

Table 1 provides a summary of the EPA monitoring points for the Rangers Valley Feedlot. This table has been reproduced from Section 2 of Environmental Protection Licence No. 3864. Click on the EPA number to view the monitoring results collected (if available).

Table 1: Summary of EPA Monitoring Points

EPA No.	Type of monitoring point	Type of discharge point	Description of location
EPA Monitoring Point 2	Surface water quality monitoring		Surface water monitoring point (S2) at Cam Creek causeway on Deepwater Road at "Nant Park" labelled as EPA Point 2 on map titled Environmental Monitoring Points - Location of Surface Water Monitoring points dated 1 st May 2007. See Fig 1 - 250832A1/10.
EPA Monitoring Point 3	Surface water quality monitoring		Surface water monitoring point (S3) at grassed waterway in Old 2 paddock labelled as EPA Point 3 on map titled Environmental Monitoring Points - Location of Surface Water MP dated 1 st May 2007. See Fig 1 - 250832A1/10.
EPA Monitoring Point 4	Surface water quality monitoring		Surface water monitoring point (S4) at Cam Creek bridge on Rangers Valley Road labelled as EPA Point 4 on map titled Environmental Monitoring Points -Location of Surface Water MP dated 1 st May 2007. See Fig 1 - 250832A1/10.
EPA Monitoring Point 5	Surface water quality monitoring		Surface water monitoring point (S5) at Severn River Bridge on the Yarraford Road labelled as EPA Point 5 on map titled Environmental Monitoring Points - Location of Surface Water MP dated 1 st May 2007. See Fig 1 - 250832A1/10.
EPA Monitoring Point 6	Surface water quality monitoring		Surface water monitoring point (S6) at Severn River Bridge on the Emmaville Road labelled as EPA Point 6 on map titled Environmental Monitoring Points - Location of Surface Water MP dated 1 st May 2007. See Fig 1 - 250832A1/10.
EPA Monitoring Point 7	Surface water quality monitoring		Surface water monitoring point (S7) at Beardy Waters causeway on the Haul Rd (2 nd causeway) -

			upstream of confluence with Severn River, labelled as EPA Point 7 on map titled Env MP -Location of Surface Water MP dated 1st May 2007. (Fig 1).
EPA Monitoring Point 8	Surface water quality monitoring		Surface water monitoring point (S8) at Severn River causeway on the Haul Road (first causeway) labelled as EPA Point 8 on map titled Environmental Monitoring Points - Location of Surface Water MP dated 1st May 2007. See Fig 1 - 250832A1/10.
10	Effluent quality and volume monitoring. Wet weather discharge. Discharge quality monitoring. Discharge to utilisation area.	Effluent quality and volume monitoring. Wet weather discharge. Discharge quality monitoring. Discharge to utilisation area.	Terminal pond and spillway servicing Pivot 3A and 3B including pump labelled as EPA Point 10 on map titled Env MPs-Location of Effluent MP dated 1st May 2007. See Fig 2 250832A1/10.
EPA Monitoring Point 11	Effluent quality and volume monitoring. Wet weather discharge. Discharge quality monitoring. Discharge to utilisation area.	Effluent quality and volume monitoring. Wet weather discharge. Discharge quality monitoring. Discharge to utilisation area.	Final effluent holding pond (on eastern side of the feedlot, known as E2) including spillway and irrigation pumps labelled as EPA Point 11 on map titled Env MPs-Location of Effluent MP dated 1st May 2007. See Fig 2. 250832A1/10.
13	Wet weather discharge. Discharge quality monitoring.	Wet weather discharge. Discharge quality monitoring	Spillway for effluent holding pond known as W2 (on western side of feedlot) labelled as EPA Point 13 on map titled Env MPs-Location of Effluent MP dated 1st May 2007. See Fig 2 250832A1/10.
14	Effluent quality and volume monitoring. Wet weather discharge. Discharge quality monitoring. Discharge to utilisation area.	Effluent quality and volume monitoring. Wet weather discharge. Discharge quality monitoring. Discharge to utilisation area.	Terminal pond and spillway servicing Pivot 1 and located in the paddock Bottom Swamp including pump labelled as EPA Point 14 on map titled Env MPs-Location of Effluent MP dated 1st May 2007. see Fig 2 250832A1/10.
EPA Monitoring Point 20	Effluent quality and volume monitoring. Wet weather discharge. Discharge quality monitoring.	Effluent quality and volume monitoring. Wet weather discharge. Discharge quality monitoring.	Effluent holding pond (on western side of feedlot, known as W4) including spillway and irrigation pump labelled as EPA Point 20 on map titled Env MPs-Location of Effluent MP dated 1st May 2007. see Fig 2 250832A1/10.

	Discharge to utilisation area.	Discharge to utilisation area.	
22	Effluent quality and volume monitoring. Wet weather discharge. Discharge quality monitoring. Discharge to utilisation area.	Effluent quality and volume monitoring. Wet weather discharge. Discharge quality monitoring. Discharge to utilisation area.	Terminal pond and spillway servicing Rye East and Rye West known as W5 including pump labelled as EPA Point 22 on map titled Env MPs-Location of Effluent MP dated 1 st May 2007. see Fig 2 250832A1/10.
EPA Monitoring Point 24	Manure quality monitoring. Mass monitoring.		Manure stockpile and composting area containing screened and unscreened manure and labelled as EPA Point 24 on map titled Env MPs-Location of Effluent MP dated 1 st May 2007. see Fig 2 250832A1/10.
EPA Monitoring Point 26	Discharge quality monitoring.		Dam located in the bottom corner of "Washpool Road" (13) paddock labelled as EPA Point 26 on map titled Env MPs-Location of Effluent MP dated 1 st May 2007. see Fig 2 250832A1/10.
EPA Monitoring Point 27	Soil quality monitoring. Mass monitoring.		Effluent utilisation area known as Pivot 1 labelled as EPA Point 27 on map titled "Rangers Valley Cattle Station Site Plan" dated 30.07.03.
EPA Monitoring Point 28	Soil quality monitoring. Mass monitoring.		Effluent utilisation area known as Pivot 3A labelled as EPA Point 28 on map titled "Rangers Valley Cattle Station Site Plan" dated 30.07.03.
EPA Monitoring Point 29	Soil quality monitoring. Mass monitoring.		Effluent utilisation area known as Pivot 3B labelled as EPA Point 29 on map titled "Rangers Valley Cattle Station Site Plan" dated 30.07.03.
EPA Monitoring Point 30	Soil quality monitoring. Mass monitoring.		Effluent utilisation area known as Rye East labelled as EPA Point 30 on map titled "Rangers Valley Cattle Station Site Plan" dated 30.07.03.
EPA Monitoring Point 31	Soil quality monitoring. Mass monitoring.		Effluent utilisation area known as Rye West labelled as EPA Point 31 on map titled "Rangers Valley Cattle Station Site Plan" dated 30.07.03.
EPA Monitoring Point 34	Groundwater quality monitoring.		Groundwater monitoring bore (34 located in corner paddock) labelled as EPA Point 34 on map titled Env MP-Location of piezometer MP dated 1 st May 2007. see Fig 3

EPA Monitoring Point 35	Groundwater quality monitoring.		Groundwater monitoring bore (35 located in the laneway north of Rye East paddock) labelled as EPA Point 35 on map titled Env MP-Location of piezometer MP dated 1 st May 2007. see Fig 3
EPA Monitoring Point 36	Groundwater quality monitoring.		Groundwater monitoring bore (36 located between ponds W3 and W4) labelled as EPA Point 36 on map titled Env MP-Location of piezometer MP dated 1 st May 2007. see Fig 3
EPA Monitoring Point 38	Groundwater quality monitoring.		Groundwater monitoring bore (38 located on eastern point of effluent pond E2) labelled as EPA Point 38 on map titled Env MP-Location of piezometer MP dated 1 st May 2007. see Fig 3
EPA Monitoring Point 40	Groundwater quality monitoring.		Groundwater monitoring bore (40 located on adjoining fence line between Pivot 3A/3B) on map titled Env MP-Location of piezometer MP dated 1 st May 2007. see Fig 3
EPA Monitoring Point 41	Groundwater quality monitoring.		Groundwater monitoring bore (41 below EPA point 14 in paddock Bottom Swamp) labelled as EPA Point 41 on map titled Env MP-Location of piezometer MP dated 1 st May 2007. see Fig 3
EPA Monitoring Point 42	Groundwater quality monitoring.		Groundwater monitoring bore (42 located in laneway between Pivot 1 and effluent pond E2) labelled as EPA Point 42 on map titled Env MP-Location of piezometer MP dated 1 st May 2007. see Fig 3
EPA Monitoring Point 43	Soil quality monitoring. Mass monitoring		Utilisation area identified as the 'solid utilisation areas as identified on drawing No 19045-05 as quoted in the consent conditions' on map titled "Map 1 - Rangers Valley Cattle Station" submitted with a letter to the EPA on 25 October 2006.
	Groundwater quality monitoring.		Groundwater monitoring bore (44 located in the north eastern grassed area of the paddock known as Old 2) labelled as EPA point 44 on map titled Env MP-Location of Peizometer MP dated 1 st May 2007. see Fig 3. 250832A1/10.

EPA Monitoring Point 44			
EPA Monitoring Point 45	Groundwater quality monitoring.		Groundwater monitoring bore (45 located on eastern boundary of the paddock known as "Donnellys Elect" labelled as EPA point 45 on map Titled Env MP location of Piezometer MP dated 1 st May 2007. see Fig 3
EPA Monitoring Point 46	Groundwater quality monitoring.		Groundwater monitoring bore (46 located in paddock known as "Oaks Road") labelled as EPA point 46 on map Titled Env MP-location of Piezometer MP dated 1 st May 2007. see Fig 3
EPA Monitoring Point 47	Groundwater quality monitoring.		Groundwater monitoring bore (47 located in paddock known as "Horse" labelled as EPA point 47 on map Titled Env MP-location of Piezometer MP dated 1 st May 2007. see Fig 3
48	Effluent quality and volume monitoring. Wet weather discharge. Discharge quality monitoring. Discharge to utilisation area.	Effluent quality and volume monitoring. Wet weather discharge. Discharge quality monitoring. Discharge to utilisation area.	Terminal Pond One and spillway servicing Pivot 2c located in the paddock known as Spillway including pump labelled as EPA Point 48 on map Titled Environmental Monitoring Points-location of Effluent MP dated 1 st May 2007. see Fig 2
49	Effluent quality and volume monitoring. Wet weather discharge. Discharge quality monitoring. Discharge to utilisation area.	Effluent quality and volume monitoring. Wet weather discharge. Discharge quality monitoring. Discharge to utilisation area.	Terminal Pond Two and spillway servicing Pivot 2B and located in paddock known as Pivot 2B including pump labelled as EPA Point 49 on map Titled Env MP-location of Effluent MP dated 1 st May 2007. see Fig 2
50	Effluent quality and volume monitoring. Wet weather discharge. Discharge quality monitoring. Discharge to utilisation area.	Effluent quality and volume monitoring. Wet weather discharge. Discharge quality monitoring.	Terminal Pond 3 and spillway servicing Pivot 2B and 2C located in the paddock known as "wally's" including pump labelled as EPA Point 50 on map Titled Env MP-location of Effluent MP dated 1 st May 2007. Fig 2

		Discharge to utilisation area.	
EPA Monitoring Point 51	Soil quality monitoring. Mass monitoring		Effluent utilisation area known as Pivot 2B labelled as EPA Pont 51 on map titled "Rangers Valley Cattle Station" Site Plan date 30.07.03
EPA Monitoring Point 52	Soil quality monitoring. Mass monitoring		Effluent utilisation known as Pivot 2C labelled as EPA Point 52 on map titled "Rangers Valley Cattle Station Site Plan date 30.07.03
EPA Monitoring Point 53	Groundwater quality monitoring.		Groundwater monitoring bore (53 located west of Terminal Pond 1 in the paddock known as spillway) labelled as EPA point 53 on map Titled Env MP- location of Piezometer MP dated 1 st May 2007. see Fig 3
EPA Monitoring Point 54	Groundwater quality monitoring.		Groundwater monitoring bore (54 located north of Terminal Pond Two in the paddock known as Pivot 2b) labelled as EPA point 54 on map Titled Env MP location of Piezometer MP dated 1 st May 2007. see Fig 3
EPA Monitoring Point 55	Groundwater quality monitoring.		Groundwater monitoring bore (55 located south of Terminal Pond Three in the paddock known as Wallys) labelled as EPA point 55 on map Titled Env MP- location of Piezometer MP dated 1 st May 2007. see Fig 3
EPA Monitoring Point 56	Groundwater quality monitoring.		Groundwater monitoring bore (56 located south of the northern holding pond N1 in the paddock known as Irrigation 1) labelled as EPA point 56 on map titled Env MP dated 1 st May 2007. see Fig 3. 250832A1/10
EPA Monitoring Point 57	Effluent Quality and Volume monitoring. Discharge to utilisation area.		Effluent holding pond (known as N1) irrigation pump labelled as EPA point 57 on map titled Env MP- Location of Effluent MP dated 1 st May 2007. see Fig 2. 250832A1/10.

EPA MONITORING POINT 2

Surface water monitoring point (S2) at Cam Creek causeway on Deepwater Road at "Nant Park" labelled as EPA Point 2 on map titled Environmental Monitoring Points - Location of Surface Water Monitoring points dated 1st May 2007. See Fig 1 - 250832A1/10.

SURFACE WATER ANALYSIS RESULTS (EPA POINT 2)

Sampled		8-Dec-2020	9-Mar-2021	29/06/2021	#16/07/2021
Obtained		18-Dec-2020	18-Mar-2021	14/07/2021	29/07/2021
Published		7-Jan-2021	9-Apr-2021	29/07/2021	29/07/2021
Pollutant	Unit of measure	Result	Result	Result	Result
Chloride	mg/L	59	12	19	15
Nitrate	mg/L	<0.005	<0.005	<0.005	<0.005
Total Kjeldahl Nitrogen	mg/L	3.7	1.7	1.6	1.8
pH	-	8.4	7.5	7.7	7.4
Conductivity	µS/cm	510	160	260	170
SAR	-	2.2	1.0	0.93	0.93
Phosphorus (Reactive)	mg/L	0.25	0.76	0.63	0.60
Nitrogen (Total)	mg/L	3.7	1.7	1.6	1.8
Suspended Solids	mg/L	51	14	20	28
Calcium	mg/L	22	7.1	15	10
Potassium	mg/L	15	8.1	6.2	5
Magnesium	mg/L	14	4.9	9.3	6.1
Sodium	mg/L	55	15	19	15
Phosphorus (Total)	mg/L	0.9	0.9	0.6	0.6
Nitrogen (Ammonia)	mg/L	0.020	0.006	0.014	<0.005

Collected during pond overflow event.

EPA MONITORING POINT 3

Surface water monitoring point (S3) at grassed waterway in Old 2 paddock labelled as EPA Point 3 on map titled Environmental Monitoring Points -Location of Surface Water MP dated 1st May 2007. See Fig 1 - 250832A1/10.

SURFACE WATER ANALYSIS RESULTS (EPA POINT 3)

Sampled		8-Dec-2020	9-Mar-2021	29/06/2021	#16/07/2021
Obtained			18-Mar-2021	14/07/2021	29/07/2021
Published			9-Apr-2021	29/07/2021	29/07/2021
Pollutant	Unit of measure		Result	Result	Result
Chloride	mg/L		36	37	30
Nitrate	mg/L		<0.005	0.60	1.3
Total Kjeldahl Nitrogen	mg/L		4.1	7.8	5.3
pH	-		7.2	7.2	7.4
Conductivity	µS/cm		370	430	320
SAR	-		370	0.51	0.57
Phosphorus (Reactive)	mg/L		6.1	7.7	5.9
Nitrogen (Total)	mg/L	DRY	6.1	8.5	6.7
Suspended Solids	mg/L		6	47	160
Calcium	mg/L		11	16	13
Potassium	mg/L		61	63	47
Magnesium	mg/L		7.4	7.7	6.5
Sodium	mg/L		13	10	10
Phosphorus (Total)	mg/L		7.3	7.0	6.3
Nitrogen (Ammonia)	mg/L		0.24	3.4	2.1

Collected during pond overflow event.

EPA MONITORING POINT 4

Surface water monitoring point (S4) at Cam Creek bridge on Rangers Valley Road labelled as EPA Point 4 on map titled Environmental Monitoring Points -Location of Surface Water MP dated 1st May 2007. See Fig 1 - 250832A1/10.

SURFACE WATER ANALYSIS RESULTS (EPA POINT 4)

Sampled		8-Dec-2020	9-Mar-2021	29/06/2021	#16/07/2021
Obtained		18-Dec-2020	18-Mar-2021	14/07/2021	29/07/2021
Published		7-Jan-2021	9-Apr-2021	29/07/2021	29/07/2021
Pollutant	Unit of measure	Result	Result	Result	Result
Chloride	mg/L	17	40	51	66
Nitrate	mg/L	<0.005	0.02	0.58	0.37
Total Kjeldahl Nitrogen	mg/L	1	2.1	2.1	2.5
pH	-	7.2	7.5	7.7	7.8
Conductivity	µS/cm	170	380	480	580
SAR	-	1.4	1.4	1.1	1.6
Phosphorus (Reactive)	mg/L	0.11	2.1	3.0	2.1
Nitrogen (Total)	mg/L	1	2.1	2.7	2.9
Suspended Solids	mg/L	11	37	62	88
Calcium	mg/L	6.4	14	22	31
Potassium	mg/L	5.1	36	34	29
Magnesium	mg/L	4.2	9.7	14	21
Sodium	mg/L	19	28	28	46
Phosphorus (Total)	mg/L	0.2	2.8	3.1	2.2
Nitrogen (Ammonia)	mg/L	0.063	0.095	0.073	0.33

Collected during pond overflow event.

EPA MONITORING POINT 5

Surface water monitoring point (S5) at Severn River Bridge on the Yarraford Road labelled as EPA Point 5 on map titled Environmental Monitoring Points -Location of Surface Water MP dated 1st May 2007. See Fig 1 - 250832A1/10.

SURFACE WATER ANALYSIS RESULTS (EPA POINT 5)

Sampled		8-Dec-2020	9-Mar-2021	29/06/2021	#16/07/2021
Obtained		18-Dec-2020	18-Mar-2021	14/07/2021	29/07/2021
Published		7-Jan-2021	9-Apr-2021	29/07/2021	29/07/2021
Pollutant	Unit of measure	Result	Result	Result	Result
Chloride	mg/L	10	9	8	6
Nitrate	mg/L	0.24	0.065	0.02	<0.005
Total Kjeldahl Nitrogen	mg/L	1.1	0.8	1.4	1.2
pH	-	7.4	7.4	7.0	7.0
Conductivity	µS/cm	150	95	75	58
SAR	-	0.60	1.2	0.85	0.68
Phosphorus (Reactive)	mg/L	0.24	0.19	0.14	0.16
Nitrogen (Total)	mg/L	1.3	0.8	1.4	1.2
Suspended Solids	mg/L	10	<5	13	43
Calcium	mg/L	8.7	3.4	3	3
Potassium	mg/L	5.1	4.2	3	4
Magnesium	mg/L	6.9	2.2	2	2
Sodium	mg/L	9.8	12	7.5	5.9
Phosphorus (Total)	mg/L	0.3	0.3	0.2	0.2
Nitrogen (Ammonia)	mg/L	0.17	0.047	0.011	0.012

Collected during pond overflow event.

EPA MONITORING POINT 6

Surface water monitoring point (S6) at Severn River Bridge on the Emmaville Road labelled as EPA Point 6 on map titled Environmental Monitoring Points -Location of Surface Water MP dated 1st May 2007. See Fig 1 - 250832A1/10.

SURFACE WATER ANALYSIS RESULTS (EPA POINT 6)

Sampled		8-Dec-2020	9-Mar-2021	29/06/2021	#16/07/2021
Obtained		18-Dec-2020	18-Mar-2021	14/07/2021	29/07/2021
Published		7-Jan-2021	9-Apr-2021	29/07/2021	29/07/2021
Pollutant	Unit of measure	Result	Result	Result	Result
Chloride	mg/L	8	14	7	5
Nitrate	mg/L	0.15	<0.005	0.11	0.057
Total Kjeldahl Nitrogen	mg/L	1.1	1.1	1.0	0.7
pH	-	7.6	7.6	7.4	7.6
Conductivity	µS/cm	150	190	120	110
SAR	-	0.45	0.98	0.44	0.43
Phosphorus (Reactive)	mg/L	0.36	0.098	0.33	0.29
Nitrogen (Total)	mg/L	1.2	1.1	1.1	0.7
Suspended Solids	mg/L	<5	12	28	110
Calcium	mg/L	8.8	10	7.5	7.4
Potassium	mg/L	5.9	4.2	4	3
Magnesium	mg/L	7.1	7.0	5.4	5.3
Sodium	mg/L	7.4	17	6.5	6.3
Phosphorus (Total)	mg/L	0.4	0.2	0.4	0.4
Nitrogen (Ammonia)	mg/L	0.054	<0.005	0.017	0.009

* Collected during pond overflow event.

EPA MONITORING POINT 7

Surface water monitoring point (S7) at Beardy Waters causeway on the Haul Rd (2nd causeway) - upstream of confluence with Severn River, labelled as EPA Point 7 on map titled Env MP -Location of Surface Water MP dated 1st May 2007. See Fig 1.

SURFACE WATER ANALYSIS RESULTS (EPA POINT 7)

Sampled		8-Dec-2020	9-Mar-2021	29/06/2021	#16/07/2021
Obtained		18-Dec-2020	18-Mar-2021	14/07/2021	29/07/2021
Published		7-Jan-2021	9-Apr-2021	29/07/2021	29/07/2021
Pollutant	Unit of measure	Result	Result	Result	Result
Chloride	mg/L	8	10	6	4
Nitrate	mg/L	0.13	<0.005	0.077	0.058
Total Kjeldahl Nitrogen	mg/L	1.1	0.9	0.9	0.6
pH	-	7.5	7.9	7.7	7.8
Conductivity	µS/cm	150	300	130	100
SAR	-	0.52	0.64	0.39	0.37
Phosphorus (Reactive)	mg/L	0.35	0.10	0.36	0.27
Nitrogen (Total)	mg/L	1.3	0.9	1	0.7
Suspended Solids	mg/L	6	<5	33	39
Calcium	mg/L	8.5	19	9.0	7.4
Potassium	mg/L	5.8	4.7	4	3
Magnesium	mg/L	6.7	17	6.7	5.3
Sodium	mg/L	8.4	16	6.3	5.5
Phosphorus (Total)	mg/L	0.4	0.2	0.4	0.4
Nitrogen (Ammonia)	mg/L	0.11	0.016	0.011	0.008

Collected during pond overflow event.

EPA MONITORING POINT 8

Surface water monitoring point (S8) at Severn River causeway on the Haul Road (first causeway) labelled as EPA Point 8 on map titled Environmental Monitoring Points - Location of Surface Water MP dated 1st May 2007. See Fig 1 - 250832A1/10.

SURFACE WATER ANALYSIS RESULTS (EPA POINT 8)

Sampled		8-Dec-2020	9-Mar-2021	29/06/2021	#16/07/2021
Obtained		18-Dec-2020	18-Mar-2021	14/07/2021	29/07/2021
Published		7-Jan-2021	9-Apr-2021	29/07/2021	29/07/2021
Pollutant	Unit of measure	Result	Result	Result	Result
Chloride	mg/L	320	14	7	8
Nitrate	mg/L	<0.005	0.080	0.073	0.04
Total Kjeldahl Nitrogen	mg/L	56	1.0	1.1	1.1
pH	-	8.0	7.3	7.5	7.3
Conductivity	µS/cm	2500	150	120	95
SAR	-	2.3	2.6	0.46	0.64
Phosphorus (Reactive)	mg/L	12	0.32	0.30	0.33
Nitrogen (Total)	mg/L	56	1.1	1.2	1.1
Suspended Solids	mg/L	250	29	27	80
Calcium	mg/L	75	6.2	7.1	5.3
Potassium	mg/L	330	6.4	4	5.0
Magnesium	mg/L	59	4.1	5.2	3
Sodium	mg/L	110	15	6.6	7.7
Phosphorus (Total)	mg/L	18	0.4	0.4	0.4
Nitrogen (Ammonia)	mg/L	25	0.077	0.014	0.011

Collected during pond overflow event.

EPA MONITORING POINT 11

Final effluent holding pond (on eastern side of the feedlot, known as E2) including spillway and irrigation pumps labelled as EPA Point 11 on map titled Env MPs-Location of Effluent MP dated 1st May 2007. See Fig 2 - 250832A1/10.

EFFLUENT ANALYSIS RESULTS (EPA POINT 11)

Sampled		8-Dec-2020	9-Mar-2021	29/06/2021	#16/07/2021
Obtained		18-Dec-2020	18-Mar-2021	14/07/2021	29/07/2021
Published		7-Jan-2021	9-Apr-2021	29/07/2021	29/07/2021
Pollutant	Unit of measure	Result	Result	Result	Result
Nitrogen (Ammonia)	mg/L	0.048	29	18	32
Chloride	mg/L	250	300	300	500
Nitrate	mg/L	<0.005	<0.01	0.56	<0.025
Phosphorus (Reactive)	mg/L	4.1	17	11	33
pH	-	7.8	7.6	8.2	7.9
Conductivity	µS/cm	1400	2300	2200	3300
SAR	-	3.4	2.6	2.6	3.4
Phosphorus (Total)	mg/L	6.2	17	17	51
Nitrogen (Total)	mg/L	5.6	59	52	100
TKN	mg/L	5.6	59	51	100
Suspended Solids	mg/L	120	360	260	780
Calcium	mg/L	37	53	42	57
Potassium	mg/L	150	340	360	580
Magnesium	mg/L	21	40	32	48
Sodium	mg/L	110	100	92	150

Collected during pond overflow event.

EPA MONITORING POINT 20

Effluent holding pond (on western side of feedlot, known as W4) including spillway and irrigation pump labelled as EPA Point 20 on map titled Env MPs-Location of Effluent MP dated 1st May 2007. See Fig 2 - 250832A1/10.

EFFLUENT ANALYSIS RESULTS (EPA POINT 20)

Sampled		8-Dec-2020	9-Mar-2021	29/06/2021	#16/07/2021
Obtained		18-Dec-2020	18-Mar-2021	14/07/2021	29/07/2021
Published		7-Jan-2021	9-Apr-2021	29/07/2021	29/07/2021
Pollutant	Unit of measure	Result	Result	Result	Result
Nitrogen (Ammonia)	mg/L	64	2.9	30	32
Chloride	mg/L	650	350	130	150
Nitrate	mg/L	<0.05	<0.005	<0.01	<0.01
Phosphorus (Reactive)	mg/L	22	0.95	19	20
pH	-	8.0	7.9	7.7	7.7
Conductivity	µS/cm	3800	1800	1300	1400
SAR	-	4.0	4.1	1.4	1.5
Phosphorus (Total)	mg/L	54	7.5	21	25
Nitrogen (Total)	mg/L	120	13	49	64
TKN	mg/L	120	13	49	64
Suspended Solids	mg/L	430	110	75	160
Calcium	mg/L	70	41	37	40
Potassium	mg/L	500	220	160	190
Magnesium	mg/L	65	27	22	24
Sodium	mg/L	200	140	45	50

* Collected during pond overflow event.

EPA MONITORING POINT 24

Manure stockpile and composting area containing screened and unscreened manure and labelled as EPA Point 24 on map titled Env MPs- Location of Effluent MP dated 1st May 2007. See Fig 2 250832A1/10.

MANURE ANALYSIS RESULTS (EPA POINT 24)

Sampled		15-Sept-2020	15-Sept-2020	9-Mar-2021	9-Mar-2021
Obtained		16-Sept-2020	16-Sept-2020	18-Mar-2021	18-Mar-2021
Published		25-Sept-2020	25-Sept-2020	9-Apr-2021	9-Apr-2021
Pollutant	Unit of measure	Unscreened Result	Screened Result	Unscreened Result	Screened Result
Moisture	%	33.7	29.8	40.7	40.3
Nitrate	mg/kg	594	682	188	161
Nitrogen (Total)	mg/kg	1.69	1.98	21000	15500
pH	-	8.07	7.89	7.80	8.16
Calcium	mg/kg	19000	20300	22200	21300
Phosphorus (Total)	mg/kg	7400	7300	7100	6300
Organic Carbon	%	21.8	15.1	27.9	13.8
Potassium	mg/kg	19400	24800	17700	15500
Magnesium	mg/kg	6000	6900	6800	7200
Sodium	mg/kg	3700	4600	4874	3045
Conductivity	µS/cm	9530	12000	12.0	7.20
SAR	-	36.8	40.3	20.4	23.0
Sulphur	mg/kg	4300	5600	6600	4400
Chloride	mg/kg	10200	12200	2600	11200
Zinc	mg/kg	194	235	233	220

EPA MONITORING POINT 26

Dam located in the bottom corner of "Washpool Road" (13) paddock labelled as EPA Point 26 on map titled Env MPs-Location of Effluent MP dated 1st May 2007. See Fig 2 - 250832A1/10.

EFFLUENT ANALYSIS RESULTS (EPA POINT 26)

Sampled		25-Sept-19	16-Mar-20	15-Sept-2020	9-Mar-2021
Obtained		4-Oct-19	25-Mar-20	24-Sept-2020	18-Mar-2021
Published		28-Oct-19	6-Apr-20	17-Oct-2020	9-Apr-2021
Pollutant	Unit of measure	Result	Result	Result	Result
Nitrogen (Ammonia)	mg/L		0.052	0.91	0.30
Chloride	mg/L		14	26	21
Nitrate	mg/L		4.0	3.8	3.2
Phosphorus (Reactive)	mg/L		0.73	1.6	1.8
pH	-		7.8	7.4	7.1
Conductivity	µS/cm		230	310	270
SAR	-	DRY	230	1.8	1.7
Phosphorus (Total)	mg/L		1.3	2.4	2.7
Nitrogen (Total)	mg/L		4.5	8.5	5.2
TKN	mg/L		0.5	4.3	1.8
Suspended Solids	mg/L		1500	95	330
Calcium	mg/L		1.6	7.4	6.5
Potassium	mg/L		9.2	19	28
Magnesium	mg/L		1.4	5.1	5.0
Sodium	mg/L		33	27	24

Collected during pond overflow event.

EPA MONITORING POINT 27

Effluent utilisation area known as Pivot 1 labelled as EPA Point 27 on map titled "Rangers Valley Cattle Station Site Plan" dated 30.07.03.

SOIL ANALYSIS RESULTS (EPA POINT 27 - PIVOT 1)

Parameter	Unit	Rayment & Higginson Reference	Annual Return 2020 - 2021	
			0-30cm	60-90cm
pH	-	4A1	6.31	7.27
Nitrogen (Total)	mg/kg	Dumas (Leco)	1177	249
Nitrogen (Nitrate)	mg/kg	7B1	3.51	11.4
Phosphorous (Colwell)	mg/kg	9B1	182	23.8
Organic Carbon	%	6A1	1.01	0.15
Conductivity	µS/cm	3A1	0.07	0.08
Chloride	mg/kg	5A1	25.6	16.0
Cation Exchange Capacity	cmol(+)/kg	15D3	7.55	7.88
Exchangeable Sodium	cmol(+)/kg	15D3	0.09	0.37
Exchangeable Potassium	cmol(+)/kg	15D3	0.37	0.85
Exchangeable Calcium	cmol(+)/kg	15D3	5.39	3.45
Exchangeable Magnesium	cmol(+)/kg	15D3	1.68	3.19
Exchangeable Sodium Percentage	%	15D3	1.25	4.73
Phosphorus Sorption Capacity	mg/kg	9I1 and 9J1	384	370
Aggregate Stability (Emerson)	EAT	-	5	3b

EPA MONITORING POINT 28

Effluent utilisation area known as Pivot 3A labelled as EPA Point 28 on map titled "Rangers Valley Cattle Station Site Plan" dated 30.07.03.

SOIL ANALYSIS RESULTS (EPA POINT 28 - PIVOT 3A)

Parameter	Unit	Rayment & Higginson Reference	Annual Return 2020 - 2021	
			0-30cm	60-90cm
pH	-	4A1	6.45	6.92
Nitrogen (Total)	mg/kg	Dumas (Leco)	1429	343
Nitrogen (Nitrate)	mg/kg	7B1	35.4	10.7
Phosphorous (Colwell)	mg/kg	9B1	157	12.0
Organic Carbon	%	6A1	1.22	0.23
Conductivity	µS/cm	3A1	0.22	0.18
Chloride	mg/kg	5A1	140	134
Cation Exchange Capacity	cmol(+)/kg	15D3	7.81	17.5
Exchangeable Sodium	cmol(+)/kg	15D3	62.3	257
Exchangeable Potassium	cmol(+)/kg	15D3	603	450
Exchangeable Calcium	cmol(+)/kg	15D3	768	1789
Exchangeable Magnesium	cmol(+)/kg	15D3	257	755
Exchangeable Sodium Percentage	%	15D3	3.47	6.38
Phosphorus Sorption Capacity	mg/kg	9I1 and 9J1	325	377
Aggregate Stability (Emerson)	EAT	-	3b	3b

EPA MONITORING POINT 29

Effluent utilisation area known as Pivot 3B labelled as EPA Point 29 on map titled "Rangers Valley Cattle Station Site Plan" dated 30.07.03.

SOIL ANALYSIS RESULTS (EPA POINT 29 - PIVOT 3B)

Parameter	Unit	Rayment & Higginson Reference	Annual Return 2020 - 2021	
			0-30cm	60-90cm
pH	-	4A1	6.28	6.68
Nitrogen (Total)	mg/kg	Dumas (Leco)	946	470
Nitrogen (Nitrate)	mg/kg	7B1	3.77	35.6
Phosphorous (Colwell)	mg/kg	9B1	82.3	12.7
Organic Carbon	%	6A1	0.86	0.30
Conductivity	µS/cm	3A1	0.08	0.21
Chloride	mg/kg	5A1	31.3	137
Cation Exchange Capacity	cmol(+)/kg	15D3	6.77	18.2
Exchangeable Sodium	cmol(+)/kg	15D3	0.29	0.82
Exchangeable Potassium	cmol(+)/kg	15D3	1.10	0.90
Exchangeable Calcium	cmol(+)/kg	15D3	3.65	10.4
Exchangeable Magnesium	cmol(+)/kg	15D3	1.72	6.07
Exchangeable Sodium Percentage	%	15D3	4.29	4.53
Phosphorus Sorption Capacity	mg/kg	9I1 and 9J1	247	695
Aggregate Stability (Emerson)	EAT	-	3b	5

EPA MONITORING POINT 30

Effluent utilisation area known as Rye East labelled as EPA Point 30 on map titled "Rangers Valley Cattle Station Site Plan" dated 30.07.03.

SOIL ANALYSIS RESULTS (EPA POINT 30 - RYE EAST)

Parameter	Unit	Rayment & Higginson Reference	Annual Return 2020 - 2021	
			0-30cm	60-90cm
pH	-	4A1	6.46	6.40
Nitrogen (Total)	mg/kg	Dumas (Leco)	1781	344
Nitrogen (Nitrate)	mg/kg	7B1	8.98	4.14
Phosphorous (Colwell)	mg/kg	9B1	104	13.4
Organic Carbon	%	6A1	1.72	0.22
Conductivity	µS/cm	3A1	0.09	0.18
Chloride	mg/kg	5A1	18.6	135
Cation Exchange Capacity	cmol(+)/kg	15D3	7.49	17.5
Exchangeable Sodium	cmol(+)/kg	15D3	0.17	0.90
Exchangeable Potassium	cmol(+)/kg	15D3	1.15	0.37
Exchangeable Calcium	cmol(+)/kg	15D3	4.08	11.9
Exchangeable Magnesium	cmol(+)/kg	15D3	2.08	4.36
Exchangeable Sodium Percentage	%	15D3	2.33	5.11
Phosphorus Sorption Capacity	mg/kg	9I1 and 9J1	312	619
Aggregate Stability (Emerson)	EAT	-	3b	5

EPA MONITORING POINT 31

Effluent utilisation area known as Rye West labelled as EPA Point 31 on map titled "Rangers Valley Cattle Station Site Plan" dated 30.07.03.

SOIL ANALYSIS RESULTS (EPA POINT 31 - RYE WEST)

Parameter	Unit	Rayment & Higginson Reference	Annual Return 2020 - 2021	
			0-30cm	60-90cm
pH	-	4A1	6.35	7.11
Nitrogen (Total)	mg/kg	Dumas (Leco)	936	509
Nitrogen (Nitrate)	mg/kg	7B1	4.76	2.27
Phosphorous (Colwell)	mg/kg	9B1	73.6	12.0
Organic Carbon	%	6A1	0.91	0.34
Conductivity	µS/cm	3A1	0.06	0.18
Chloride	mg/kg	5A1	20.2	144
Cation Exchange Capacity	cmol(+)/kg	15D3	5.02	20.6
Exchangeable Sodium	cmol(+)/kg	15D3	0.09	1.14
Exchangeable Potassium	cmol(+)/kg	15D3	0.75	0.91
Exchangeable Calcium	cmol(+)/kg	15D3	2.75	11.7
Exchangeable Magnesium	cmol(+)/kg	15D3	1.42	6.87
Exchangeable Sodium Percentage	%	15D3	1.76	5.53
Phosphorus Sorption Capacity	mg/kg	9I1 and 9J1	251	588
Aggregate Stability (Emerson)	EAT	-	7	5

EPA MONITORING POINT 51

SOIL ANALYSIS RESULTS (EPA POINT 51 - PIVOT 2B)

Parameter	Unit	Rayment & Higginson Reference	Annual Return 2020 - 2021	
			0-30cm	60-90cm
pH	-	4A1	6.89	6.94
Nitrogen (Total)	mg/kg	Dumas (Leco)	528	429
Nitrogen (Nitrate)	mg/kg	7B1	7.94	8.06
Phosphorous (Colwell)	mg/kg	9B1	64.6	12.9
Organic Carbon	%	6A1	0.44	0.24
Conductivity	μ S/cm	3A1	0.09	0.14
Chloride	mg/kg	5A1	26.6	80.6
Cation Exchange Capacity	cmol(+)/kg	15D3	5.72	15.7
Exchangeable Sodium	cmol(+)/kg	15D3	0.11	0.87
Exchangeable Potassium	cmol(+)/kg	15D3	1.17	0.31
Exchangeable Calcium	cmol(+)/kg	15D3	2.75	10.7
Exchangeable Magnesium	cmol(+)/kg	15D3	1.69	3.79
Exchangeable Sodium Percentage	%	15D3	1.92	5.56
Phosphorus Sorption Capacity	mg/kg	9I1 and 9J1	316	640
Aggregate Stability (Emerson)	EAT	-	3b	5

EPA MONITORING POINT 52

SOIL ANALYSIS RESULTS (EPA POINT 52 - PIVOT 2C)

Parameter	Unit	Rayment & Higginson Reference	Annual Return 2020 - 2021	
			0-30cm	60-90cm
pH	-	4A1	6.03	6.85
Nitrogen (Total)	mg/kg	Dumas (Leco)	1411	493
Nitrogen (Nitrate)	mg/kg	7B1	9.92	9.35
Phosphorous (Colwell)	mg/kg	9B1	117	16.7
Organic Carbon	%	6A1	1.27	0.30
Conductivity	μS/cm	3A1	0.09	0.14
Chloride	mg/kg	5A1	33.0	91.9
Cation Exchange Capacity	cmol(+)/kg	15D3	8.60	17.3
Exchangeable Sodium	cmol(+)/kg	15D3	0.11	0.87
Exchangeable Potassium	cmol(+)/kg	15D3	1.22	0.38
Exchangeable Calcium	cmol(+)/kg	15D3	4.66	10.3
Exchangeable Magnesium	cmol(+)/kg	15D3	2.58	5.68
Exchangeable Sodium Percentage	%	15D3	1.59	5.41
Phosphorus Sorption Capacity	mg/kg	9I1 and 9J1	371	506
Aggregate Stability (Emerson)	EAT	-	3b	3b

EPA MONITORING POINT 34

Groundwater monitoring bore (34 located in corner paddock) labelled as EPA Point 34 on map titled Env MP-Location of piezometer MP dated 1st May 2007. See Fig 3.

GROUNDWATER ANALYSIS RESULTS (EPA POINT 34)

Sampled		9-Oct-19	15-May-20	21-Oct-20	29-Apr-21
Obtained		18-Oct-19	27-May-20	29-Oct-20	13-May-21
Published		28-Oct-19	19-June-20	11-Nov-20	14-May-21
Pollutant	Unit of measure	Result	Result	Result	Result
Nitrogen (ammonia)	mg/L	<0.005	<0.005	0.008	0.016
Nitrogen (nitrate)	mg/L	30	60	48	48
Phosphorus (Reactive)	mg/L	0.085	0.12	0.12	0.14
pH	-	7.4	7.7	7.8	7.8
Conductivity	µS/cm	1300	1600	1600	1600
Phosphorus (total)	mg/L	0.1	0.2	0.4	0.3
Nitrogen (total)	mg/L	42	89	60	55
Suspended Solids	mg/L	110	75	140	85

EPA MONITORING POINT 35

Groundwater monitoring bore (35 located in the laneway north of Rye East paddock) labelled as EPA Point 35 on map titled Env MP-Location of piezometer MP dated 1st May 2007. See Fig 3.

GROUNDWATER ANALYSIS RESULTS (EPA POINT 35)

Sampled		9-Oct-19	15-May-20	21-Oct-20	29-Apr-21
Obtained					
Published					
Pollutant	Unit of measure	Result	Result	Result	Result
Nitrogen (ammonia)	mg/L				
Nitrogen (nitrate)	mg/L				
Phosphorus (Reactive)	mg/L				
pH	-	DRY	DRY	DRY	DRY
Conductivity	µS/cm				
Phosphorus (total)	mg/L				
Nitrogen (total)	mg/L				
Suspended Solids	mg/L				

EPA MONITORING POINT 36

Groundwater monitoring bore (36 located between ponds W3 and W4) labelled as EPA Point 36 on map titled Env MP-Location of piezometer MP dated 1st May 2007. See Fig 3.

GROUNDWATER ANALYSIS RESULTS (EPA POINT 36)

Sampled		9-Oct-19	15-May-20	21-Oct-20	29-Apr-21
Obtained		18-Oct-19	27-May-20	29-Oct-20	13-May-21
Published		28-Oct-19	19-June-20	11-Nov-20	14-May-21
Pollutant	Unit of measure	Result	Result	Result	Result
Nitrogen (ammonia)	mg/L	<0.005	<0.005	0.006	<0.005
Nitrogen (nitrate)	mg/L	4.4	4.7	3.7	3.6
Phosphorus (Reactive)	mg/L	0.098	0.12	0.10	0.11
pH	-	7.6	7.6	7.7	7.7
Conductivity	µS/cm	4700	4900	4600	4600
Phosphorus (total)	mg/L	0.08	0.2	0.2	0.2
Nitrogen (total)	mg/L	4.4	6.5	4.7	3.8
Suspended Solids	mg/L	110	26	46	30

EPA MONITORING POINT 38

Groundwater monitoring bore (located on eastern point of effluent pond E2) labelled as EPA Point 38 on map titled Env MP-Location of piezometer MP dated 1st May 2007. See Fig 3.

GROUNDWATER ANALYSIS RESULTS (EPA POINT 38)

Sampled		9-Oct-19	15-May-20	21-Oct-20	29-Apr-21
Obtained		18-Oct-19	27-May-20	29-Oct-20	13-May-21
Published		28-Oct-19	19-June-20	11-Nov-20	14-May-21
Pollutant	Unit of measure	Result	Result	Result	Result
Nitrogen (ammonia)	mg/L	0.021	0.022	0.012	0.38
Nitrogen (nitrate)	mg/L	12	14	12	0.084
Phosphorus (Reactive)	mg/L	0.11	0.093	0.080	0.068
pH	-	6.8	6.8	6.9	6.7
Conductivity	µS/cm	1300	1300	1200	750
Phosphorus (total)	mg/L	0.06	0.2	0.1	1.2
Nitrogen (total)	mg/L	13	19	15	5.8
Suspended Solids	mg/L	40	24	40	120

EPA MONITORING POINT 40

Groundwater monitoring bore (40 located on adjoining fence line between Pivot 3A/3B) on map titled Env MP-Location of piezometer MP dated 1st May 2007. See Fig 3.

GROUNDWATER ANALYSIS RESULTS (EPA POINT 40)

Sampled		9-Oct-19	15-May-20	21-Oct-20	29-Apr-21
Obtained		18-Oct-19	27-May-20	29-Oct-20	13-May-21
Published		28-Oct-19	19-June-20	11-Nov-20	14-May-21
Pollutant	Unit of measure	Result	Result	Result	Result
Nitrogen (ammonia)	mg/L	0.011	0.009	0.007	0.007
Nitrogen (nitrate)	mg/L	18	15	20	16
Phosphorus (Reactive)	mg/L	0.062	0.047	0.04	0.05
pH	-	7.2	7.1	7.2	7.2
Conductivity	µS/cm	1300	1900	1500	1800
Phosphorus (total)	mg/L	<0.05	0.1	0.07	0.05
Nitrogen (total)	mg/L	20	20	24	17
Suspended Solids	mg/L	20	22	16	20

EPA MONITORING POINT 41

Groundwater monitoring bore (41 below EPA point 14 in paddock Bottom Swamp) labelled as EPA Point 41 on map titled Env MP Location of piezometer MP dated 1st May 2007. See Fig 3.

GROUNDWATER ANALYSIS RESULTS (EPA POINT 41)

Sampled		9-Oct-19	15-May-20	21-Oct-20	29-Apr-21
Obtained		18-Oct-19	27-May-20	29-Oct-20	
Published		28-Oct-19	19-June-20	11-Nov-20	
Pollutant	Unit of measure	Result	Result	Result	Result
Nitrogen (ammonia)	mg/L	1.4	0.16	0.15	
Nitrogen (nitrate)	mg/L	1.5	10	3.3	
Phosphorus (Reactive)	mg/L	<0.005	0.027	0.03	
pH	-	7.1	7.3	7.2	DRY
Conductivity	µS/cm	2900	2600	2800	
Phosphorus (total)	mg/L	0.2	0.3	0.2	
Nitrogen (total)	mg/L	3.0	14	4.2	
Suspended Solids	mg/L	120	720	350	

EPA MONITORING POINT 42

Groundwater monitoring bore (42 located in laneway between Pivot 1 and effluent pond E2) labelled as EPA Point 42 on map titled Env MP- Location of piezometer MP dated 1st May 2007. See Fig 3.

GROUNDWATER ANALYSIS RESULTS (EPA POINT 42)

Sampled		9-Oct-19	15-May-20	21-Oct-20	29-Apr-21
Obtained		18-Oct-19	27-May-20	29-Oct-20	13-May-21
Published		28-Oct-19	19-June-20	11-Nov-20	14-May-21
Pollutant	Unit of measure	Result	Result	Result	Result
Nitrogen (ammonia)	mg/L	0.034	0.017	0.054	0.14
Nitrogen (nitrate)	mg/L	2.0	3.9	4.9	0.75
Phosphorus (Reactive)	mg/L	0.023	0.018	0.02	0.11
pH	-	6.7	6.8	6.7	6.9
Conductivity	µS/cm	2600	2300	2600	2600
Phosphorus (total)	mg/L	0.06	0.09	0.2	0.7
Nitrogen (total)	mg/L	2.6	5.8	5.9	1.7
Suspended Solids	mg/L	120	46	400	720

EPA MONITORING POINT 43

The following tables are a summary of the analysis results of the soil quality in the utilisation areas identified as the 'solid utilisation areas as identified on drawing No 19045-05 as quoted in the consent conditions' on map titled "Map 1 - Rangers Valley Cattle Station" submitted with a letter to the EPA on 25 October 2006 (EPA Point 43).

Monitoring has been undertaken at Special Frequency 7, in accordance with the frequency required in accordance with Section M2 of Environmental Protection Licence No. 3864.

SOIL ANALYSIS RESULTS (BEARDY)

Parameter	Unit	Annual Return 2020 - 2021	
		0-30 cm	60-90 cm
pH	-	6.03	6.64
Nitrogen (Total)	mg/kg	1763	319
Nitrogen (Nitrate)	mg/kg	4.15	5.57
Phosphorous (Colwell)	mg/kg	171	17.9
Organic Carbon	%	1.74	0.35
Conductivity	µS/cm	0.05	0.07
Chloride	mg/kg	23.8	17.4
Cation Exchange Capacity	cmol(+)/kg	8.65	21.5
Exchangeable Sodium	cmol(+)/kg	0.06	1.47
Exchangeable Potassium	cmol(+)/kg	0.47	0.27
Exchangeable Calcium	cmol(+)/kg	5.62	12.1
Exchangeable Magnesium	cmol(+)/kg	2.49	7.72
Exchangeable Sodium Percent	%	0.68	6.84
Phosphorus Sorption Capacity	PSC mg/kg	405	544
Aggregate Stability (Emerson)	-	5	5

SOIL ANALYSIS RESULTS (BOTT GRANTS)

Parameter	Unit	Annual Return 2020 - 2021	
		0-30 cm	60-90 cm
pH	-	6.14	6.59
Nitrogen (Total)	mg/kg	1406	354
Nitrogen (Nitrate)	mg/kg	6.51	4.01
Phosphorous (Colwell)	mg/kg	126	14.4
Organic Carbon	%	1.19	0.25
Conductivity	μS/cm	0.05	0.06
Chloride	mg/kg	16.1	9.04
Cation Exchange Capacity	cmol(+)/kg	7.75	18.3
Exchangeable Sodium	cmol(+)/kg	0.14	0.65
Exchangeable Potassium	cmol(+)/kg	0.51	0.28
Exchangeable Calcium	cmol(+)/kg	4.93	11.6
Exchangeable Magnesium	cmol(+)/kg	2.17	5.74
Exchangeable Sodium Percent	%	1.78	3.57
Phosphorus Sorption Capacity	PSC mg/kg	375	553
Aggregate Stability (Emerson)	-	5	5

SOIL ANALYSIS RESULTS (CROUCHES)

Parameter	Unit	Annual Return 2020 - 2021	
		0-30 cm	60-90 cm
pH	-	5.59	6.50
Nitrogen (Total)	mg/kg	1076	473
Nitrogen (Nitrate)	mg/kg	14.2	5.72
Phosphorous (Colwell)	mg/kg	87.3	16.2
Organic Carbon	%	0.96	0.27
Conductivity	µS/cm	0.09	0.06
Chloride	mg/kg	30.2	7.70
Cation Exchange Capacity	cmol(+)/kg	17.7	18.7
Exchangeable Sodium	cmol(+)/kg	0.80	0.87
Exchangeable Potassium	cmol(+)/kg	0.26	0.27
Exchangeable Calcium	cmol(+)/kg	11.7	12.3
Exchangeable Magnesium	cmol(+)/kg	4.96	5.25
Exchangeable Sodium Percent	%	4.50	4.62
Phosphorus Sorption Capacity	PSC mg/kg	510	832
Aggregate Stability (Emerson)	-	5	5

SOIL ANALYSIS RESULTS (MIDD OAKS)

Parameter	Unit	Annual Return 2020 - 2021	
		0-30 cm	60-90 cm
pH	-	5.73	6.85
Nitrogen (Total)	mg/kg	1162	215
Nitrogen (Nitrate)	mg/kg	19.0	3.19
Phosphorous (Colwell)	mg/kg	151	14.3
Organic Carbon	%	1.03	0.12
Conductivity	μS/cm	0.07	0.06
Chloride	mg/kg	17.2	16.3
Cation Exchange Capacity	cmol(+)/kg	5.88	12.4
Exchangeable Sodium	cmol(+)/kg	0.15	0.44
Exchangeable Potassium	cmol(+)/kg	0.49	0.25
Exchangeable Calcium	cmol(+)/kg	3.63	7.70
Exchangeable Magnesium	cmol(+)/kg	1.60	3.99
Exchangeable Sodium Percent	%	2.49	3.58
Phosphorus Sorption Capacity	PSC mg/kg	357	438
Aggregate Stability (Emerson)	-	5	5

SOIL ANALYSIS RESULTS (OLD 2)

Parameter	Unit	Annual Return 2020 - 2021	
		0-30 cm	60-90 cm
pH	-	6.19	6.41
Nitrogen (Total)	mg/kg	1659	588
Nitrogen (Nitrate)	mg/kg	24.4	16.2
Phosphorous (Colwell)	mg/kg	109	17.4
Organic Carbon	%	1.45	0.38
Conductivity	μS/cm	0.15	0.20
Chloride	mg/kg	60.1	223
Cation Exchange Capacity	cmol(+)/kg	8.19	19.1
Exchangeable Sodium	cmol(+)/kg	0.29	0.82
Exchangeable Potassium	cmol(+)/kg	1.27	0.29
Exchangeable Calcium	cmol(+)/kg	4.71	12.3
Exchangeable Magnesium	cmol(+)/kg	1.92	5.68
Exchangeable Sodium Percent	%	3.53	4.28
Phosphorus Sorption Capacity	PSC mg/kg	459	809
Aggregate Stability (Emerson)	-	3b	6

SOIL ANALYSIS RESULTS (OLD 3)

Parameter	Unit	Annual Return 2020 - 2021	
		0-30 cm	60-90 cm
pH	-	6.06	6.30
Nitrogen (Total)	mg/kg	898	418
Nitrogen (Nitrate)	mg/kg	80.4	9.43
Phosphorous (Colwell)	mg/kg	43.8	16.5
Organic Carbon	%	0.68	0.27
Conductivity	μS/cm	0.25	0.06
Chloride	mg/kg	127	11.4
Cation Exchange Capacity	cmol(+)/kg	7.74	16.2
Exchangeable Sodium	cmol(+)/kg	0.24	0.57
Exchangeable Potassium	cmol(+)/kg	0.40	0.25
Exchangeable Calcium	cmol(+)/kg	5.62	10.9
Exchangeable Magnesium	cmol(+)/kg	1.47	4.53
Exchangeable Sodium Percent	%	3.13	3.53
Phosphorus Sorption Capacity	PSC mg/kg	333	763
Aggregate Stability (Emerson)	-	5	5

SOIL ANALYSIS RESULTS (OLD 4)

Parameter	Unit	Annual Return 2020 - 2021	
		0-30 cm	60-90 cm
pH	-	5.92	7.03
Nitrogen (Total)	mg/kg	1190	379
Nitrogen (Nitrate)	mg/kg	8.26	2.53
Phosphorous (Colwell)	mg/kg	112	15.0
Organic Carbon	%	1.13	0.28
Conductivity	μS/cm	0.06	0.07
Chloride	mg/kg	19.2	9.04
Cation Exchange Capacity	cmol(+)/kg	6.58	18.3
Exchangeable Sodium	cmol(+)/kg	0.17	2.11
Exchangeable Potassium	cmol(+)/kg	0.34	0.31
Exchangeable Calcium	cmol(+)/kg	4.93	9.37
Exchangeable Magnesium	cmol(+)/kg	1.13	6.54
Exchangeable Sodium Percent	%	2.65	11.5
Phosphorus Sorption Capacity	PSC mg/kg	506	557
Aggregate Stability (Emerson)	-	5	3b

SOIL ANALYSIS RESULTS (PINES)

Parameter	Unit	Annual Return 2020 - 2021	
		0-30 cm	60-90 cm
pH	-	6.36	6.86
Nitrogen (Total)	mg/kg	1826	294
Nitrogen (Nitrate)	mg/kg	8.78	5.84
Phosphorous (Colwell)	mg/kg	240	16.2
Organic Carbon	%	1.61	0.20
Conductivity	μS/cm	0.10	0.11
Chloride	mg/kg	33.6	53.1
Cation Exchange Capacity	cmol(+)/kg	10.3	11.9
Exchangeable Sodium	cmol(+)/kg	0.09	0.51
Exchangeable Potassium	cmol(+)/kg	0.98	0.49
Exchangeable Calcium	cmol(+)/kg	7.12	7.27
Exchangeable Magnesium	cmol(+)/kg	2.08	3.65
Exchangeable Sodium Percent	%	0.92	4.30
Phosphorus Sorption Capacity	PSC mg/kg	446	357
Aggregate Stability (Emerson)	-	3b	3b

SOIL ANALYSIS RESULTS (PIVOT 2A)

Parameter	Unit	Annual Return 2020 - 2021	
		0-30 cm	60-90 cm
pH	-	5.91	6.61
Nitrogen (Total)	mg/kg	1083	712
Nitrogen (Nitrate)	mg/kg	402	6.81
Phosphorous (Colwell)	mg/kg	82.5	14.2
Organic Carbon	%	0.94	0.38
Conductivity	μS/cm	0.04	0.07
Chloride	mg/kg	18.7	5.10
Cation Exchange Capacity	cmol(+)/kg	8.28	19.6
Exchangeable Sodium	cmol(+)/kg	0.21	0.66
Exchangeable Potassium	cmol(+)/kg	0.23	0.35
Exchangeable Calcium	cmol(+)/kg	6.45	12.3
Exchangeable Magnesium	cmol(+)/kg	1.38	6.25
Exchangeable Sodium Percent	%	2.58	3.35
Phosphorus Sorption Capacity	PSC mg/kg	370	754
Aggregate Stability (Emerson)	-	5	5

SOIL ANALYSIS RESULTS (RIVER)

Parameter	Unit	Annual Return 2020 - 2021	
		0-30 cm	60-90 cm
pH	-	6.16	6.91
Nitrogen (Total)	mg/kg	2215	378
Nitrogen (Nitrate)	mg/kg	3.82	1.95
Phosphorous (Colwell)	mg/kg	343	11.3
Organic Carbon	%	2.01	0.42
Conductivity	μS/cm	0.09	0.16
Chloride	mg/kg	26.4	48.5
Cation Exchange Capacity	cmol(+)/kg	11.3	24.1
Exchangeable Sodium	cmol(+)/kg	0.14	0.99
Exchangeable Potassium	cmol(+)/kg	1.20	0.57
Exchangeable Calcium	cmol(+)/kg	6.70	13.0
Exchangeable Magnesium	cmol(+)/kg	3.27	9.62
Exchangeable Sodium Percent	%	1.27	4.11
Phosphorus Sorption Capacity	PSC mg/kg	526	541
Aggregate Stability (Emerson)	-	3b	5

SOIL ANALYSIS RESULTS (SUGARLOAF WEST)

Parameter	Unit	Annual Return 2020 - 2021	
		0-30 cm	60-90 cm
pH	-	5.06	5.98
Nitrogen (Total)	mg/kg	1381	405
Nitrogen (Nitrate)	mg/kg	19.5	3.61
Phosphorous (Colwell)	mg/kg	120	13.2
Organic Carbon	%	1.13	0.27
Conductivity	μS/cm	0.04	0.06
Chloride	mg/kg	9.92	5.56
Cation Exchange Capacity	cmol(+)/kg	5.66	14.8
Exchangeable Sodium	cmol(+)/kg	0.13	0.27
Exchangeable Potassium	cmol(+)/kg	0.43	0.38
Exchangeable Calcium	cmol(+)/kg	3.94	10.0
Exchangeable Magnesium	cmol(+)/kg	1.14	4.14
Exchangeable Sodium Percent	%	2.24	1.83
Phosphorus Sorption Capacity	PSC mg/kg	324	553
Aggregate Stability (Emerson)	-	5	5

SOIL ANALYSIS RESULTS (TOP SWAMP)

Parameter	Unit	Annual Return 2020 - 2021	
		0-30 cm	60-90 cm
pH	-	6.33	6.48
Nitrogen (Total)	mg/kg	2393	633
Nitrogen (Nitrate)	mg/kg	13.6	21.2
Phosphorous (Colwell)	mg/kg	169	15.6
Organic Carbon	%	2.15	0.38
Conductivity	μS/cm	0.08	0.09
Chloride	mg/kg	23.4	53.7
Cation Exchange Capacity	cmol(+)/kg	12.3	18.9
Exchangeable Sodium	cmol(+)/kg	0.18	1.10
Exchangeable Potassium	cmol(+)/kg	0.86	0.33
Exchangeable Calcium	cmol(+)/kg	7.64	10.8
Exchangeable Magnesium	cmol(+)/kg	3.61	6.65
Exchangeable Sodium Percent	%	1.46	5.82
Phosphorus Sorption Capacity	PSC mg/kg	446	759
Aggregate Stability (Emerson)	-	5	5

SOIL ANALYSIS RESULTS (WASHPOOL RD)

Parameter	Unit	Annual Return 2020 – 2021	
		0-30 cm	60-90 cm
pH	-	6.45	6.44
Nitrogen (Total)	mg/kg	1123	394
Nitrogen (Nitrate)	mg/kg	11.4	4.62
Phosphorous (Colwell)	mg/kg	184	17.7
Organic Carbon	%	1.14	0.20
Conductivity	μS/cm	0.23	0.08
Chloride	mg/kg	161	17.5
Cation Exchange Capacity	cmol(+)/kg	7.74	17.6
Exchangeable Sodium	cmol(+)/kg	0.19	0.48
Exchangeable Potassium	cmol(+)/kg	0.87	0.34
Exchangeable Calcium	cmol(+)/kg	4.11	11.8
Exchangeable Magnesium	cmol(+)/kg	2.56	5.03
Exchangeable Sodium Percent	%	2.47	2.71
Phosphorus Sorption Capacity	PSC mg/kg	380	847
Aggregate Stability (Emerson)	-	5	5

SOIL ANALYSIS RESULTS (WASHPOOL RIVER)

Parameter	Unit	Annual Return 2020 - 2021	
		0-30 cm	60-90 cm
pH	-	7.03	4.97
Nitrogen (Total)	mg/kg	1367	353
Nitrogen (Nitrate)	mg/kg	34.1	8.23
Phosphorous (Colwell)	mg/kg	248	25.1
Organic Carbon	%	1.03	0.26
Conductivity	µS/cm	0.20	0.13
Chloride	mg/kg	124	98.1
Cation Exchange Capacity	cmol(+)/kg	7.95	5.93
Exchangeable Sodium	cmol(+)/kg	0.29	1.12
Exchangeable Potassium	cmol(+)/kg	0.83	0.28
Exchangeable Calcium	cmol(+)/kg	4.70	1.43
Exchangeable Magnesium	cmol(+)/kg	2.12	3.09
Exchangeable Sodium Percent	%	3.64	18.9
Phosphorus Sorption Capacity	PSC mg/kg	376	397
Aggregate Stability (Emerson)	-	5	2

EPA MONITORING POINT 44

Groundwater monitoring bore (44 located in the north eastern grassed area of the paddock known as Old 2) labelled as EPA point 44 on map titled Env MP-Location of Peizometer MP dated 1st May 2007. See Fig 3 - 250832A1/10.

GROUNDWATER ANALYSIS RESULTS (EPA POINT 44)

Sampled		10-April-19	9-Oct-19	15-May-20	21-Oct-20	29-Apr-21
Obtained		23-April-19	18-Oct-19	27-May-20	29-Oct-20	13-May-21
Published		16-May-19	28-Oct-19	19-June-20	11-Nov-20	14-May-21
Pollutant	Unit of measure	Result	Result	Result	Result	Result
Nitrogen (ammonia)	mg/L	<0.005	<0.005	0.017	0.026	<0.005
Nitrogen (nitrate)	mg/L	0.96	0.68	0.72	1.0	0.78
Phosphorus (Reactive)	mg/L	0.097	0.091	0.077	0.091	0.087
pH	-	7.2	7.0	7.0	7.1	7.1
Conductivity	µS/cm	640	610	670	650	640
Phosphorus (total)	mg/L	0.1	0.06	0.2	0.1	0.1
Nitrogen (total)	mg/L	1.0	0.7	0.9	1.2	0.8
Suspended Solids	mg/L	19	30	68	26	32

EPA MONITORING POINT 45

Groundwater monitoring bore (45 located on eastern boundary of the paddock known as "Donnellys Elect" labelled as EPA point 45 on map titled Env MP location of Piezometer MP dated 1st May 2007. See Fig 3.

GROUNDWATER ANALYSIS RESULTS (EPA POINT 45)

Sampled		10-April-19	9-Oct-19	15-May-20	21-Oct-20	29-Apr-21
Obtained		23-April-19	18-Oct-19	27-May-20	29-Oct-20	13-May-21
Published		16-May-19	28-Oct-19	19-June-20	11-Nov-20	14-May-21
Pollutant	Unit of measure	Result	Result	Result	Result	Result
Nitrogen (ammonia)	mg/L	0.005	0.007	0.01	0.031	<0.005
Nitrogen (nitrate)	mg/L	2.6	2.9	3.4	2.7	5.3
Phosphorus (Reactive)	mg/L	0.037	0.034	0.019	0.067	0.03
pH	-	7.2	7.1	7.0	7.2	7.2
Conductivity	µS/cm	360	360	380	370	380
Phosphorus (total)	mg/L	<0.05	<0.05	0.09	0.09	0.06
Nitrogen (total)	mg/L	2.9	2.9	4.5	3.8	5.3
Suspended Solids	mg/L	14	16	26	41	26

EPA MONITORING POINT 46

Groundwater monitoring bore (46 located in paddock known as "Oaks Road") labelled as EPA point 46 on map Titled Env MP-location of Piezometer MP dated 1st May 2007. See Fig 3.

GROUNDWATER ANALYSIS RESULTS (EPA POINT 46)

Sampled		10-April-19	9-Oct-19	15-May-20	21-Oct-20	29-Apr-21
Obtained		23-April-19	18-Oct-19	27-May-20	29-Oct-20	13-May-21
Published		16-May-19	28-Oct-19	19-June-20	11-Nov-20	14-May-21
Pollutant	Unit of measure	Result	Result	Result	Result	Result
Nitrogen (ammonia)	mg/L	<0.005	<0.005	<0.005	0.011	<0.005
Nitrogen (nitrate)	mg/L	9.7	9.2	11	9.8	10
Phosphorus (Reactive)	mg/L	0.033	0.031	0.020	0.03	0.03
pH	-	7.5	7.3	7.3	7.4	7.5
Conductivity	µS/cm	1500	1400	1400	1400	1400
Phosphorus (total)	mg/L	<0.05	<0.05	0.07	<0.05	<0.05
Nitrogen (total)	mg/L	10	10	15	11	11
Suspended Solids	mg/L	29	16	26	5	24

EPA MONITORING POINT 47

Groundwater monitoring bore 47 located in paddock known as "Horse" labelled as EPA point 47 on map Titled Env MP-location of Piezometer MP dated 1st May 2007. See Fig 3.

GROUNDWATER ANALYSIS RESULTS (EPA POINT 47)

Sampled		10-April-19	9-Oct-19	15-May-20	21-Oct-20	29-Apr-21
Obtained						
Published						
Pollutant	Unit of measure	Result	Result	Result	Result	Result
Nitrogen (ammonia)	mg/L					
Nitrogen (nitrate)	mg/L					
Phosphorus (Reactive)	mg/L					
pH	-	DRY	DRY	DRY	DRY	DRY
Conductivity	µS/cm					
Phosphorus (total)	mg/L					
Nitrogen (total)	mg/L					
Suspended Solids	mg/L					

EPA MONITORING POINT 53

Groundwater monitoring bore 53 located west of Terminal Pond 1 in the paddock known as spillway labelled as EPA point 53 on map Titled Env MP-location of Piezometer MP dated 1st May 2007. See Fig 3. 250832A1/10.

GROUNDWATER ANALYSIS RESULTS (EPA POINT 53)

Sampled		10-April-19	9-Oct-19	15-May-20	21-Oct-20	29-Apr-21
Obtained		23-April-19	18-Oct-19	27-May-20	29-Oct-20	13-May-21
Published		16-May-19	28-Oct-19	19-June-20	11-Nov-20	14-May-21
Pollutant	Unit of measure	Result	Result	Result	Result	Result
Nitrogen (ammonia)	mg/L	0.007	<0.005	<0.005	0.008	<0.005
Nitrogen (nitrate)	mg/L	0.04	0.03	0.092	0.02	0.02
Phosphorus (Reactive)	mg/L	0.023	0.031	1.021	0.03	0.03
pH	-	7.4	7.2	7.2	7.3	7.3
Conductivity	µS/cm	610	580	610	590	580
Phosphorus (total)	mg/L	<0.05	<0.05	0.06	<0.05	<0.05
Nitrogen (total)	mg/L	0.1	<0.1	0.2	0.1	<0.1
Suspended Solids	mg/L	34	18	12	22	44

EPA MONITORING POINT 54

Groundwater monitoring bore 54 located north of Terminal Pond Two in the paddock known as Pivot 2b labelled as EPA point 54 on map titled Env MP location of Piezometer MP dated 1st May 2007. See Fig 3. 250832A1/10.

GROUNDWATER ANALYSIS RESULTS (EPA POINT 54)

Sampled		10-April-19	9-Oct-19	15-May-20	21-Oct-20	29-Apr-21
Obtained		23-April-19	18-Oct-19	27-May-20	29-Oct-20	13-May-21
Published		16-May-19	28-Oct-19	19-June-20	11-Nov-20	14-May-21
Pollutant	Unit of measure	Result	Result	Result	Result	Result
Nitrogen (ammonia)	mg/L	0.86	0.20	0.024	0.01	<0.005
Nitrogen (nitrate)	mg/L	1.1	3.5	4.4	3.7	3.5
Phosphorus (Reactive)	mg/L	0.15	0.008	0.040	0.054	0.051
pH	-	6.8	6.6	6.7	6.8	6.8
Conductivity	µS/cm	660	590	630	600	650
Phosphorus (total)	mg/L	0.1	0.08	0.1	0.07	0.08
Nitrogen (total)	mg/L	2.3	3.7	6.0	4.8	3.8
Suspended Solids	mg/L	500	73	60	21	30

EPA MONITORING POINT 55

Groundwater monitoring bore 55 located south of Terminal Pond Three in the paddock known as “Wallys” labelled as EPA point 55 on map titled Env MP-location of Piezometer MP dated 1st May 2007. See Fig 3. 250832A1/10.

GROUNDWATER ANALYSIS RESULTS (EPA POINT 55)

Sampled		10-April-19	9-Oct-19	15-May-20	21-Oct-20	29-Apr-21
Obtained		23-April-19	18-Oct-19	27-May-20	29-Oct-20	13-May-21
Published		16-May-19	28-Oct-19	19-June-20	11-Nov-20	14-May-21
Pollutant	Unit of measure	Result	Result	Result	Result	Result
Nitrogen (ammonia)	mg/L	<0.005	<0.005	<0.005	0.011	0.016
Nitrogen (nitrate)	mg/L	0.01	3.5	0.02	0.04	0.01
Phosphorus (Reactive)	mg/L	0.048	0.045	0.058	0.053	0.065
pH	-	7.3	7.2	7.2	7.3	7.3
Conductivity	µS/cm	510	500	540	580	520
Phosphorus (total)	mg/L	0.1	<0.05	0.1	0.1	0.08
Nitrogen (total)	mg/L	0.1	<0.1	<0.1	<0.1	<0.1
Suspended Solids	mg/L	510	62	95	84	29

EPA MONITORING POINT 56

Groundwater monitoring bore (56 located south of the northern holding pond N1 in the paddock known as Irrigation 1) labelled as EPA point 56 on map titled Env MP dated 1st May 2007. See Fig 3. 250832A1/10.

GROUNDWATER ANALYSIS RESULTS (EPA POINT 56)

Sampled		10-April-19	9-Oct-19	15-May-20	21-Oct-20	29-Apr-21
Obtained		23-April-19	18-Oct-19	27-May-20	29-Oct-20	13-May-21
Published		16-May-19	28-Oct-19	19-June-20	11-Nov-20	14-May-21
Pollutant	Unit of measure	Result	Result	Result	Result	Result
Nitrogen (ammonia)	mg/L	<0.005	0.012	0.006	0.007	<0.005
Nitrogen (nitrate)	mg/L	12	7.4	12	10	12
Phosphorus (Reactive)	mg/L	0.023	0.026	0.019	0.03	0.03
pH	-	7.1	6.9	6.9	7.0	7.0
Conductivity	µS/cm	1600	1400	1400	1300	1400
Phosphorus (total)	mg/L	<0.05	<0.05	0.07	<0.05	0.06
Nitrogen (total)	mg/L	12	11	16	13	12
Suspended Solids	mg/L	37	12	10	17	24

EPA MONITORING POINT 57

Effluent holding pond (known as N1) irrigation pump labelled as EPA point 57 on map titled Env MP- Location of Effluent MP dated 1st May 2007. See Fig 2 - 250832A1/10.

EFFLUENT ANALYSIS RESULTS (EPA POINT 57)

Sampled		8-Dec-2020	9-Mar-2021	29/06/2021	#16/07/2021
Obtained		18-Dec-2020	18-Mar-2021	14/07/2021	29/07/2021
Published		7-Jan-2021	9-Apr-2021	29/07/2021	29/07/2021
Pollutant	Unit of measure	Result	Result	Result	Result
Nitrogen (Ammonia)	mg/L	0.062	36	96	92
Chloride	mg/L	71	600	370	380
Nitrate	mg/L	0.008	<0.01	<0.025	<0.025
Phosphorus (Reactive)	mg/L	0.18	26	44	52
pH	-	9.8	8.0	7.9	7.8
Conductivity	µS/cm	630	3800	3400	3300
SAR	-	3.2	4.4	2.6	2.8
Phosphorus (Total)	mg/L	0.2	26	53	56
Nitrogen (Total)	mg/L	2.1	74	150	170
TKN	mg/L	2.0	74	150	170
Suspended Solids	mg/L	<10	340	340	430
Calcium	mg/L	18	69	69	7.4
Potassium	mg/L	11	540	450	490
Magnesium	mg/L	21	72	48	51
Sodium	mg/L	85	220	120	130

* Collected during pond overflow event.