Lithgow Environment Group Inc.

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Preserving the Balance of Nature

Mining and Industry Projects
NSW Department of Planning & Environment
GPO Box 39 Sydney NSW 2001

8 November 2016

Dear Sir/Madam,

Re: Springvale Water Transfer and Treatment Project SSD 16_7592

The Lithgow Environment Group Inc. (LEG) welcomes this Proposal to re-use Springvale Colliery's minewater for cooling purposes in Mount Piper Power Station, which will finally:

- Enable Springvale Colliery to meet the commitments made to the EPA in 2005 under the Springvale – Delta Electricity Water Transfer Scheme[70] to protect swamps on Newnes Platea and clean up the Wolgan River by transferring minewater to Wallerawang Power Station for industrial reuse;
- Enable Energy Australia to meet Condition 4 of Water Access Licence No. 27428 issued in February 2014[71], which states:

  "The Licence Holder must not take any water from the Coxs River under this access licence unless the Licence Holder has first used all available mine water from its storages for the purpose of power generation." [71]
- Enable the Springvale Extension to (hopefully) achieve a Neutral or Beneficial Effect (NorBE) as required by State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011[75].

LEG does however have serious reservations about whether this Proposal in its current form can meet the stated objectives, and urges the DP&E to revise the following:

1. Wangcol Creek is not a suitable receiving environment for emergency minewater discharges;
2. LDP006 is a highly polluted and unstable environment;
3. The proposal fails to address all of Springvale's minewater discharge points;
4. Unnecessary duplication of the existing Springvale – Delta Electricity Water Transfer Scheme (SDWTS) pipeline alignment will cause unnecessary damage to the scenic Clerestory Spurs;
5. Appears to be designed more to dilute extremely high salinity (5190 uS/cm in April 2016) in Springvale's LDP006, rather than for reuse as cooling water in Mt Piper Power Station;
6. Toxicity of the LDP009 discharge – has it been addressed?
7. Temporary storage of Minewater underground at Angus Place Colliery

1. **Wangcol Creek is not a suitable environment for Emergency Discharges from LDP006.**

The Proposal intends to use LDP006 for Emergency Discharges whenever Mt Piper Power Station power has stopped for maintenance or is operating below capacity. Those emergency discharges will be dumped into receiving waters of LDP006, which has a current Salinity level >5000 uS/cm. This discharge will also exacerbate Salinity and Acid Mine Drainage (AMD) in Wangcol Creek downstream.

Wangcol Creek downstream of LDP006 is not a natural creekline. It is a highly disturbed artificial drain carved through coal waste and coal chitter from the old Wallerawang Colliery (now Pine Dale Mine). The photos below were taken in 2004, before Pine Dale Mine began operations. The unstable coal chitter along the creekbank can be clearly seen. The sinkhole where water was diverted into the old Wallerawang Colliery underground mine workings can also be clearly seen.

Allowing up to 30ML/day of emergency discharges to flow through such a highly disturbed environment will only exacerbate Acid Mine Drainage, Salinity problems, erosion, and siltation further downstream in the Coxs River.

LEG urges the DP&E to consider alternatives the LDP006 and Wangcol Creek for Emergency Discharges.

2. **LDP006 is a highly polluted unstable environment which must be addressed as part of this proposal**

LEG has been monitoring water quality at Springvale Coal Services LDP006 since 2006. LDP006 is by far the most polluted watercourse in the entire Lithgow LGA, and has been since 2010. Yet this is not identified in any of the documents presented in support of this Proposal?

Salinity at LDP006 has quadrupled in the past 10 years - from 1200 uS/cm in 2006, to 5190 uS/cm in June 2016. Salinity may quadruple again in the next 10 years, unless this issue is seriously addressed.

It would appear to LEG that the actual and perverse aim of this Proposal may be to use Springvale's treated minewater to dilute the LDP006 discharge - by dumping treated minewater with a Salinity of 500 uS/cm

into LDP006 with a Salinity of 5190 uS/cm. This defeats the entire purpose of this Proposal, which is supposed to be about lowering Salinity in the Coxs River by reusing minewater for cooling at MPPS. Furthermore no modelling has been provided to demonstrate if or by how much this will ultimately reduce the Salinity in the LDP006 discharge – short term or long term.

LEG points out that Salinity is a serious issue. Springvale's consultant Cardno Ecology Lab (2014) identified in the EA for the Springvale Extension that ***"The aquatic biota will thus be exposed to salinity conditions they have not previously experienced. These may result in direct toxic effects on some organisms and indirect effects on others through modification of species composition of the ecosystem."***

LEG's water quality monitoring since 2006 has identified Salinity as a major issue in the Coxs River catchment. The default ANZECC guideline trigger value for conductivity for an upland river is 350 uS/cm. 15 of the 30 sites regularly monitored by LEG exceed 350 uS/cm, all of which are associated with minewater or power station discharges. All undisturbed sites have a median salinity in the range of 30 – 50 uS/cm.

The Coxs River NOW Gauge (212054) confirms that Salinity levels have doubled between 1992 and 2016, from a mean of 615 uS/cm to a current mean of 1200 uS/cm.

The highest Salinity recorded by LEG was once Wallerawang Power Stations "Tortuous Water Course" discharge into the Coxs River below Lake Wallace, with a level of 2600 uS/cm. The Springvale LDP006 discharge far eclipses this at **5190 uS/cm** recorded in the Springvale Coal Services Environmental Monitoring Report June 2016[74].

The Water NSW NOW Gauge (2120654) Data demonstrates an upward trend in Salinity since 1992, and a marked increase since Wallerawang Power Station closed in 2014. Lake Wallace has the highest Salinity level ever. This is entirely attributable to Springvale's LDP009 minewater discharges of 1200+ uS/cm. This is over 4 times higher than the default ANZECC guideline trigger value for conductivity in an upland river of 350 uS/cm, a value which is totally unacceptable to LEG, and we believe to most people.

LEG has raised concerns on numerous occasions in submissions to the DP&E about Salinity levels in the Coxs River, Nuebecks Creek, Wangcol Creek, and the LDP006 discharge.

LEG's monitoring results for Salinity only at LDP006 since 2006 are shown below. LEG's Electrical Conductivity metre has a limit of 2000 uS/cm, so we have backed this up with data from monthly Springvale Coal Services Environmental Monitoring Reports[74] available on Centennial Coal's website. LEG has similar records for other Centenial LDP's, which LEG will retained for use through the most effective avenues.

SITE 18	DATE	EC uS/cm	COMMENTS
Springvale LDP006 Castlereagh Hwy, Blackman's Flat. Downstream	24/10/06	1240	
	18/11/06	1240	
	31/12/06	1290	12mm rain
	25/1/07	1280	40mm rain

Lamberts Gully mine, Springvale Coal Services, Main Settlement Dam, Washery Sediment Dam, Stockpile Sediment Dam, coal fines recovery project, coal conveyor, and proposed LCC Regional Solid Waste Landfill. **33° 21.818'S** **150° 3.514'E** Altitude: 904m	1/4/07	1460	
	12/4/07	1450	
	22/4/07	1520	
	23/4/07	1510	
	29/4/07	1410	18mm rain
	6/5/07	1420	
	15/5/07	***1410***	***SCA Field Data***
	26/5/07	970	48mm rain
	1/6/07	1040	8mm rain
	14/6/07	870	88mm rain
	22/6/07	1170	35mm, no frogs
	30/6/07	1230	34mm, muddy
	23/7/07	1210	Rusty creekbed
	29/7/07	1180	Rusty creekbed, no frogs
	28/8/07	1120	25mm rain, rusty coloured water
	7/9/07	1050	Rusty creekbed, no frogs
	27/9/07	1010	Oil slick on surface, milky, no frogs
	11/10/07	1010	Oil slick on surface, slightly turbid
	30/10/07	1140	Oil slick with round silver blobs
	4/11/07	-	Turbidity after 50mm storm overnite
	30/11/07	1140	150mm rain Nov, muddy/milky
	31/12/07	1220	Rust colour water, rust on creekbed
	20/1/08	890	Muddy after 70mm rain o'nite
	2/3/08	1200	71 mm rain. Slightly muddy
	2/4/08	1040	Oil slick, flowing, rusty creekbed
	30/7/08	1150	Flowing, slight oil slick
	30/9/08	1100	Flowing, rusty colour, iron odour
	31/10/08	1110	
	25/1/09	1120	Milky/rust colour, good flow, Gambusia
	25/2/09	1120	Yellow/rusty, flowing, 30mm rain 7 day
	1/4/09	1200	20mm o/nite,rusty,good flow,Gambusia
	31/5/09	1390	Blue/grey, oil slick
	28/6/09	1510	Flowing well, clear, slight oil slick
	28/7/09	1500	Higher flow than usual, iron odour, yellow
	1/9/09	1290	Usual flow, oil slick on surface. Iron odour
	9/9/09		EPA Pollution Reduction Notice to Lambert's Gully Mine to reduce EC, Zn, Al, Ni, Mn in discharge from LD6
	30/9/09	1310	Yellow, oily scum on surface
	6/11/09	1650	Yellow/brown, pronounced oil slick
	12/12/09	1420	Low flow, rusty muck on surface, yellow
	11/2/10	1180	60mm rain w'end, brown, oil slick, low DO
	12/3/10	1750	High flow, slightly milky, poss. Gambusia
	10/9/10	-	Centennial dispute above but agree to try and reduce Ni, Zn & EC
	29/7/11	-	Julie attended inspection with Rob Hunt st LD6, aim to concrete-line creek as high metals are leaching from chitter previously dumped in creek
	April 2012	*2170*	*Springvale Coal Services Enviro Monitoring Report April 2012: A total of 101.6 ML of*

			water was discharged from LDP006 during April 2012, averaging 3.4 ML/day. Max was 6592 kL on 23 April 2012
	May 2012	*2190*	*Springvale Coal Services Enviro Monitoring Report April 2012: A total of 44.8 ML of water was discharged from LDP006 during May 2012, averaging 1.4 ML/day. Max was 3799 kL on 1 May 2012*
	June 2012	*1130*	*Springvale Coal Services Enviro Monitoring Report June 2012: A total of 29.18 ML of water was discharged from LDP006 during June 2012, averaging 0.97 ML/day. Max was 3447 kL on 16 June 2012*
	July 2012	*554*	*Springvale Coal Services Enviro Monitoring Report July 2012: A total of 28.89 ML of water was discharged from LDP006 during July 2012, averaging 0.93 ML/day. Max was 3104 kL on 11 July 2012*
	August 2012	*1380*	*Springvale Coal Services Enviro Monitoring Report August 2012: A total of 19.82 ML of water was discharged from LDP006 during August 2012 averaging 0.64 ML/day. Max 2357 kL, 8 July 2012 (August, their typo not mine!)*
	September 2012	*1480*	*Springvale Coal Services Enviro Monitoring Report August 2012: A total of 26.27 ML of water was discharged from LDP006 during September 2012, averaging 0.88 ML per day. Max was 4569.43 kL on 17 September 2012.*
	26/9/12	>2000	Flowing. Confronted by rude, arrogant defensive Big Rim staff member
	October 2012	*1498*	*Springvale Coal Services Enviro Monitoring Report October 2012: A total of 12.8 ML of water was discharged from LDP006 during September 2012, averaging 0.41 ML per day. Max 989 kL 1/10/12*
	22/11/12	>2000	Murky
	November 2012	*2130*	*Springvale Coal Services Enviro Monitoring Report November 2012: A total of 7.91 ML of water was discharged from LDP006 during November 2012, averaging 0.28 ML per day. Max 492 kL on 28/11/12*
	December 2012	*2610*	*Springvale Coal Services Enviro Monitoring Report December 2012: A total of 6.8 ML of water was discharged from LDP006 during September (their typo not mine!) 2012, averaging 0.2 ML per day. Max 2768 kL on 25/12/12*
	10/1/13	>2000	Browny-milky
	January 2013	*1340*	*Springvale Coal Services Enviro Monitoring Report January 2013: A total of 16.83 ML of water was discharged from LDP006 during January 2013, averaging 0.54 ML per day.*

			Max 4115 kL on 27/1/13
	February 2013	*1860*	*Springvale Coal Services Enviro Monitoring Report February 2013. A total of 79.5 ML of water was discharged from LDP006 during February 2013, averaging 2.84 ML per day. Max7695kl on 23/2/13*
	7/3/13	>2000	Grey-blue
	March 2013	*1620 1/3/13 2590 7/3/13*	*Springvale Coal Services Enviro Monitoring Report March 2013. A total of 90.9 ML of water was discharged from LDP006 during March 2013, averaging 2.93 ML per day. The first of March 2013 recorded a discharge of 11,652 kL, this is 1652 kL above the EPL discharge limit of 10,000 kL.*
	23/4/13	>2000	Milky-blue
	April 2013	*2790*	*Springvale Coal Services Enviro Monitoring Report April 2013. A total of 21.9 ML of water was discharged from LDP006 during April 2013, averaging 0.73 ML/day. Max 1688 kL 0n 1 April 2013*
	May 2013	*2490*	*Springvale Coal Services Enviro Monitoring Report May 2013. A total of 1.1 ML of water was discharged from LDP006 during May 2013, averaging 0.04 ML/day.*
	June 2013	*1100*	*Springvale Coal Services Enviro Monitoring Report June 2013. A total of 6.6 ML of water was discharged from LDP006 during June 2013, averaging 0.22 ML/day.*
	July 2013	*3000*	*Springvale Coal Services Enviro Monitoring Report July 2013. A total of 56.0 ML of water was discharged from LDP006 during July 2013, averaging 1.8 ML/day. Max 3816 kL on 6 July 2013*
	August 2013	*3180*	*Springvale Coal Services Enviro Monitoring Report August 2013. A total of 23.8 ML of water was discharged from LDP006 during August 2013, averaging 0.77 ML per day. Max 2340 kL 8/8/13*
	September 2013	*3140*	*Springvale Coal Services Enviro Monitoring Report September 2013. A total of 13.6 ML of water was discharged from LDP006 during September 2013, averaging 0.45 ML per day. Max 2105 kL 17/9/13*
	October 2013	*NA*	*Springvale Coal Services Enviro Monitoring Report Oct 2013. NA*
	November 2013	*NA*	*Springvale Coal Services Enviro Monitoring Report November 2013.*
	December 2013	*NA*	*Springvale Coal Services Enviro Monitoring Report December 2013.*
	January 2014	*NA*	*Springvale Coal Services Enviro Monitoring Report January 2014.*
	February	*NA*	*Springvale Coal Services Enviro Monitoring*

	2014		*Report February 2014*
	March 2014	*2920*	*Springvale Coal Services Enviro Monitoring Report March 2014. Max 4744 kL on 27 March 2014*
	April 2014	*3040*	*Springvale Coal Services Enviro Monitoring Report March 2014. Max 13542 kL on 4 April 2014, 3542 kL above the EPL discharge limit of 10,000 kL.*
	May 2014	*3250*	*Springvale Coal Services Enviro Monitoring Report May 2014. Max 3070 kL 29 Max 2014*
	June 2014	*3040*	*Springvale Coal Services Enviro Monitoring Report June 2014. 10935 kL on 7 June 2014 10728 kL on 8 June 2014 10427 kL on 9 June 2014*
	July 2014	*NA*	*Springvale Coal Services Enviro Monitoring Report July 2014.*
	August 2014	*2136*	*Springvale Coal Services Enviro Monitoring Report August 2014.*
	7/9/14	>2000	Murky
	September 2014	*3080*	*Springvale Coal Services Enviro Monitoring Report September 2014*
	October 2014	*1620*	*Springvale Coal Services Enviro Monitoring Report October 2014*
	November 2014	*NA*	*Springvale Coal Services Enviro Monitoring Report November 2014*
	December 2014	*3.67 mS/cm 3670 µS/cm*	*Springvale Coal Services Enviro Monitoring Report December 2014*
	January 2015	*4194, 4330*	*Springvale Coal Services Enviro Monitoring Report January2015*
	February 2015	*3420, 4550*	*Springvale Coal Services Enviro Monitoring Report February2015*
	March 2015	*4480, 4530*	*Springvale Coal Services Enviro Monitoring Report March 2015*
	April 2015	*2220,1220*	*Springvale Coal Services Enviro Monitoring Report April 2015*
	May 2015	*4000*	*Springvale Coal Services Enviro Monitoring Report May 2015*
	24/5/15	>2000	No great flow, grey green, photo
	June 2015	*3340*	*Springvale Coal Services Enviro Monitoring Report June 2015*
	July 2015	*2810*	*Springvale Coal Services Enviro Monitoring Report July 2015*
	August 2015	*3780*	*Springvale Coal Services Enviro Monitoring Report August 2015*
	September 2015	*2030*	*Springvale Coal Services Enviro Monitoring Report September 2015*
	November 2015	*1537, 1870*	*Springvale Coal Services Enviro Monitoring Report November 2015*
	December 2015	*4550*	*Springvale Coal Services Enviro Monitoring Report December 2015*
	12/1/16	>2000	Flowing well
	January	*1703*	*Springvale Coal Services Enviro Monitoring*

	2016		*Report January 2016*
	09/02/16	>2000	Flowing, 200mm rain in January
	February 2016	*4690, 4560*	*Springvale Coal Services Enviro Monitoring Report February 2016*
	09/03/16	>2000	Flowing
	March 2016	*4900*	*Springvale Coal Services Enviro Monitoring Report March 2016*
	10/4/16	>2000	Flowing, salt visible roadside drain
	03/05/16	>2000	Rusty slick on water surface
	April 2016	*4550*	*Springvale Coal Services Enviro Monitoring Report April 2016*
	May 2016	*4520*	*Springvale Coal Services Enviro Monitoring Report April 2016*
	June 2016	*5190*	*Springvale Coal Services Enviro Monitoring Report June 2016*
	July 2016	*4660*	*Springvale Coal Services Enviro Monitoring Report July 2016*

Licence Limit for Salinity

Springvale's EPL3607 has a Salinity limit of 1200 uS/cm for discharges from LDP009 into Sawyers Swamp Creek. However there is no Salinity limit for the LDP006 discharge into Wangcol Creek. Why not?

LEG urges the DP&E to Recommend a Salinity Discharge Limit for LDP006 as part of this Proposal.

Reinstate volumetric flow reporting at LDP006

From April 2012 to December 2014 Springvale Coal Services reported flow rates from LDP006 in monthly Environmental Monitoring Reports[74]. Centennial stopped reporting flow rates in December 2014.

LDP006 has volumetric discharge limit of 10,000 kL (10ML)/day under EPL3607. This has been exceeded on at least 5 occasions since 2013 – on 1 March 2013, 4 April 2014, 7 June 2014, 8 June 2014, and 9 June 2014. The maximum reported flow was 13,542 kL on 4 April 2014.

Some of that flow data from Springvale's monthly reports[74] is summarised below -

- April 2012: A total of 101.6 ML of water was discharged from LDP006 during April 2012, averaging 3.4 ML per day. Max was 6592 kL on 23 April 2012
- May 2012: A total of 44.8 ML of water was discharged from LDP006 during May 2012, averaging 1.4 ML per day. Max was 3799 kL on 1 May 2012
- June 2012: A total of 29.18 ML of water was discharged from LDP006 during June 2012, averaging 0.97 ML/day. Max was 3447 kL on 16 June 2012
- July 2012: A total of 28.89 ML of water was discharged from LDP006 during July 2012, averaging 0.93 ML/day. Max was 3104 kL on 11 July 2012
- August 2012: A total of 19.82 ML of water was discharged from LDP006 during August 2012 averaging 0.64 ML/day. Max 2357 kL, 8 July 2012 (read August, their typo not mine!)
- September 2012: A total of 26.27 ML of water was discharged from LDP006 during September 2012, averaging 0.88 ML per day. Max was 4569.43 kL on 17 September 2012

- October 2012: A total of 12.8 ML of water was discharged from LDP006 during October 2012, averaging 0.41 ML per day. Max was 989 kL 1/10/12
- November 2012: A total of 7.91 ML of water was discharged from LDP006 during November 2012, averaging 0.28 ML per day. Max was 492 kL on 28/11/12
- December 2012: A total of 6.8 ML of water was discharged from LDP006 during September (read December, their typo not mine!) 2012, averaging 0.2 ML per day. Max was 2768 kL on 25/12/12
- January 2013: A total of 16.83 ML of water was discharged from LDP006 during January 2013, averaging 0.54 ML per day. Max 4115 kL on 27/1/13
- February 2013: A total of 79.5 ML of water was discharged from LDP006 during February 2013, averaging 2.84 ML per day. Max 7695 kl on 23/2/13
- March 2013: A total of 90.9 ML of water was discharged from LDP006 during March 2013, averaging 2.93 ML per day. Max 11,652 kL on 1 March 2013, 1652 kL above the EPL discharge limit of 10,000 kL
- April 2013: A total of 21.9 ML of water was discharged from LDP006 during April 2013, averaging 0.73 ML/day. Max 1688 kL 0n 1 April 2013
- May 2013: A total of 1.1 ML of water was discharged from LDP006 during May 2013, averaging 0.04 ML/day
- June 2013: A total of 6.6 ML of water was discharged from LDP006 during June 2013, averaging 0.22 ML/day
- July 2013: A total of 56.0 ML of water was discharged from LDP006 during July 2013, averaging 1.8 ML/day. Max 3816 kL on 6 July 2013
- March 2014: Max 4744 kL on 27 March 2014
- April 2014: Max 13542 kL on 4 April 2014, 3542 kL above the EPL discharge limit of 10,000 kL
- May 2014: Max 3070 kL 29 Max 2014
- June 2014: exceeded 10 ML discharge limit on 3 occasions: 10935 kL on 7 June 2014, 10728 kL on 8 June 2014, and 10427 kL on 9 June 2014

Despite Centennial's reports[74] claiming zero flow on many occasions, LEG has never seen LDP006 not flowing since monitoring commenced at LDP006 in 2006. Centennial have averaged flow rates so that they appear to be as low as possible. However by averaging reported flow rates[74] from the 2012 – 2014, it is in the order of 2 - 4 ML/day – not an insignificant flow, and large enough to adversely impact on water quality and aquatic life in the Coxs River downstream.

How can the DP&E and EPA monitor compliance with the 10,000 kL (10ML)/day limit on LDP006 if it is not being recorded/reported? LEG urges the DP&E to reinstate Volumetric Reporting at LDP006.

Salt encrustation and Acid Mine Drainage along Castlereagh Highway adjacent Cookes and DML Dam

Of great concern to LEG is the salt encrustation and Acid Mine Drainage (AMD) observed along the Castlereagh Highway road verge adjacent LDP006 at various times since 2010, most notably in May 2013 and April 2016 (See photos below).

LEG cannot comprehend how the DP&E or any responsible NSW government agency can possibly regard this as acceptable in any waterway, let alone a drinking water catchment for 5 million people?

Photos taken adjacent the Springvale Coal Services Site - April 2016

Photos taken adjacent the Springvale Coal Services Site - April 2016

LEG urges the DP&E to seriously consider how this Proposal can address this ongong and escalating problem. Introducing yet more highly saline minewater into an already saturated environment is only likely to exacerbate the salt encrustation and Acid Mine Drainage issues adjacent LDP006. Dilution with minewater will only create additional problems now and long into the future.

The minewater flow from LDP006 should be collected as part of this proposal and be adequately treated.

The Springvale – Delta Electricity Water Transfer Scheme (SDWTS)

WPS once drew the majority of its cooling water needs from the Springvale Coal – Delta Electricity Water Transfer Scheme (SDWTS)[70] commissioned in 2006 to protect endangered swamps on Newnes Plateau and clean up the Wolgan River by transferring Springvale's polluted minewater to Wallerawang Power Station (WPS) for reuse for industrial purposes (ie. For power station cooling).

The Scheme had a capacity of 30 ML per day, and over the first six months of operation averaged a transfer rate of 15.55 ML of water each day. Since WPS closed that minewater has been dumped via Sawyers Swamp Creek into the Coxs River, undoing all of the good work done by the SCA, OEH and EPA over many years in an attempt to clean up Angus Place/Springvale Colliery minewater discharges.

The orginal intent of the SDWTS was to re-use that minewater for power station cooling. Springvale's minewater should have been diverted to Mount Piper Power Station as a Condition of Consent of the Springvale Extension, instead of being dumped into the Coxs River and Sydney's Drinking Water Catchment.

The DP&E, Springvale Coal, and Energy Australia should honour the original intent of the SDWTS.

EnergyAustralia's Water Access Licence 27428

WPS once drew approximately 25,000ML/year of water from the upper Coxs River catchment. This amount of water is no longer being extracted. Energy Australia's current Water Access Licence 27428, Statement of Conditions dated February 2014[71], allows for the extraction of 25,000 megalitres per year for cooling at Mount Piper Power Station. Condition 4 of that Licence states -

The Licence Holder must not take any water from the Coxs River under this access licence unless the Licence Holder has first used all available mine water from its storages for the purpose of power generation.

LEG urges the DPE&E to require Energy Australia to abide by Condition 4 of its Water Access License, and use the 30ML/day of available minewater Springvale Colliery is currently dumping into the Coxs River.

Lake Wallace and Lake Lyell are spilling more often

LEG believes there has been a tendency for the DP&E to regard Lake Wallace and Lake Lyell has huge 'pollutant traps' in the upper Coxs River catchment, which allow contaminants to 'settle out' prior to that water continuing further downstream into the Sydney Drinking Water Catchment.

But because Wallerawang Power Station has now closed, and Springvale Colliery has massively increased minewater flows, Lake Wallace has been constantly overflowing since the Springvale Extension was approved in September 2015, and Lake Lyell has similarly been overflowing more requlary. Prior to this Lake Wallace only overflowed during storms, and Lake Lyell didn't overflow for 11 years from 1999 to 2010.

Since WPS has closed and is no longer drawing 25,000ML/year from the catchment, and because Springvale Colliery has increased its minewater discharges to 30,000 ML/year, the 'pollutant trap' effect of Lake Wallace and Lake Lyell no longer applies. The upper Coxs River has become more of a 'direct flow system', polluted sediment accumulated over many decades is now being mobilised, and polluted minewater is now penetrating further down into the Sydney Drinking Water catchment than at any time in history.

Springvale's own consultant Cardno Ecology Lab (2014) identified in the EA for the Springvale Extension that ***"The aquatic biota will thus be exposed to salinity conditions they have not previously experienced. These may result in direct toxic effects on some organisms and indirect effects on others through modification of species composition of the ecosystem."***

This has implications for all aquatic life and all water-users downstream. The DP&E must ensure that Springvale's minewater is genuinely used for Power Station Cooling, and not as an adhoc stop-gap measure to dilute salinity in the LDP006 discharge.

4Nature vs Centennial Coal Court Case

LEG reminds the DP&E that the Land and Environment Court decision on 13 September 2016 demonstrated that the State Environmental Planning Policy (Sydney Drinking Water SEPP) cannot adequately protect water quality. This SEPP requires decision-makers to determine whether or not a proposal has a neutral or beneficial effect (NoRBE) on the water quality of receiving waters.

Two separate submissions by the SCA to the NSW Department of Planning and Environment and Planning Assessment Commission on 3 April 2014 and 12 November 2014 clearly stated that the 2015 Springvale Extension did not achieve NoRBE - yet the mine was still approved?

There is no quarantee that this Proposal will ever be built, and if so whether it will achieve NorBE.

4Nature is currently appealing Judge Pepper's decision.

It is a great shame that community groups have to go to such extraordinary lengths to do what the DP&E should have done in approving the Springvale Extension.

LEG strongly urges the DP&E to ensure that this proposal will genuinely have a neutral or beneficial effect (NoRBE) on water quality of receiving waters in Sydney drinking water catchment.

COMMUNITY CONCERNS ABOUT WATER QUALITY

LEG refers the DP&E to the Environment Assessment Report on the Springvale Extension. The report identified that of the 320 submissions received from the general public and interest groups, 229 (**72%**) objected to the project, 80 (**27%**) supported the project, and 5 (**1%**) were comments.

The two highest priority issues were Subsidence damage to peat swamps, and Water discharge quality.

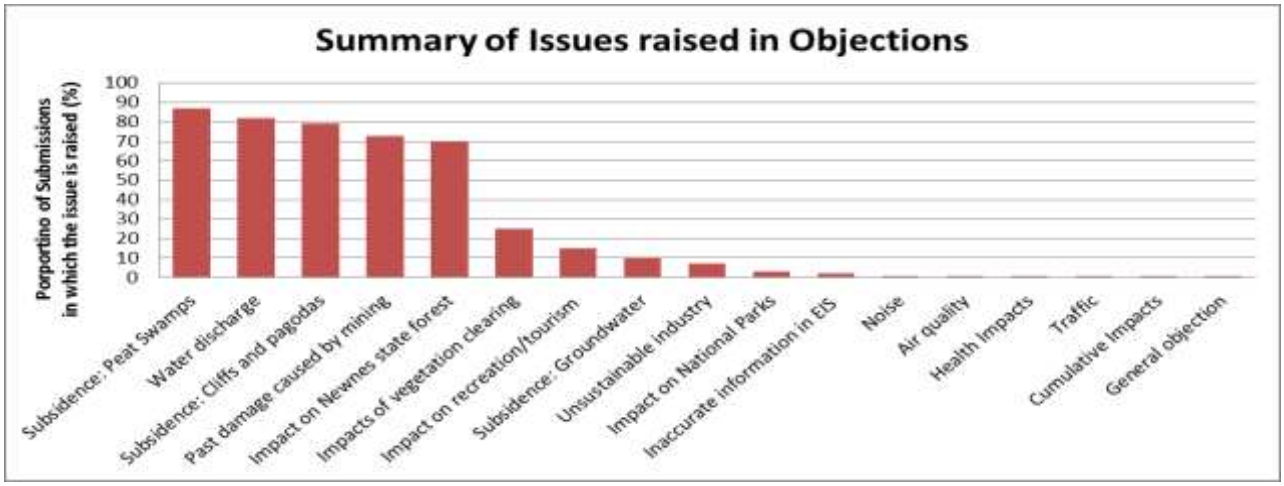


Figure 5: *Summary of Issues raised in submissions objecting to the project (*DP&E Assessment Report April 2015)

LEG was therefore devastated that the DP&E and PAC were so out of touch with the concerns of the majority of respondents, and chose to ignore the advice of the NSW Governments own expert advisers in the OEH, IESC, EPA and SCA, by recommending approval of the Proposal virtually as exhibited.

Futhermore, the DP&E and PAC recommended deferring decisions on the most significant issues raised in the submissions –

- **T**he DP&E and PAC deferred swamp protection until well into the future by requiring only self-regulated long term monitoring to protect the nine (9) swamps that would be directly undermined (Sunnyside East, Carne West, Gang Gang South West, Gang Gang East, Pine, Pine Upper, Paddys, Marrangaroo Ck and Marrangaroo Ck Upper Swamps). This is despite the fact monitoring failed to

protect Kangaroo Creek Swamp, Junction Swamp, Narrow Swamp and East Wolgan Swamp. And if and when monitoring does detect damage, the damage will be irreversible;

- The DP&E and PAC deferred a decision on Offsets and the RBS (Regional Biodiversity Strategy) until end June 2016;
- The DP&E and PAC deferred a desion on minewater discharge quality standards and licence discharge limits by requiring Springvale to negotiate with the EPA and other relevant agencies to develop minewater management options by the end of June 2016;
- The DP&E and PAC deferred a decision on predicted surface water take and water entitlements until 2018.

Clearly community expectations were high that damage to peat swamps should be minimised, and that minewater pollution into the Coxs River and Sydney's drinking water supply should be reduced. These were key matters for decision by the DP&E and the PAC Review on the Springvale Extension, and both failed.

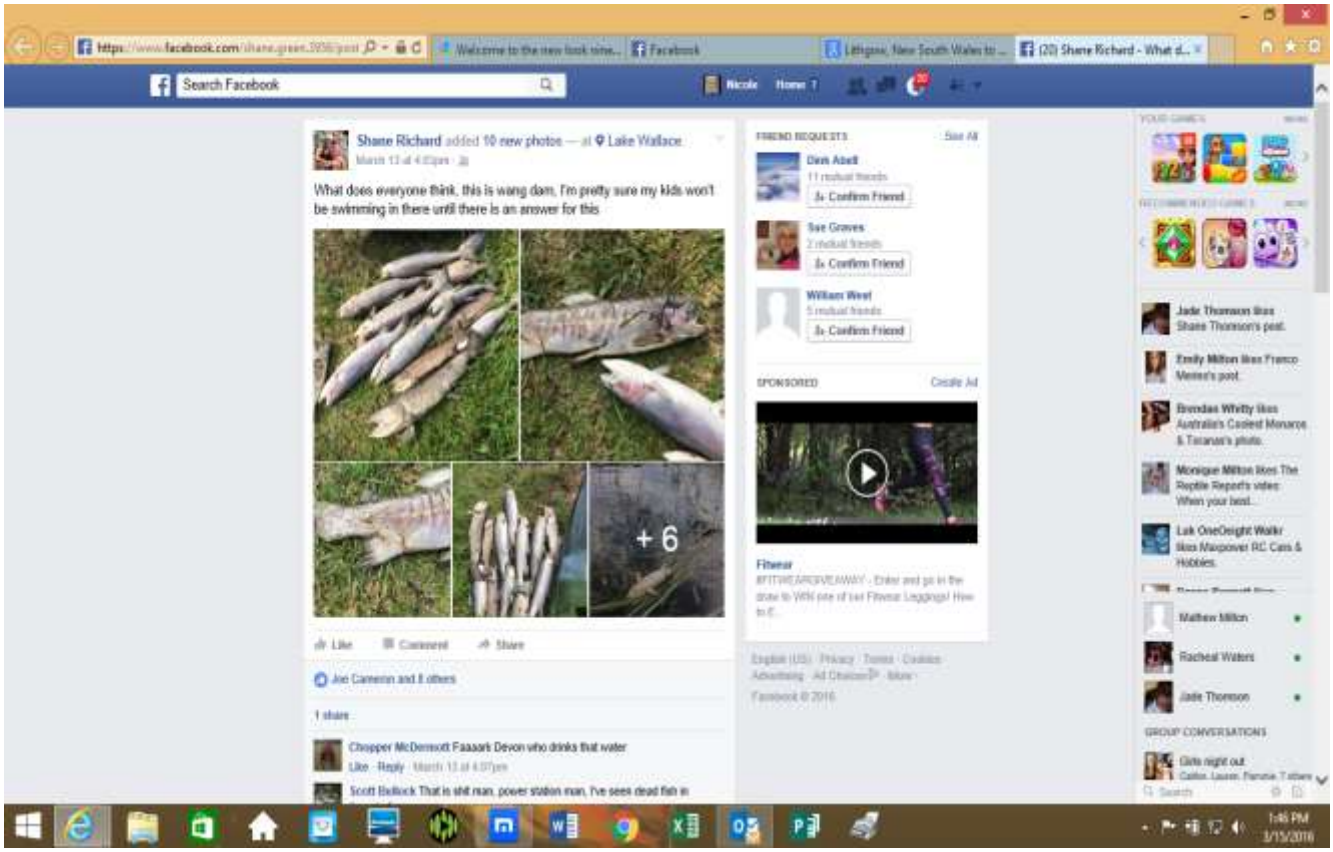
We urge the DP&E genuinely take community concerns into consideration in assessing this Proposal.

Toxicity of the LDP009 discharge

We refer the DP&E to Appendix 10 of the Springvale Extension - Coxs River Ecotoxicology Assessment. The minewater discharge from LDP009 was found by the OEH to be significantly toxic to most of the tested species of animals and plants, with algae and hydra being more sensitive than the cladoceran. **The LDP009 discharge was acutely toxic (ie. effectively lethal) to the tested fish species.**

The Springvale EA failed to identify this toxicity, nor advise how long the LDP009 discharge had been toxic, and how far this toxicity extended downstream. LEG has received disturbing reports about dead fish and deformed fish in Lake Wallace for over 2 years, as have the EPA. LEG believes the LDP009 is the likely cause.

One such incident was widely reported by the Lithgow Mercury http://www.lithgowmercury.com.au/story/3800000/autumn-heatwave-was-fatal-for-trout/, Prime News, and through social media in March 2016. Various agencies blamed this particular fisg death on a heatwave, deoxygenation of water, and algal blooms – not surpisingly all ignored the elephant in the room – LDP009.



The DP&E and PAC claimed the cause of this toxicity identified by the OEH was unknown, speculated that flocculants used by Springvale at LDP009 may be the cause, said that the Proponent was working to find a solution, approved the Springvale Extension as proposed anyway, allowed it to remain toxic, and deferred a decision on Licence Discharge Limits until the end of June 2016. A totally unacceptable situation!

LEG urges the DP&E to fully inform the public as part of the assessment for this Proposal whether the cause of this toxicity has ever been identified, how it has been addressed, how such instances can be detected sooner, and be prevented from occurring in future.

Cumulative sources off salinity

This Proposal fails to address the cumulative impacts of saline discharges over and above those from LDP009, including –

- Angus Place LDP001 & LDP002 (900 – 1100 µS/cm),
- Springvale LDP0010 (1000 µS/cm);
- Western Coal Services LDP006 (5190 µS/cm in June 2016);
- Proposed Nuebeck Coal Project (DGR's issued),
- Proposed Pine Dale Mine Extension, and

- Possible proposed dilution of LDP009 using Clarence Colliery minewater (300 – 350 µS/cm).

This DP&E must address all of Centennial's Licenced Discharge Points into the Coxs River.

Hunter Salinity Trading Scheme

High volume discharges of saline water from mines and power stations into the environment are not a new problem. The DP&E will be familiar with the Hunter Salinity Trading Scheme. LEG believes that it provides a guide to the appropriate salinity levels in LDP006 and other minewater discharges into the Coxs River -

- When the Hunter River is in low flow, no discharges are allowed;
- When the river is in high flow, limited discharges are allowed controlled by a system of salt credits;
- The volume of discharge allowed depends on the ambient salinity in the river, so can change daily;
- The total allowable discharge is calculated so that the salt concentration does not go above 900EC in the middle and lower sectors of the river, or above 600EC in the upper sector;
- When the river is in flood, unlimited discharges so long as salt concentration don't go above 900EC.

Springvale LDP009, Angus Place LDP001, Western Coal Services/Springale LDP006, proposed Neubeck Coal Project and Pine Dale Mine etc. all operate in the upper sector of the Coxs River. Springvale and Angus Place minewater has a salinity level of 1200 EC. Discharges from the Western Coal Services site have been >2000 EC since 2012, and up to 5190EC. Salinity in discharges from the proposed Neubeck Coal Project and Pine Dale Mine Extension are not known, but are highly likely to be 1200+ EC.

If the Hunter Salinity Trading Scheme conditions were applied to the upper Coxs River then Springvale's LDP009 and LDP006 discharges would be Licenced to ensure that Salinity levels did not exceed 600EC in the upper Coxs River.

LEG therefore considers that a discharge of 30 ML/day of minewater with a salinity of 1200+ EC is neither appropriate nor sustainable, and poses a significant threat to aquatic ecosystem health. Such a discharge is likely to kill almost all life in the Coxs River downstream to the stored waters of Lake Burragorang.

LEG urges the DP&E to recommend an acceptable standard for Saline discharges into the Coxs River and Sydney Drinking Water Catchment using the guidelines applicable to the Hunter River, and preferably based on the default ANZECC guideline trigger value for conductivity in an upland river of 350 uS/cm.

Temporary storage of Minewater underground at Angus Place Colliery

Springvale are currently directing 5ML/day of minewater to an underground storage area (Area 300) in Angus Place Colliery. This arrangement cannot be regarded as sustainable long-term, especially given the

amount of surface fracturing that has occurred as a result of longwall mining in the Angus Place Colliery mine lease, and heavy recent rain.

Evidence is emerging that this storage may be seeping to the surface via Lamb's Creek. LEG has recorded higher than usual levels of salinity, detected hydrogen suphide odours, and sighted excessive Iron deposits.

LEG reminds the DP&E that one of the proposed solutions to control underground combustion at Coalpac's Cullen Valley Mine was to raise the water table in the old Tyldsley Mine underground workings. This resulted in at least two relatively recent Acid Mine Drainage seepages appearing at Farley Street Wetlands in Cullen Bullen and on the western boundary of Cullen Valley Mine. Trees and other vegetation have been killed by highly acidic pH4 water high with salinity of 1700 EC, and very high levels of iron and other metals.

We urge the DP&E to recommend against temporary adhoc proposals which may excacerbate far-field Acid Mine Drainage and and Salinity impacts, and require Springvale and Energy Australia to develop long-term sustainable solutions that will reduce pollution in the Coxs River to environmentally acceptable standards.

Nutrients

More Blue-green algae Red alerts have occurred in Lake Wallace, between Lake Wallace and Lake Lyell, and in Lake Lyell in the past 3 years than at any time in memory. The EPA appear unable to find any answers.

LEG notes from the OEH's Response to Submissions to the Springvale Extension that the LDP009 discharge recorded **Ammonia levels of 0.44mg/L, 33 times higher than the ANZECC nutrient trigger value**. LEG also understands that both Angus Place and Springvale mines have had issues with Sewage treatment.

LEG urges the DP&E to recommend an investigation into high Ammonia levels in the LDP009 and LDP006 discharges to assess whether these may be contributing to Blue-green alagal blooms in Lake Wallace, between Lake Wallace and Lake Lyell, and in Lake Lyell itself.

CONCLUSION

We thank you for this opportunity to comment on this proposal, and trust the above meets with your favourable consideration.

Yours sincerely,

Chris Jonkers - Vice President
Lithgow Environment Group Inc.

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