

LORIS H HASSALL TRADING PTY LTD – FORBES



LABORATORY RESULTS FROM MONITORING DATA 2017

EPL # 12765

REPORTING PERIOD:

12-NOV-2016 to 11-NOV-2017

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**EPA MONITORING REFQUENCY REQUIRED AND UNITS OF MEASURE TO BE
TAKEN**

SOIL SAMPLING SITES

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POINT 3: PIEZOMETERS SUMMARY OF RESULTS

POINT 4: SOIL SAMPLE SUMMARY OF RESULTS

LITRES IRRIGATED

MAP OF 5 MONITORING POINTS

EPA MONITORING FREQUENCY

POINT 1,2,5				
	Pollutant	Units of measure	Frequency	Sampling Method
<u>1</u>	CONDUCTIVITY	microsiemens per centimetre	Quarterly	In situ
<u>2</u>	p H	p H	Quarterly	In situ
<u>3</u>	NITROGEN (total)	milligrams per litre	Quarterly	Grab Sample
<u>4</u>	PHOSPHORUS (total)	milligrams per litre	Quarterly	Grab Sample
<u>5</u>	SODIUM	milligrams per litre	Quarterly	Grab Sample
<u>6</u>	POTASSIUM	milligrams per litre	Quarterly	Grab Sample
<u>7</u>	BOD	milligrams per litre	Quarterly	Grab Sample
<u>8</u>	OIL AND GREASE	milligrams per litre	Quarterly	Grab Sample
<u>9</u>	Chloride	milligrams per litre	Quarterly	Grab Sample
<u>10</u>	Calcium	milligrams per litre	Quarterly	Grab Sample
<u>11</u>	MAGNESIUM	milligrams per litre	Quarterly	Grab Sample
<u>12</u>	SODIUM ABSORPTION RATIO	sodium absorption ratio	Quarterly	Grab Sample

POINT 3				
	Pollutant	Units of measure	Frequency	Sampling Method
<u>1</u>	STANDING WATER LEVEL	metres	Quarterly	In situ
<u>2</u>	NITROGEN (total)	milligrams per litre	Quarterly	Grab Sample
<u>3</u>	PHOSPHORUS (total)	milligrams per litre	Quarterly	Grab Sample
<u>4</u>	CONDUCTIVITY	microsiemens per centimetre	Quarterly	In situ
<u>5</u>	p H	p H	Quarterly	In situ

POINT 4				
	Pollutant	Units of measure	Frequency	Sampling Method
<u>1</u>	AVAILABLE PHOSPHORUS	milligrams per kilogram	Yearly	Speical Method 1
<u>2</u>	Exchangeable sodium %	percent	Yearly	Speical Method 1
<u>3</u>	CONDUCTIVITY	microsiemens per centimetre	Yearly	Speical Method 1
<u>4</u>	NITRATE	milligrams per litre	Yearly	Speical Method 1
<u>5</u>	p H	p H	Yearly	Speical Method 1
<u>6</u>	NITROGEN (total)	milligrams per kilogram	Yearly	Speical Method 1
<u>7</u>	CALCIUM	milligrams per litre	Yearly	Speical Method 1
<u>8</u>	MAGNESIUM	milligrams per litre	Yearly	Speical Method 1
<u>9</u>	SODIUM ABSORPTION RATIO	sodium absorption ratio	Yearly	Speical Method 1

POINT 1 =- IRRIGATION PIT

TURN ON AND SAMPLE IS COLLECTED AT BOTTOM OF PIT. TIP PART INTO EACH BOTTLE.
 REPEAT EVERY 1/2 HOUR UNTIL SESL BOTTLES ARE FULL

POINT 2 & 5 = EVAP DAMS.

TAKE SAMPLE FROM DEEP AS POSSIBLE, TIP PART INTO EACH BOTTLE.
 REPEAT AT HALF DEPTH AND THEN JUST BELOW SURFACE UNTIL SESL BOTTLES ARE FULL, SEAL AND LABEL

COMPOSITE SOIL POINT 4

5 SAMPLES TO BE TAKEN
 25m2 AREA x 7 BAYS AT
 DEPTHS OF 0>10 CM +
 10>40CM
 SEAL AND LABEL

GPS SOIL SAMPLING SITES

	7	LAT: LONG:	-33.332066 148.064235	N0-7
	6	LAT: LONG:	-33.331922 148.063527	N0-6
	5	LAT: LONG:	-33.331797 148.062883	N0-5
	4	LAT: LONG:	-33.331698 148.062175	N0-4
	3	LAT: LONG:	-33.331627 148.061467	N0-3
	2	LAT: LONG:	-33.31519 148.060614	N0-2
	1	LAT: LONG:	-33.33142 148.060008	N0-1

LH HASSALL TRADING P/L 812 PARKES RD. FORBES NSW

APPENDIX G

EPA REGISTER LINK:

<https://apps.epa.nsw.gov.au/prpoeoapp>

EFFLUENT ANALYSIS RECORD SHEET

LICENCE # 12765

REVISION:0

Refer NEW POINTS FOR TESTING SITE PLAN AUG-18



DATE: 30/11/2017

PUBLISHED: 11/10/2018

POINT 1 - IRRIGATION PIT							
UNIT OF MEASURE	23/01/2017	10/04/2017	23/08/2017	14/11/2017	HIGH	LOW	AVE
BOD - mg/L	4140	4570	2440	3030	4570	2440	0
Chloride - mg/L	10600	15036	3778	5160	15036	3778	8644
Total Kjeldahl Nitrogen - mg/L	718	478	768	562	768	478	632
Oil & Grease (LLE) - mg/L	77	32	17	42	77	17	14.5
Total Phosphorus - mg/L	34.8	34	29	20.1	34.8	20.1	29
Potassium mg/L	163	220	162	175	220	162	180
Conductivity -microsiemens/per cm	39600	46000	16900	16690	46000	16690	39730
Sodium - mg/L	5440	10559	2579	3530	10559	2579	5527
(Ph)	7.83	10.79	11.7	11.79	11.79	7.83	10.5
Calcium - mg/L	179	31	119	244	244	31	191
Magnesium - mg/L	30.4	2	1.35	1	30.4	1	11.6
Sodium Absorption Ratio	99	500	64	105	500	64	256

DATE TAKEN:

TIME TAKE:

TAKEN BY:

SESL REPORT:

23/01/2017	10/04/2017	16/08/2017	14/11/2017
7.30AM	7.15 AM	7.30 AM	7.30 AM
MARK	MARK	MARK	MARK
6/02/2017	3/05/2017	5/09/2017	28/11/2017

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EVAPORATION DAM MONITORING RECORD

LICENCE #: LICENCE # 12765

REVISIONS

Refer NEW POINTS FOR TESTING SITE PLAN AUG-18

DATE: 1-Dec PUBLISHED: 11/10/2018

APPENDIX C



UNIT OF MEASURE	POINT 2 - EVAPORATION DAM				SML LINED		
	23/01/2017	19/04/2017	23/08/2017	15/11/2017	HIGH	LOW	AVE
BOD - mg/L	11100	7000	6730	13800	13800	6730	9658
Chloride - mg/L	202000	98346	144946	186000	202000	98346	157823
Total Kjeldahl Nitrogen - mg/L	1160	948	399	2040	2040	399	1137
Oil & Grease (LLE) - mg/L	20	39	133	43	133	20	59
Total Phosphorus - mg/L	206	188	199	387	387	188	245
Potassium mg/L	1730	843	1229	3230	3230	843	1758
Conductivity -microsiemens/per cm	510000	334000	475000	534000	534000	334000	617667
Sodium - mg/L	102000	56539	85609	104000	104000	56539	87037
(Ph)	6.83	6.61	6.88	6.64	6.88	6.61	7
Calcium - mg/L	151	65	1229	145	1229	65	530
Magnesium - mg/L	116	44	63	152	152	44	125
Sodium Absorption Ratio	1522	1331	1835	1750	1835	1331	2146

DATE TAKEN:
 TIME TAKE:
 TAKEN BY:
 SESL REPORT:

23/01/2017	19/04/2017	23/08/2017	15/11/2017
8:00 AM	7.15 am	7.30 am	7.30 am
MARK	MARK	MARK	MARK
6/02/2017	3/05/2017	5/09/2017	28/11/2017

UNIT OF MEASURE	POINT 5 - EVAPORATION DAM				LGE LINED		
	23/01/2017	19/04/2017	23/08/2017	15/11/2017	HIGH	LOW	AVE
BOD - mg/L	18200	17100	16000	9250	18200	9250	15138
Chloride - mg/L	204000	95104	173656	187000	204000	95104	164940
Total Kjeldahl Nitrogen - mg/L	1350	1530	2680	1240	2680	1240	1700
Oil & Grease (LLE) - mg/L	18	16	64	26	64	26	31
Total Phosphorus - mg/L	200	252	360	404	404	200	304
Potassium mg/L	2820	2530	3712	6110	6110	2530	3793
Conductivity -microsiemens/per cm	510000	282000	570000	555000	570000	282000	639000
Sodium - mg/L	101000	48455	100787	103000	103000	48455	88311
(Ph)	6.68	6.46	7.06	6.42	7.06	6.42	7
Calcium - mg/L	170	73	74.9	120	170	73	146
Magnesium - mg/L	119	56	95	200	200	56	157
Sodium Absorption Ratio	1455	1040	1827	1650	1827	1040	1991

DATE TAKEN:
 TIME TAKE:
 TAKEN BY:
 SESL REPORT:

23/01/2017	19/04/2017	23/08/2017	15/11/2017
8.30 am	7.30 am	8:00 AM	8:00 AM
MARK	MARK	MARK	MARK
6/02/2017	3/05/2017	5/09/2017	28/11/2017

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EPA REGISTER LINK: <https://apps.epa.nsw.gov.au/eproc0000>

PIEZOMETER ANALYSIS RECORD LICENCE # 12765

REVISION 0 PUBLISHED: 11/10/2018

1/12/2017



POINT 3 - PIZOMETERS

ANALYSIS	PIEZOMETER 1					PIEZOMETER 2				
	Mar-17	Sep-17	HIGH	LOW	AVE	Mar-17	Sep-17	HIGH	LOW	AVE
Chromium Total - mg/L										
Electrical Conductivity - µS/m										
Nitrogen Total - mg/L										
pH - pH units										
Phosphorus Total - mg/L										
Redox Potential										
Standing Water Level - m										
Sulphide - mg/L										
	PIEZOMETER 3					PIEZOMETER 4				
ANALYSIS	Mar-17	Sep-17	HIGH	LOW	AVE	Mar-17	Sep-17	HIGH	LOW	AVE
Chromium Total - mg/L										
Electrical Conductivity - µS/m										
Nitrogen Total - mg/L										
pH - pH units										
Phosphorus Total - mg/L										
Redox Potential										
Standing Water Level - m										
Sulphide Total - mg/L										
	PIEZOMETER 5					PIEZOMETER 6				
ANALYSIS	Mar-17	Sep-17	HIGH	LOW	AVE	Mar-17	Sep-17	HIGH	LOW	AVE
Chromium Total - mg/L										
Electrical Conductivity - µS/m										
Nitrogen Total - mg/L										
pH - pH units										
Phosphorus Total - mg/L										
Redox Potential										
Standing Water Level - m										
Sulphide Total - mg/L										

DATE TAKEN:	4/09/2017	26/09/2017
TIME TAKE:	10:00 AM	11:00 AM
TAKEN BY:	MARK	MARK
SESL REPORT:	NA	NA

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EFFLUENT IRRIGATED POINT 1 LICENCE # 12765

REVISION: 0

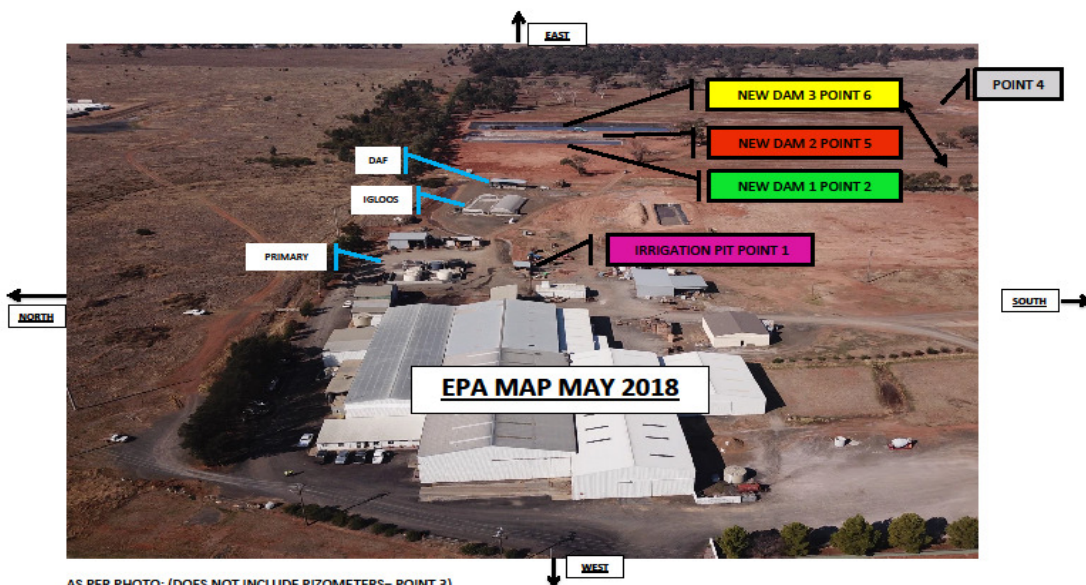
Refer NEW POINTS FOR TESTING SITE PLAN AUG-18



DATE: 30/11/2017

PUBLISHED: 11/10/2018

	Lts	kilo/lts	No. of days	low	kilo/lts	high	kilo/lts
	60000	60	9	38000	38	72000	72
	68000	68	10	37000	37	71000	71
	60000	60	8	35000	35	68000	68
	55000	55	9	38000	38	72000	72
	60000	60	8	39000	39	68000	68
	50000	50	9	39000	39	65000	65
	55000	55	10	35000	35	73000	73
	60000	60	10	28000	28	74000	74
	60000	60	9	29000	29	68000	68
	55000	55	9	30000	30	75000	75
	60000	60	8	38000	38	76000	76
	68000	68	9	37000	37	68000	68
	60000	60	9	36000	36	65000	65
	55000	55	10	35000	35	60000	60
	60000	60	8	38000	38	69000	69
	50000	50	9	39000	39	68000	68
	55000	55	8	30000	30	67000	67
	60000	60	9	28000	28	68000	68
	60000	60	9	29000	29	69000	69
	55000	55	10	35000	35	72000	72
	60000	60	8	36000	36	71000	71
	68000	68	9	38000	38	72000	72
	60000	60	10	23000	23	72000	72
	55000	55	10	38000	38	65000	65
	60000	60	9	32000	32	68000	68
	50000	50	9	32000	32	65000	65
	55000	55	9	28000	28	65000	65
	60000	60	10	32000	32	65000	65
	60000	60	10	36000	36	65000	65
	55000	55	10	38000	38	65000	65
	65000	65	10	42000	42	68000	68
	KILOLITRES						
Total Lts	1,814,000	1,814	284				
No. times irrigated	284	284					
Av: Lts	6387.3	6.4					



AS PER PHOTO: (DOES NOT INCLUDE PIZOMETERS= POINT 3)

- | | | | |
|----------|---------------------------------------|----------|-------------------------|
| #POINT 1 | IRRIGATION PIT | #POINT 2 | NEW DAM 1 |
| #POINT 3 | PIEZOMETERS x 6 = POINT 3 (NOT SHOWN) | #POINT 4 | IRRIGATION BLOCK = SOIL |
| #POINT 5 | NEW DAM 2 | #POINT 6 | NEW DAM 3 |

Council Lot Numbers

LORIS. H. HASSALLS TRADING - FORBES

APPENDIX: 1

