14 September 2026

Ms Sally Strohmayr
Director Petroleum Regulation
Environmental Regulation
Department of Lands, Planning and Environment
PO Box 3675
Darwin NT 0801
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Dear Ms Strohmayr

Re: Annual Interpretative Groundwater Quality Report - Beetaloo Basin Shenandoah South E&A Program EMP, EP98 and EP117 TAM1-3 (the EMP) for Kyalla 117 N2 well site

Ministerial condition 14(V) of the conditions of approval for the above EMP requires *"… an interpretative report of groundwater quality based on the groundwater monitoring required to be conducted at the well site(s) in accordance with Table 6 of the Code. The interpretative report must be provided annually within 3 months of the anniversary of the approval date of the EMP and include:*

- *identification of any change to groundwater quality or level attributable to conduct of the regulated activity at the well site(s) and discussion of the significance and cause of any such observed change*
- *interpretation of any statistical outliers observed from baseline measured values for each of the analytes.*
- *discussion of any trends observed.*
- *a summary of the results including descriptive statistics.*
- *description of the layout of the groundwater monitoring bores and wells, indicative groundwater flow directions and levels in accordance with the Preliminary Guideline Groundwater Monitoring Bores for Exploration Petroleum Wells in the Beetaloo Sub-basin."*

This report covers the period 23 June 2025 through 23 June 2026, although the full record of water quality data gathered has been considered for the purposes of statistical analysis.

The Code refers to the *Code of Practice: Onshore petroleum activities in the Northern Territory* (DENR, 2019). It is referred to as the "Code" throughout this report.

This letter constitutes the annual interpretative groundwater quality report for the TAM1-3 EMP. This interpretive groundwater quality report has been produced by Mr Peter Evans, Senior Hydrogeologist on behalf of Tamboran B2 Pty Ltd (Tamboran).

During the current reporting period no activities involving drilling or hydraulic fracturing were undertaken on the Kyalla 117 well pad site.

Site layout and groundwater flow direction

Kyalla 117 N2 well site

Figure 1 presents the layout of the Kyalla 117 N2 well site, showing the locations of the Kyalla 117 N2-1H and Shenandoah S-1H appraisal wells and the locations of the control monitoring bores (CMB – ALB: RN040896; GRF: RN041132) and the impact monitoring bores (IMB - ALB: RN041137; GRF: RN041136).

The indicative groundwater flow direction, based on the SREBA (DEPWS, 2022) is from the southwest to the northeast in the vicinity of the Kyalla 117 N2 well site (Figure 1).

The CMBs are between 75 m and 85 m to the southeast of Kyalla 117 N2 wellhead and the IMBs are between 19 m and 22 m to the northwest of the wellhead. The CMBs and IMBs are up hydraulic gradient and down hydraulic gradient of the wellhead respectively, based on the regional groundwater flow direction (Figure 1, after DEPWS, 2022). The CMBs and IMBs are fully penetrating of their target aquifers.

Figure 1 Kyalla 117 N2 site layout and indicative groundwater flow direction

Water level trends

Kyalla 117 N2 well site

Continuous water level monitoring using InSitu® LevelTroll automatic water level sensors commenced at the site prior the start of activities. Figure 2 presents daily averaged barometrically corrected time series water level data the Anthony Lagoon Beds (ALB) (blue lines) and the Gum Ridge Formation (GRF) (orange/red lines). Figure 3 presents high resolution data (including 5-minute monitoring) since 2019. The periods of activities at the well site are also shown on Figure 3.

The data shows:

- There was no significant change in the water levels from before to after the exploration activities at Kyalla 117 N2.

- Differences in the depths of the presented water levels related to the differing heights of the reference points (above ground level) from which the water levels are measured.
- The short periods of deeper water levels relate to groundwater extraction for the authorised activities.
- Notwithstanding the fluctuations related to groundwater extraction, the water levels in both monitored zones show a marginal rising in water level trend (broadly 0.2 m over four years) with an overprinted seasonal fluctuation of approximately 0.1 m. The recharge impact of the wet seasons since the 2023/2024 is particularly obvious.
- The water levels in the monitored zones move in concert and by a very similar magnitude, suggesting a high likelihood of direct hydraulic connection at the site between the two aquifer units monitored.

There has been no significant change to the water levels in either the Anthony Lagoon Beds or the Gum Ridge Formation due to the regulated activities.

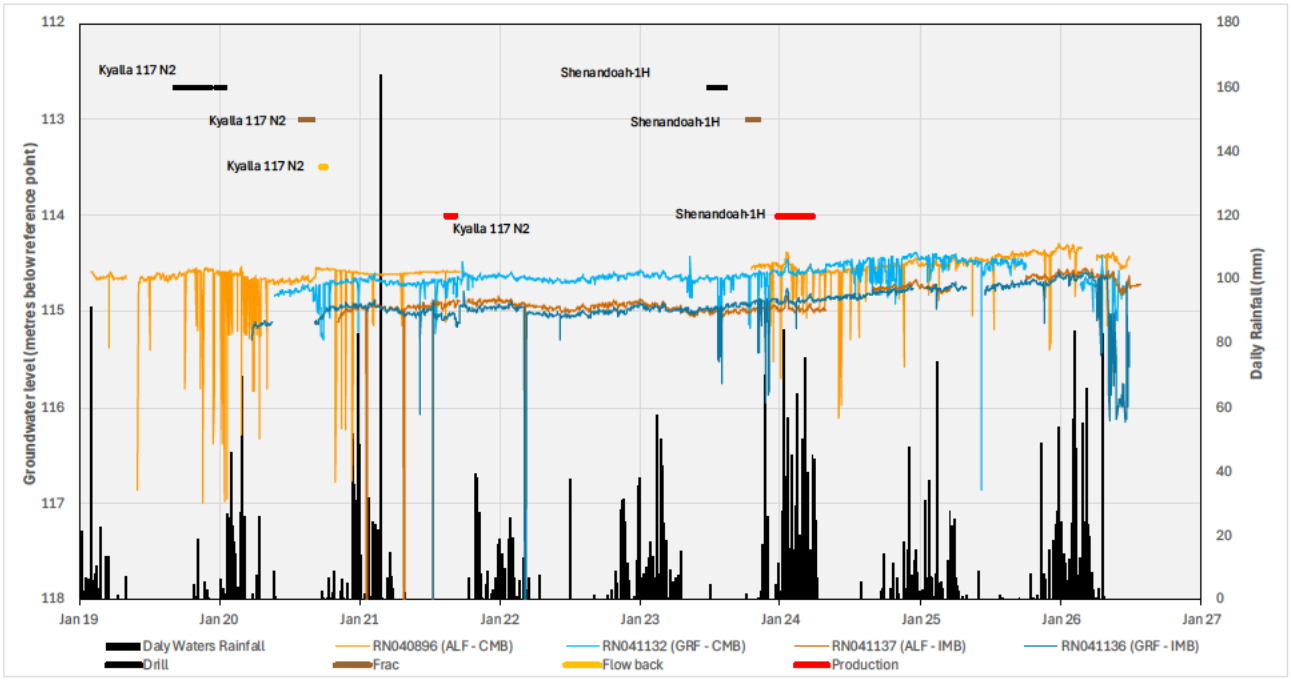


Figure 1 CMB and IMB daily average water levels

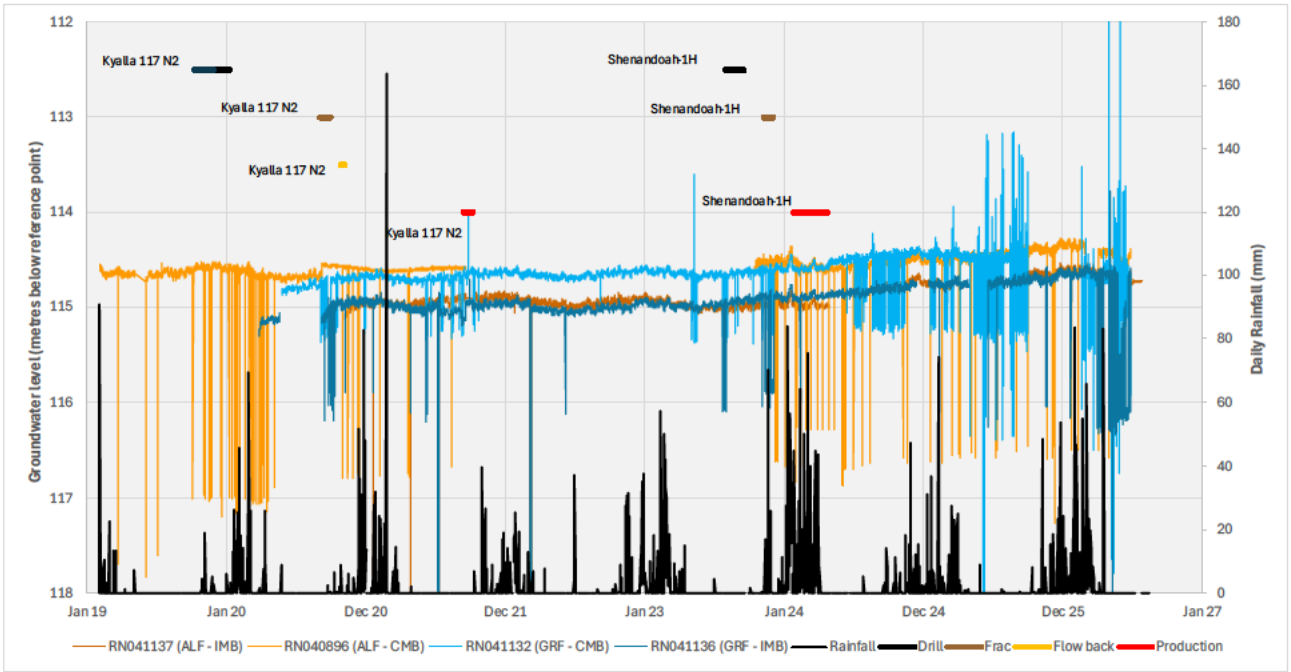


Figure 2 All logger data including high temporal resolution data

Water quality trends

Groundwater from the CMBs and IMBs has been sampled for the suite of analytes listed in Table 6 of clause B.4.17 of the Code. Water quality monitoring of the CMBs commenced on 1 February 2019 and 17 August 2019 for the ALB and GRF, respectively. Water quality monitoring of both IMBs commenced on 25 March 2020, prior to the stimulation of Kyalla 117 N2-1H. Sampling has been conducted quarterly since the hydraulic fracturing was performed, with the last samples included in this reporting period collected on 8 June 2025. This includes sampling during the hydraulic fracturing of the Shenandoah S-1H well on the Kyalla 117 N2 pad.

Summary statistics of the analytical results for each of the CMBs and IMBs are provided in Table 1 to Table 4. Where an analyte concentration was reported as less than the effective quantification limit (EQL), it was assumed to be 0.5 times the EQL for the calculation of the statistic.

To identify whether there has been any change in water quality due to the regulated activities, a statistical assessment was made using a Student T-Test to test whether there was a significant difference in the results between the CMB (upgradient) and the IMB (downgradient). An F-Test was used to determine whether the homoscedastic (statistically similar variance) or heteroscedastic (statistically different variance) formula for the T-Test was used. Where a concentration was reported as less than the limit of reporting (LOR = EQL), the limit of reporting was assumed as the sample concentration. The statistical significance was assessed to a 95% confidence. The results of the analysis are provided in Table 5 and Table 6.

The analytes where the P-value was less 0.05 (95% confidence that there is a significant different between the CMB and IMB data) are identified and described in Tables 7 and 8. Timeseries control charts for these analytes is provided in Attachment A and Attachment B for the Gum Ridge Formation and Anthony Lagoon Beds, respectively.

There are relatively few statistically significant differences in groundwater chemistry between the CMBs and the IMBs.

The analytes which show differences and interpretation of their trends, as discussed above, indicate subtle changes to the groundwater quality in the immediate vicinity of the wells probably relating to the loss of drilling fluid while drilling through the highly permeable Anthony Lagoon Beds and Gum Ridge Formation. Lost circulation is commonly noted on Statements of Bore for registered groundwater bores drilled in the limestone aquifers. The changes in chemistry are likely to be localised and are expected to reduce over time as the groundwater chemistry returns to background conditions.

Conclusions

No significant persistent changes have been observed in the groundwater quality or the groundwater level at the Kyalla 117 N2 well site that can be attributed to the regulated activities.

Tamboran will continue to monitor the groundwater at the Kyalla 117 N2 well site in accordance with the ministerial conditions of approval of the EMP.

If you require any further information, please do not hesitate to email me.

Kind regards

Alana Court
Senior Environmental Manager
[redacted]

References

DENR (2018) Preliminary Guideline: Groundwater Monitoring Bores for Exploration Petroleum Wells in the Beetaloo Sub-basin. Department of Environment and Natural Resources, November 2018.

DENR (2019) Code of Practice: Onshore Petroleum Activities in the Northern Territory. May 2019.

DEPWS (2022) Regional Report: Strategic Regional Environmental and Baseline Assessment for the Beetaloo Sub-basin. DEPWS Technical Report 41/2022. Department of Environment, Parks and Water Security, Northern Territory Government. Berrimah, Northern Territory.

Table 1 Kyalla 117 Gum Ridge Formation CMB (BET-MB022/RN041132) Statistical Summary

Analyte	Total or Filtered	Output Unit	EQL	Count	Min	Max	Average	P10	P50	P90
pH (Field)	T	pH_Units	0.01	60	6.7	7.81	7.05	6.85	7.00	7.19
Electrical Conductivity (Field)	T	µS/cm	1	52	955	1,634	1,472.5	1,283.0	1,522	1,564
pH (Lab)	T	pH_Units	0.01	36	7.23	7.86	7.56	7.34	7.58	7.73
Electrical Conductivity (Lab)	T	µS/cm	1	36	1,120	1,380	1,194	1,155	1,190	1,255
Total Dissolved Solids	T	mg/L	10	36	614	808.00	709.14	660.50	708.50	775.50
Suspended Solids	T	mg/L	5	35	5	17.00	6.77	5.00	5.00	10.00
Alkalinity (Bicarbonate as $CaCO_3$)	T	mg/L	1	36	260	393.00	308.31	297.50	306.50	322.00
Alkalinity (Carbonate as $CaCO_3$)	T	mg/L	1	36	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Alkalinity (Hydroxide as $CaCO_3$)	T	mg/L	1	36	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Alkalinity (Total as $CaCO_3$)	T	mg/L	1	36	260	393.00	308.31	297.50	306.50	322.00
Chloride	T	mg/L	1	36	149	194.00	164.14	154.50	164.00	174.50
Sulphate as SO_4	F	mg/L	1	34	102	183.00	120.03	104.30	116.50	131.70
Sodium	F	mg/L	1	36	87	107	98.50	91.00	99.00	105.00
Potassium	F	mg/L	1	36	13	21	15.81	14.00	16.00	17.50
Calcium	F	mg/L	1	36	72	109	88.92	79.50	89.00	96.50
Magnesium	F	mg/L	1	36	33	49	38.33	35.00	38.00	41.00
Fluoride	T	mg/L	0.1	36	1.1	1.60	1.34	1.25	1.30	1.40
Nitrate (as N)	T	mg/L	0.01	36	0.010	0.230	0.020	0.010	0.010	0.020
Nitrite (as N)	T	mg/L	0.01	36	0.01	0.01	<LOR	0.01	0.01	0.01
Gross alpha activity	T	Bq/L	0.05	30	0.09	2.23	1.36	0.76	1.44	1.69
Gross beta activity (excluding activity of K-40)	T	Bq/L	0.1	30	0.10	0.87	0.51	0.29	0.52	0.74
Methane	T	mg/L	0.01	35	<:PR	0.064	0.03	<LOR	0.022	0.0416
Ethane	T	µg/L	10	35	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Propane	T	mg/L	0.01	35	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Arsenic	F	mg/L	0.001	35	<LOR	0.005	0.0027	<LOR	0.002	0.005
Barium	F	mg/L	0.001	35	0.046	0.075	0.060	0.053	0.061	0.065
Boron	F	mg/L	0.05	35	0.16	0.28	0.22	0.18	0.21	0.26
Cadmium	F	mg/L	0.0001	35	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Chromium (III+VI)	F	mg/L	0.001	35	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Copper	F	mg/L	0.001	35	<LOR	0.002	0.00054	<LOR	<LOR	<LOR
Iron	F	mg/L	0.05	35	0.25	3.49	1.87	0.57	2.12	3.33
Lead	F	mg/L	0.001	35	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Lithium	F	mg/L	0.001	35	0.033	0.052	0.040	0.038	0.043	0.048
Manganese	F	mg/L	0.001	35	0.015	0.07	0.03	0.02	0.03	0.04
Mercury	F	mg/L	0.0001	35	0.0001	0.0001	<LOR	0.0001	0.0001	0.0001
Selenium	F	mg/L	0.01	35	0.004	0.01	<LOR	0.01	0.01	0.01
Silicon as SiO_2	F	mg/L	0.05	18	21.00	25.10	22.43	21.55	22.25	23.56
Silver	F	mg/L	0.001	35	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Strontium	F	mg/L	0.001	35	0.634	0.85	0.76	0.69	0.77	0.81
Zinc	F	mg/L	0.005	35	0.005	0.044	0.010	0.005	0.005	0.011
TRH C_6-C_{10} fraction (sum)	T	µg/L	20	35	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
TRH C_{10}-C_{40} fraction (sum)	T	µg/L	100	35	<LOR	190	102.57	<LOR	<LOR	<LOR
Sum of BTEX	T	µg/L	1	35	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Total Reportable PAH	T	µg/L	0.5	31	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR

Table 2 Kyalla 117 N2 Gum Ridge Formation IMB (BET-MB024/RN041136) Statistical Summary

Table 2 Kyalla 117 N2 Gum Ridge Formation IMB (BET-MB0241/RN041136) Statistical Summary

Analyte	Total or Filtered	Output Unit	EQL	Count	Min	Max	Average	P10	P50	P90
pH (Field)	T	pH_Units	0.01	68	6.73	7.71	7.00	6.80	6.93	7.23
Electrical Conductivity (Field)	T	µS/cm	1	62	960	1,720	1,254.5	1,327.0	1,557	1,630
pH (Lab)	T	pH_Units	0.01	29	7.3	7.88	7.56	7.42	7.51	7.78
Electrical Conductivity (Lab)	T	µS/cm	1	29	1,140	1,690	1,261	1,160	1,220	1,382
Total Dissolved Solids	T	mg/L	10	29	628	1020.00	736.14	665.60	724.00	806.60
Suspended Solids	T	mg/L	5	29	5	13.00	7.24	5.00	6.00	12.00
Alkalinity (Bicarbonate as $CaCO_3$)	T	mg/L	1	29	264	372.00	315.48	296.00	312.00	341.00
Alkalinity (Carbonate as $CaCO_3$)	T	mg/L	1	29	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Alkalinity (Hydroxide as $CaCO_3$)	T	mg/L	1	29	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Alkalinity (Total as $CaCO_3$)	T	mg/L	1	29	264	372.00	315.48	296.00	312.00	341.00
Chloride	T	mg/L	1	29	153	199	170.76	161.20	170.00	180.00
Sulphate as SO_4	F	mg/L	1	28	103	295	140.82	105.70	117.50	201.50
Sodium	F	mg/L	1	29	85	112	99.45	93.80	99.00	106.20
Potassium	F	mg/L	1	29	13	25	17.72	14.00	17.00	22.20
Calcium	F	mg/L	1	29	72	147	95.41	81.00	94.00	107.00
Magnesium	F	mg/L	1	29	33	61	40.69	34.80	39.00	49.20
Fluoride	T	mg/L	0.1	29	1.2	1.50	1.34	1.20	1.40	1.40
Nitrate (as N)	T	mg/L	0.002 & 0.01	29	0.01	0.03	0.010	0.01	0.01	0.020
Nitrite (as N)	T	mg/L	0.002 & 0.01	29	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Gross alpha activity	T	Bq/L	0.05	26	0.64	2.31	1.45	1.13	1.54	1.65
Gross beta activity (excluding activity of K-40)	T	Bq/L	0.1	26	0.15	0.98	0.51	0.26	0.52	0.69
Methane	T	mg/L	0.01	29	0.01	0.058	0.02	0.01	0.01	0.0218
Ethane	T	µg/L	10	29	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Propane	T	mg/L	0.01	29	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Arsenic	F	mg/L	0.001	29	0.001	0.006	0	0.001	0.002	0.0050
Barium	F	mg/L	0.001	29	0.045	0.072	0.060	0.049	0.058	0.068
Boron	F	mg/L	0.05	29	0.15	0.29	0.21	0.18	0.20	0.24
Cadmium	F	mg/L	0.00005 & 0.0001	29	<LOR	0.0002	0.000103	0.0001	0.0001	0.0001
Chromium (III+VI)	F	mg/L	0.001	29	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Copper	F	mg/L	0.001	29	0.001	0.002	0.001	0.001	0.001	0.001
Iron	F	mg/L	0.05	29	0.08	6.01	1.81	0.65	1.42	3.54
Lead	F	mg/L	0.001	29	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Lithium	F	mg/L	0.001	29	0.034	0.056	0.040	0.038	0.042	0.046
Manganese	F	mg/L	0.001	29	0.023	0.19	0.05	0.03	0.04	0.07
Mercury	F	mg/L	0.00005 & 0.0001	29	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Selenium	F	mg/L	0.0002 & 0.01	29	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Silicon as SiO_2	F	mg/L	0.05	12	20.60	23.20	21.95	21.23	21.80	22.88
Silver	F	mg/L	0.001	29	<LOR	0.001	0.001	0.001	0.001	0.001
Strontium	F	mg/L	0.001	29	0.651	0.94	0.76	0.72	0.75	0.82
Zinc	F	mg/L	0.005	29	0.005	0.052	0.010	0.005	0.005	0.017
TRH C_6-C_{10} fraction (sum)	T	µg/L	20	29	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
TRH C_{10}-C_{40} fraction (sum)	T	µg/L	100	29	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Sum of BTEX	T	µg/L	1	29	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Total Reportable PAH	T	µg/L	0.5	29	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR

Table 3 Kyalla 117 N2 Anthony Lagoon Beds CMB (BET-MB021/ RN040896) Statistical Summary

Analyte	Total or Filtered	Output Unit	EQL	Count	Min	Max	Average	P10	P50	P90
pH (Field)	T	pH_Units	0.01	83	6.8	7.83	7.15	6.90	7.10	7.42
Electrical Conductivity (Field)	T	µS/cm	1	58	945	1,746	1,419.5	1,276.1	1,470	1,527
pH (Lab)	T	pH_Units	0.01	47	7.31	8.03	7.62	7.41	7.61	7.83
Electrical Conductivity (Lab)	T	µS/cm	1	47	1,090	1,380	1,187	1,140	1,180	1,240
Total Dissolved Solids	T	mg/L	10	47	624	826	704.34	661.20	699.00	751.60
Suspended Solids	T	mg/L	5	45	1	73	8.91	5.00	5.00	9.60
Alkalinity (Bicarbonate as $CaCO_3$)	T	mg/L	1	47	224	318	283.13	248.60	288.00	301.00
Alkalinity (Carbonate as $CaCO_3$)	T	mg/L	1	47	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Alkalinity (Hydroxide as $CaCO_3$)	T	mg/L	1	47	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Alkalinity (Total as $CaCO_3$)	T	mg/L	1	47	224	318.00	283.13	248.60	288.00	301.00
Chloride	T	mg/L	1	47	152	199.00	170.09	157.60	169.00	181.40
Sulphate as SO_4	F	mg/L	1	43	98	167.00	123.19	106.40	118.00	148.20
Sodium	F	mg/L	1	47	86	120	106.06	99.60	106.00	113.20
Potassium	F	mg/L	1	47	11	18	14.26	12.00	14.00	17.00
Calcium	F	mg/L	1	47	64	93	79.45	71.60	80.00	86.80
Magnesium	F	mg/L	1	47	34	45	39.06	36.00	39.00	42.00
Fluoride	T	mg/L	0.1	47	0.9	1.20	1.07	1.00	1.10	1.20
Nitrate (as N)	T	mg/L	0.01	47	<LOR	0.190	0.023	<LOR	0.020	0.034
Nitrite (as N)	T	mg/L	0.01	47	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Gross alpha activity	T	Bq/L	0.05	39	0.16	0.62	0.32	0.20	0.32	0.39
Gross beta activity (excluding activity of K-40)	T	Bq/L	0.1	39	0.10	0.65	0.20	0.10	0.19	0.29
Methane	T	mg/L	0.01	44	<LOR	0.072	0.0205	<LOR	0.012	0.0427
Ethane	T	µg/L	10	44	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Propane	T	mg/L	0.01	44	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Arsenic	F	mg/L	0.001	45	<LOR	0.006	0.001578	<LOR	<LOR	0.0036
Barium	F	mg/L	0.001	45	0.043	0.105	0.060	0.050	0.056	0.076
Boron	F	mg/L	0.05	45	0.17	0.31	0.22	0.19	0.22	0.25
Cadmium	F	mg/L	0.0001	45	<LOR	0.0002	0.000102	<LOR	<LOR	<LOR
Chromium (III+VI)	F	mg/L	0.001	45	<LOR	<LOR	0.001	<LOR	<LOR	<LOR
Copper	F	mg/L	0.001	45	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Iron	F	mg/L	0.05	45	<LOR	2.12	0.00	0.27	0.63	1.41
Lead	F	mg/L	0.001	45	<LOR	0.003	0.047022	<LOR	<LOR	<LOR
Lithium	F	mg/L	0.001	45	0.036	0.063	0.035	0.040	0.046	0.056
Manganese	F	mg/L	0.001	45	0.01	0.08	<LOR	0.02	0.03	0.06
Mercury	F	mg/L	0.0001	45	<LOR	<LOR	0.009733	<LOR	<LOR	<LOR
Selenium	F	mg/L	0.004 & 0.01	45	<LOR	<LOR	21.675	<LOR	<LOR	<LOR
Silicon as SiO_2	F	mg/L	0.05	20	20.60	23.70	<LOR	20.70	21.45	23.12
Silver	F	mg/L	0.001	45	<LOR	<LOR	0.641244	<LOR	<LOR	<LOR
Strontium	F	mg/L	0.001	45	0.512	0.78	0.03	0.59	0.65	0.69
Zinc	F	mg/L	0.005	45	<LOR	0.135	<LOR	<LOR	0.028	0.054
TRH C_6-C_{10} fraction (sum)	T	µg/L	20	44	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
TRH C_{10}-C_{40} fraction (sum)	T	µg/L	100	44	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Sum of BTEX	T	µg/L	1	44	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Total Reportable PAH	T	µg/L	0.5	39	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR

Table 4 Kyalla 117 N2 Anthony Lagoon Beds IMB (BET-MB023/RN041137) Statistical Summary

Analyte	Total or Filtered	Output Unit	EQL	Count	Min	Max	Average	P10	P50	P90
pH (Field)	T	pH_Units	0.01	36	6.81	7.90	7.12	6.86	6.99	7.62
Electrical Conductivity (Field)	T	µS/cm	1	30	911	1,511	1,343.9	1,236.3	1,373	1,453
pH (Lab)	T	pH_Units	0.01	23	7.26	7.89	7.58	7.36	7.58	7.78
Electrical Conductivity (Lab)	T	µS/cm	1	23	1,060	1,350	1,125	1,070	1,110	1,174
Total Dissolved Solids	T	mg/L	10	23	588	754.00	661.17	632.40	661.00	694.80
Suspended Solids	T	mg/L	5	23	4	24.00	7.48	5.00	5.00	15.60
Alkalinity (Bicarbonate as $CaCO_3$)	T	mg/L	1	23	264	384.00	309.52	290.20	310.00	319.60
Alkalinity (Carbonate as $CaCO_3$)	T	mg/L	1	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Alkalinity (Hydroxide as $CaCO_3$)	T	mg/L	1	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Alkalinity (Total as $CaCO_3$)	T	mg/L	1	23	264	384.00	309.52	290.20	310.00	319.60
Chloride	T	mg/L	1	23	131	170	145.91	134.00	143.00	161.80
Sulphate as SO_4	F	mg/L	1	22	84	122	100.55	89.10	100.50	109.90
Sodium	F	mg/L	1	23	80	108	89.22	83.00	88.00	97.80
Potassium	F	mg/L	1	23	11	18	15.04	13.20	15.00	16.00
Calcium	F	mg/L	1	23	66	96	83.04	76.20	83.00	89.00
Magnesium	F	mg/L	1	23	34	44	38.17	36.20	38.00	40.80
Fluoride	T	mg/L	0.1	23	0.9	1.20	1.07	1.00	1.10	1.20
Nitrate (as N)	T	mg/L	0.002 & 0.01	23	0.01	0.22	0.020	0.01	0.01	0.036
Nitrite (as N)	T	mg/L	0.002 & 0.01	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Gross alpha activity	T	Bq/L	0.05	20	0.19	0.93	0.55	0.32	0.55	0.72
Gross beta activity (excluding activity of K-40)	T	Bq/L	0.1	20	0.10	0.47	0.25	0.10	0.25	0.33
Methane	T	mg/L	0.01	23	0.01	0.021	0.02	0.0112	0.015	0.0198
Ethane	T	µg/L	10	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Propane	T	mg/L	0.01	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Arsenic	F	mg/L	0.001	23	0.002	0.016	0.01	0.0052	0.009	0.0138
Barium	F	mg/L	0.001	23	0.060	0.090	0.070	0.063	0.076	0.086
Boron	F	mg/L	0.05	23	0.14	0.34	0.20	0.16	0.19	0.26
Cadmium	F	mg/L	0.00005 & 0.0001	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Chromium (III+VI)	F	mg/L	0.001	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Copper	F	mg/L	0.001	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Iron	F	mg/L	0.05	23	0.5	3.92	1.69	0.62	1.70	2.51
Lead	F	mg/L	0.001	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Lithium	F	mg/L	0.001	23	0.033	0.054	0.040	0.037	0.042	0.046
Manganese	F	mg/L	0.001	23	0.022	0.10	0.07	0.05	0.07	0.09
Mercury	F	mg/L	0.00005 & 0.0001	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Selenium	F	mg/L	0.0002 & 0.01	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Silicon as SiO_2	F	mg/L	0.05	14	21.80	24.50	23.26	21.98	23.55	24.25
Silver	F	mg/L	0.001	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Strontium	F	mg/L	0.001	23	0.544	0.74	0.63	0.57	0.64	0.69
Zinc	F	mg/L	0.005	23	0.005	0.115	0.010	0.005	0.006	0.013
TRH C_6-C_{10} fraction (sum)	T	µg/L	20	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
TRH C_{10}-C_{40} fraction (sum)	T	µg/L	100	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Sum of BTEX	T	µg/L	1	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
Total Reportable PAH	T	µg/L	0.5	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR

Table 5 Kyalla 117 N2 Statistical Assessment for Gum Ridge Formation

Analyte	Total or Filtered	Output unit	EQL	Sample size		Average Concentration		Statistics	
				Gum Ridge Formation CMB (BET-MB022)	Gum Ridge Formation CMB (BET-MB024)	Gum Ridge Formation CMB (BET-MB022)	Gum Ridge Formation CMB (BET-MB024)	F.Test Statistic	T-Test - P-value
pH (Field)	T	pH Units	0.1	60	68	7.05	7.00	1.38	0.242
Electrical Conductivity (Field)	T	µS/cm	1	52	62	1,472	1,254.5	0.85	0.360
pH (Lab)	T	pH Units	0.01	36	29	7.56	7.56	0.05	0.815
Electrical Conductivity (Lab)	T	µS/cm	1	36	29	1,194	1,261.0	9.28	0.0034
Total Dissolved Solids	T	mg/L	10	36	29	709.1	736.1	3.13	0.081621
Suspended Solids	T	mg/L	5	35	29	6.77	7.24	0.41	0.525
Alkalinity (Bicarbonate as $CaCO_3$)	T	mg/L	1	36	29	308.3	315.5	1.73	0.193625
Alkalinity (Carbonate as $CaCO_3$)	T	mg/L	1	36	29	<LOR	<LOR	-	-
Alkalinity (Hydroxide as $CaCO_3$)	T	mg/L	1	36	29	<LOR	<LOR	-	-
Alkalinity (Total as $CaCO_3$)	T	mg/L	1	36	29	308.31	315.5	1.73	0.1936251
Chloride	T	mg/L	1	36	29	164.1	170.8	7.26	0.0090
Sulphate as SO_4	F	mg/L	1	34	28	120.0	140.8	6.07	0.0166
Sodium	F	mg/L	1	36	29	98.5	99.4	0.50	0.481
Potassium	F	mg/L	1	36	29	15.8	17.7	9.28	0.003
Calcium	F	mg/L	1	36	29	88.9	95.4	5.74	0.0195
Magnesium	F	mg/L	1	36	29	38.3	40.7	3.94	0.052
Fluoride	T	mg/L	0.1	36	29	1.34	1.34	0.07	0.79367
Nitrate (as N)	T	mg/L	0.002 - 0.01	36	29	0.020	0.012	1.14	0.29077
Nitrite (as N)	T	mg/L	0.01	36	29	<LOR	<LOR	-	-
Gross alpha activity	T	Bq/L	0.05	30	26	1.36	1.454	0.93	3.396E-01
Gross beta activity (excluding activity of K-40)	T	Bq/L	0.1	30	26	0.51	0.507	0.00	0.999
Methane	T	mg/L	0.01	35	29	0.030	0.02	8.97	0.004
Ethane	T	µg/L	10	35	29	<LOR	<LOR	-	-
Propane	T	mg/L	0.01	35	29	<LOR	<LOR	-	-
Arsenic	F	mg/L	0.001	35	29	0.0027	0.001	0.05	0.822
Barium	F	mg/L	0.001	35	29	0.060	0.06	0.83	0.365
Boron	F	mg/L	0.05	35	29	0.22	0.21	1.36	0.249
Cadmium	F	mg/L	0.00005 - 0.0001	35	29	<LOR	0.00	1.21	0.275
Chromium (III+VI)	F	mg/L	0.0002 - 0.001	35	29	<LOR	<LOR	-	-
Copper	F	mg/L	0.001	35	29	0.0005	0.00	1.61	0.210
Iron	F	mg/L	0.05	35	29	1.87	1.81	0.04	0.840
Lead	F	mg/L	0.001	35	29	<LOR	<LOR	-	-
Lithium	F	mg/L	0.001	35	29	0.040	0.042	0.23	0.636
Manganese	F	mg/L	0.0005 - 0.001	35	29	0.030	0.048	10.08	0.002
Mercury	F	mg/L	0.0001	35	29	<LOR	<LOR	-	-
Selenium	F	mg/L	0.0002 - 0.01	35	29	<LOR	<LOR	-	-
Silicon as SiO_2	F	mg/L	0.05	18	12	22.43	21.95	1.94	1.75E-01
Silver	T	mg/L	0.001	35	29	<LOR	0.00	-	-
Strontium	F	mg/L	0.001	35	29	0.76	0.764	0.20	0.653
Zinc	F	mg/L	0.005	35	29	0.0100	0.009	0.70	0.404
TRH C_6 - C_{10} fraction (Sum)	T	µg/L	20	35	28	<LOR	<LOR	-	-
TRH C_{10} - C_{40} fraction (Sum)	T	µg/L	100	35	28	102.57	<LOR	-	-
Sum of BTEX	T	µg/L	1	35	28	<LOR	<LOR	-	-
Total Reportable PAH	T	µg/L	0.5	31	28	<LOR	<LOR	-	-

Table 6 Kyalla 117 N2 Statistical Assessment for Anthony Lagoon Beds

Analyte	Total or Filtered	Output unit	EQL	Sample size		Average Concentration		Statistics	
				Anthony Lagoon Formation CMB (BET-MB021)	Anthony Lagoon Formation IMB (BET-MB023)	Anthony Lagoon Formation CMB (BET-MB021)	Anthony Lagoon Formation IMB (BET-MB023)	F.Test Statistic	T-Test - P-value
pH (Field)	T	pH Units	0.1	83	36	7.15	7.12	0.38	0.537
Electrical Conductivity (Field)	T	µS/cm	1	58	30	1,420	1,343.9	5.81	0.018
pH (Lab)	T	pH Units	0.01	47	23	7.62	7.58	0.72	0.398
Electrical Conductivity (Lab)	T	µS/cm	1	47	23	1,187	1,124.8	16.96	0.0001
Total Dissolved Solids	T	mg/L	10	47	23	704.3	661.2	20.57	0.000024
Suspended Solids	T	mg/L	5	45	23	8.91	7.48	0.26	0.614
Alkalinity (Bicarbonate as $CaCO_3$)	T	mg/L	1	47	23	283.1	309.5	27.06	0.000002
Alkalinity (Carbonate as $CaCO_3$)	T	mg/L	1	47	23	<LOR	<LOR	-	-
Alkalinity (Hydroxide as $CaCO_3$)	T	mg/L	1	47	23	<LOR	<LOR	-	-
Alkalinity (Total as $CaCO_3$)	T	mg/L	1	47	23	283.13	309.5	27.06	0.0000020
Chloride	T	mg/L	1	47	23	170.1	145.9	79.40	4.893E-13
Sulphate as SO_4	F	mg/L	1	43	22	123.2	100.6	32.99	2.885E-07
Sodium	F	mg/L	1	47	23	106.1	89.2	104.99	2.002E-15
Potassium	F	mg/L	1	47	23	14.3	15.0	3.26	0.075
Calcium	F	mg/L	1	47	23	79.4	83.0	4.80	0.0319
Magnesium	F	mg/L	1	47	23	39.1	38.2	1.92	0.170
Fluoride	T	mg/L	0.1	47	23	1.07	1.07	0.11	0.74661
Nitrate (as N)	T	mg/L	0.002 - 0.01	47	23	0.023	0.020	0.00	0.96659
Nitrite (as N)	T	mg/L	0.01	47	23	<LOR	<LOR	-	-
Gross alpha activity	T	Bq/L	0.05	39	20	0.32	0.550	43.13	1.668E-08
Gross beta activity (excluding activity of K-40)	T	Bq/L	0.1	39	20	0.20	0.250	3.14	0.082
Methane	T	mg/L	0.01	44	23	0.021	0.02	2.27	0.14
Ethane	T	µg/L	10	44	23	<LOR	<LOR	-	-
Propane	T	mg/L	0.01	44	23	<LOR	<LOR	-	-
Arsenic	F	mg/L	0.001	45	23	0.0016	0.010	159.95	2.66E-19
Barium	F	mg/L	0.001	45	23	0.060	0.07	22.58	1.13E-05
Boron	F	mg/L	0.05	45	23	0.22	0.20	2.47	0.121
Cadmium	F	mg/L	0.00005 - 0.0001	45	23	0.00010	<LOR	-	-
Chromium (III+VI)	F	mg/L	0.0002 - 0.001	45	23	0.0010	<LOR	-	-
Copper	F	mg/L	0.001	45	23	<LOR	<LOR	-	-
Iron	F	mg/L	0.05	45	23	0.79	1.69	28.42	1.27E-06
Lead	F	mg/L	0.001	45	23	0.00104	<LOR	0.51	0.479
Lithium	F	mg/L	0.001	45	23	0.047	0.040	11.47	0.001
Manganese	F	mg/L	0.0005 - 0.001	45	23	0.035	0.070	72.72	0.00
Mercury	F	mg/L	0.0001	45	23	<LOR	<LOR	-	-
Selenium	F	mg/L	0.0002 - 0.01	45	23	0.01	<LOR	0.49	0.4883
Silicon as SiO_2	F	mg/L	0.05	20	14	21.67	23.26	26.98	1.13E-05
Silver	T	mg/L	0.001	45	23	<LOR	<LOR	-	-
Strontium	F	mg/L	0.001	45	23	0.64	0.630	0.47	0.4944425
Zinc	F	mg/L	0.005	45	23	0.0308	0.010	10.80	0.002
TRH C_6 - C_{10} fraction (Sum)	T	µg/L	20	44	23	<LOR	<LOR	-	-
TRH C_{10} - C_{40} fraction (Sum)	T	µg/L	100	44	23	<LOR	<LOR	-	-
Sum of BTEX	T	µg/L	1	44	23	<LOR	<LOR	-	-
Total Reportable PAH	T	µg/L	0.5	39	23	<LOR	<LOR	-	-

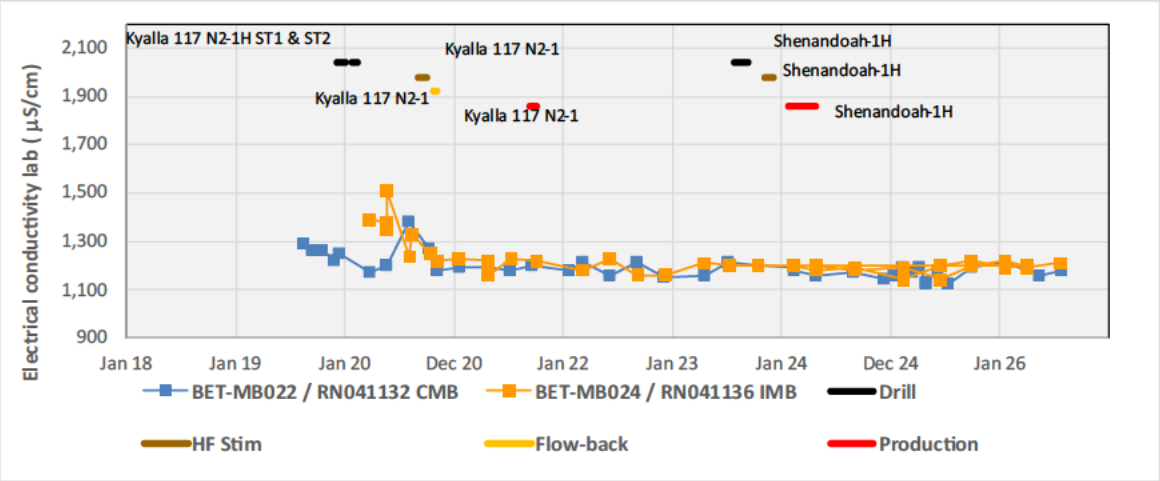
Table 7 Description of water quality trends for the Gum Ridge Formation for those analytes where there is a statistically significant difference between the CMB and IMB

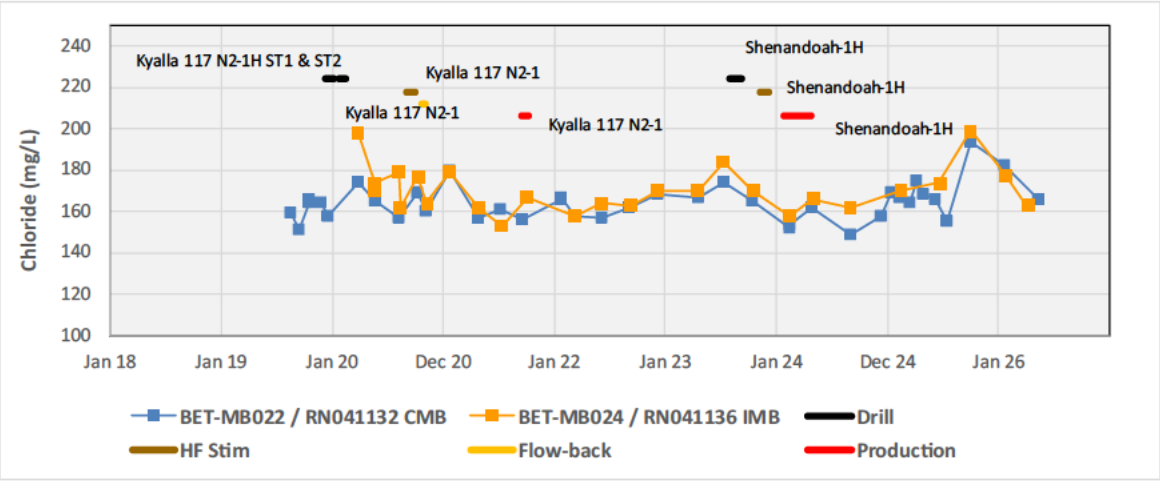
Analyte	Monitoring bore with highest reported concentration	Description of concentrations/trends
		Gum Ridge Formation
Electrical conductivity (laboratory)	IMB	The IMB has a very slightly higher electrical conductivity although both Gum Ridge Formation bores show a steady and temporally very similar long-term decline from initially slightly elevated values most likely associated with the construction of the individual monitoring bores. There have been some minor fluctuations in concentrations with the IMB and CMB tending to move in concert therefore most likely related to or changes in overall concentrations. The most recent field EC values are very similar in magnitude.
Chloride	IMB	The IMB concentrations are generally slightly greater than IMB. The initial IMB result was slightly elevated probably reflecting the impact of the construction of this monitoring bore. Results in the IMB would be expected to be greater than the CMB if the main contribution was from the E&A wells but this is not consistently the case. There have been some minor fluctuations in concentrations with the IMB and CMB tending to move in concert therefore most likely related to analytical techniques or natural variability. No real trends or changes in overall concentrations
Sulphate	IMB	Overall, marginally declining sulphate concentrations are evident in both the IMB and CMB. IMB generally has a slightly higher concentration. Both bores showed higher values after their initial construction and this might be related to sulphide mineral oxidation during the drilling of the monitoring bores through the introduction of compressed air into the formation.
Potassium	IMB	The IMB potassium concentration increased after the start of E&A drilling to ~12 mg/L to 15 mg/L, with some minor fluctuations throughout the monitoring record. The IMB potassium concentrations declined from August 2020 and by November 2020 were very close to those of the CMB. Although temporally variable, the potassium concentrations from the CMB and IMB are now relatively closely correlated. The increase in the IMB potassium concentration after E&A drilling suggests the potential for localised influence on the water quality due to drilling fluids.
Calcium	IMB	Both the CMB and IMB showed relatively elevated calcium values during early sampling, most probably reflecting impacts from water bore drilling & cementing. Subsequently the calcium values have declined somewhat and show temporally variable but moderately well correlated values with perhaps a slight long-term declining trend in both.
Methane	CMB	Although generally the methane concentrations in the CMB are above those of the IMB, the methane concentrations in both the CMB and IMB show considerable temporal variability from below detection limits to peaks of approximately 0.05 to 0.06 mg/L. The peak methane values do not seem to correlate with E&A well construction. There is no evident long-term trend in the methane data for the impact bore, although a possible rising trend may be present in the CMB since October 2023 and may reflect changes in organic carbon impact to the Gum Ridge Formation regional in association with the wet seasons since 2023 / 2024.
Manganese	IMB	The initial reported manganese value for the IMB was an elevated outlier of 0.186 mg/L. Similarly the initial reported manganese value for the CMB was also an elevated outlier of 0.072 mg/L. It is also possible that the drilling E&A drilling activities contributed to the initial outlier value in the IMB through possible introduction of oxygen during drilling through the Gum Ridge Formation. Since the subsidence of these initial impacts the manganese values in both the CMB and IMB have shown temporal variability with no real trend.

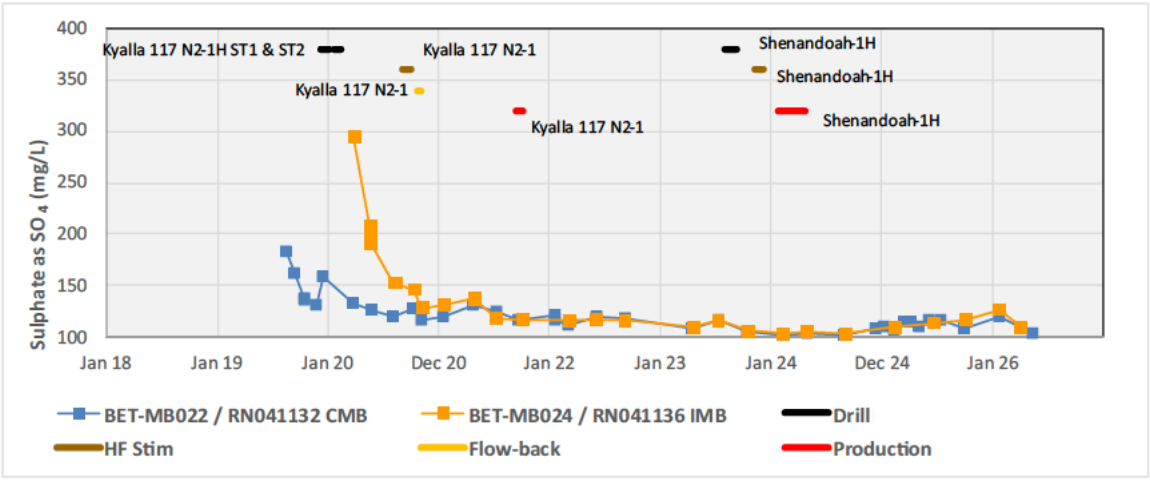
Table 8 Description of water quality trends for the Anthony Lagoon Beds for those analytes where there is a statistically significant difference between the CMB and IMB

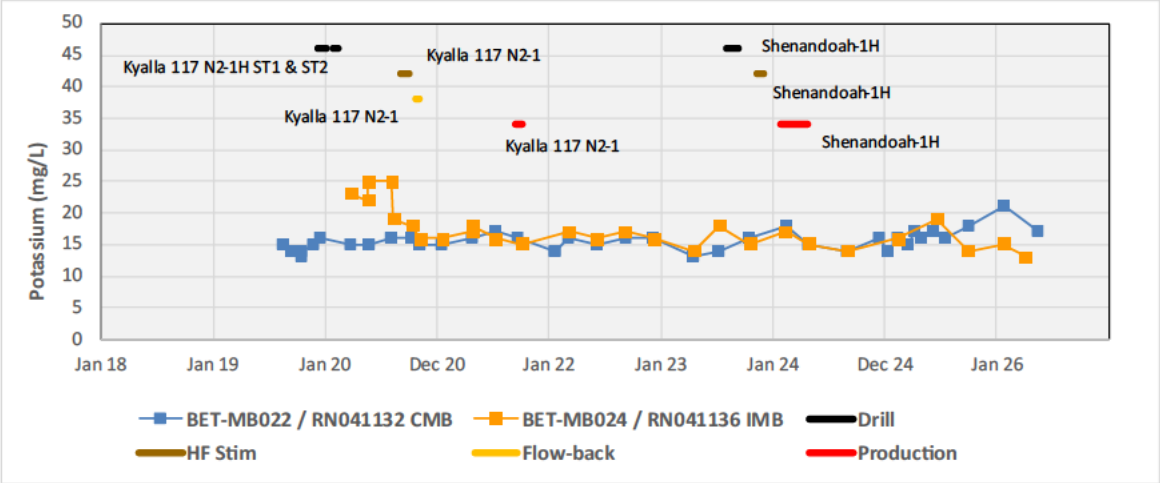
Analyte	Monitoring bore with highest reported concentration	Description of concentrations/trends
		Anthony Lagoon Beds
Electrical conductivity (laboratory)	CMB	The CMB has a higher electrical conductivity although both Anthony Lagoon Beds bores show a temporally variable EC pattern with reasonably close correlation. There is a possible declining trend in both bore since peak values at August 2020.
Electrical conductivity (field)	CMB	The CMB has a higher electrical conductivity although both Anthony Lagoon Beds bores show a temporally variable EC pattern with moderate correlation. There is a possible rising trend in both bore since minimum values at April 2023, which appears to have largely stabilised since mid-2025.
Total dissolved solids	CMB	The CMB has a higher total dissolved solids concentrations although both show a temporally variable EC pattern with moderate correlation. Since February 2024 the CMB data has shown much more temporally variable TDS data with a peak TDS value of 826 mg/L being observed in early May 2025. It is of some note that since February 2024 the IMB TDS values have largely not displayed the degree of wide temporal variation noted in the CMB. The period of increased temporal variability in CMB TDS commenced during the early stages of production from Shenandoah-1H however it seems to be unlikely that these are related. There appears to be no long-term trends evident in both bores.
Bicarbonate alkalinity (also total alkalinity)	CMB	With the exception of a CMB high value outlier of 423 mg/L in September 2023, the IMB concentration is generally marginally greater than the CMB. Apart from this and another isolated IMB high value outlier of 384 mg/L in March 2022, the CMB & IMB data show moderate correlation. No real trends or changes in overall concentrations in bicarbonate alkalinity are evident in both the Anthony Lagoon Beds bores.
Total alkalinity	CMB	Directly related to Alkalinity (Bicarbonate) as this is dominant alkalinity species.
Chloride	CMB	The CMB concentrations are generally greater than IMB. Results in the IMB would be expected to be greater than the CMB if the main contribution was from the E&A wells but this is not the case. There have been some minor fluctuations in concentrations with the IMB and CMB tending to move somewhat in concert and therefore most likely related to analytical techniques or natural variability. A CMB low outlier of 111 mg/L in September 2024 is isolated and does not appear to correlate with site E&A activities. No real trends or changes in overall concentrations are evident. The most recent chloride values (April 2026) show a divergence between the CMB and IMB with chloride in the CMB rising to 190 mg/L and chloride in the IMB declining to 136 mg/L.
Sulphate	CMB	Overall, marginally declining sulphate concentrations with reasonable correlation are evident in both the IMB and CMB. CMB generally has a slightly higher concentration.
Sodium	CMB	The CMB concentration is generally greater than IMB. Both CMB and IMB sodium concentrations show some temporal variability however there appears to be some correlation. Results in the IMB would be expected to be greater than the CMB if the main contribution was from the E&A wells. No real trends or changes in overall concentrations is evident.
Calcium	CMB	The CMB concentrations are generally very close to those of the IMB. Both CMB and IMB calcium concentrations show some temporal variability however there appears to be some reasonable correlation. Results in the IMB would be expected to be consistently greater than the CMB if the main contribution was from the E&A wells. No real trends or changes in overall concentrations is evident.
Gross alpha activity	IMB	Overall, the IMB concentration has been generally greater than that of the CMB, but not always. Gross alpha activity observed in both the CMB & IMB showed some correlation of temporal pattern between March 2022 and August 2024, albeit that the amplitude of fluctuation and the absolute gross alpha activity values observed in the IMB were significantly greater. Over the period of record there does not appear to be any discernible long-term trend in values in either the CMB of IMB and the greater alpha activity values do not correlate with key wellsite E&A activities.
Arsenic	IMB	Arsenic values are significantly greater than those in the IMB. There is a relatively strong long-term trend in both bores for declining arsenic levels. The initially elevated arsenic values in the early time data my potentially reflect the impact of drilling the monitoring bores with the increase in oxygen potentially liberating arsenic initially bound to aquifer materials although this appears to take some time after initial construction to peak.
Barium	CMB	Although the initial peak in barium in the CMB was greater than that for the IMB, the overall barium values exceed those for the CMB for the remainder of the record. The initial peak in the CMB barium probably reflects a liberation of barium from the aquifer during water bore drilling with this subsequently declining and then stabilising. There is also a slight long-term declining trend in the IMB barium data. There appears to be no correlation with key well site E&A activities.
Iron	IMB	Generally, the iron levels in the IMB are greater than those in the CMB. Iron values rose in the IMB from 1.06 mg/L in August 2020 to a peak of 3.92 mg/L in April 2021. This was not reflected in the CMB data but does not seem to correlate with site E&A drilling, stimulation or production activities. There appears to be no consistent trend in either the CMB or IMB iron data.
Lithium	CMB	The barium concentration in the CMB and IMB show long-term temporal variability with moderate to good correlation. As possible very slight long-term declining trend exists for both bores.
Manganese	IMB	The manganese concentration in the IMB has always been greater to that in the CMB. Both bores show temporally variable data with poor correlation and no obvious trend.
Silicon as SIO_2	CMB	Overall the IMB silicon values are generally slightly higher than the IMB values. Having said that, apart from a CMB high value outlier of 13.4 mg/L in September 2024, the silicon levels in the CMB and IMB are similar with no evident long-term trend
Zinc	CMB	An early elevated CMB outlier zinc value of 0.135 mg/L was reported in November 2019. Similarly the initial reported zinc value for the IMB was also an elevated outlier of 0.115 mg/L in March 2020. The zinc concentration in the CMB is generally significantly greater than the IMB values which rapidly declined to close to detection limit. This suggests that the construction of the water bores causes some transient elevation in zinc values in the Anthony Lagoon Beds.

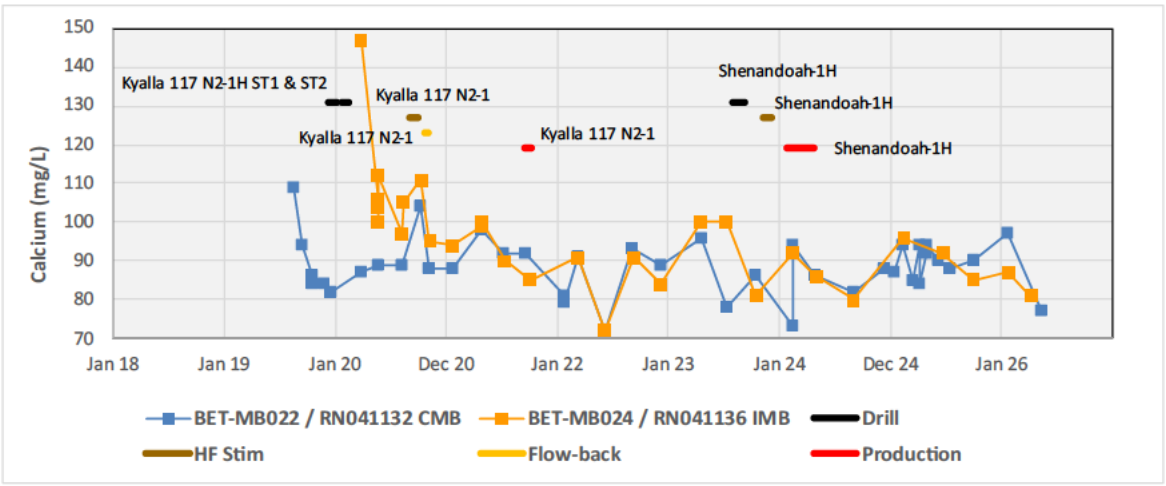
Attachment A - Timeseries chemistry charts – Gum Ridge Formation

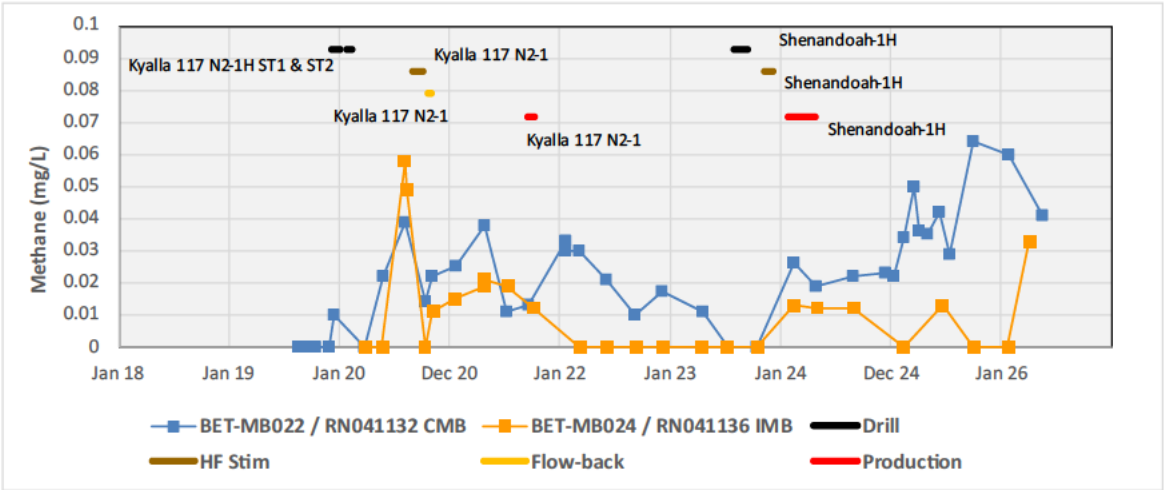


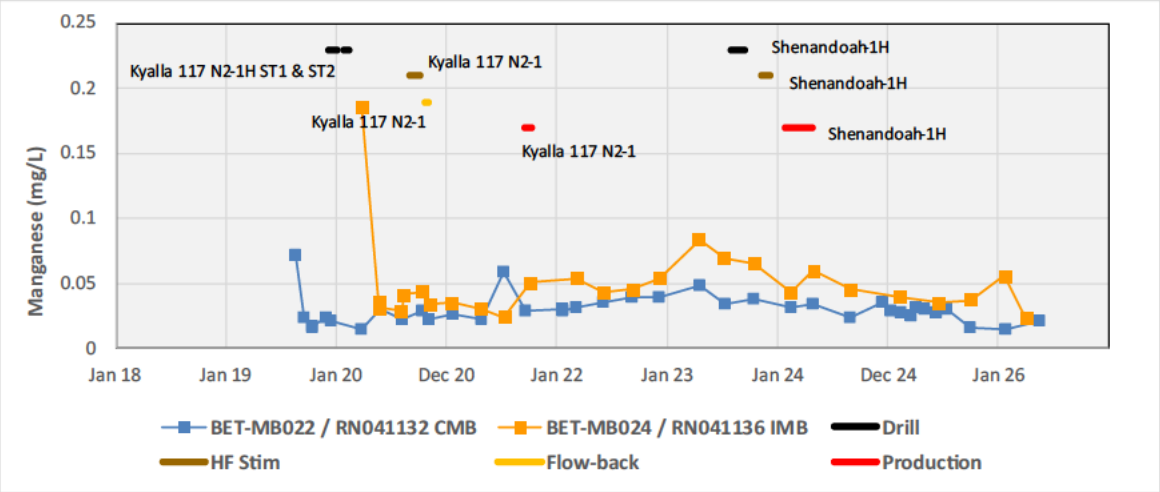




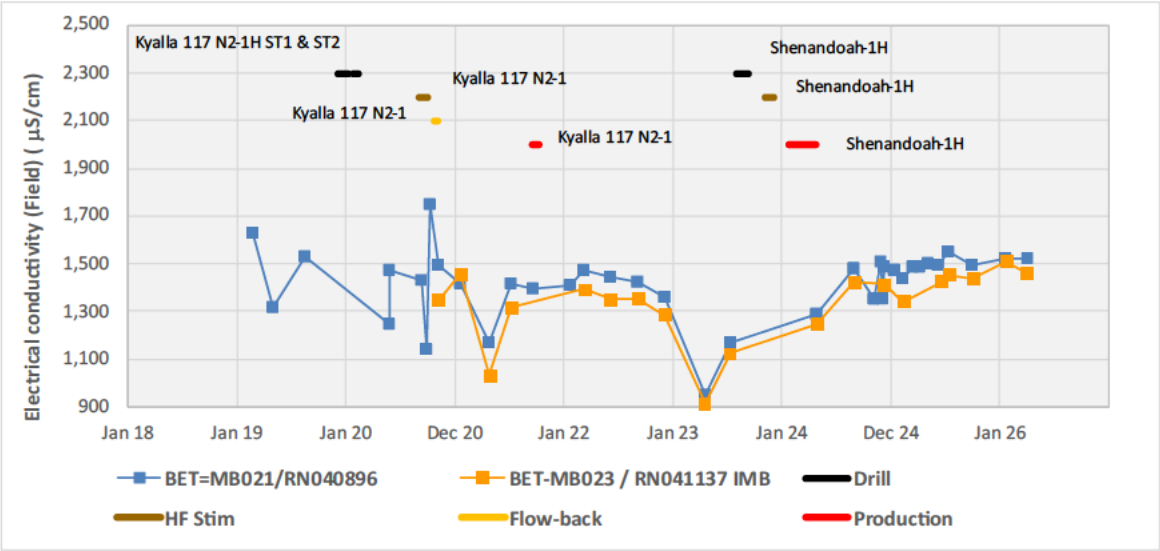

Potassium (mg/L)
50
45
40
35
30
25
20
15
10
5
0
Jan 18
Jan 19
Jan 20
Dec 20
Jan 22
Jan 23
Jan 24
Dec 24
Jan 26
Kyalla 117 N2-1H ST1 & ST2
Kyalla 117 N2-1
Kyalla 117 N2-1
Kyalla 117 N2-1
Shenandoah-1H
Shenandoah-1H
Shenandoah-1H
BET-MB022 / RN041132 CMB
BET-MB024 / RN041136 IMB
Drill
HF Stim
Flow-back
Production

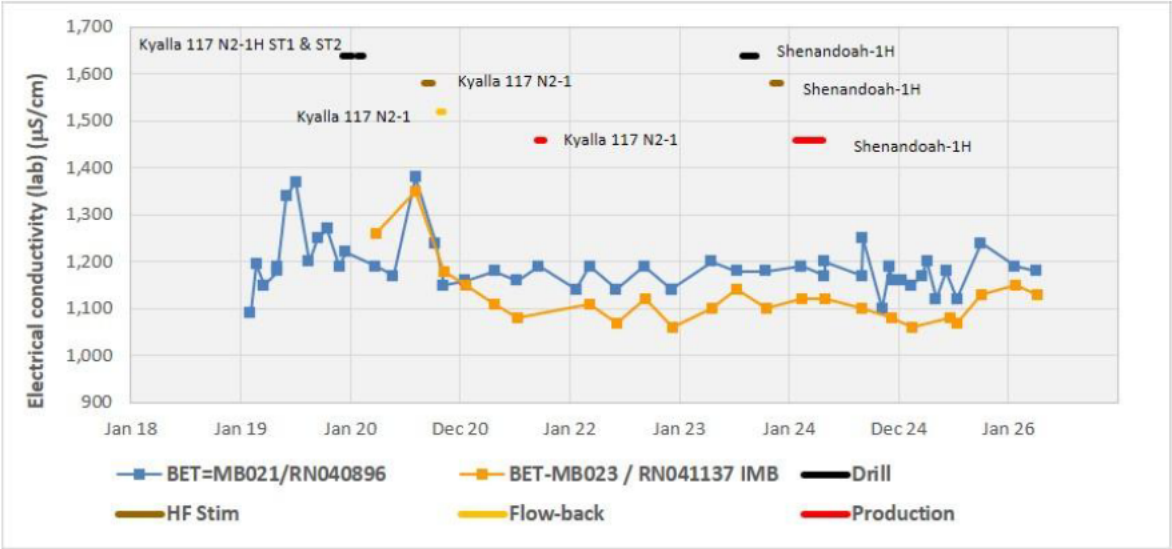

Calcium (mg/L)
150
140
130
120
110
100
90
80
70
Jan 18
Jan 19
Jan 20
Dec 20
Jan 22
Jan 23
Jan 24
Dec 24
Jan 26
Kyalla 117 N2-1H ST1 & ST2
Kyalla 117 N2-1
Kyalla 117 N2-1
Kyalla 117 N2-1
Shenandoah-1H
Shenandoah-1H
Shenandoah-1H
BET-MB022 / RN041132 CMB
BET-MB024 / RN041136 IMB
Drill
HF Stim
Flow-back
Production

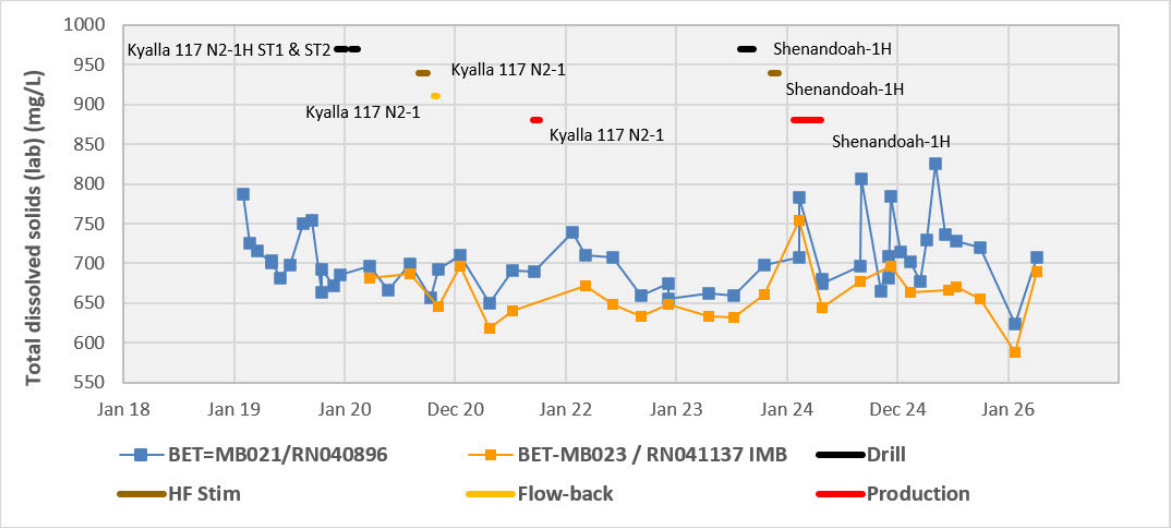

Methane (mg/L)
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
Jan 18
Jan 19
Jan 20
Dec 20
Jan 22
Jan 23
Jan 24
Dec 24
Jan 26
Kyalla 117 N2-1H ST1 & ST2
Kyalla 117 N2-1
Kyalla 117 N2-1
Kyalla 117 N2-1
Shenandoah-1H
Shenandoah-1H
Shenandoah-1H
BET-MB022 / RN041132 CMB
BET-MB024 / RN041136 IMB
Drill
HF Stim
Flow-back
Production

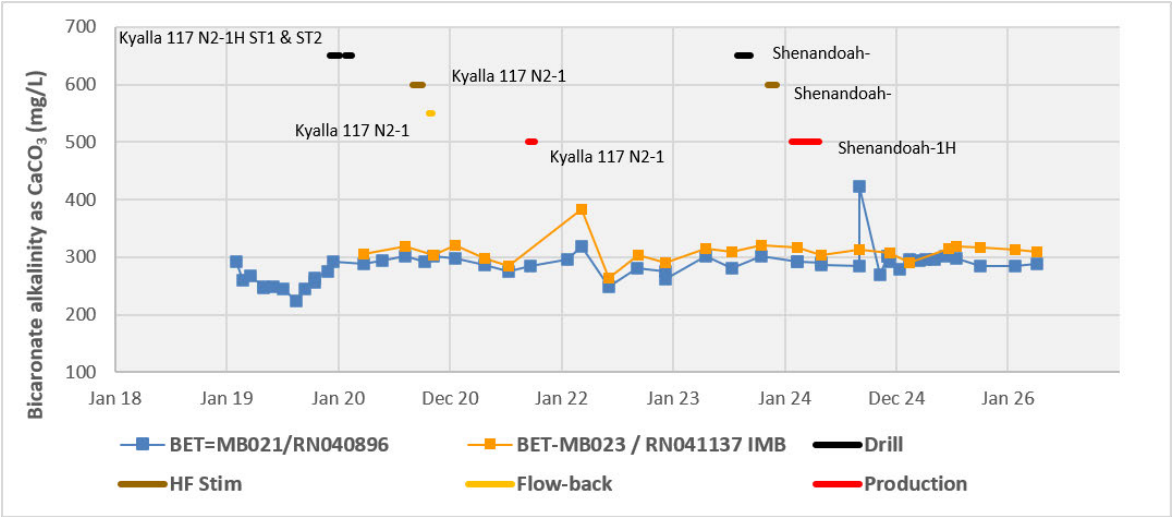

0.25
0.2
0.15
0.1
0.05
0
Manganese (mg/L)
Kyalla 117 N2-1H ST1 & ST2
Kyalla 117 N2-1
Kyalla 117 N2-1
Kyalla 117 N2-1
Shenandoah-1H
Shenandoah-1H
Shenandoah-1H
Jan 18
Jan 19
Jan 20
Dec 20
Jan 22
Jan 23
Jan 24
Dec 24
Jan 26
BET-MB022 / RN041132 CMB
BET-MB024 / RN041136 IMB
Drill
HF Stim
Flow-back
Production

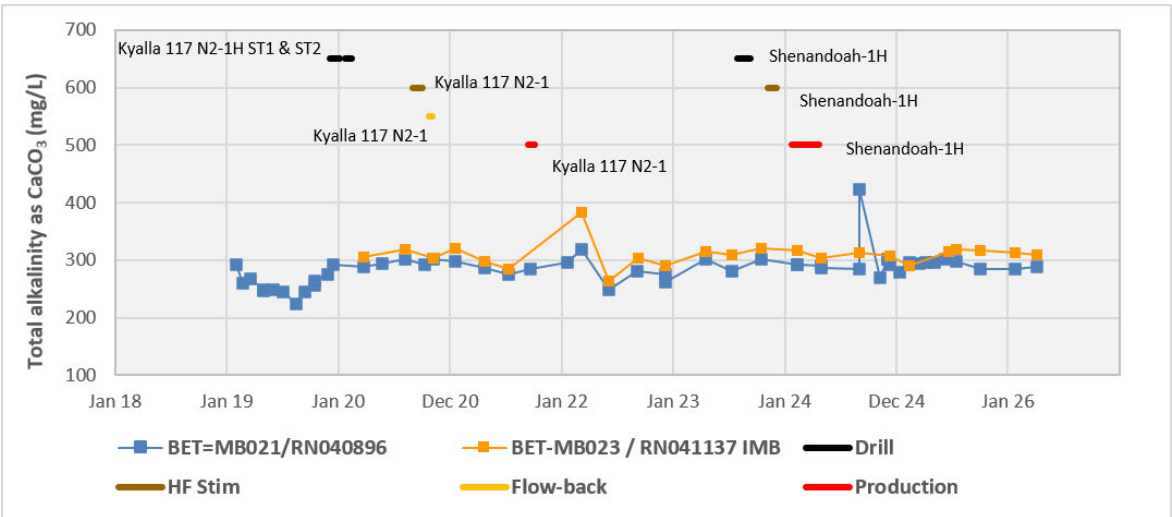
Attachment B - Timeseries chemistry charts – Anthony Lagoon Beds

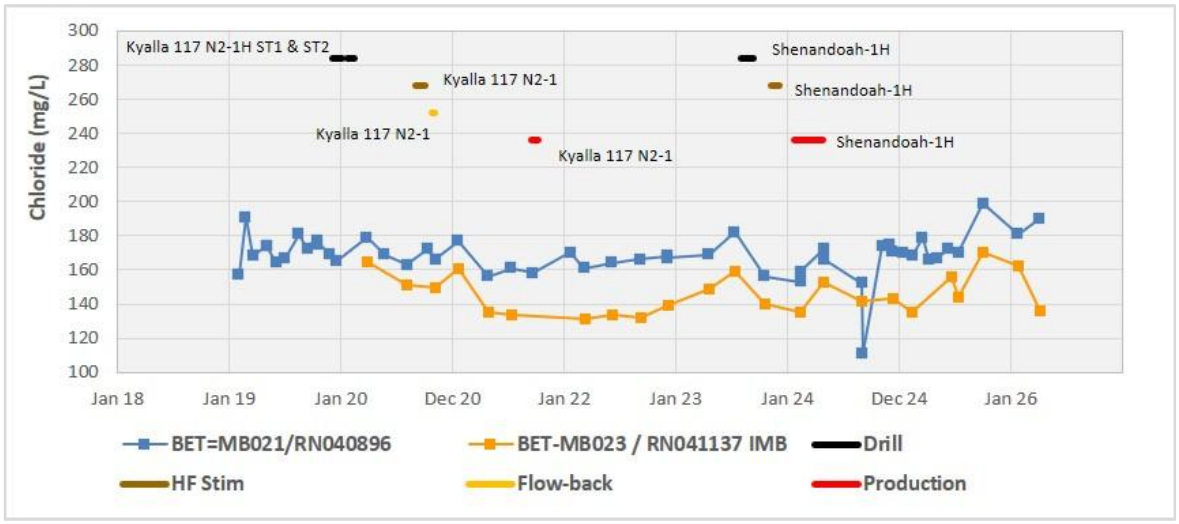


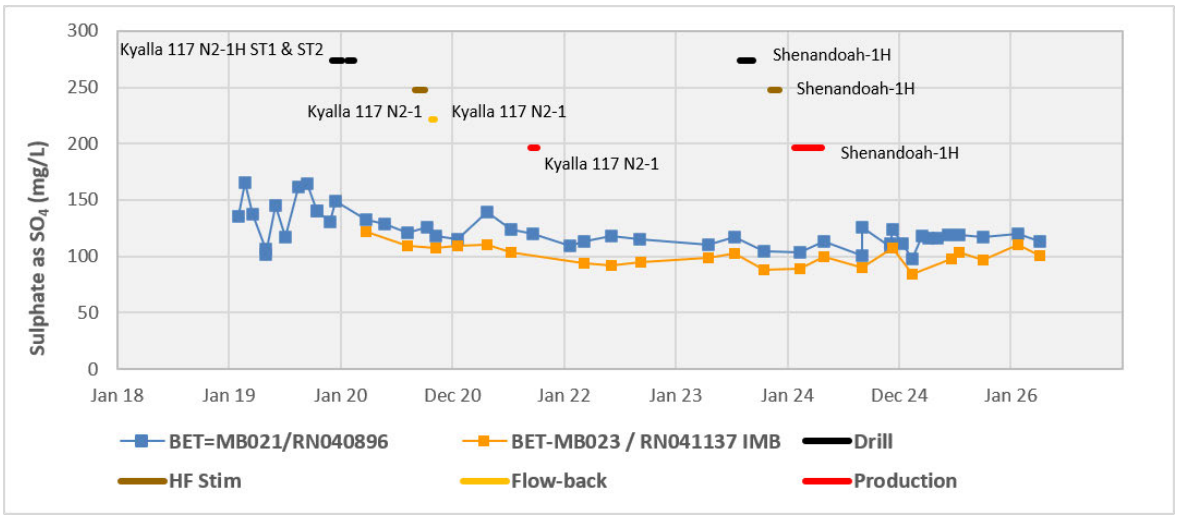


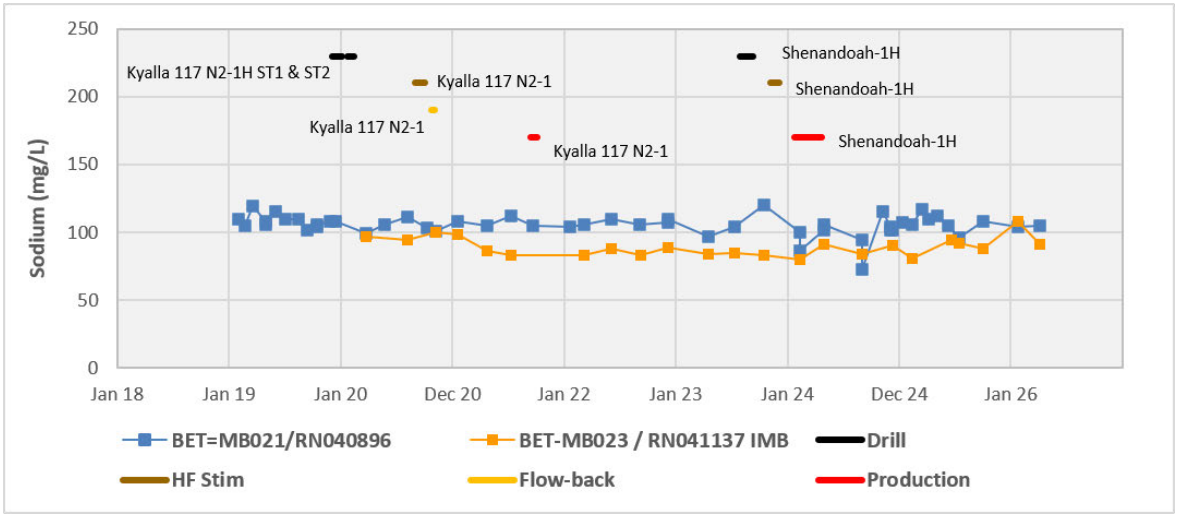

Total dissolved solids (lab) (mg/L)
1000
950
900
850
800
750
700
650
600
550
Kyalla 117 N2-1H ST1 & ST2
Kyalla 117 N2-1
Kyalla 117 N2-1
Kyalla 117 N2-1
Shenandoah-1H
Shenandoah-1H
Shenandoah-1H
Jan 18
Jan 19
Jan 20
Dec 20
Jan 22
Jan 23
Jan 24
Dec 24
Jan 26
BET=MB021/RN040896
BET-MB023 / RN041137 IMB
Drill
HF Stim
Flow-back
Production

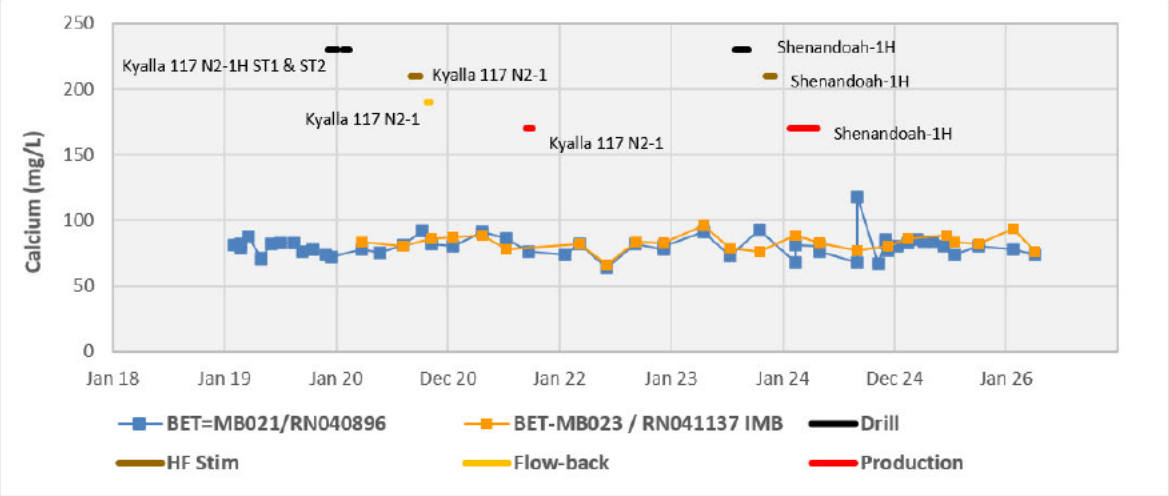

Bicaronate alkalinity as CaCO3 (mg/L)
700
600
500
400
300
200
100
Kyalla 117 N2-1H ST1 & ST2
Kyalla 117 N2-1
Kyalla 117 N2-1
Kyalla 117 N2-1
Shenandoah-
Shenandoah-
Shenandoah-1H
Jan 18
Jan 19
Jan 20
Dec 20
Jan 22
Jan 23
Jan 24
Dec 24
Jan 26
BET=MB021/RN040896
BET-MB023 / RN041137 IMB
Drill
HF Stim
Flow-back
Production

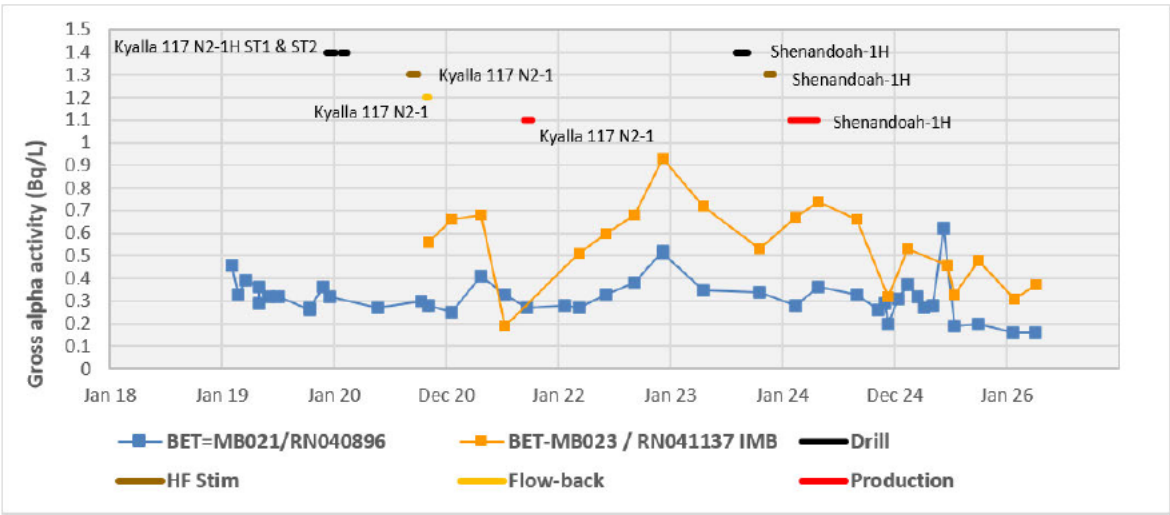

Total alkalinity as CaCO3 (mg/L)
700
600
500
400
300
200
100
Kyalla 117 N2-1H ST1 & ST2
Kyalla 117 N2-1
Kyalla 117 N2-1
Kyalla 117 N2-1
Shenandoah-1H
Shenandoah-1H
Shenandoah-1H
Jan 18
Jan 19
Jan 20
Dec 20
Jan 22
Jan 23
Jan 24
Dec 24
Jan 26
BET=MB021/RN040896
BET-MB023 / RN041137 IMB
Drill
HF Stim
Flow-back
Production

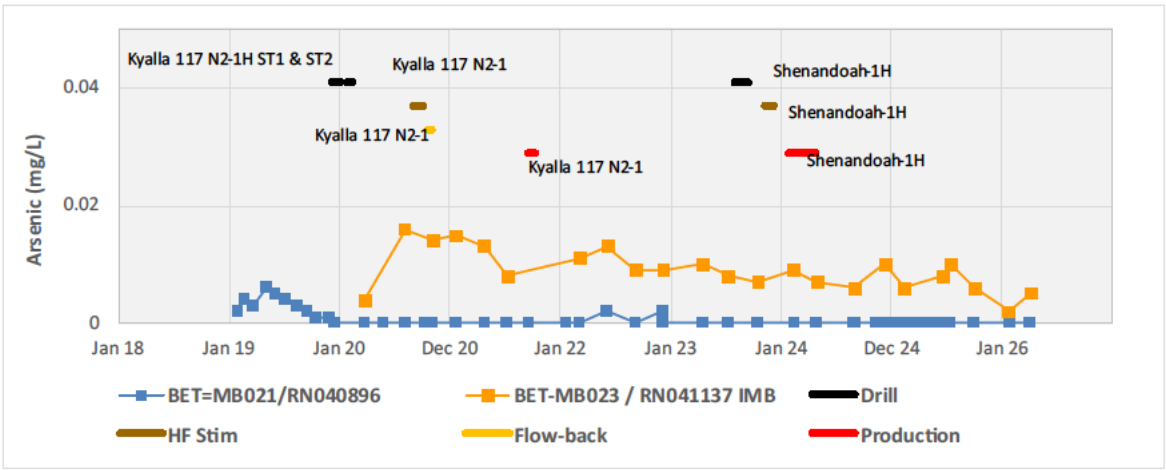

Chloride (mg/L)
300
280
260
240
220
200
180
160
140
120
100
Kyalla 117 N2-1H ST1 & ST2
Kyalla 117 N2-1
Kyalla 117 N2-1
Kyalla 117 N2-1
Shenandoah-1H
Shenandoah-1H
Shenandoah-1H
Jan 18
Jan 19
Jan 20
Dec 20
Jan 22
Jan 23
Jan 24
Dec 24
Jan 26
BET=MB021/RN040896
BET-MB023 / RN041137 IMB
Drill
HF Stim
Flow-back
Production

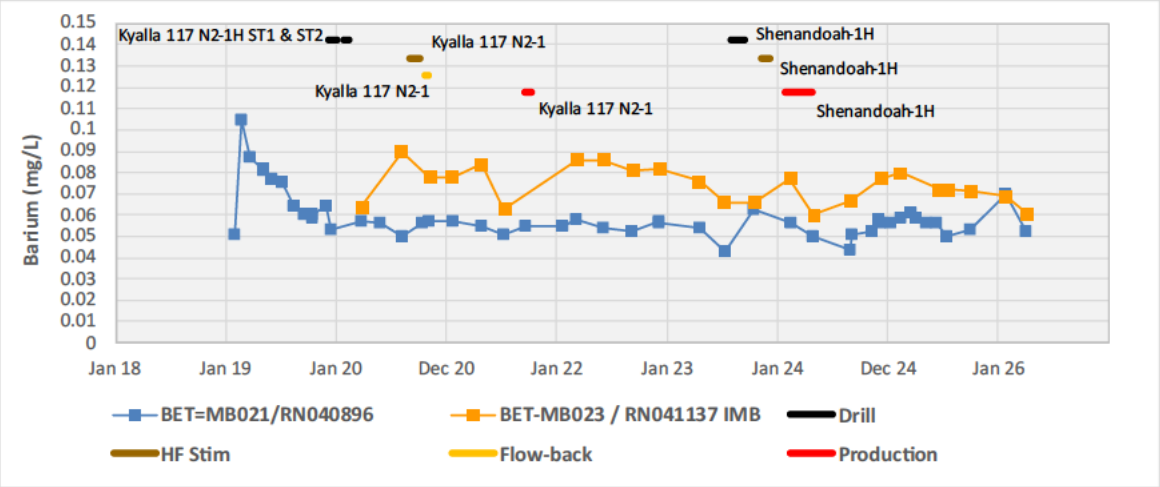

Sulphate as SO_4 (mg/L)
300
250
200
150
100
50
0
Kyalla 117 N2-1H ST1 & ST2
Kyalla 117 N2-1
Kyalla 117 N2-1
Kyalla 117 N2-1
Shenandoah-1H
Shenandoah-1H
Shenandoah-1H
Jan 18
Jan 19
Jan 20
Dec 20
Jan 22
Jan 23
Jan 24
Dec 24
Jan 26
BET=MB021/RN040896
BET-MB023 / RN041137 IMB
Drill
HF Stim
Flow-back
Production


Sodium (mg/L)
250
200
150
100
50
0
Kyalla 117 N2-1H ST1 & ST2
Kyalla 117 N2-1
Kyalla 117 N2-1
Kyalla 117 N2-1
Shenandoah-1H
Shenandoah-1H
Shenandoah-1H
Jan 18
Jan 19
Jan 20
Dec 20
Jan 22
Jan 23
Jan 24
Dec 24
Jan 26
BET=MB021/RN040896
BET-MB023 / RN041137 IMB
Drill
HF Stim
Flow-back
Production


Calcium (mg/L)
250
200
150
100
50
0
Kyalla 117 N2-1H ST1 & ST2
Kyalla 117 N2-1
Kyalla 117 N2-1
Kyalla 117 N2-1
Shenandoah-1H
Shenandoah-1H
Shenandoah-1H
Jan 18
Jan 19
Jan 20
Dec 20
Jan 22
Jan 23
Jan 24
Dec 24
Jan 26
BET=MB021/RN040896
BET-MB023 / RN041137 IMB
Drill
HF Stim
Flow-back
Production


Gross alpha activity (Bq/L)
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Kyalla 117 N2-1H ST1 & ST2
Kyalla 117 N2-1
Kyalla 117 N2-1
Kyalla 117 N2-1
Shenandoah-1H
Shenandoah-1H
Shenandoah-1H
Jan 18
Jan 19
Jan 20
Dec 20
Jan 22
Jan 23
Jan 24
Dec 24
Jan 26
BET=MB021/RN040896
BET-MB023 / RN041137 IMB
Drill
HF Stim
Flow-back
Production


Arsenic (mg/L)
0.04
0.02
0
Kyalla 117 N2-1H ST1 & ST2
Kyalla 117 N2-1
Kyalla 117 N2-1
Kyalla 117 N2-1
Shenandoah-1H
Shenandoah-1H
Shenandoah-1H
Jan 18
Jan 19
Jan 20
Dec 20
Jan 22
Jan 23
Jan 24
Dec 24
Jan 26
BET=MB021/RN040896
BET-MB023 / RN041137 IMB
Drill
HF Stim
Flow-back
Production


Barium (mg/L)
0.15
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
Kyalla 117 N2-1H ST1 & ST2
Kyalla 117 N2-1
Kyalla 117 N2-1
Kyalla 117 N2-1
Shenandoah-1H
Shenandoah-1H
Shenandoah-1H
Jan 18
Jan 19
Jan 20
Dec 20
Jan 22
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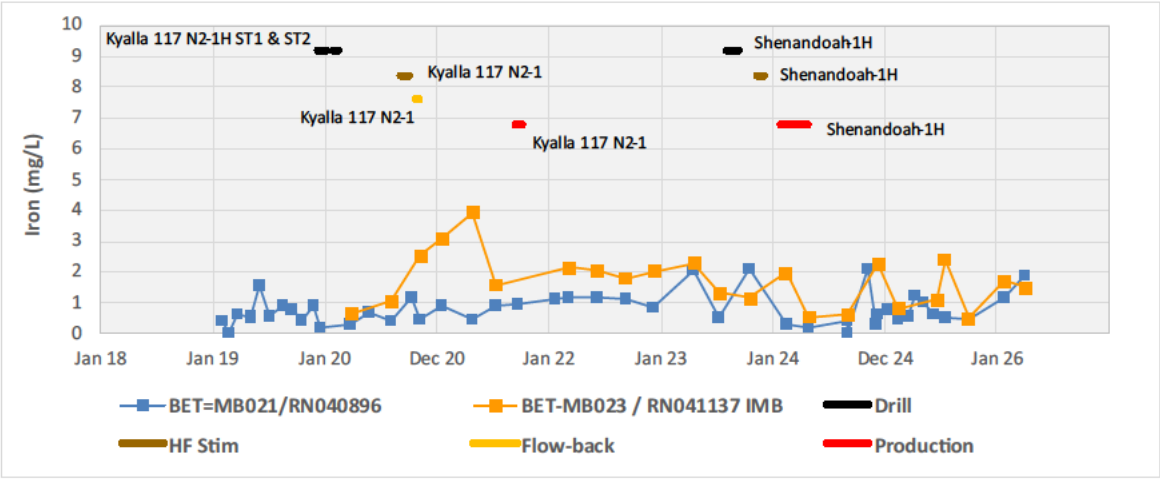
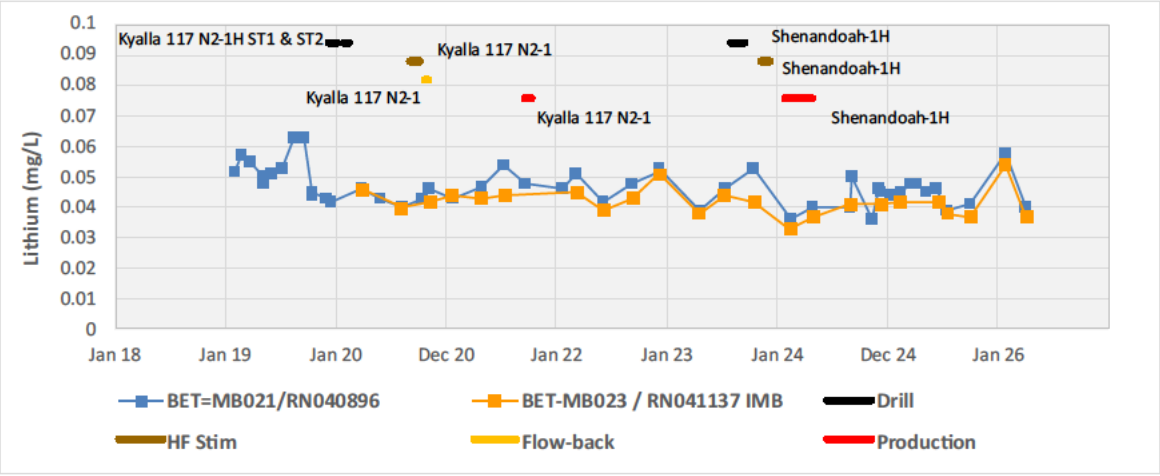
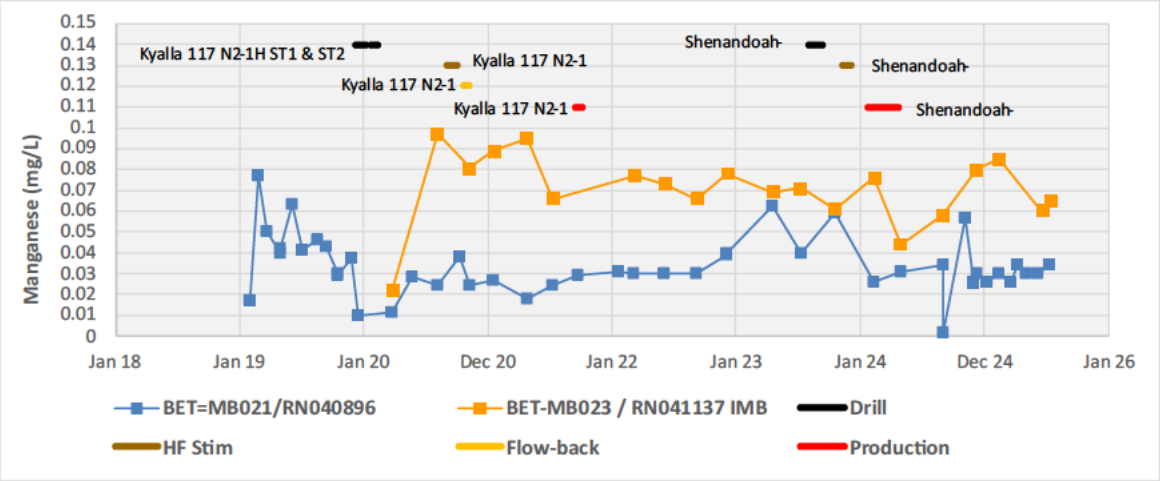
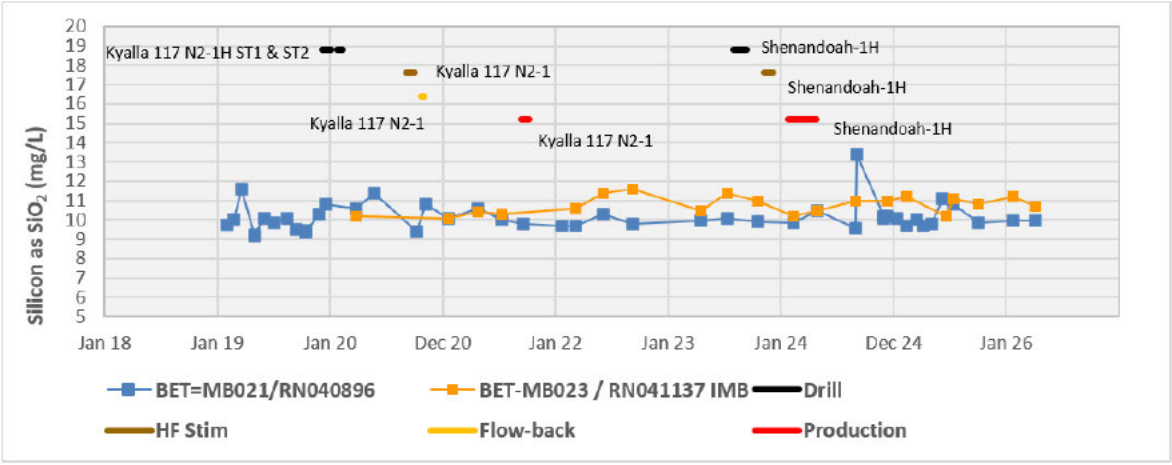
Jan 24
Dec 24
Jan 26
BET=MB021/RN040896
BET-MB023 / RN041137 IMB
Drill
HF Stim
Flow-back
Production


Iron (mg/L)
10
9
8
7
6
5
4
3
2
1
0
Kyalla 117 N2-1H ST1 & ST2
Kyalla 117 N2-1
Kyalla 117 N2-1
Kyalla 117 N2-1
Shenandoah-1H
Shenandoah-1H
Shenandoah-1H
Jan 18
Jan 19
Jan 20
Dec 20
Jan 22
Jan 23
Jan 24
Dec 24
Jan 26
BET=MB021/RN040896
BET-MB023 / RN041137 IMB
Drill
HF Stim
Flow-back
Production


Lithium (mg/L)
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
Kyalla 117 N2-1H ST1 & ST2
Kyalla 117 N2-1
Kyalla 117 N2-1
Kyalla 117 N2-1
Shenandoah-1H
Shenandoah-1H
Shenandoah-1H
Jan 18
Jan 19
Jan 20
Dec 20
Jan 22
Jan 23
Jan 24
Dec 24
Jan 26
BET=MB021/RN040896
BET-MB023 / RN041137 IMB
Drill
HF Stim
Flow-back
Production


Manganese (mg/L)
0.15
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
Kyalla 117 N2-1H ST1 & ST2
Kyalla 117 N2-1
Kyalla 117 N2-1
Kyalla 117 N2-1
Shenandoah-
Shenandoah-
Shenandoah-
Jan 18
Jan 19
Jan 20
Dec 20
Jan 22
Jan 23
Jan 24
Dec 24
Jan 26
BET=MB021/RN040896
BET-MB023 / RN041137 IMB
Drill
HF Stim
Flow-back
Production


Silicon as SiO2 (mg/L)
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
Kyalla 117 N2-1H ST1 & ST2
Kyalla 117 N2-1
Kyalla 117 N2-1
Kyalla 117 N2-1
Shenandoah-1H
Shenandoah-1H
Shenandoah-1H
Jan 18
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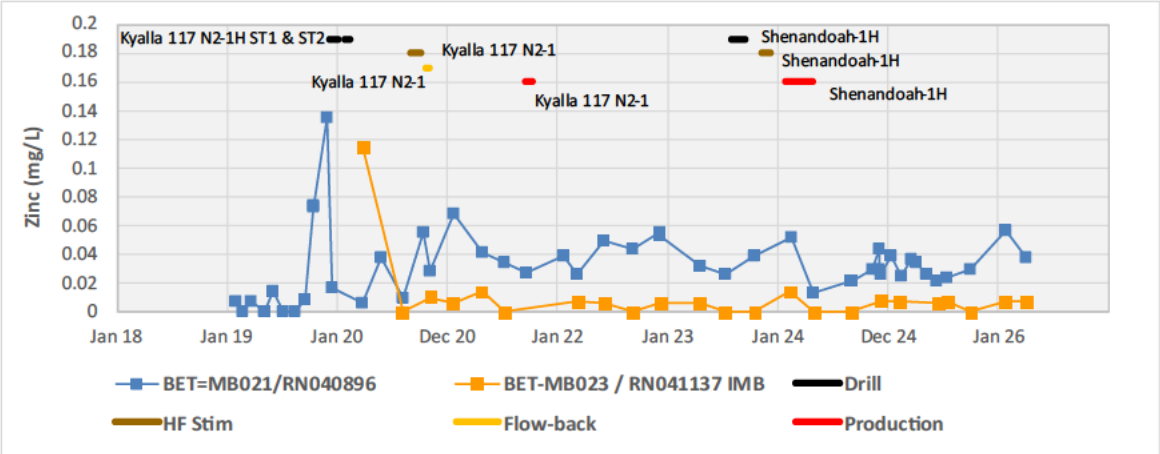
Dec 24
Jan 26
BET=MB021/RN040896
BET-MB023 / RN041137 IMB
Drill
HF Stim
Flow-back
Production


Zinc (mg/L)
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
Kyalla 117 N2-1H ST1 & ST2
Kyalla 117 N2-1
Kyalla 117 N2-1
Kyalla 117 N2-1
Shenandoah-1H
Shenandoah-1H
Shenandoah-1H
Jan 18
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Dec 20
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BET=MB021/RN040896
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