequency - As above until it has been been determined that the spill plume is within acceptable levels.

** Note that if ash dam plume is detected then bore monitoring is required to be escalated to a weekly monitoring with sampling locations to be extended both downstream and laterally from the creek.*

Analytes	Sample container to be used	Sample size required	Preservation Methods	Maximum Storage Time
Field analytes - in field (using the YSI Field monitor	Plastic bottle - unpreserved	1000 mL	Refrigerate at 4°C	72 hours
Conductivity, TDS, SS, Alkalinity, Fluoride, Sulfate, Chloride, Boron, Silica, Hardness	Plastic bottle - unpreserved	1000 mL	Refrigerate at 4°C	24 hours
BOD	Plastic bottle - unpreserved	250 mL	Refrigerate at 4°C	24 hours
Aluminium, Arsenic, Barium, Beryliium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Sodium, Strontium, Tin, Thallium, Thorium, Uranium, Vanadium, Zinc	Plastic bottle - nitric acid supplied in bottle	250 mL	Filter on site to 0.45 µm Refrigerate at 4°C	28 days
Oil and Grease	Glass bottle - acid supplied within bottle	1000 mL	Refrigerate at 4°C	7 days

Sampling routine during and post - spill event (pre-spill sampling conducted by environment)

Sampler Enviro Chem Contractor

* Chemistry to cover environment sample during an unavailability

Daily Fortnightly Monthly

* Note that if ash dam plume is detected then bore monitoring is required to be escalated to a weekly monitoring with sampling locations to be extended both downstream and laterally from the creek.

Week 1

	Frequency	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Sampler								
Surface								
ADB	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Calv/coal crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Nob's if required	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Linke's crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Glad hwy	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Callide dam	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Bores								
68807	Fortnightly	Contractor						
68267	Fortnightly	Contractor						
34330	Fortnightly	Contractor						
62420	Fortnightly	Contractor						
Nob's	Fortnightly	Contractor						
13030283	Fortnightly	Contractor						
13030284	Fortnightly	Contractor						
13030532	Fortnightly	Contractor						
13030128	Fortnightly	Contractor						

Week 2

	Frequency	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Sampler								
Surface								
ADB	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Calv/coal crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Nob's if required	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Linke's crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Glad hwy	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Callide dam	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Bores								
68807	Not required							
68267	Not required							
34330	Not required							
62420	Not required							
Nob's	Not required							
13030283	Not required							
13030284	Not required							
13030532	Not required							
13030128	Not required							

Week 3

	Frequency	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Sampler								
Surface								
ADB	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Calv/coal crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Nob's if required	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Linke's crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Glad hwy	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Callide dam	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Bores								
68807	Monthly	Contractor						
68267	Monthly	Contractor						
34330	Monthly	Contractor						
62420	Monthly	Contractor						
Nob's	Monthly	Contractor						
13030283	Monthly	Contractor						
13030284	Monthly	Contractor						
13030532	Monthly	Contractor						
13030128	Monthly	Contractor						

Week 4

	Frequency	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Sampler								
Surface								
ADB	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Calv/coal crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Nob's if required	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Linke's crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Glad hwy	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Callide dam	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Bores								
68807	Not required							
68267	Not required							
34330	Not required							
62420	Not required							
Nob's	Not required							
13030283	Not required							
13030284	Not required							
13030532	Not required							
13030128	Not required							

Week 5

	Frequency	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Sampler								
Surface								
ADB	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Calv/coal crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Nob's if required	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Linke's crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Glad hwy	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Callide dam	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Bores								
68807	Not required							
68267	Not required							
34330	Not required							
62420	Not required							
Nob's	Not required							
13030283	Not required							
13030284	Not required							
13030532	Not required							
13030128	Not required							

Week 6

	Frequency	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Sampler								
Surface								
ADB	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Calv/coal crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Nob's if required	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Linke's crossing	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Glad hwy	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Callide dam	Daily	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro	Enviro
Bores								
68807	Not required							
68267	Not required							
34330	Not required							
62420	Not required							
Nob's	Not required							
13030283	Not required							
13030284	Not required							
13030532	Not required							
13030128	Not required							