

MGO
MT OWEN / GLENDELL

GLENCORE

6 May 2022

Mr Stephen Barry
Planning Director
Office of the Independent Planning Commission

By email: casey.joshua@ipcn.nsw.gov.au

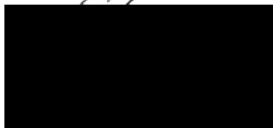
Dear Stephen,

**Glendell Continued Operations Project (SSD 9349) and Mount Owen Continued Operations (SSD 5850)
Modification – Request for Borehole Data**

As requested in the Independent Planning Commission's (Commission) letter dated 3 May 2022, please find attached as Annexure 1 raw borehole data (including gas composition content) for boreholes that have informed the Gas Domain Model for the Glendell Continued Operations Project. The location of each borehole is shown on Figures 2.1 and 2.2 of the Response to IPC Questions document (Umwelt Report Ref: 4166/R31, March 2022).

Should you require any further information or clarification on the above then please do not hesitate to contact the undersigned.

Yours sincerely,



Shane Scott
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Annexure 1 – Table of Raw Gas Sample Data

Borehole ID	Sample ID	Sample Depth From (m below collar)	Sample Depth To (m below collar)	Sample Thickness (m)	Gas Content (Raw, at 15°C, 1 atm) (m ³ /tonne)	Relative Density (g/cm ³)	Methane (% air-free)	Carbon Dioxide (% air-free)	Nitrogen (% air-free)	Interpreted gas zone
GGD2097	GGD2097001	23.62	24.16	0.54	0.18	1.91	1.25	25.65	73.09	LGZ
GGD2097	GGD2097005	28.59	28.97	0.38	0.53	1.32	0.15	12.15	87.33	LGZ
GGD2097	GGD2097007	34.98	35.61	0.63	0.38	1.41	0.23	18.35	81.30	LGZ
GGD2097	GGD2097012	55.38	55.87	0.49	0.30	1.70	7.62	24.49	67.85	LGZ
GGD2097	GGD2097013	56.38	56.87	0.49	0.32	1.95	1.03	9.64	89.72	LGZ
GGD2097	GGD2097015	57.92	58.66	0.74	0.43	1.43	0.52	11.58	87.93	LGZ
GGD2097	GGD2097016	58.66	59.44	0.78	0.40	1.46	0.70	38.76	60.70	LGZ
GGD2097	GGD2097022	81.69	82.49	0.80	0.25	1.44	0.18	13.71	86.08	LGZ
GGD2097	GGD2097023	82.49	83.25	0.76	0.20	1.64	6.08	4.86	88.90	LGZ
GGD2097	GGD2097024	83.25	84.01	0.76	0.11	1.51	0.94	15.81	83.21	LGZ
GGD2097	GGD2097025	84.01	84.81	0.80	0.11	1.50	0.13	14.50	85.36	LGZ
GGD2097	GGD2097026	84.81	85.60	0.79	0.15	1.69	0.38	14.30	85.30	LGZ
GGD2097	GGD2097027	85.60	86.40	0.80	0.08	1.86	0.18	11.19	88.62	LGZ
GGD2097	GGD2097034	109.41	110.16	0.75	0.16	1.33	3.14	9.46	87.36	LGZ
GGD2097	GGD2097035	110.16	110.94	0.78	0.13	1.33	3.49	12.09	84.38	LGZ
GGD2097	GGD2097036	110.94	111.73	0.79	0.17	1.33	1.45	16.70	81.84	LGZ
GGD2097	GGD2097037	111.73	112.52	0.79	0.12	1.79	0.55	14.93	84.52	LGZ
GGD2097	GGD2097038	112.52	113.32	0.80	0.15	1.47	1.25	20.37	78.38	LGZ
GGD2097	GGD2097041	128.10	128.91	0.81	0.48	1.39	52.55	4.54	43.22	Zone 1
GGD2097	GGD2097042	128.91	129.70	0.79	0.54	1.37	52.07	4.88	42.59	Zone 1
GGD2097	GGD2097043	129.70	130.36	0.66	0.58	1.42	50.11	4.52	46.18	Zone 1
GGD2097	GGD2097045	131.75	132.55	0.80	0.54	1.59	56.75	3.26	39.92	Zone 1
GGD2097	GGD2097049	145.60	146.40	0.80	1.65	1.45	78.22	1.20	20.57	Zone 2
GGD2097	GGD2097050	146.40	147.17	0.77	2.16	1.44	77.50	1.24	21.56	Zone 2
GGD2097	GGD2097053	158.84	159.63	0.79	2.43	1.45	84.21	0.90	14.89	Zone 2
GGD2097	GGD2097054	159.63	160.45	0.82	3.03	1.32	83.89	0.85	15.10	Zone 2
GGD2097	GGD2097055	160.45	161.15	0.70	2.26	1.60	80.79	1.31	17.91	Zone 2
GGD2097	GGD2097056	161.15	161.69	0.54	2.78	1.42	80.14	0.92	18.84	Zone 2
GGD2098	GGD2098002	21.88	22.63	0.75	0.28	1.52	3.82	22.37	75.90	LGZ
GGD2098	GGD2098003	22.63	23.31	0.68	0.53	1.28	0.33	22.50	78.19	LGZ
GGD2098	GGD2098008	68.18	68.97	0.79	0.30	1.72	1.66	22.80	75.22	LGZ
GGD2098	GGD2098009	68.97	69.78	0.81	0.40	1.39	0.77	21.90	78.00	LGZ
GGD2098	GGD2098010	69.78	70.57	0.79	0.45	1.40	0.69	26.57	72.53	LGZ
GGD2098	GGD2098011	71.24	71.83	0.59	0.30	1.31	0.82	37.84	61.34	LGZ
GGD2098	GGD2098012	71.83	72.57	0.74	0.28	1.62	1.04	39.34	59.61	LGZ
GGD2098	GGD2098013	72.57	73.36	0.79	0.24	1.55	0.36	22.64	76.68	LGZ
GGD2098	GGD2098014	73.36	74.10	0.74	0.30	1.84	0.40	26.48	73.12	LGZ
GGD2098	GGD2098018	76.28	77.08	0.80	0.26	1.67	0.67	29.64	69.69	LGZ
GGD2098	GGD2098019	77.88	78.70	0.82	0.25	1.63	0.63	17.00	83.37	LGZ
GGD2098	GGD2098020	78.70	79.48	0.78	0.28	1.31	0.58	27.60	71.82	LGZ
GGD2098	GGD2098021	79.48	80.28	0.80	0.24	1.30	0.70	29.90	69.39	LGZ
GGD2098	GGD2098022	80.28	80.88	0.60	0.17	1.71	1.06	25.67	73.26	LGZ
GGD2098	GGD2098027	98.29	98.87	0.58	0.88	1.34	59.59	2.26	37.76	Zone 1
GGD2098	GGD2098028	98.87	99.35	0.48	1.07	1.25	41.15	6.98	51.89	Zone 1
GGD2098	GGD2098029	99.35	99.80	0.45	0.92	1.37	55.19	2.15	42.62	Zone 1
GGD2098	GGD2098030	99.80	100.34	0.54	0.97	1.37	56.69	2.08	40.51	Zone 1
GGD2098	GGD2098031	100.34	101.82	1.48	0.59	1.75	52.42	2.21	45.12	Zone 1
GGD2098	GGD2098032	103.41	104.00	0.59	1.15	1.60	47.53	9.23	43.45	Zone 1
GGD2098	GGD2098033	104.00	104.61	0.61	0.83	1.85	64.38	1.83	33.98	Zone 1
GGD2098	GGD2098035	118.94	119.69	0.75	1.43	1.48	83.21	0.47	16.08	Zone 1
GGD2098	GGD2098036	119.69	120.45	0.76	1.34	1.36	88.88	0.51	10.60	Zone 1
GGD2098	GGD2098041	144.82	145.62	0.80	2.93	1.40	85.32	0.50	14.12	Zone 2
GGD2098	GGD2098042	145.62	146.38	0.76	3.09	1.43	86.75	0.60	12.54	Zone 2
GGD2098	GGD2098043	146.38	147.18	0.80	2.62	1.61	83.90	0.69	15.52	Zone 2
GGD2098	GGD2098044	147.18	147.74	0.56	2.66	1.54	82.55	0.56	16.86	Zone 2
GGD2098	GGD2098048	167.23	167.90	0.67	2.65	1.57	80.96	0.52	18.52	20BP
GNC012	GNC012_001	29.36	30.15	0.79	0.46	1.46	0.46	74.77	24.72	LGZ
GNC012	GNC012_002	30.80	31.10	0.30	0.39	1.44	4.66	37.27	24.73	LGZ
GNC012	GNC012_003	51.49	52.27	0.78	0.30	1.54	0.24	33.60	66.23	LGZ

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GNC012	GNC012_004	52.63	53.40	0.77	0.50	1.49	2.99	38.98	57.79	LGZ
GNC012	GNC012_005	55.69	56.40	0.71	0.46	1.59	0.03	51.00	49.00	LGZ
GNC012	GNC012_007	86.70	87.50	0.80	0.32	1.48	1.26	6.31	59.07	LGZ
GNC012	GNC012_009	95.68	96.42	0.74	0.93	1.45	65.84	1.92	32.70	Zone 1
GNC012	GNC012_010	107.23	108.03	0.80	1.96	1.35	89.57	0.84	9.51	Zone 1
GNC012	GNC012_012	108.86	109.62	0.76	1.99	1.44	84.50	0.81	14.65	Zone 1
GNC012	GNC012_013	112.80	113.58	0.78	0.94	1.59	83.05	1.17	16.19	Zone 1
GNC012	GNC012_014	130.22	130.99	0.77	3.00	1.42	93.59	0.61	6.03	Zone 2
GNC012	GNC012_015	130.99	131.78	0.79	2.64	1.45	95.03	0.62	4.13	Zone 2
GNC012	GNC012_016	152.65	153.35	0.70	3.07	1.47	87.22	1.38	11.72	Zone 2
GNC012	GNC012_017	153.35	154.14	0.79	3.15	1.42	93.79	0.87	5.08	Zone 2
GNC012	GNC012_018	154.14	154.60	0.46	3.25	1.46	94.66	1.03	4.25	Zone 2
GNC012	GNC012_019	155.28	155.78	0.50	3.32	1.46	94.30	1.00	4.56	Zone 2
GNC012	GNC012_020	171.54	172.33	0.79	2.50	1.57	94.93	0.93	4.13	20BP
GNC012	GNC012_021	172.33	173.07	0.74	3.66	1.33	97.07	0.63	2.44	20BP
GNC012	GNC012_022	174.90	175.15	0.25	3.02	1.66	90.08	1.29	8.50	20BP
GNC013	GNC013_001	33.31	33.69	0.38	0.89	1.51	49.60	23.78	26.77	Zone 1
GNC013	GNC013_002	33.69	34.51	0.82	1.15	1.39	57.57	25.20	17.16	Zone 1
GNC013	GNC013_004	35.52	36.26	0.74	1.24	1.38	59.11	26.30	14.68	Zone 1
GNC013	GNC013_005	53.73	54.15	0.42	2.75	1.42	70.82	4.49	24.71	Zone 1
GNC013	GNC013_006	54.15	54.87	0.72	1.18	1.51	84.06	5.00	11.34	Zone 1
GNC013	GNC013_007	57.18	57.87	0.69	1.28	1.55	74.66	7.73	17.69	Zone 1
GNC013	GNC013_008	70.42	71.16	0.74	1.73	1.44	76.62	13.11	10.26	Zone 1
GNC013	GNC013_009	71.16	71.70	0.54	3.53	1.36	61.07	12.33	26.37	Zone 2
GNC014	GNC014_001	29.50	29.77	0.27	0.62	1.39	5.04	39.44	55.65	LGZ
GNC014	GNC014_002	36.18	36.50	0.32	0.33	1.52	1.73	31.30	66.80	LGZ
GNC014	GNC014_003	39.55	40.20	0.65	0.32	1.41	9.86	21.20	68.90	LGZ
GNC014	GNC014_004	41.00	41.65	0.65	0.38	1.39	11.73	32.47	55.69	LGZ
GNC014	GNC014_005	60.62	60.96	0.34	0.38	1.46	4.62	8.42	86.80	LGZ
GNC014	GNC014_006	60.96	61.57	0.61	0.29	1.50	3.90	13.20	83.00	LGZ
GNC014	GNC014_007	70.93	71.31	0.38	0.24	1.48	1.74	5.79	92.50	LGZ
GNC014	GNC014_009	78.72	79.34	0.62	0.31	1.63	3.31	4.35	91.90	LGZ
GNC014	GNC014_010	80.04	80.55	0.51	0.26	1.40	2.76	3.82	93.50	LGZ
GNC014	GNC014_011	105.33	106.08	0.75	1.30	1.43	80.00	1.73	18.03	Zone 1
GNC014	GNC014_012	106.08	106.90	0.82	1.27	1.60	87.85	1.30	10.62	Zone 1
GNC014	GNC014_013	106.90	107.70	0.80	1.60	1.45	87.20	1.04	11.59	Zone 1
GNC014	GNC014_014	107.70	108.05	0.35	2.50	1.43	96.25	1.28	2.42	Zone 1
GNC014	GNC014_015	137.70	137.92	0.22	3.06	1.40	91.99	1.33	6.90	Zone 2
GNC014	GNC014_016	138.01	138.51	0.50	3.30	1.47	92.79	0.78	6.16	Zone 2
GNC014	GNC014_017	159.95	160.27	0.32	3.45	1.40	90.35	0.78	8.82	Zone 2
GNC014	GNC014_018	160.27	161.06	0.79	3.22	1.42	95.82	0.57	3.51	Zone 2
GNC014	GNC014_019	161.06	161.74	0.68	3.68	1.38	94.73	0.74	4.69	Zone 2
GNC014	GNC014_020	161.74	162.15	0.41	2.67	1.76	93.13	1.25	5.33	Zone 2
GNC014	GNC014_021	171.52	172.32	0.80	3.41	1.39	95.57	0.64	3.70	Zone 3
GNC014	GNC014_022	179.48	180.27	0.79	4.90	1.36	95.71	0.77	3.43	Zone 3
GNC014	GNC014_023	180.27	181.04	0.77	3.19	1.47	97.05	0.72	2.13	Zone 3
GNC014	GNC014_024	181.07	181.87	0.80	3.65	1.51	97.14	0.82	2.06	Zone 3
GNC014	GNC014_025	181.87	182.33	0.46	3.88	1.49	96.08	0.86	3.17	Zone 3
GNC014	GNC014_026	196.52	196.92	0.40	3.00	1.62	93.67	1.21	4.99	Zone 3
GNC014	GNC014_027	197.14	197.93	0.79	4.53	1.38	97.11	0.57	2.34	Zone 3
GNC014	GNC014_028	197.93	198.73	0.80	4.90	1.36	94.35	0.51	5.03	Zone 3
GNC014	GNC014_029	213.14	213.66	0.52	1.82	1.83	92.16	0.89	6.90	Zone 3
GNC014	GNC014_030	213.66	214.46	0.80	4.81	1.41	95.32	0.59	4.11	Zone 3
GNC014	GNC014_031	214.46	215.24	0.78	3.18	1.35	86.25	0.58	12.96	Zone 3
GNC014	GNC014_033	230.46	230.96	0.50	4.57	1.46	97.44	0.81	2.00	Zone 3
GNC014	GNC014_034	231.43	232.21	0.78	5.55	1.33	96.71	0.54	2.63	Zone 3
GNC014	GNC014_035	232.21	232.69	0.48	5.36	1.38	97.04	0.53	2.48	Zone 3
GNC014	GNC014_036	233.00	233.63	0.63	3.38	1.71	96.46	0.83	2.68	Zone 3
GNC015	GNC015_001	50.60	51.25	0.65	0.97	1.40	67.80	10.28	22.54	Zone 1
GNC015	GNC015_002	51.53	52.30	0.77	1.13	1.60	44.60	11.20	44.30	Zone 1
GNC015	GNC015_003	52.30	53.13	0.83	0.60	1.41	18.90	31.80	48.82	Zone 1

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GNC015	GNC015_004	53.13	53.80	0.67	0.32	1.81	9.03	11.90	79.10	Zone 1
GNC015	GNC015_005	67.97	68.75	0.78	2.02	1.49	88.94	3.97	7.22	Zone 1
GNC015	GNC015_006	68.75	69.18	0.43	0.98	1.68	84.90	2.92	12.20	Zone 1
GNC015	GNC015_007	82.77	83.49	0.72	3.42	1.65	55.92	2.73	41.29	Zone 2
GNC015	GNC015_008	83.49	84.19	0.70	2.45	1.43	92.14	2.01	5.65	Zone 2
GNC015	GNC015_009	84.19	84.80	0.61	2.40	1.39	91.84	1.90	6.41	Zone 2
GNC015	GNC015_010	85.24	85.63	0.39	2.70	1.45	91.78	1.68	6.51	Zone 2
GNC015	GNC015_011	121.05	121.62	0.57	2.75	1.50	84.29	1.57	14.12	Zone 3
GNC015	GNC015_012	121.72	122.31	0.59	4.20	1.41	92.16	1.04	6.77	Zone 3
GNC015	GNC015_013	142.99	143.25	0.26	3.27	1.59	80.31	2.53	17.00	Zone 3
GNC015	GNC015_014	143.47	144.27	0.80	3.78	1.39	92.72	2.15	5.14	Zone 3
GNC015	GNC015_015	144.27	145.09	0.82	3.87	1.43	93.84	1.83	4.34	Zone 3
GNC015	GNC015_016	145.09	145.39	0.30	3.27	1.58	90.67	1.88	7.56	Zone 3
GNC015	GNC015_017	158.60	159.39	0.79	1.99	1.65	73.64	3.39	23.03	Zone 3
GNC015	GNC015_018	159.40	160.20	0.80	3.65	1.48	94.06	1.58	4.33	Zone 3
GNC015	GNC015_019	160.20	161.03	0.83	4.68	1.36	96.28	1.02	2.46	Zone 3
GNC015	GNC015_020	161.03	161.59	0.56	1.65	1.81	90.07	1.36	6.65	Zone 3
GNC015	GNC015_021	163.57	164.15	0.58	3.37	1.66	94.83	1.36	3.71	Zone 3