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Our Ref: S187F/016b
Date: 12 September 2014

Nagindar Singh
Centennial Angus Place Pty Ltd
Locked Bag 1002
WALLERAWANG
NSW 1002

Dear Nagindar,

RE: ANGUS PLACE MINE EXTENSION PROJECT - RESPONSE TO SUBMISSIONS (Query on Total Predicted Discharge to the Coxs River)

1. Introduction

We have prepared letter this based on email correspondence between Centennial Angus Place Pty Ltd (Angus Place) and RPS Aquaterra Pty Ltd (RPS) (BELL/SINGH, 28 August 2014) seeking assistance to address a query received via email from the NSW Environmental Protection Authority (EPA) on the proposed total discharge to the Coxs River associated with the Angus Place Mine Extension Project (KIRSCH/CLIFT, 27 June 2014).

2. Proposed Response

Query 1. …I raised at yesterday's meeting what I saw as a discrepancy in what the project estimates will be the mine water discharge volumes (ML/day) from both Angus Place and Springvale combined for each year 2013-2032….

Table 5.2 of the Surface Water Impact Assessment (RPS, 2014a) presents the predicted discharge from each Licensed Discharge Point (LDP) at Angus Place Colliery from 2013 to 2032. The discharge from Angus Place Colliery is different to that at Springvale Mine primarily due to differences in groundwater inflow to the underground workings. Figure 16 of the Surface Water Impact Assessment presents the mine water make used as input to the site water balance. As presented in the Groundwater Impact Assessment (RPS, 2014b), regional groundwater flow direction is to the northeast toward the Wolgan Valley. As such, the extension at Angus Place is hydrogeologically down-gradient to Springvale Mine and hence inflows are higher.

There are two model scenarios presented in Table 5.2, one assuming the current capacity of the Springvale Delta Water Transfer Scheme (SDWTS) is maintained at 30ML/d. The second scenario corresponds with an upgrade of the capacity of the SDWTS to 50ML/d, when the combined water make at Angus Place and Springvale Mine exceeds 30ML/d. A third scenario, not previously presented in detail in the Surface Water Impact Assessment, is the circumstance where the SDWTS is not available to Angus Place Colliery and all mine water discharge at Angus Place is via LDP001 to Kangaroo Creek. The modelled discharges from the site water balance, as presented below, are as per Table 5.2, together with the total discharge to the Coxs River. The site water balance was prepared by GHD Pty Ltd and further detail is presented in Appendix D of RPS (2014a). It is noted that Angus Place LDP005 comprises discharge of treated effluent via spray irrigation and was not included in Table 5.2 of the Surface Water

Table: Predicted Discharge (ML/d) to the Coxs River (adapted from Table 5.2 of RPS (2014a)).

Year	Discharge (ML/d) with SDWTS at 30ML/d			Discharge (ML/d) with SDWTS at 50ML/d			No SDWTS available to Angus Place Colliery		
	LDP001	LDP002	Total to Coxs River	LDP001	LDP002	Total to Coxs River	LDP001[1]	LDP002	Total to Coxs River
2013	0.05	0.29	0.34	0.05	0.29	0.34	8.45	0.29	8.74
2014	0.05	0.29	0.34	0.05	0.29	0.34	8.46	0.29	8.75
2015	0.05	0.29	0.34	0.05	0.29	0.34	11.69	0.29	11.98
2016	0.05	0.29	0.34	0.05	0.29	0.34	14.62	0.29	14.91
2017	0.05	0.29	0.34	0.05	0.29	0.34	14.84	0.29	15.13
2018	0.05	0.29	0.34	0.05	0.29	0.34	13.77	0.29	14.06
2019	0.67	0.29	0.96	0.05	0.29	0.34	15.07	0.29	15.36
2020	5.86	0.29	6.15	0.05	0.29	0.34	19.90	0.29	20.19
2021	6.51	0.29	**6.80**	0.05	0.29	0.34	19.98	0.29	20.27
2022	6.44	0.29	6.73	0.05	0.29	0.34	19.53	0.29	19.82
2023	6.39	0.29	6.68	0.05	0.29	0.34	20.17	0.29	20.46
2024	6.36	0.29	6.65	0.05	0.29	0.34	20.79	0.29	21.09
2025	1.06	0.29	1.35	0.05	0.29	0.34	27.04	0.29	27.33
2026	0.05	0.29	0.34	0.05	0.29	0.34	28.33	0.29	28.62
2027	0.05	0.29	0.34	0.05	0.29	0.34	26.91	0.29	27.20
2028	0.05	0.29	0.34	0.05	0.29	0.34	26.31	0.29	26.60
2029	0.05	0.29	0.34	0.05	0.29	0.34	26.95	0.29	27.24
2030	0.05	0.29	0.34	0.05	0.29	0.34	28.68	0.29	**28.97**
2031	0.05	0.29	0.34	0.05	0.29	0.34	24.48	0.29	24.77
2032	0.07	0.29	0.36	0.05	0.29	0.34	25.73	0.29	26.03

1. Calculated based on sum of discharge to Angus Place LDP001 and Angus Place's contribution to SDWTS, as presented in Table 5.2 of the Surface Water Impact Assessment for the model scenario where the capacity of the SDWTS was 30ML/d.

mpact Assessment, as the flow rate was negligible at <0.1ML/d. It is noted in the table above that data is presented from Table 5.2 to two decimal places. It is highlighted that the model predictions presented above were obtained from the detailed site water balance prepared in GoldSIM and therefore take into account both above-ground and underground water management infrastructure, including storages.

From the above table, the predicted total discharge to the Coxs River ranges from 0.34ML/d with the SDWTS at the current capacity of 30ML/d to a maximum of 6.80ML/d in 2021. In the scenario where the SDWTS is upgraded to 50ML/d, the discharge at Angus Place is 0.34ML/d, since all mine water make at Angus Place is transferred to the SDWTS for discharge to Coxs River via Springvale Mine's LDP009. In the circumstance that the SDWTS is not available and Angus Place Colliery discharges to the Coxs River independent of Springvale Mine, predicted total discharge to the Coxs River ranges between 8.75ML/d in 2014 and 28.97ML/d in 2026.

A regional water quality impact assessment has been prepared by RPS (2014c) as part of the Response to Submissions and that water quality model presents the impact to flow and salinity of each of these scenarios.

3. References

RPS, 2014a. *Angus Place Mine Extension Project – Surface Water Impact Assessment*. Reference No. S187D/021c, dated 9 February 2014.

RPS, 2014b. *Angus Place Mine Extension Project – Groundwater Impact Assessment*. Reference No. S187B/015d, dated 9 February 2014.

RPS, 2014c. *Regional Water Quality Impact Assessment*. Reference No. S187E/012b, dated 10 September 2014.

4. Closing

We trust this information is sufficient for your purposes, however should you require any further details or clarification, please do not hesitate to contact our office.

Yours sincerely
RPS Water

Justin

Dr Justin Bell
Principal Environmental Engineer

cc:
enc: