

ANNUAL ANNOUNCED ENTITLEMENT HISTORY				
	Oakey Creek Groundwater Management Area			
WATER YEAR	1	2	3	4
1992/1993				
1993/1994				
1994/1995	OCGMA AA commencement			
1995/1996	90	90	90	90
1996/1997	90	90	90	90
1997/1998	90	90	90	90
1998/1999	90	90	90	90
1999/2000	90	90	90	90
2000/2001	90	90	90	90
2001/2002	90	90	90	90
2002/2003	80	90	90	90
2003/2004	70	90	90	90
2004/2005	70	90	90	90
2005/2006	60	90	90	90
2006/2007	55	75	75	80
2007/2008	50	65	65	70
2008/2009	45	55	55	60
2009/2010	45	55	55	60
2010/2011	45	55	55	60
2011/2012	55	55	55	60
2012/2013	70	60	70	70
2013/2014	80	65	80	80
2014/2015	80	65	80	80

RTI DL RELEASE - DNRM

Department of Natural Resources and Mines
DIRECTOR-GENERAL'S BRIEFING NOTE

CTS 07447/15

To: Dr Brett Heyward
Director-General

From: Paul Sanders
Regional Manager
Water Services, South Region

Copy: Rachael Cronin 22/4/15
Deputy Director-General, Service Delivery

Lyall Hinrichsen
Executive Director, Water Policy

Approved / Not Approved / Noted Further information required
sch4p4(6) Personal information
Director-General
Dated 23/4/15

Action Officer: Jason Chavasse
Telephone: 4529 1233

Date: 20 April 2015

Contamination of the groundwater around the township of Oakey

RECOMMENDATION

1. It is recommended that the Director-General:
 - **note** that the groundwater in and around the township of Oakey is contaminated with chemicals associated with Fire Fighting Foam due to training activities conducted between 1970 and 2005 at the Commonwealth Army Aviation Centre, Oakey;
 - **note** the Commonwealth Department of Defence (Defence) is managing this issue by undertaking a long-term environmental investigation and assessment as well as managing stakeholder and community concerns; and
 - **note** that Defence has convened a meeting of government agencies on 23 April 2015 to update on the situation and discuss future management options for the groundwater resource.

TIMING

2. **Routine:** There is no critical date associated with this brief, however noting is requested by 23 April 2015.

KEY ISSUES

3. Investigations to date have revealed that contaminated groundwater is primarily within the Oakey Creek Alluvium but it has also been detected in the adjacent and underlying Basalt aquifer and the Walloon Coal Measures (aquifer of the Great Artesian Basin).
4. The Oakey Creek Alluvium provides a groundwater source for town water supply; individual stock and domestic supplies; irrigation and commercial operations (e.g. Nippon Meats Oakey Abattoir).
5. As a precaution, Defence has recommended people should not drink any bore water but this has not extended to watering stock, gardens or crops.
6. Currently the Toowoomba Regional Council has suspended the take of water from their Oakey bores and is instead accessing water from the Toowoomba pipeline.
7. Defence are also providing domestic water directly to some households that have no alternative water supply.
8. Defence have arranged a meeting of relevant government agencies on the 23 April 2015 to discuss the future management of the resource/s including:
 - a. quarantine areas.
 - b. restrictions on the use of groundwater.
 - c. mechanisms state government agencies have to manage and limit access to groundwater.
9. Restrictions on the access to groundwater may be a necessary outcome for future management of the resource however it is likely to have adverse and ongoing implications for the departments involved, e.g. added regulatory burden, and moves the focus of attention from Defence.
10. To date Department of Natural Resources and Mines (the department) has been involved as a general stakeholder, listening to issues and ensuring the concerns of our clients are considered.

11. The department has also provided groundwater information to assist Defence with their investigation however we have not undertaken any regulatory role which is in the domain of the Department of Environment and Heritage Protection (EHP).
12. The media are well aware of the issue and have had several articles over the past couple of years in the local papers. All current media matters are handled by Defence.

BACKGROUND

13. The groundwater in and around the township of Oakey is contaminated with the chemicals - Perfluorooctanoic acid (PFOA) and Perfluorooctane sulphonate (PFOS).
14. The current extent of the PFOS and PFOA contaminant plumes are presented in **(Attachment 1 and Attachment 2)**.
15. These chemicals were used in firefighting foam due to their fire resistance and surfactant properties; they were also used in other materials such as non-stick coatings and treatments for water resistance.
16. These chemicals were first investigated as a contaminant in the United States in the late 1990s and as yet there is still not a full understanding of the effects on humans however it is known to persist in the environment and potentially bio-accumulate.
17. These chemicals have also been detected in other Commonwealth Defence sites including RAAF Base, Townsville.
18. Since becoming aware of the issue, Defence have held four community information sessions between 2012 and 2014 which were attended by the department, other departments (EHP, Health and Agriculture) and various other community and business stakeholders.
19. Defence also attended a meeting of the department's facilitated Oakey Creek Groundwater Advisory Committee to discuss the issue with water entitlement holders and committee members.
20. There is an ongoing investigation and assessment being conducted by Defence to:
 - further quantify the issue (extent and future direction of the plume);
 - investigate remediation options;
 - discuss make-good options; and
 - discuss future management of the groundwater.
21. The department can implement restrictions (maximum one year) on the take of water under section 23 of the *Water Act 2000* where 'there is a thing in harmful quantities in water'.
22. The department is implementing permanent groundwater entitlement trade rules in this area. The implementation of these rules may have the added benefit of providing those who have a groundwater entitlement in the impacted area an option to sell their entitlement if the use of the water is no longer feasible due to the contaminants.

CONSULTATION

23. Service Delivery or Policy and Program Support. Yes
Water Policy within Policy Program and Support has been consulted and will attend the upcoming meeting.
South Region, Water Services has been involved as a key stakeholder in the community information sessions that Defence has organised.

ATTACHMENTS

24. **Attachment 1:** Diagram of the PFOA Detection and Investigation area
Attachment 2: Diagram of the PFOS Detection and Investigation area

NEXT STEPS

25. The following departmental staff will attend the meeting on 23 April 2015: Jason Chavasse, Steve Goudie, Paul Hausler, Bernie Prendergast and Paul Sanders

Paul Sanders
Regional Manager
Water Service, South Region

Director-General's Comments

Release

Oakey Creek Groundwater Management Area

Information meeting 30/5/07

OCGMA Overview

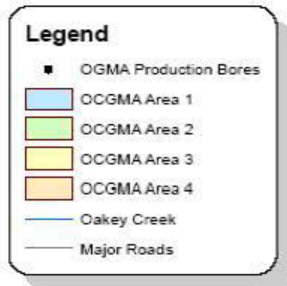
- Major alluvial groundwater resource
- 2nd largest in Eastern Downs
- Divided into 4 management areas
- Depth of alluvium ranges from 15 – 60 m
- Recharge predominantly from streamflow in Sub Area 1
- Recharge also from flood events, leakage from surrounding basalts

OCGMA Overview (Con't)

- Total entitlement – 9421 ML
- Yield (1992) – 8000 ML
- Total Authorisations – 89
- Entitlement has been capped since 1992
- Metering introduced in 1995
- Usage has been managed through Announced Entitlements since 1996

OCGMA – Bore distribution by Sub Area

Oakey Creek Groundwater Management Area Production Bores



Entitlement by Sub Area

Sub Area	Authorisations	Total entitlement
1	21	1910
2	18	2218
3	42	4341
4	8	952

Announced Entitlement Summary

Water year	Sub Area 1	Sub Area 2	Sub Area 3	Sub Area 4
2000/01	90	90	90	90
2001/02	80	90	90	90
2002/03	80	90	90	90
2003/04	70	90	90	90
2004/05	70	90	90	90
2005/06	60	90	90	90
2006/07	55	75	75	80

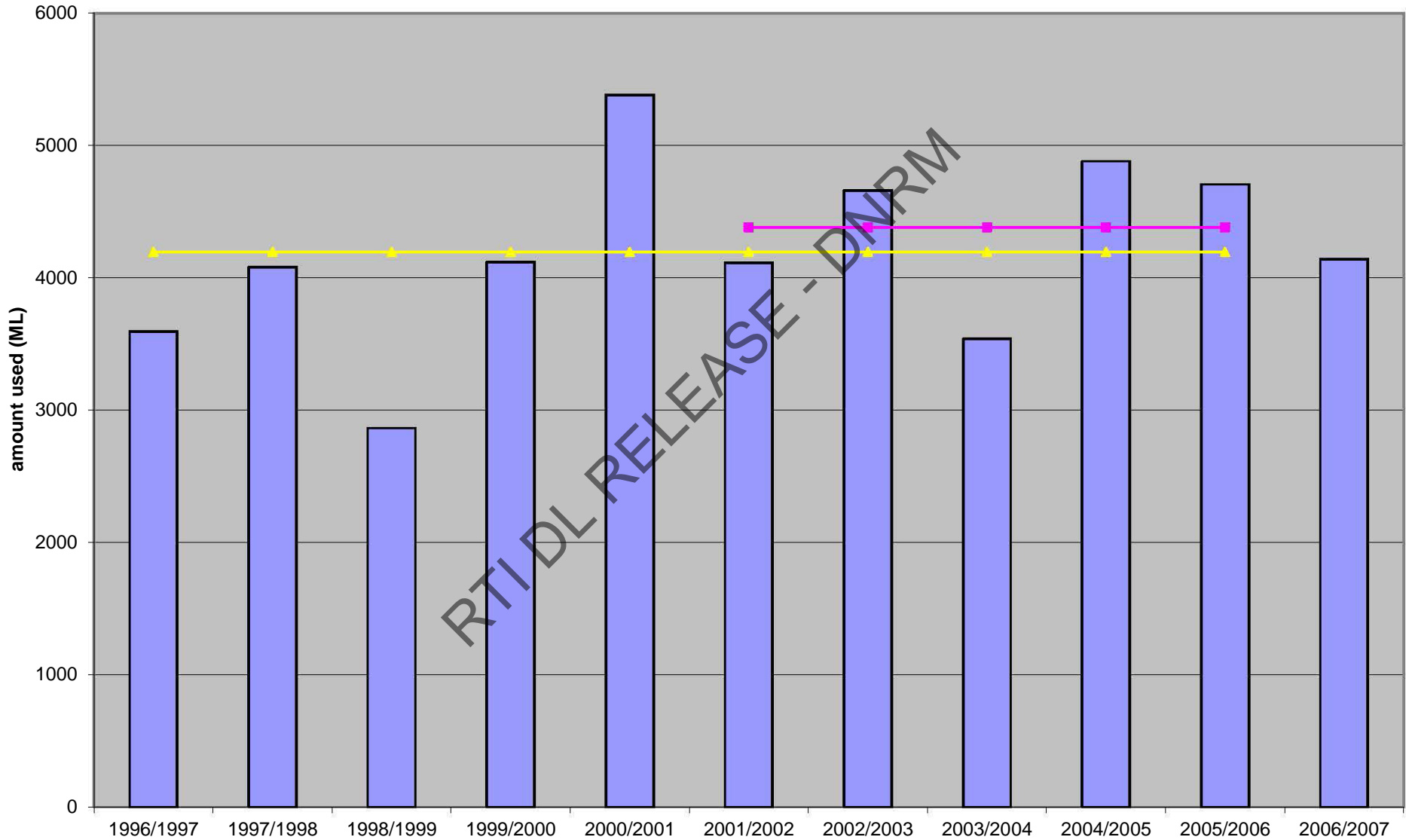
1445 Announced entitlement was 90% for all sub areas prior to 2000

Metered Usage – 1996 to present

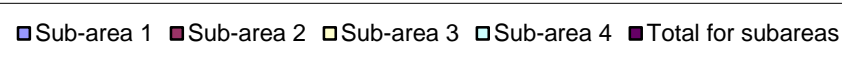
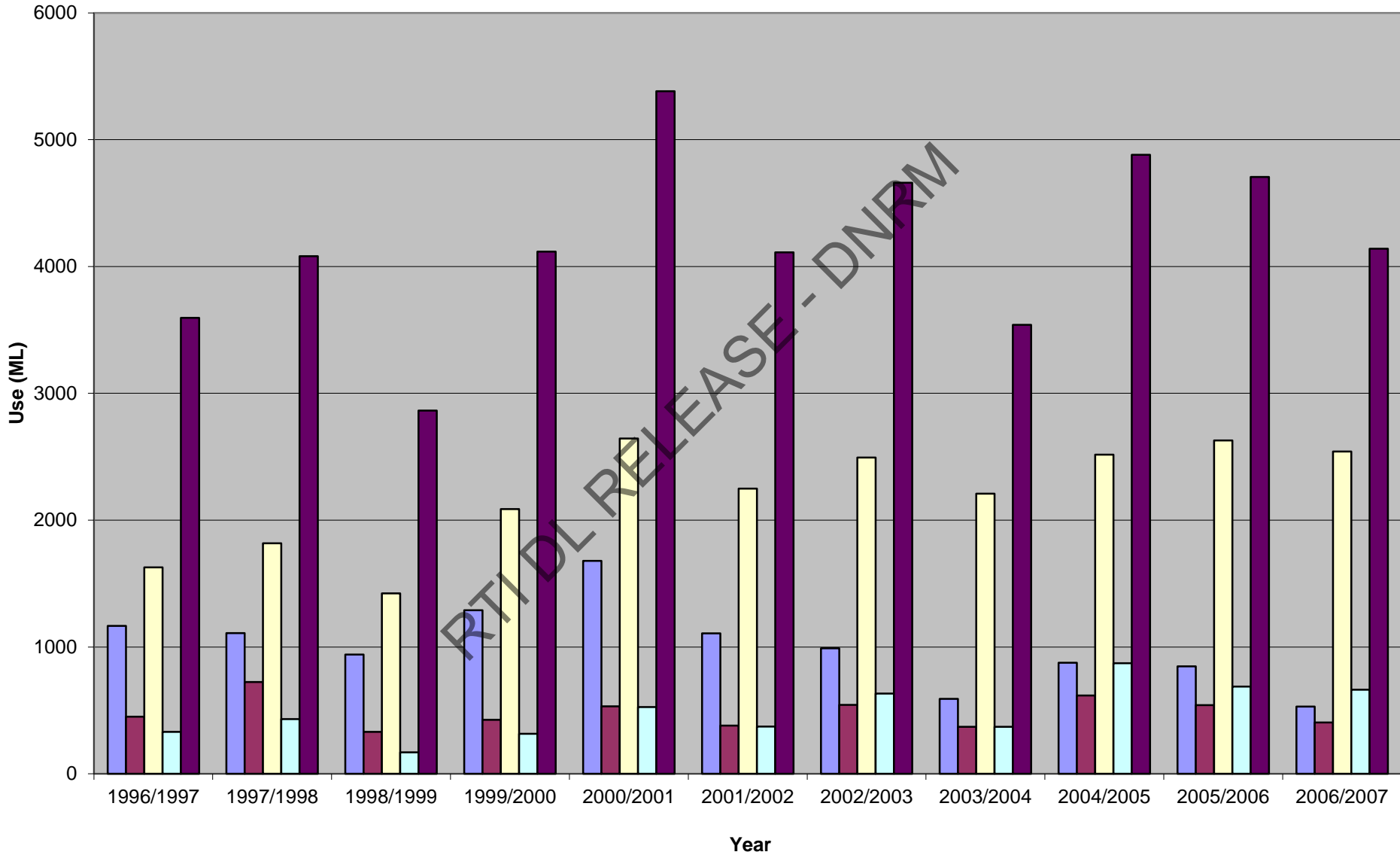
Water year	Sub Area 1	Sub Area 2	Sub Area 3	Sub Area 4	TOTAL
1996/97	1166	451	1628	331	3595
1997/98	1109	723	1818	431	4081
1998/99	941	330	1423	169	2863
1999/2000	1289	426	2087	315	4117
2000/01	1679	532	2644	526	5382
2001/02	1108	380	2249	373	4112
2002/03	990	543	2494	632	4660
2003/04	590	370	2208	370	3539
2004/05	875	618	2516	871	4881
2005/06	847	541	2628	688	4706
2006/07*	531	404	2542	663	4140

* Usage until March 2007

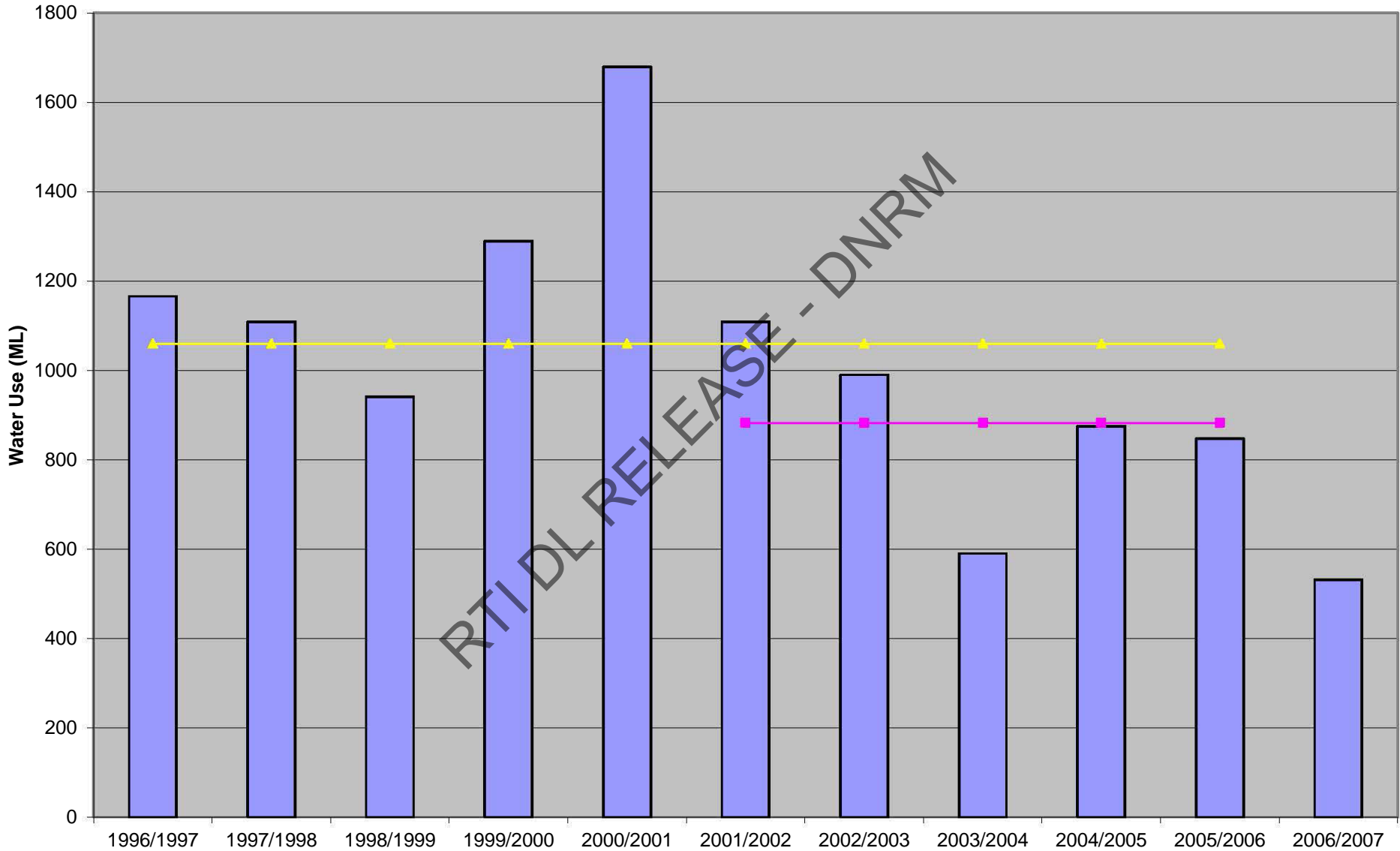
Total Water Use for all subareas in OCGMA



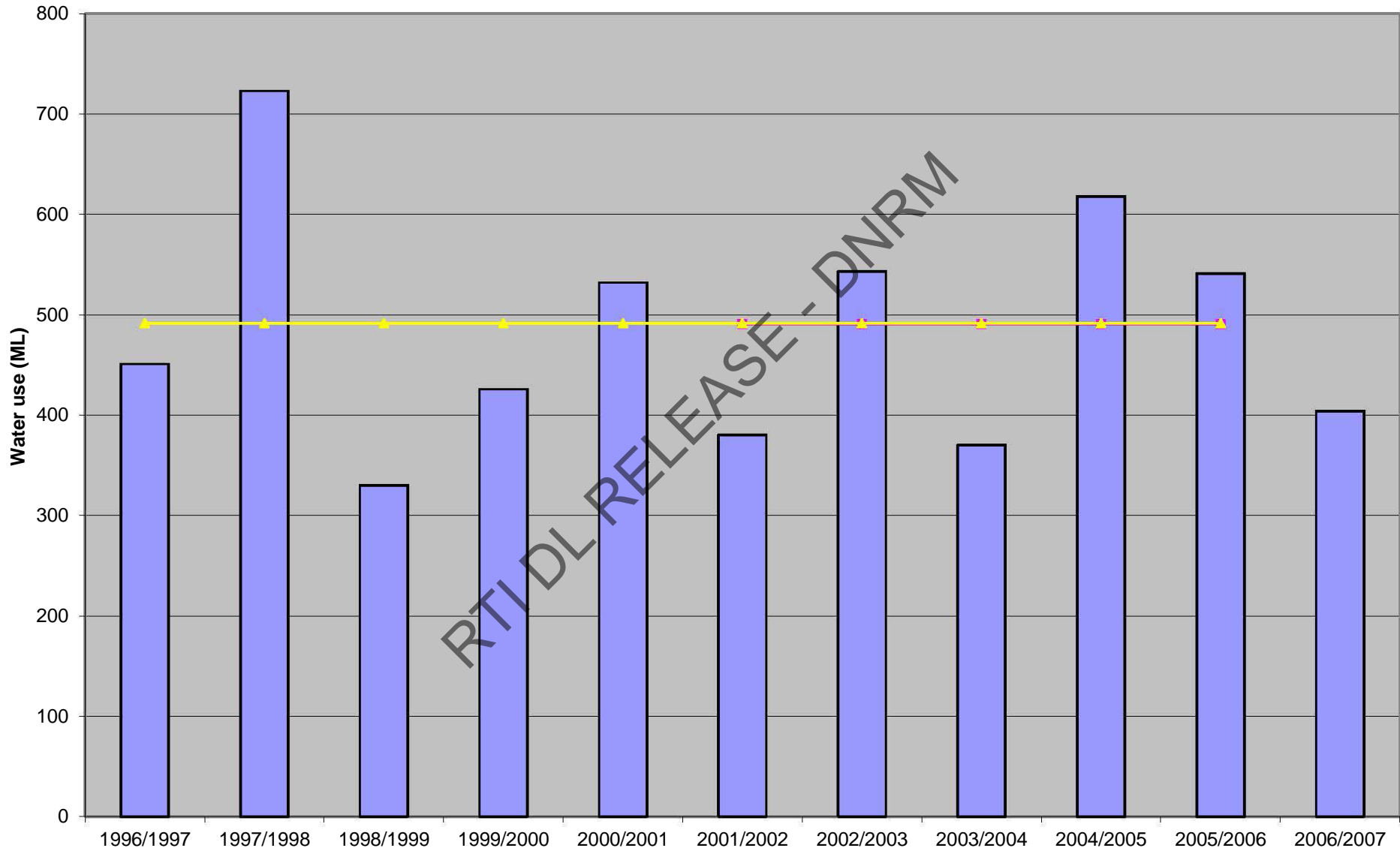
Total Water use across all sub-areas in OCGMA (ML)



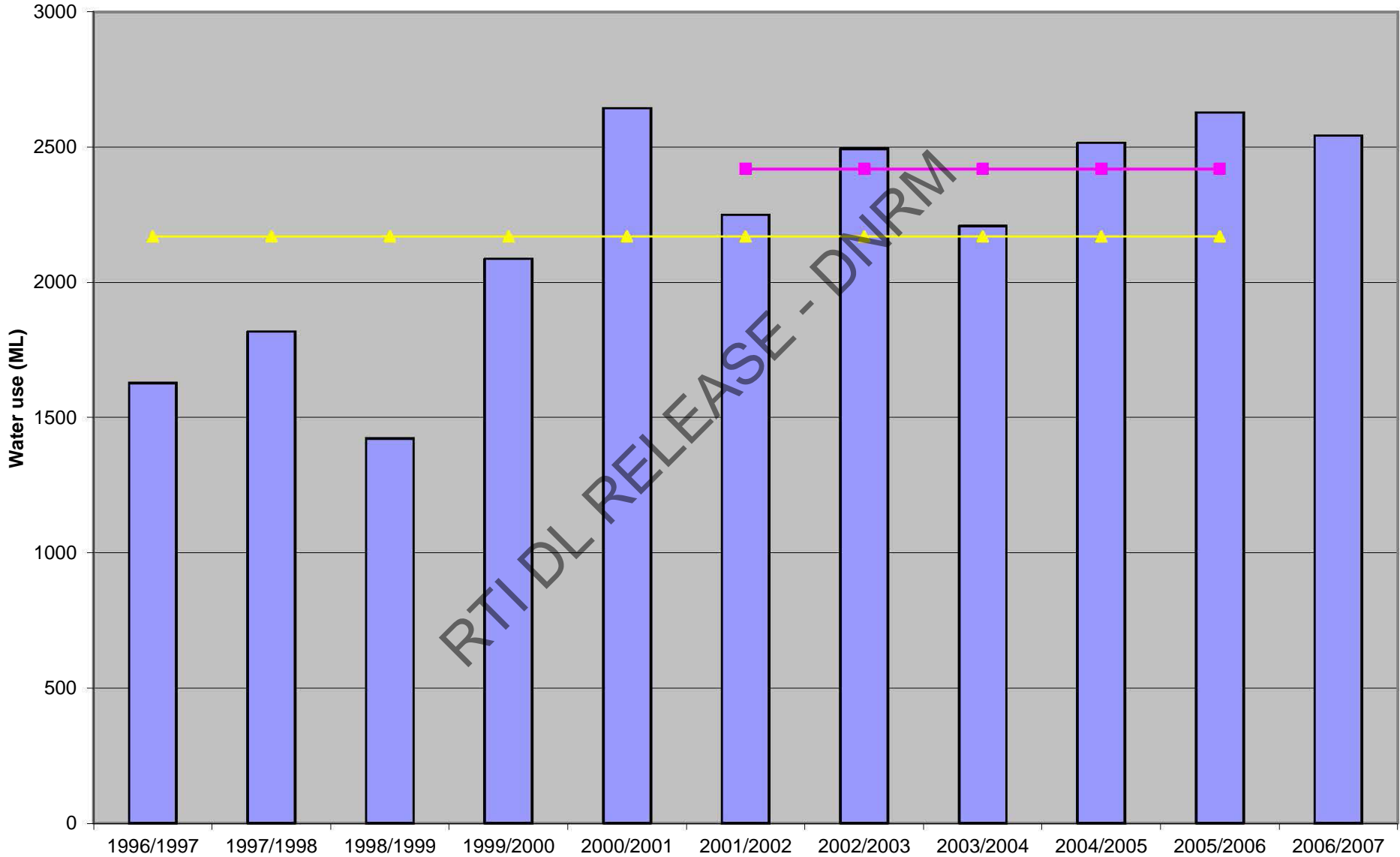
Total water use and average use for sub-area 1 (ML)



Total water use and average use for sub-area 2 (ML)

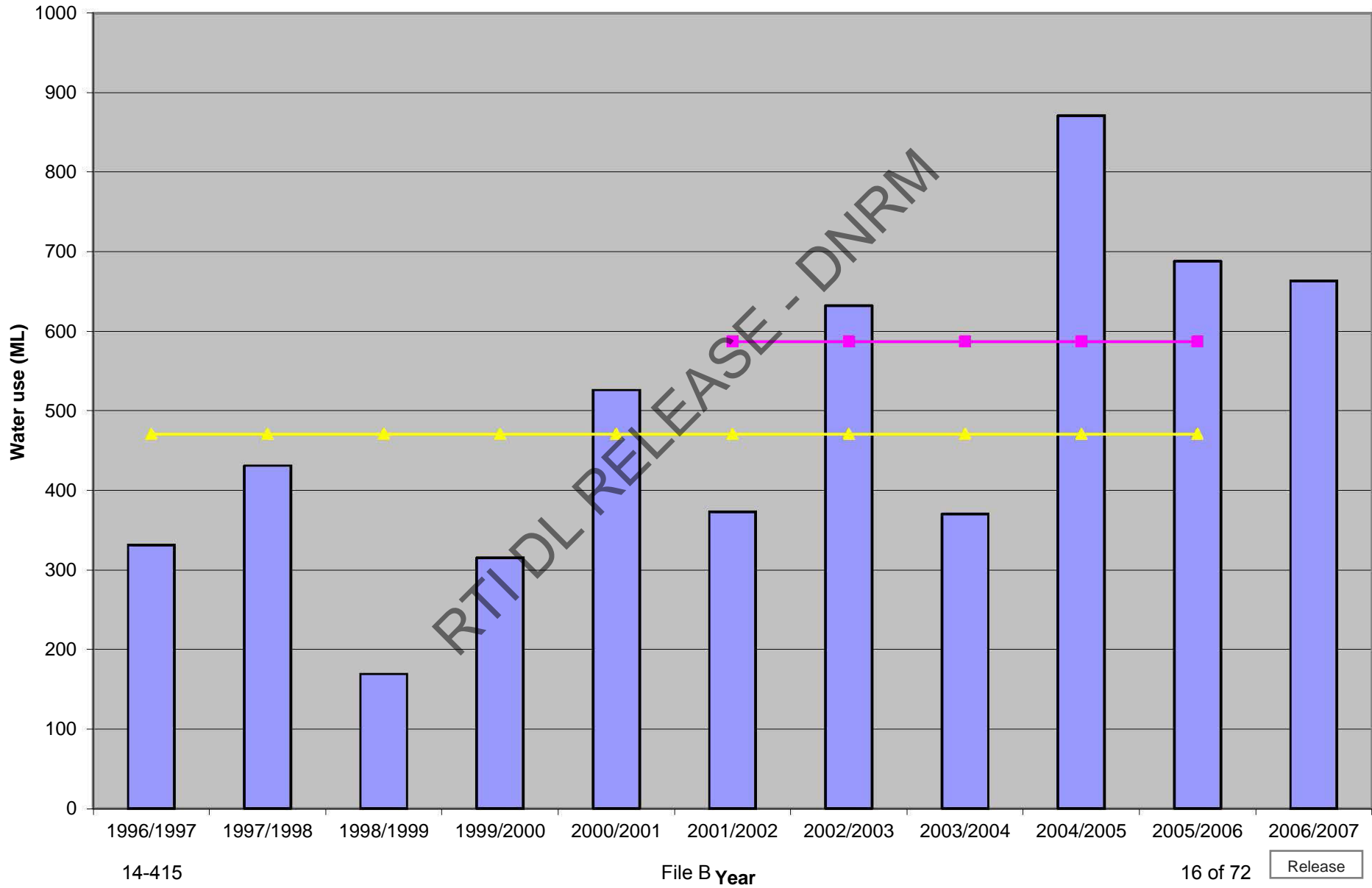


Total water use and average use for sub-area 3 (ML)



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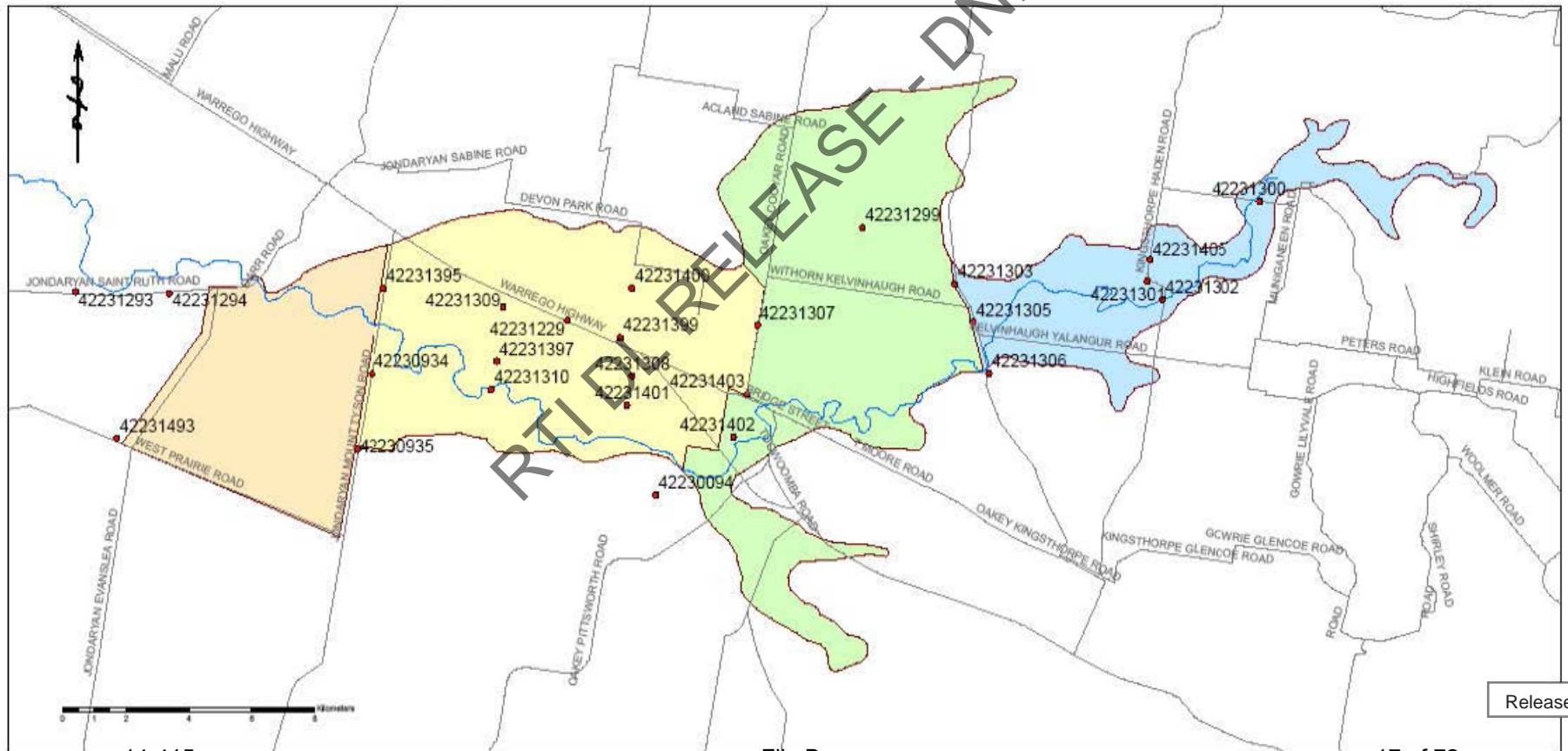
Total water use and average use for sub-area 4 (ML)



Oakey Creek Groundwater Management Area Observation Bores

Legend

- OCGMA Area 1
- OCGMA Area 2
- OCGMA Area 3
- OCGMA Area 4
- Departmental Monitoring Bores
- Oakey Creek
- Major Roads

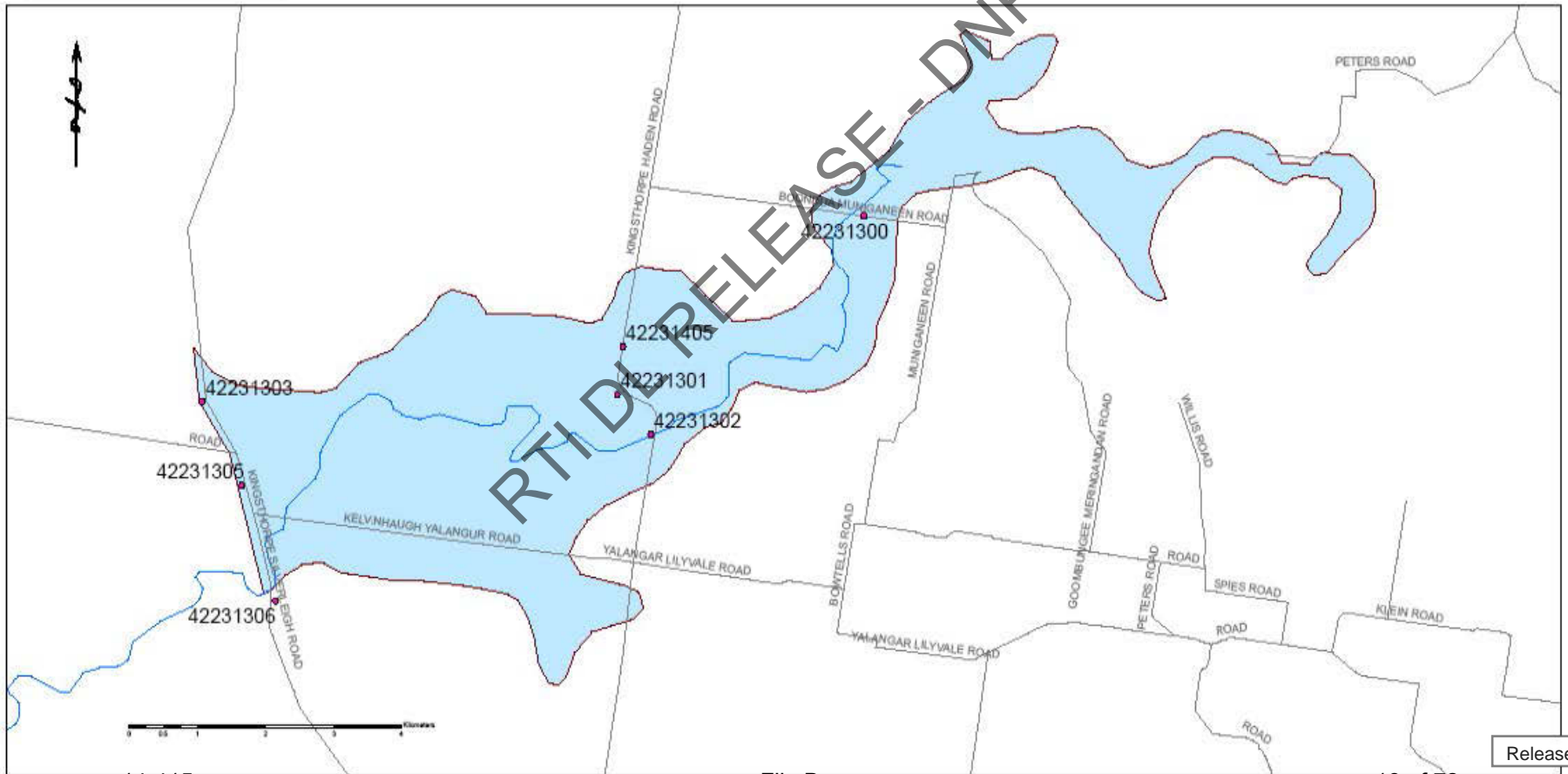


Release

Oakey Creek Groundwater Management Area 1 Observation Bores

Legend

- Departmental Monitoring Bores
- Oakey Creek
- Major Roads
- OCGMA Area 1



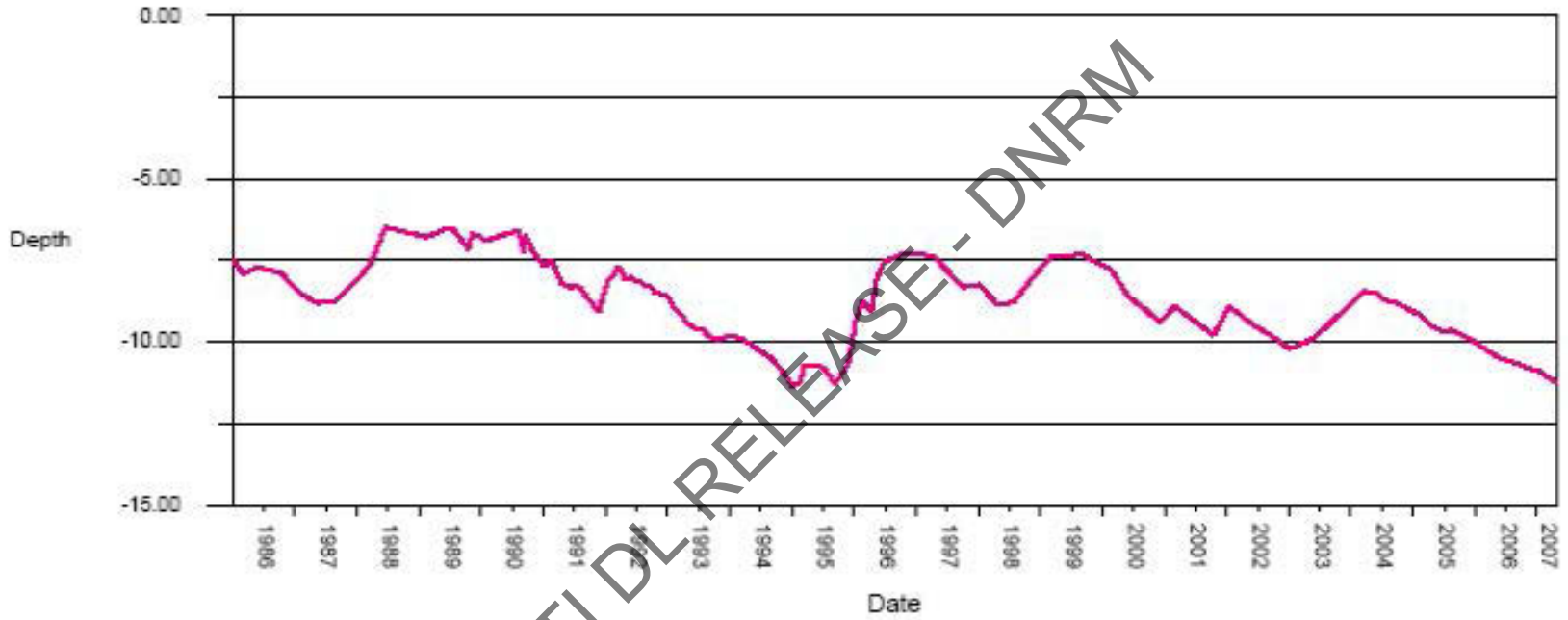
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RN: 42231300

Pipe: A

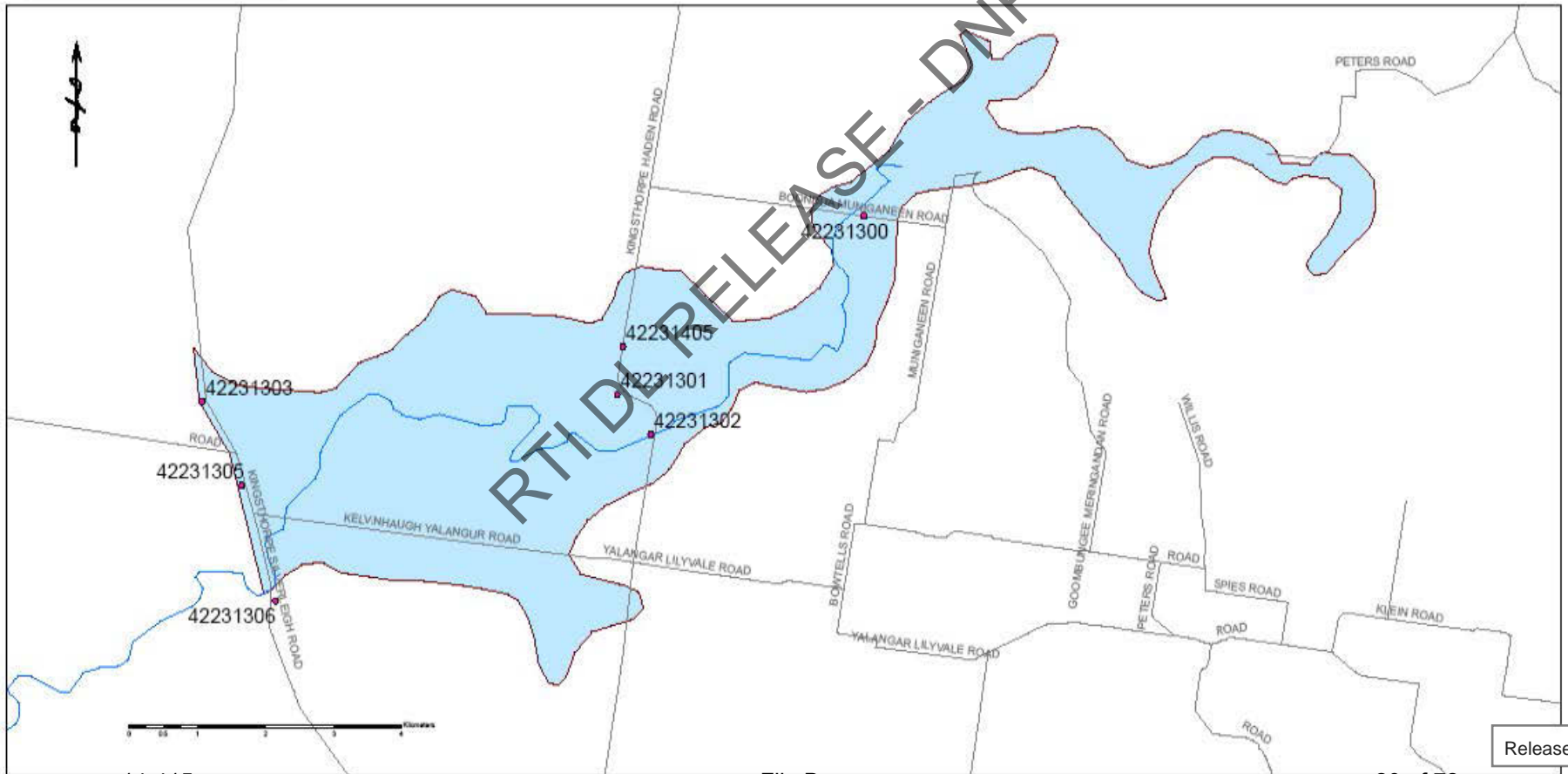


Release

Oakey Creek Groundwater Management Area 1 Observation Bores

Legend

- Departmental Monitoring Bores
- Oakey Creek
- Major Roads
- OCGMA Area 1



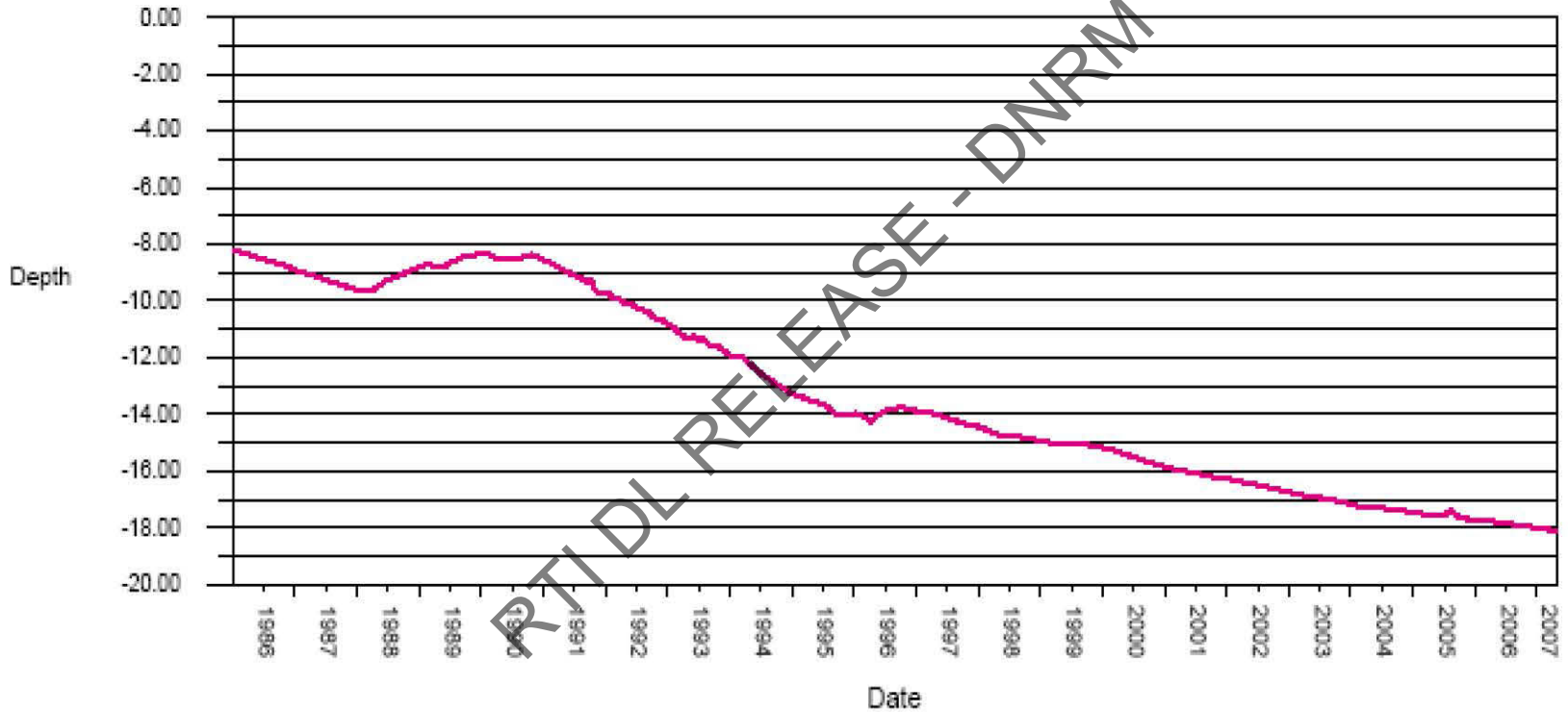
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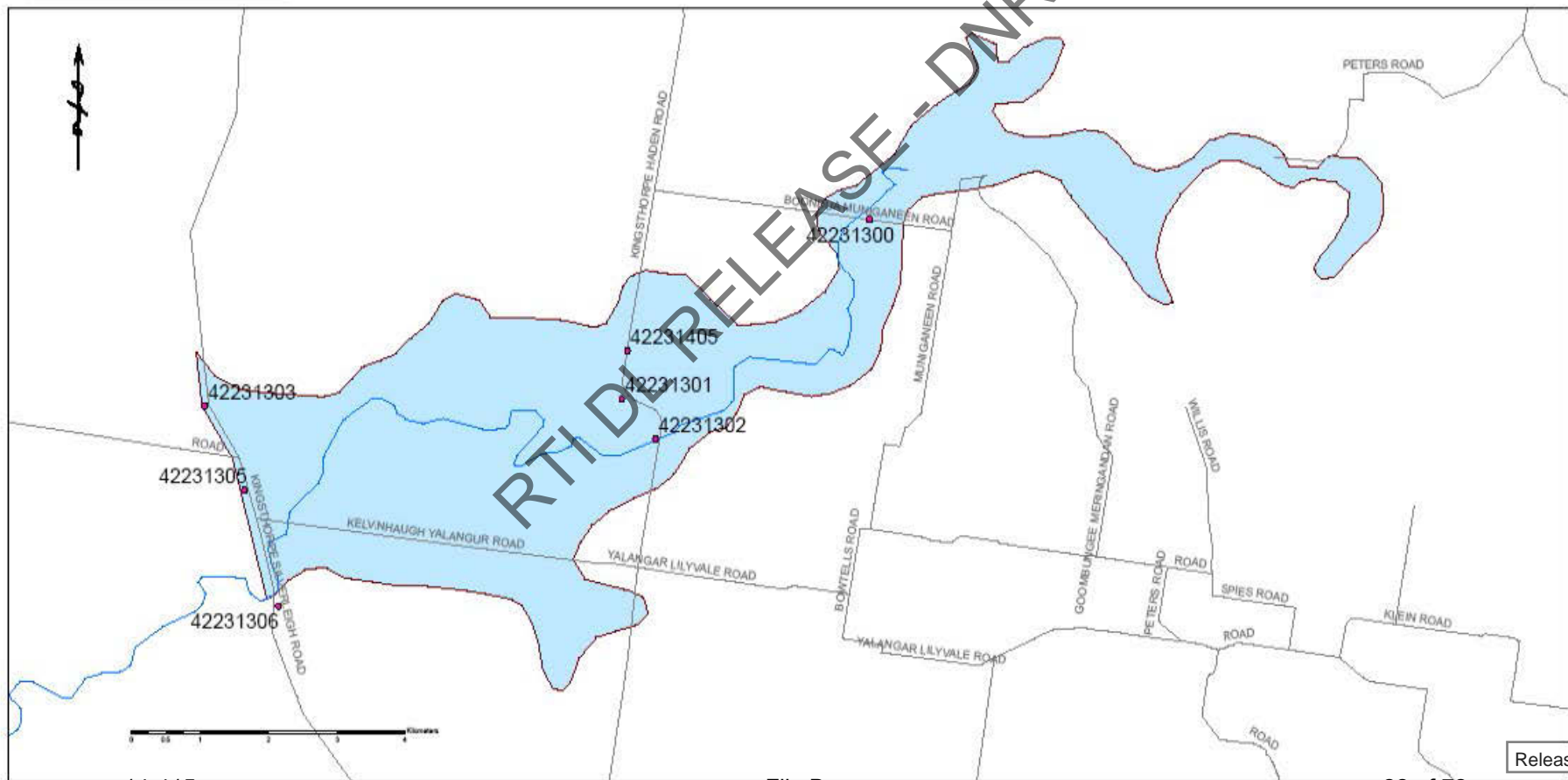


Release

Oakey Creek Groundwater Management Area 1 Observation Bores

Legend

- Departmental Monitoring Bores
- Oakey Creek
- Major Roads
- OCGMA Area 1



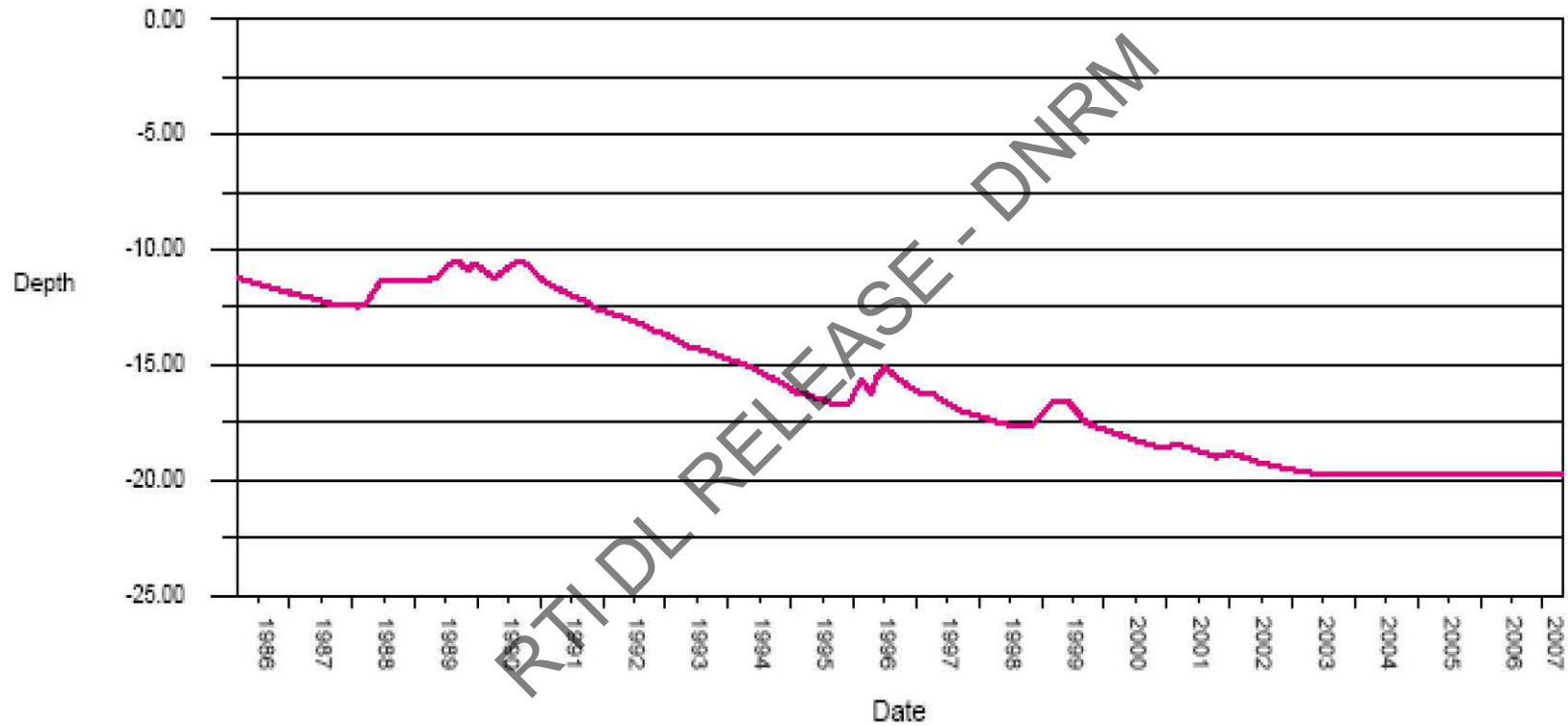
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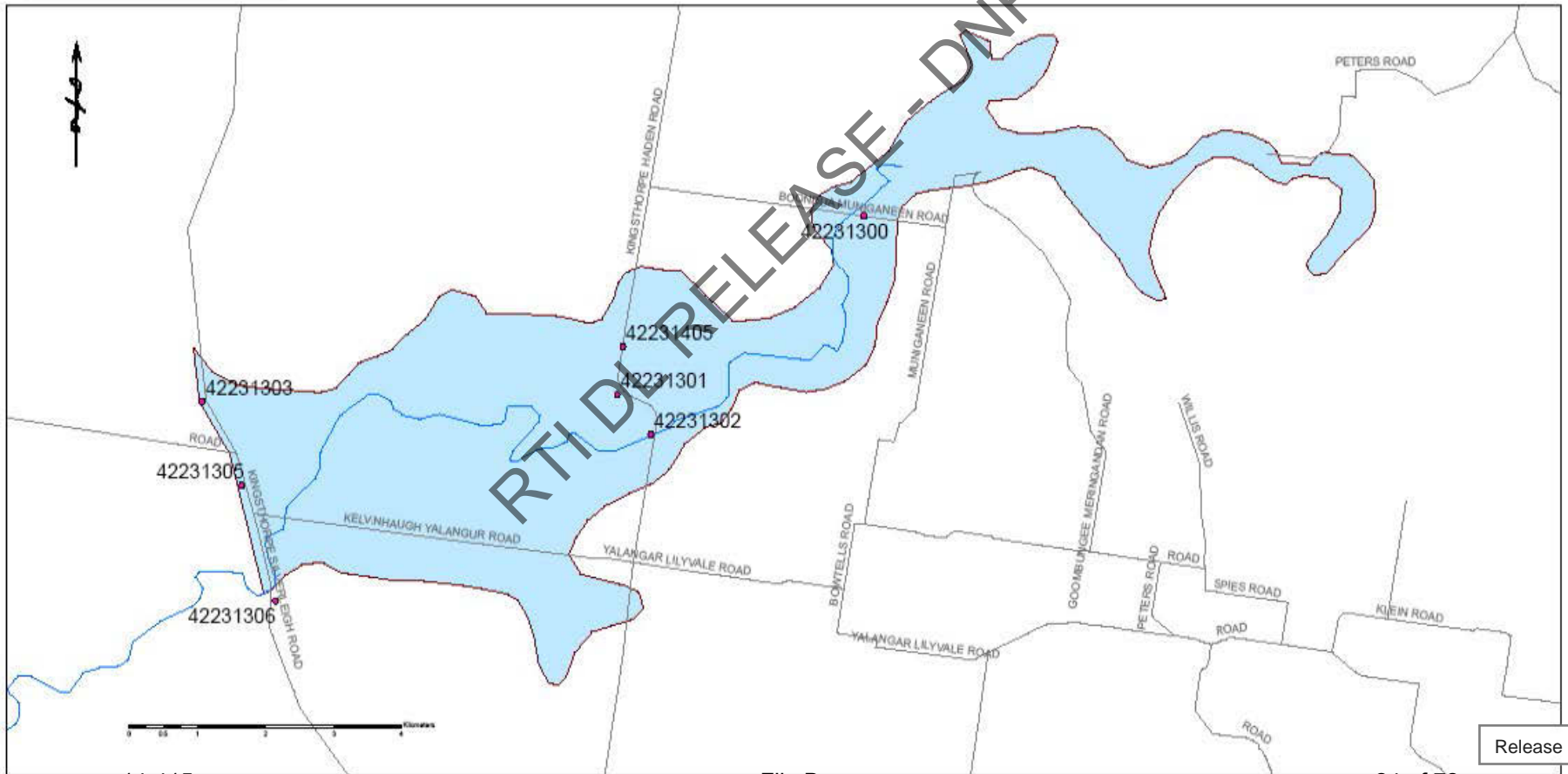


Release

Oakey Creek Groundwater Management Area 1 Observation Bores

Legend

- Departmental Monitoring Bores
- Oakey Creek
- Major Roads
- OCGMA Area 1



Release

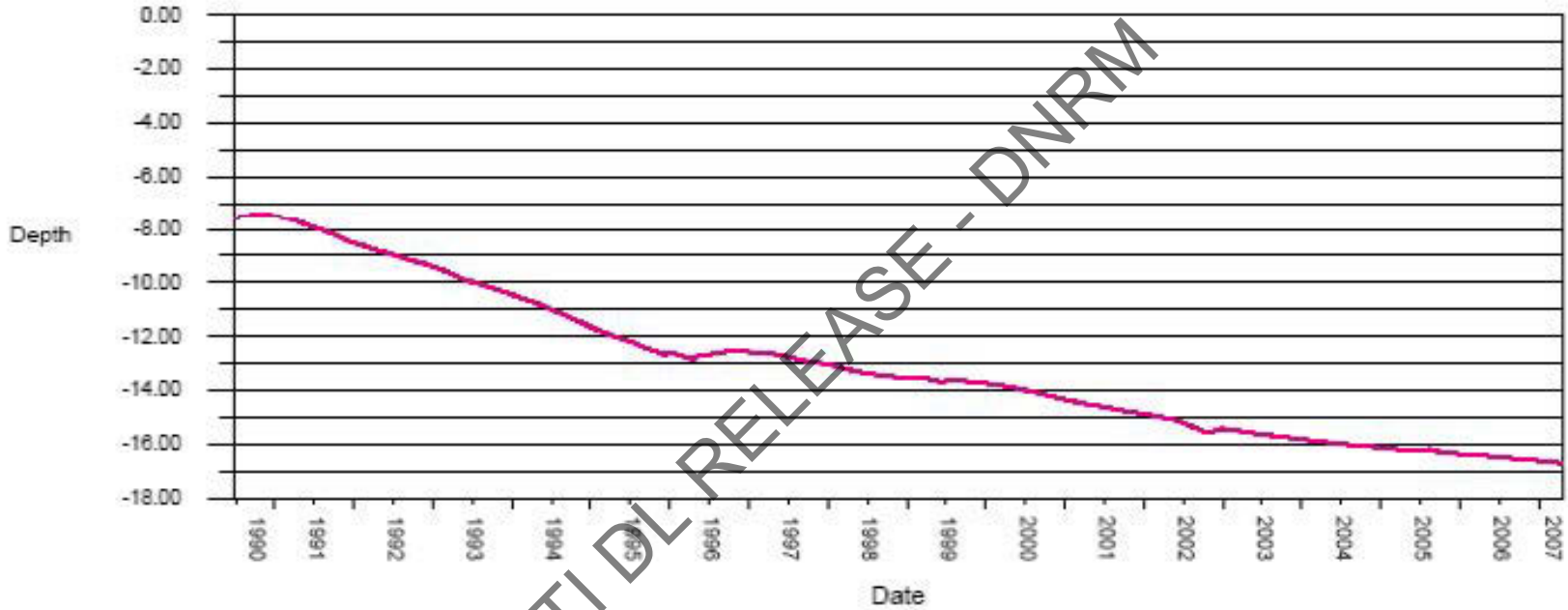
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Pipe: A



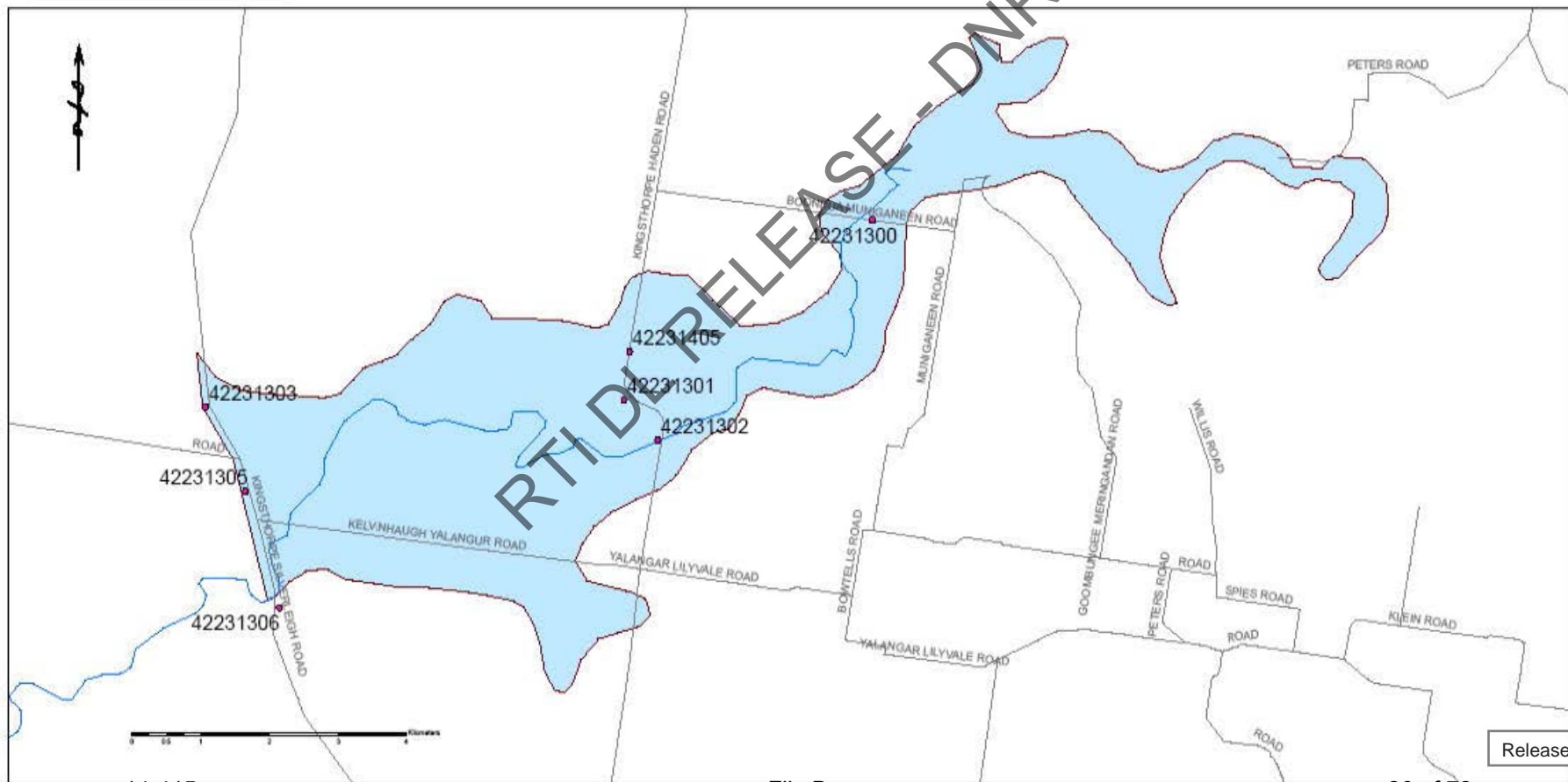
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Release

Oakey Creek Groundwater Management Area 1 Observation Bores

Legend

- Departmental Monitoring Bores
- Oakey Creek
- Major Roads
- OCGMA Area 1



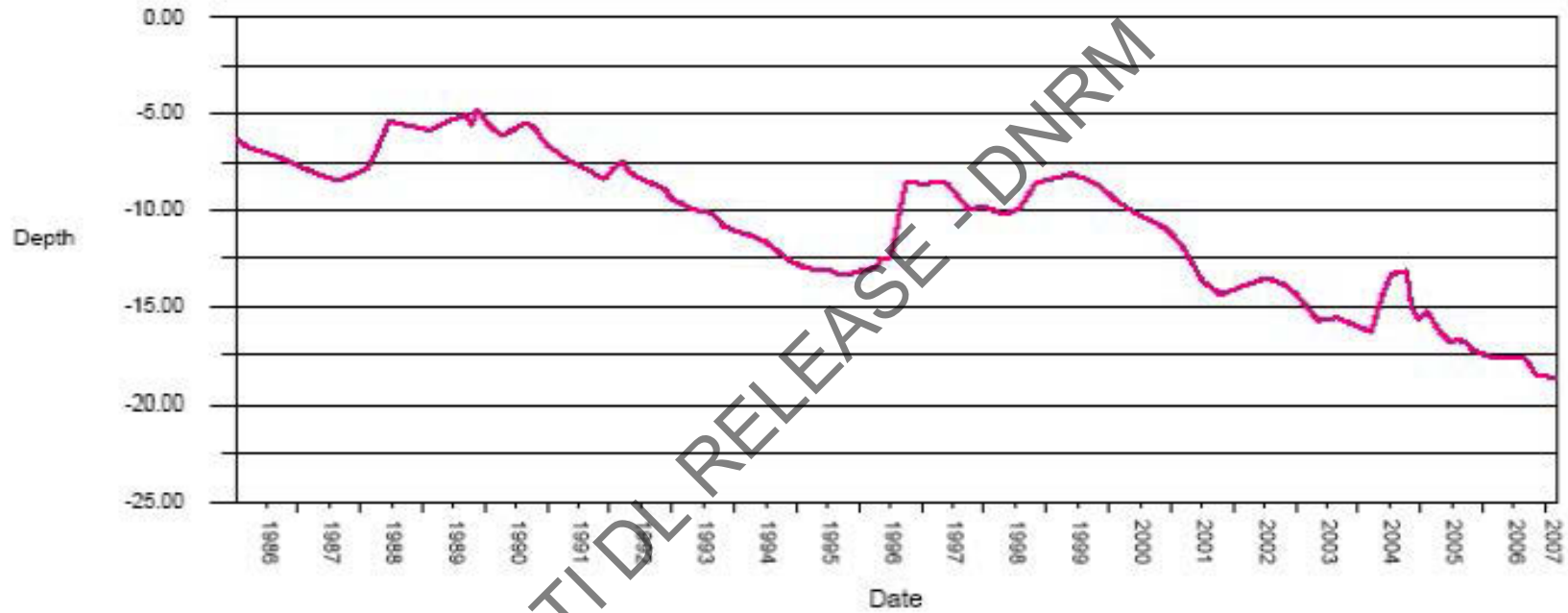
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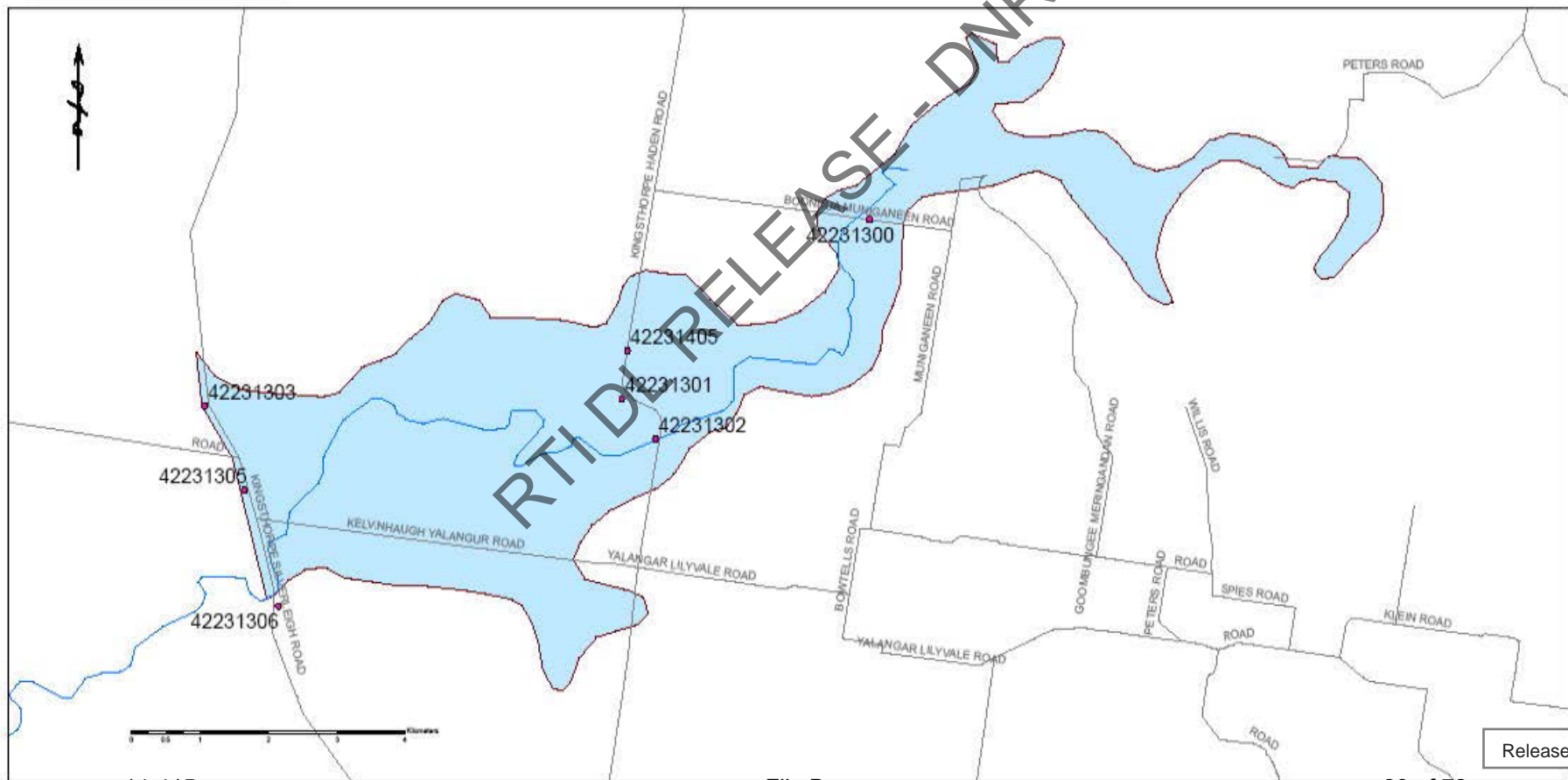


Release

Oakey Creek Groundwater Management Area 1 Observation Bores

Legend

- Departmental Monitoring Bores
- Oakey Creek
- Major Roads
- OCGMA Area 1



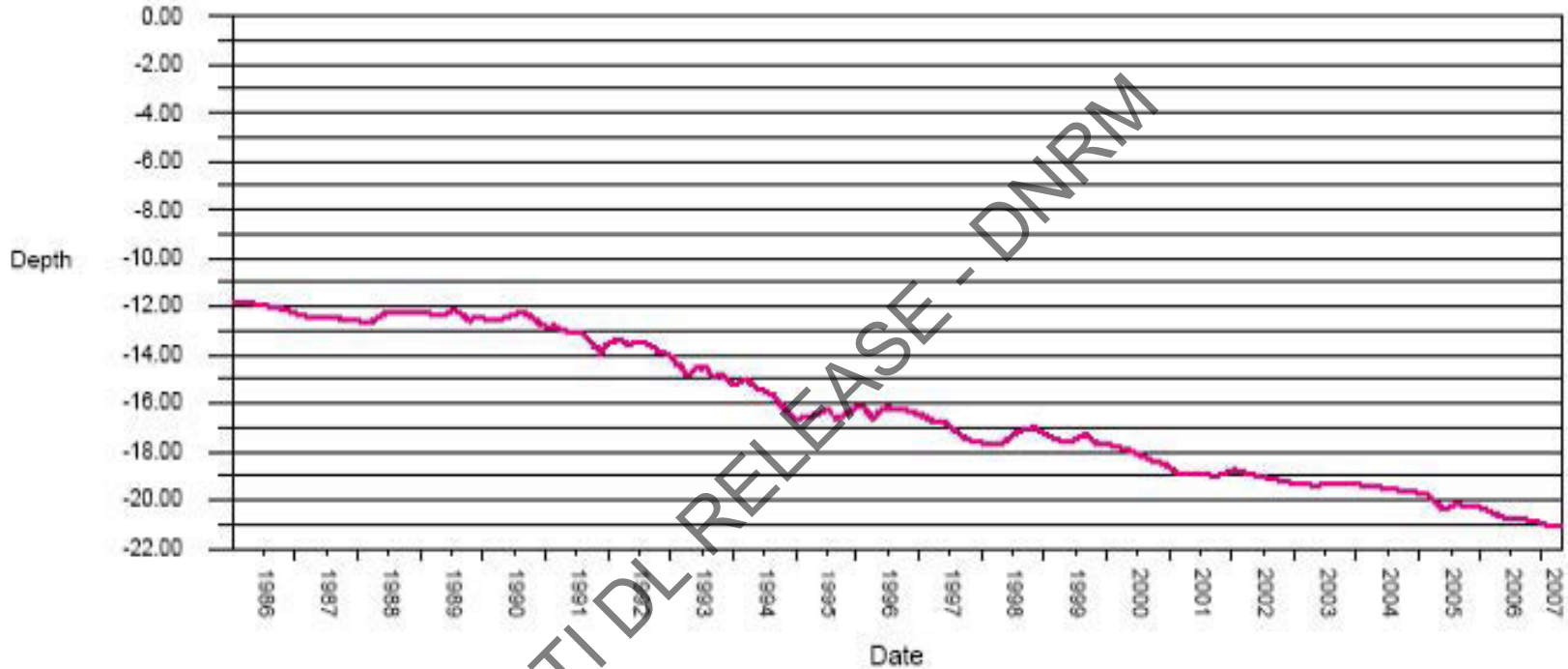
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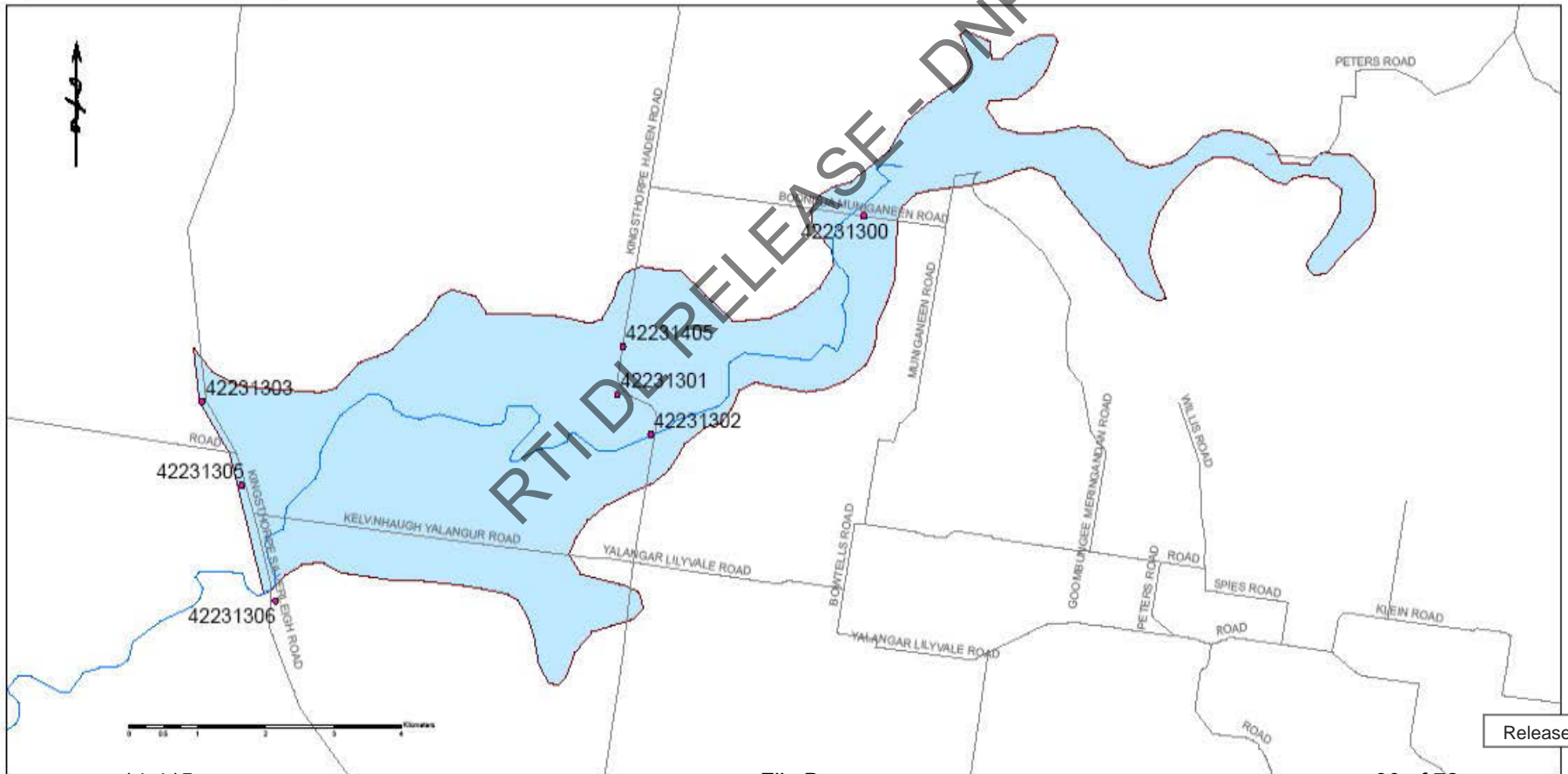


Release

Oakey Creek Groundwater Management Area 1 Observation Bores

Legend

- Departmental Monitoring Bores
- Oakey Creek
- Major Roads
- OCGMA Area 1



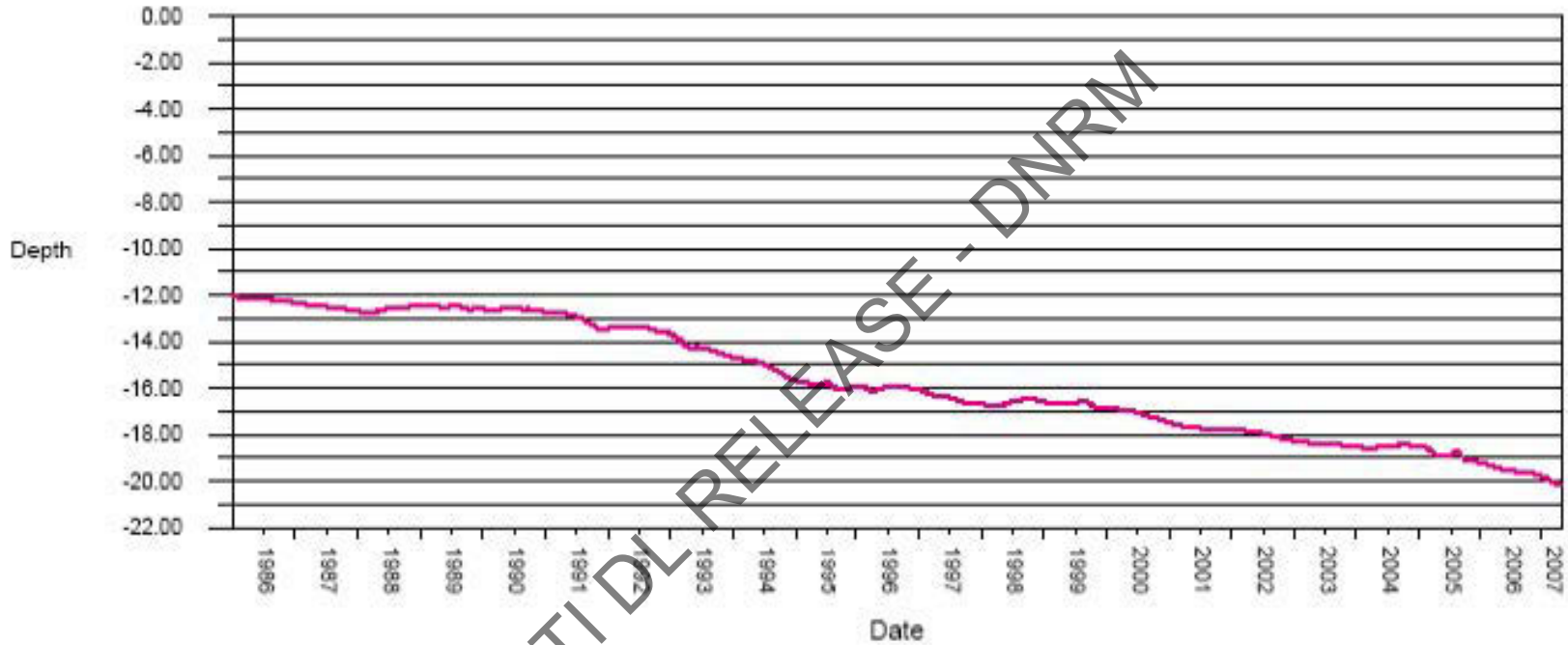
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RN: 42231303

Pipe: A



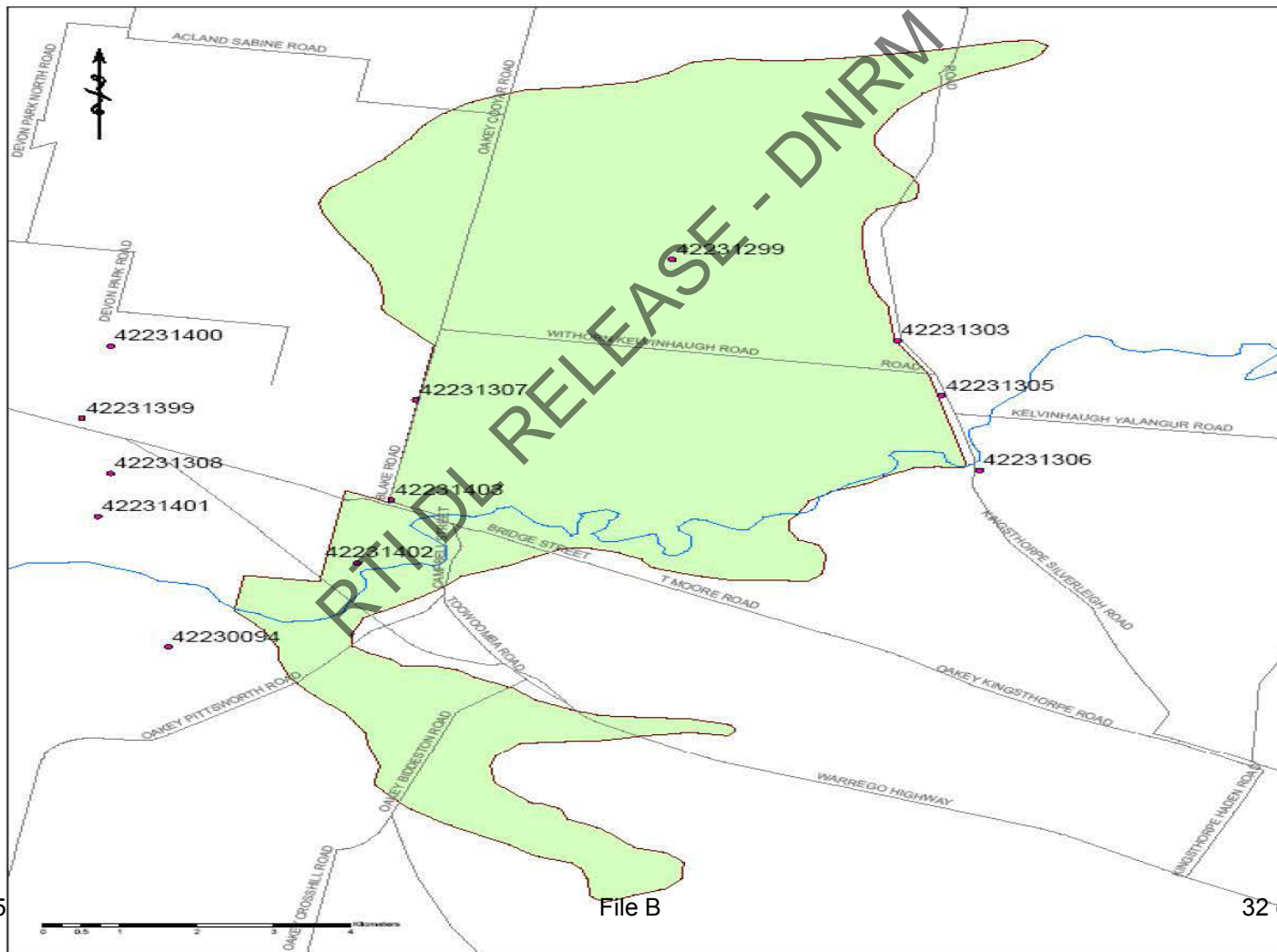
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Release

Oakey Creek Groundwater Management Area 2 Observation Bores

Legend

- Oakey Creek
- Major Roads
- OCGMA Area 2
- Departmental Monitoring Bores



Release

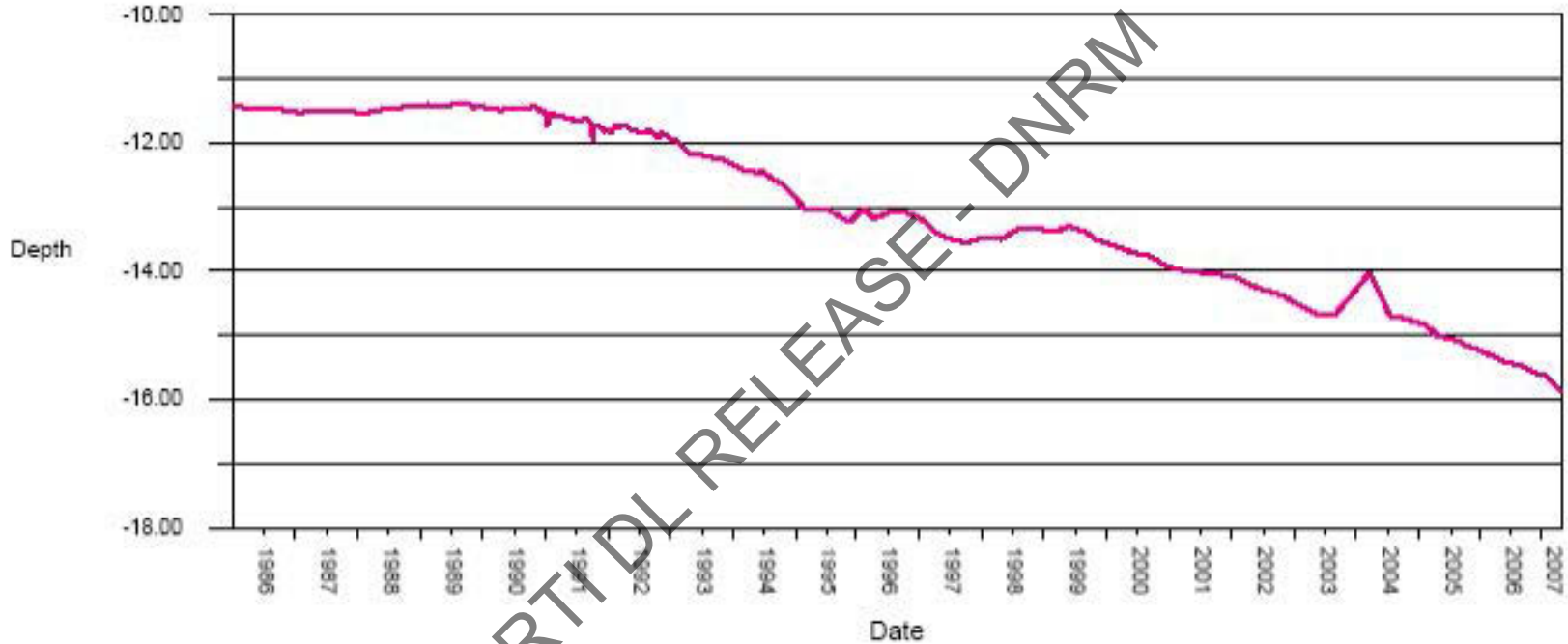
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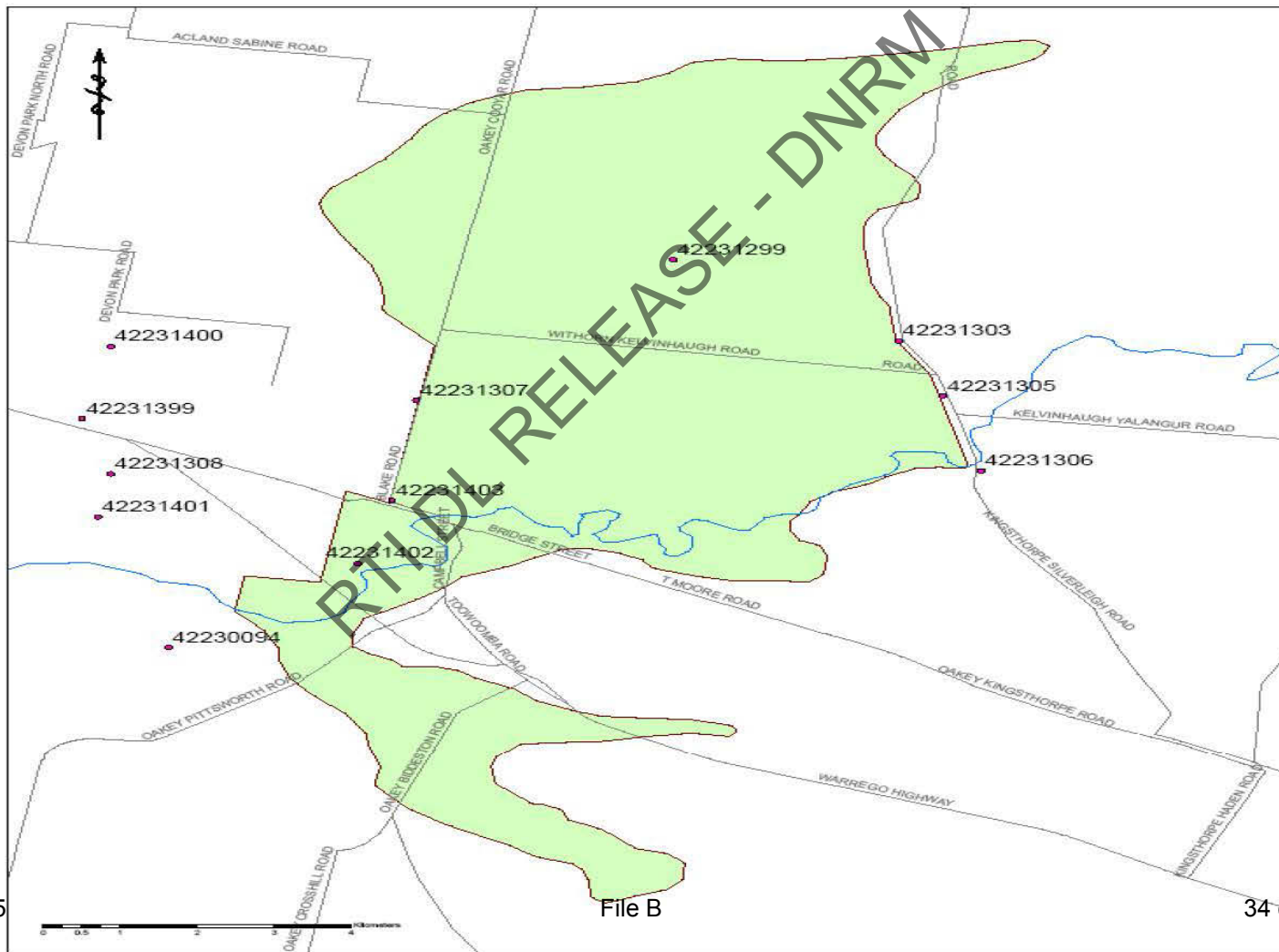


Release

Oakey Creek Groundwater Management Area 2 Observation Bores

Legend

-  Oakey Creek
-  Major Roads
-  OCGMA Area 2
-  Departmental Monitoring Bores



Release

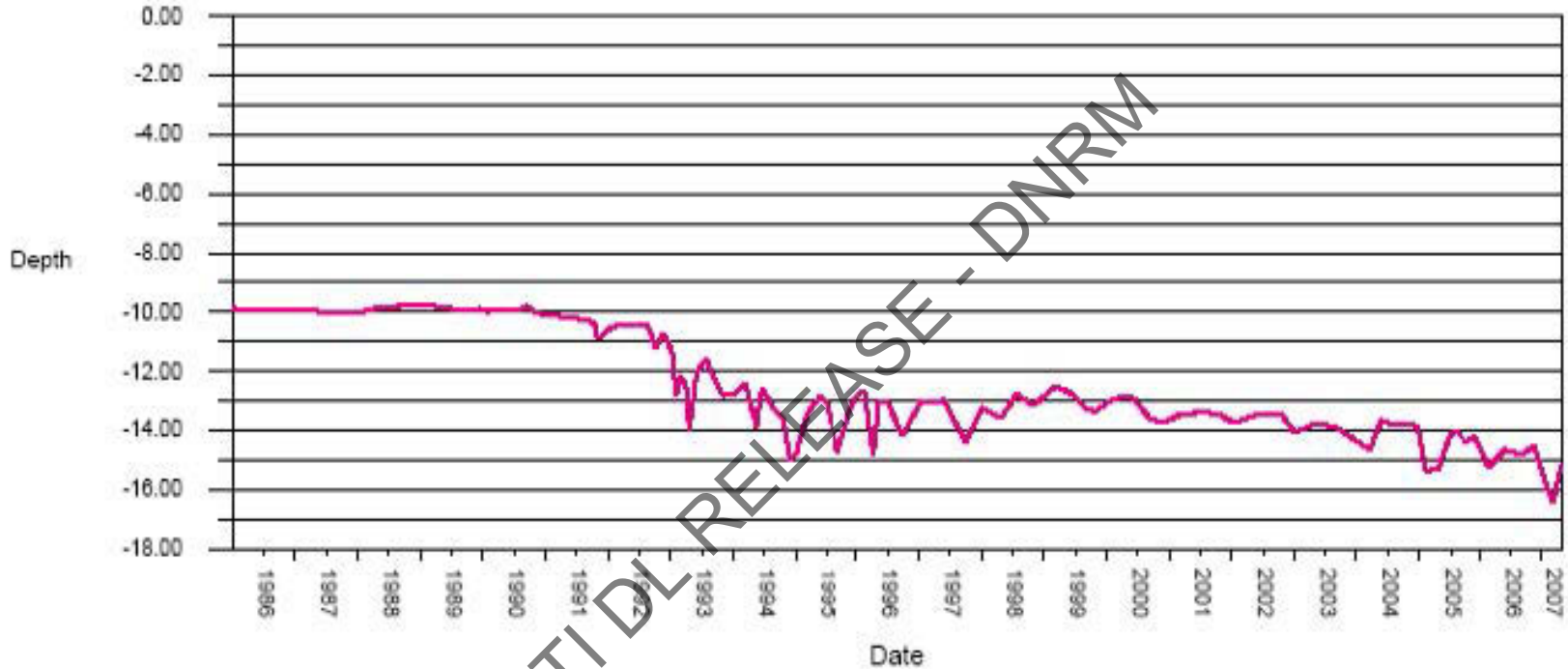
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RN: 42231307

Pipe: A



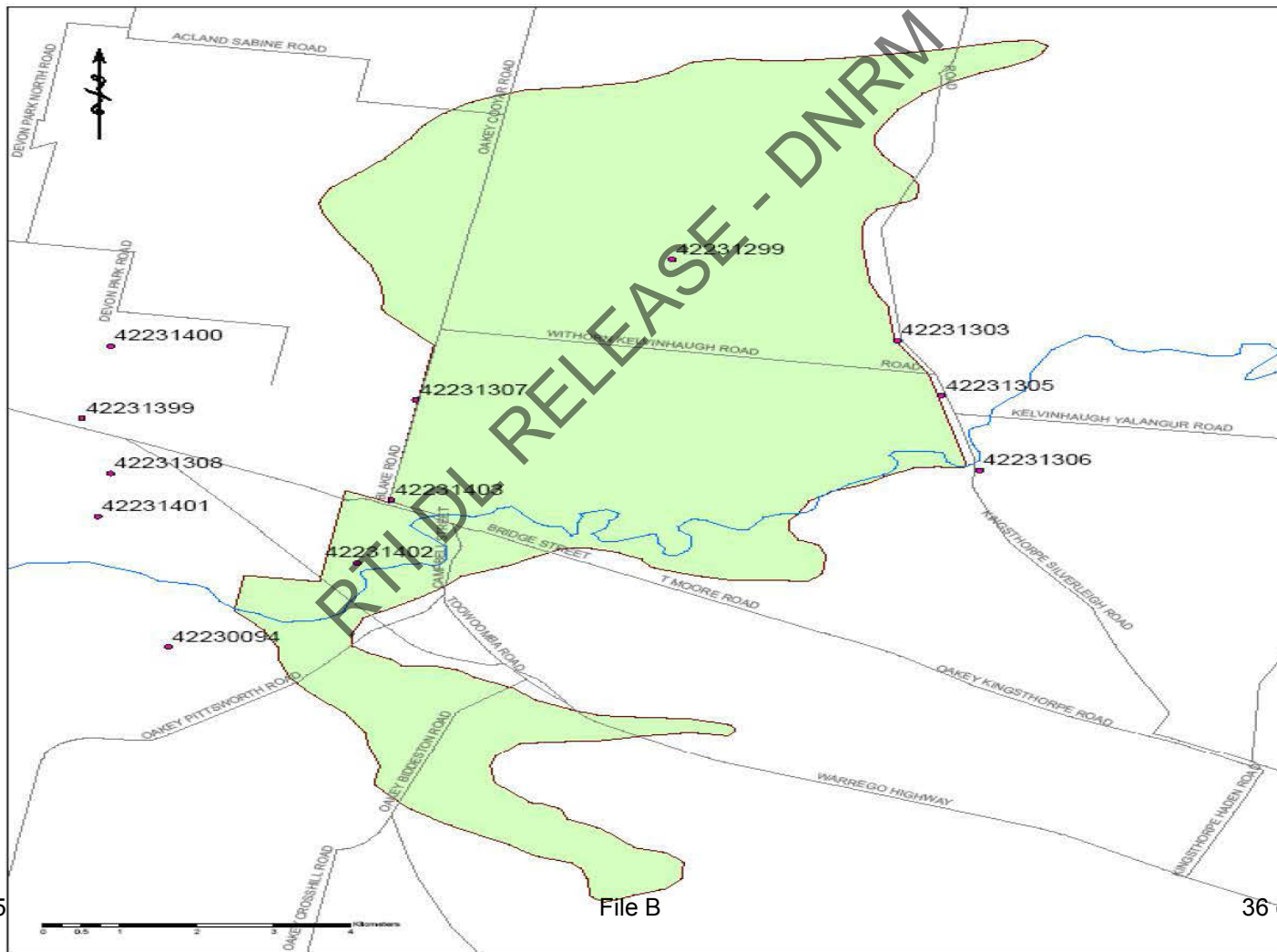
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Release

Oakey Creek Groundwater Management Area 2 Observation Bores

Legend

- Oakey Creek
- Major Roads
- OCGMA Area 2
- Departmental Monitoring Bores



Release

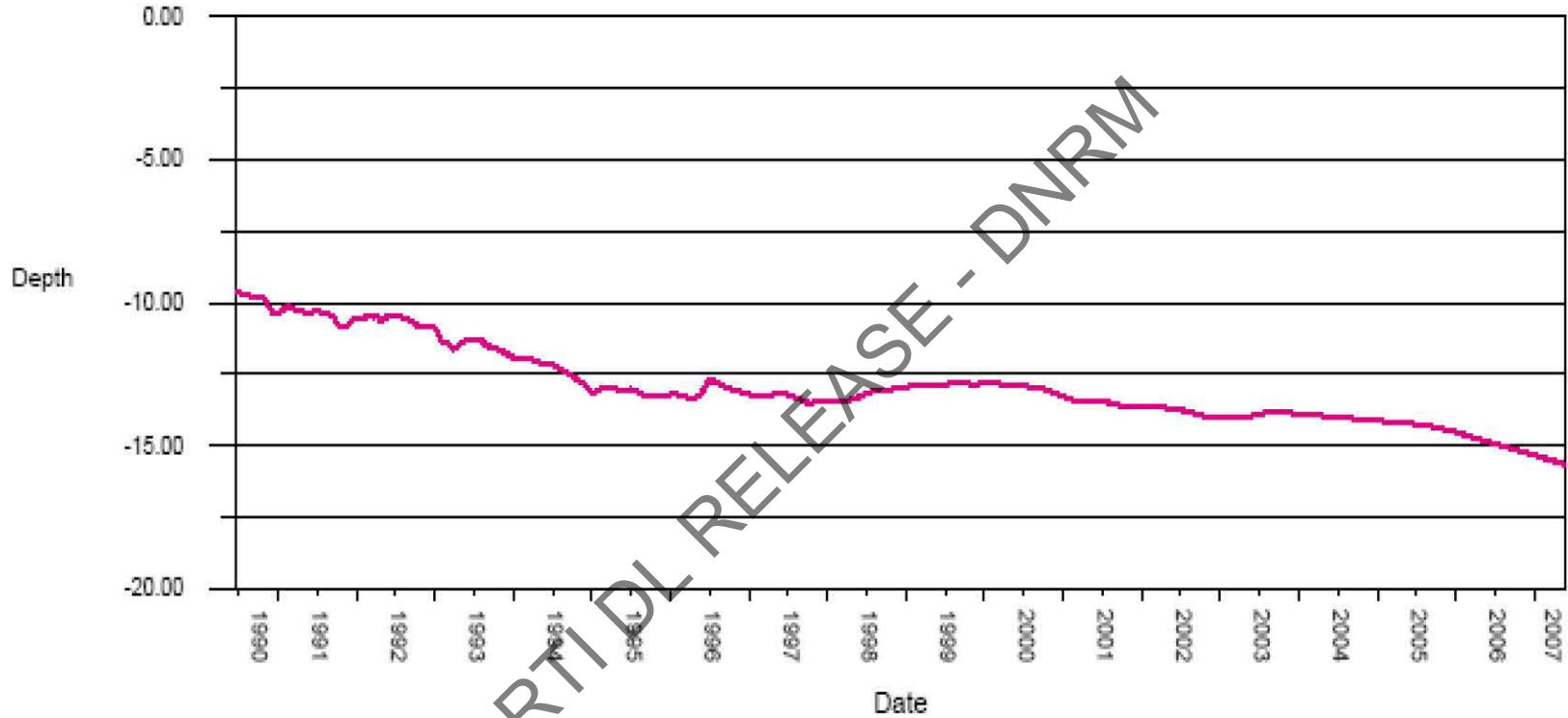
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RN: 42231403

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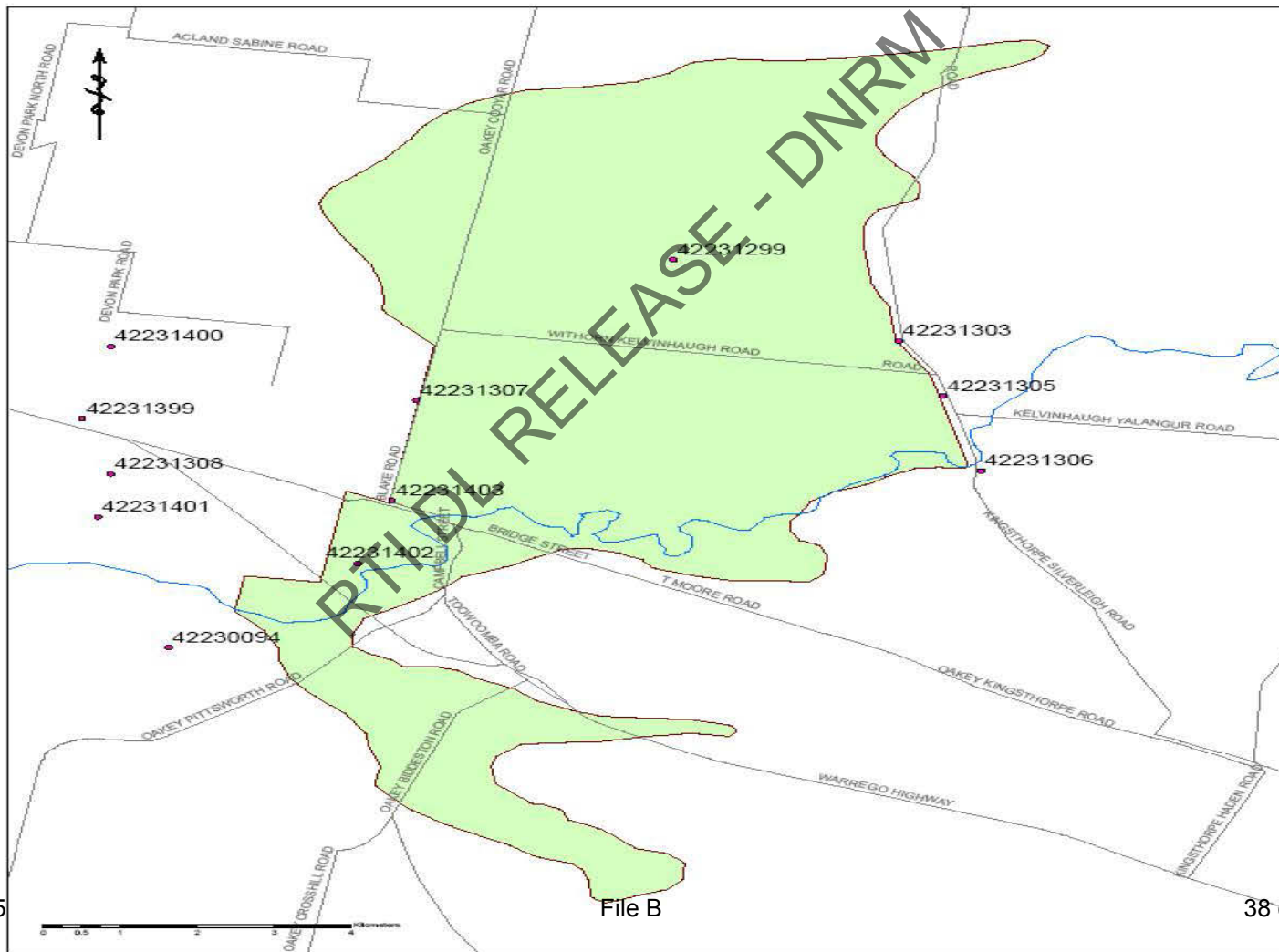


Release

Oakey Creek Groundwater Management Area 2 Observation Bores

Legend

-  Oakey Creek
-  Major Roads
-  OCGMA Area 2
-  Departmental Monitoring Bores



Release

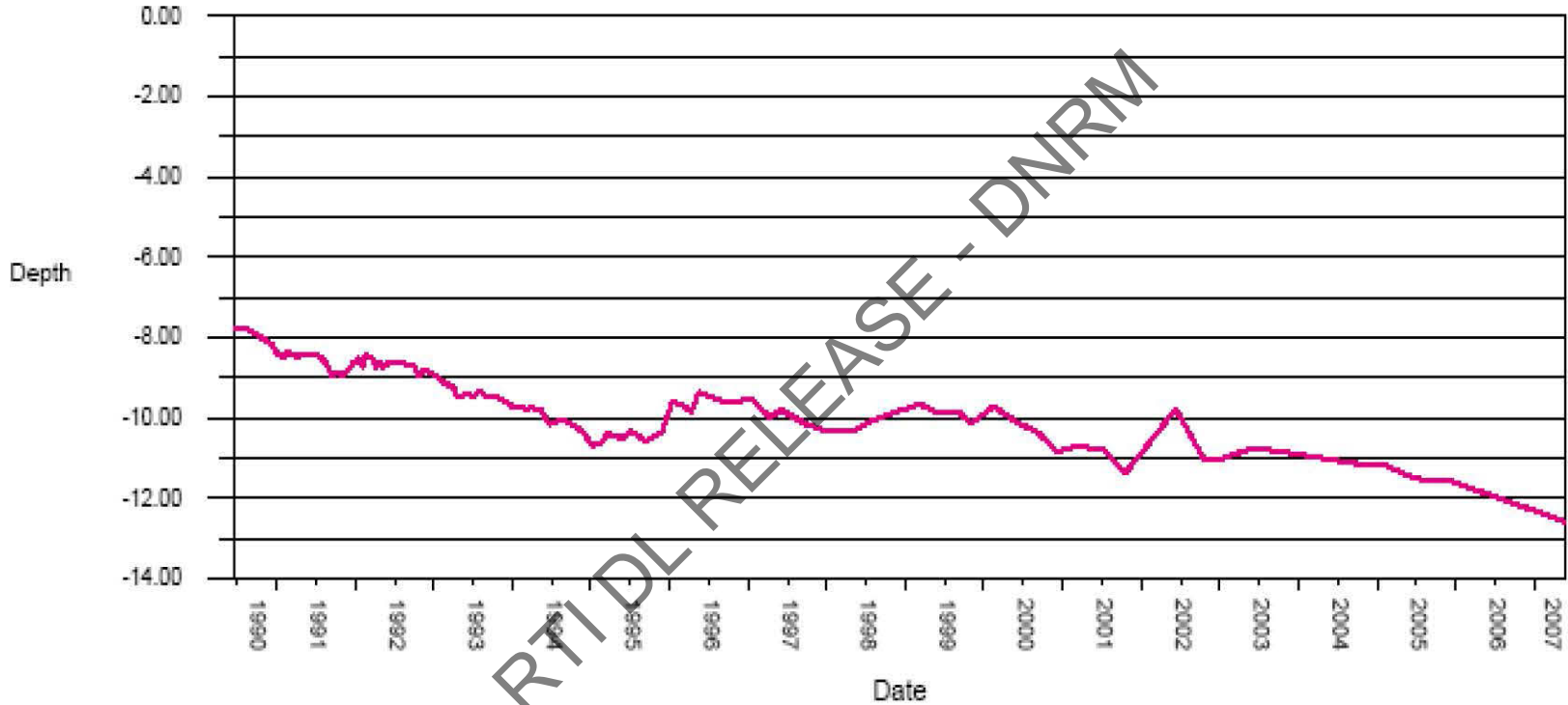
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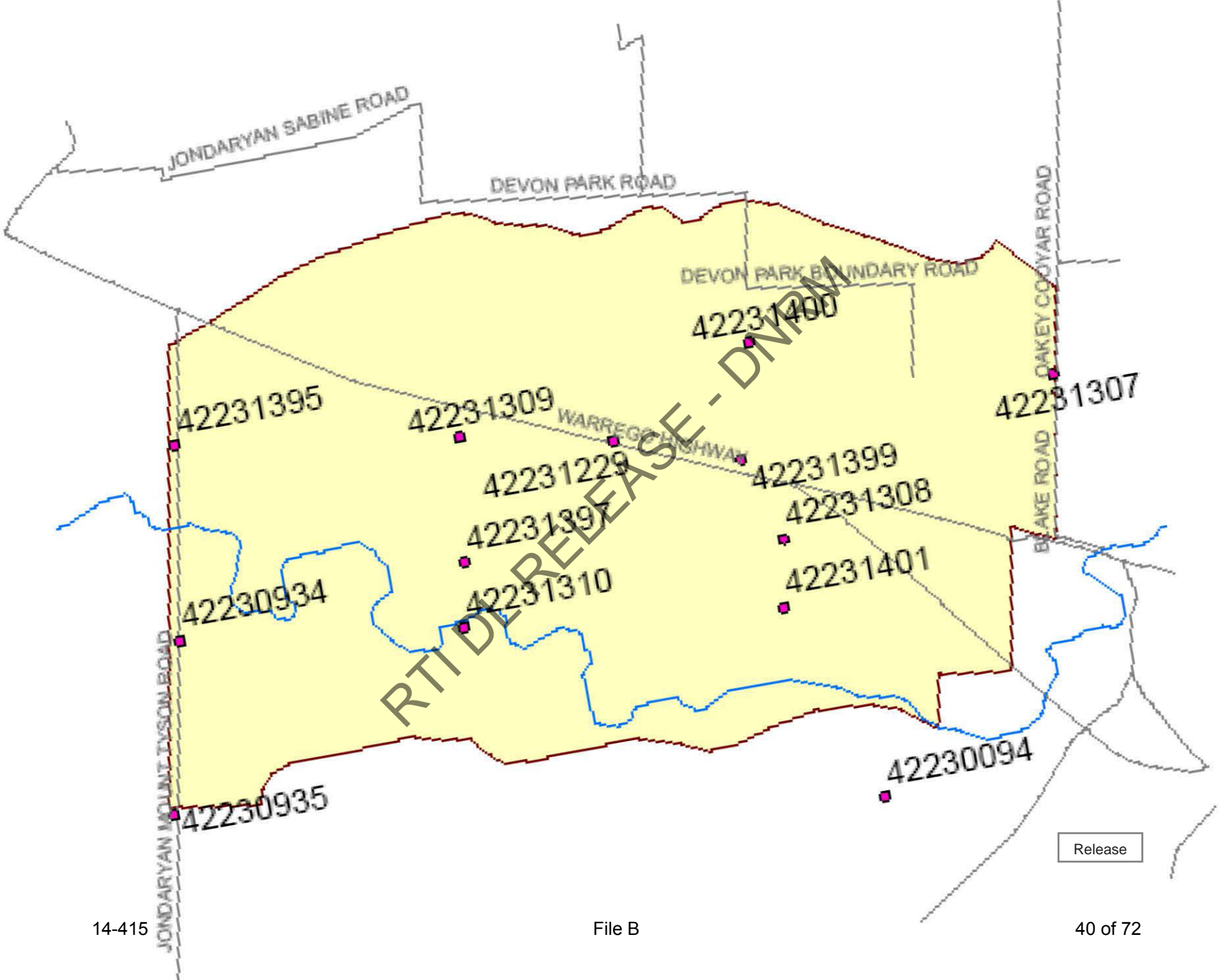
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RN: 42231402

Pipe: A



Release



Release

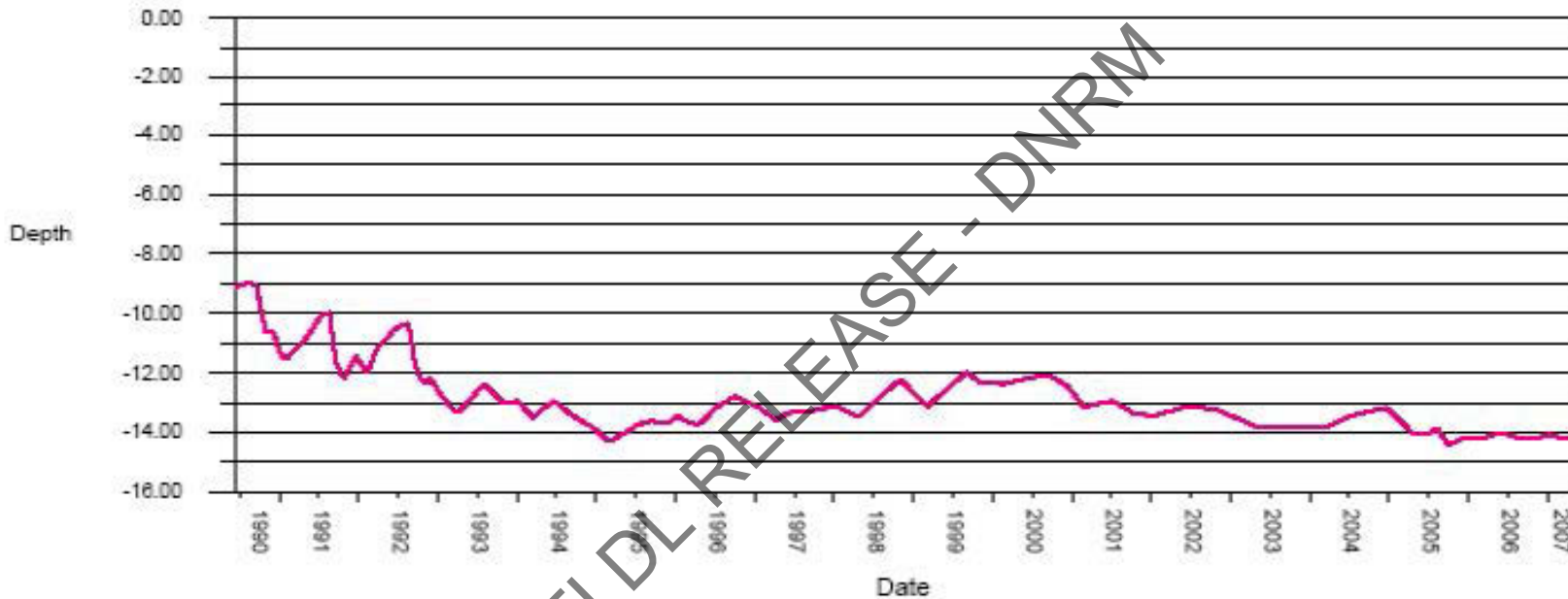
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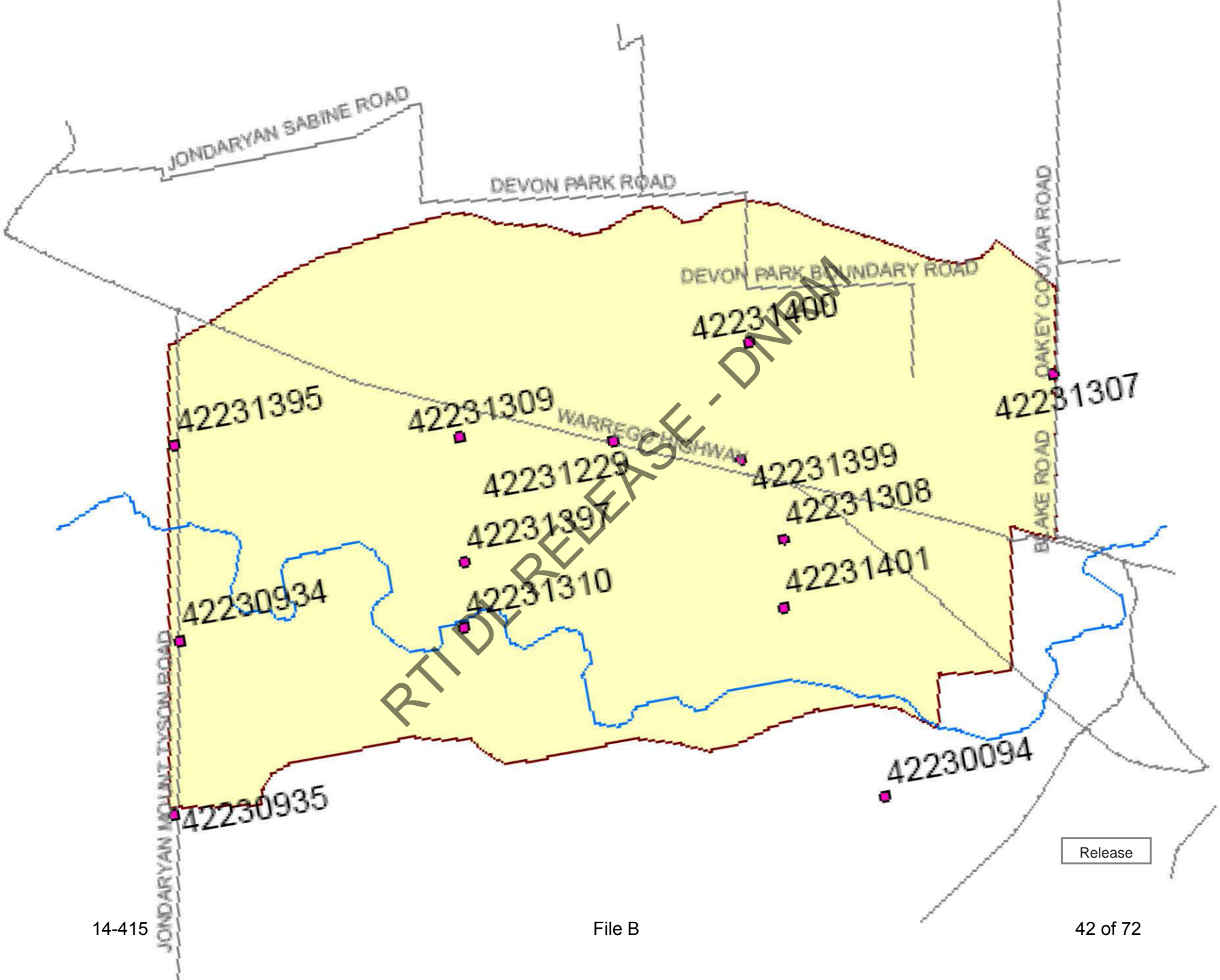
Water Level Below Measurement Point

RN: 42231400

Pipe: A



Release



Release

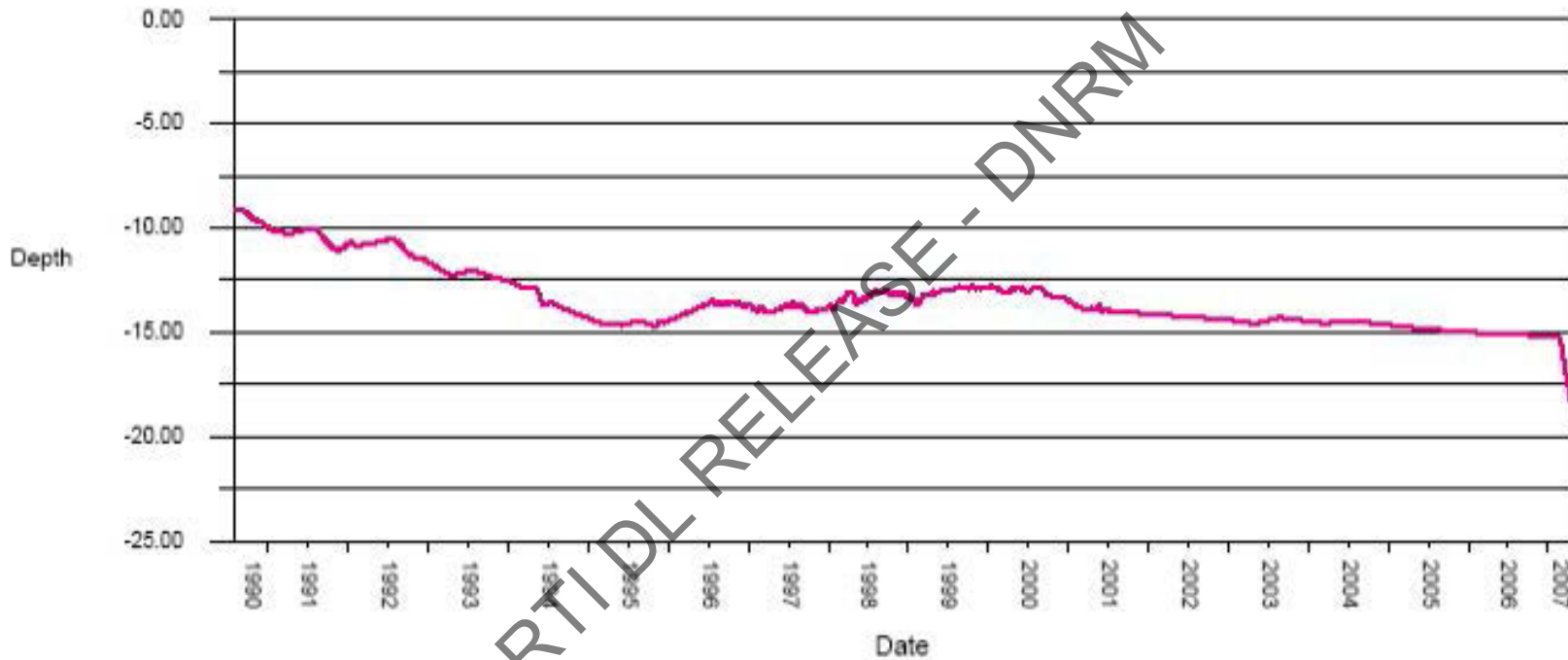
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Water Level Below Measurement Point

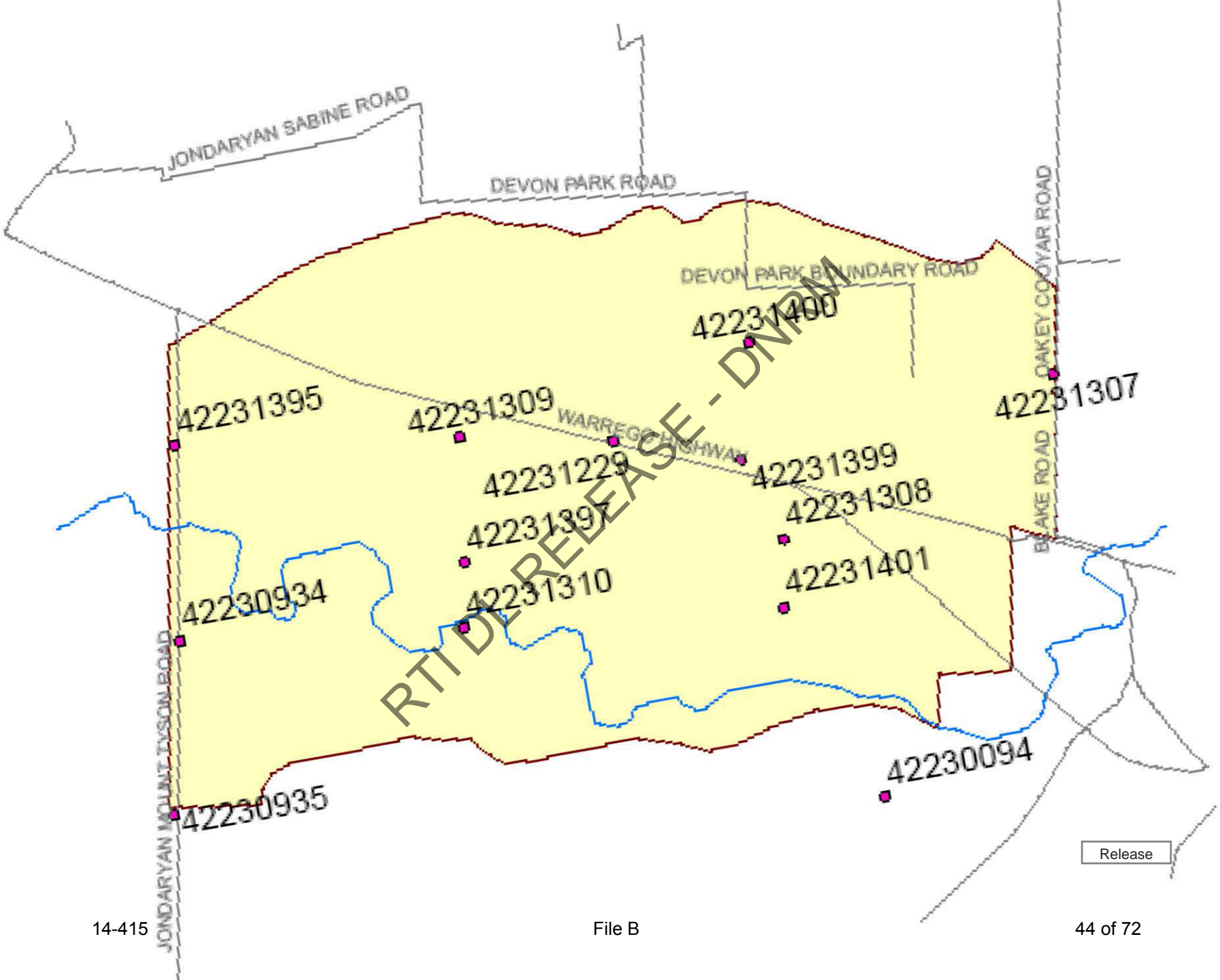
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Release



Release

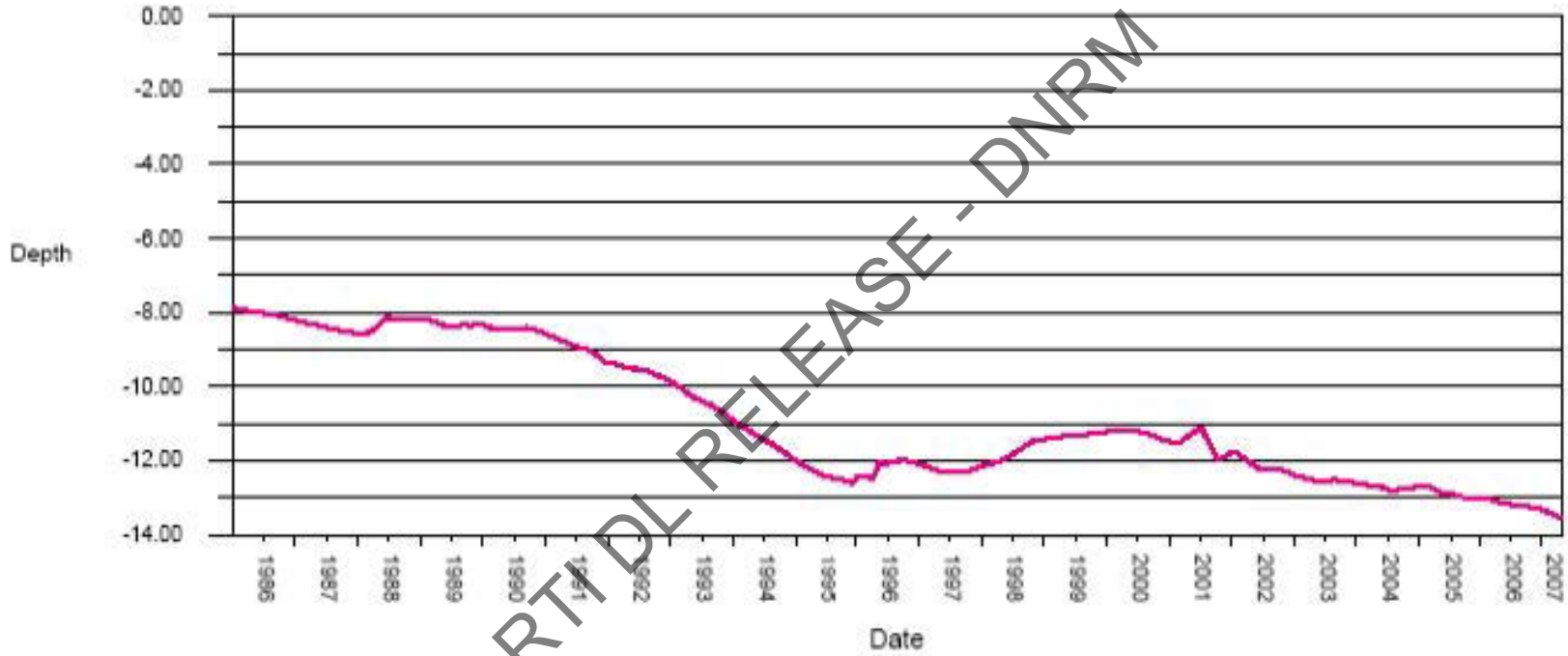
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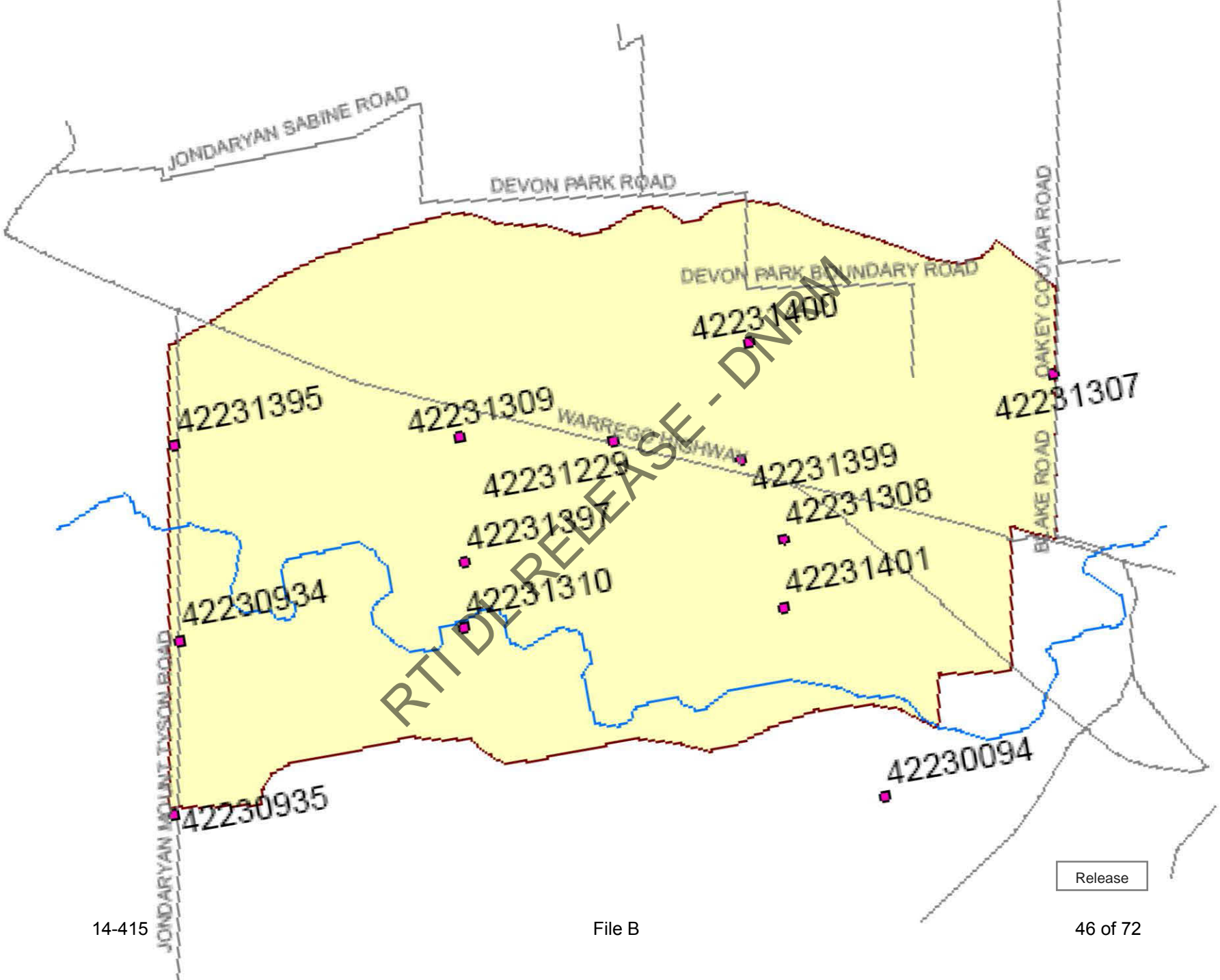
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RN: 42231308

Pipe: A



Release



Release

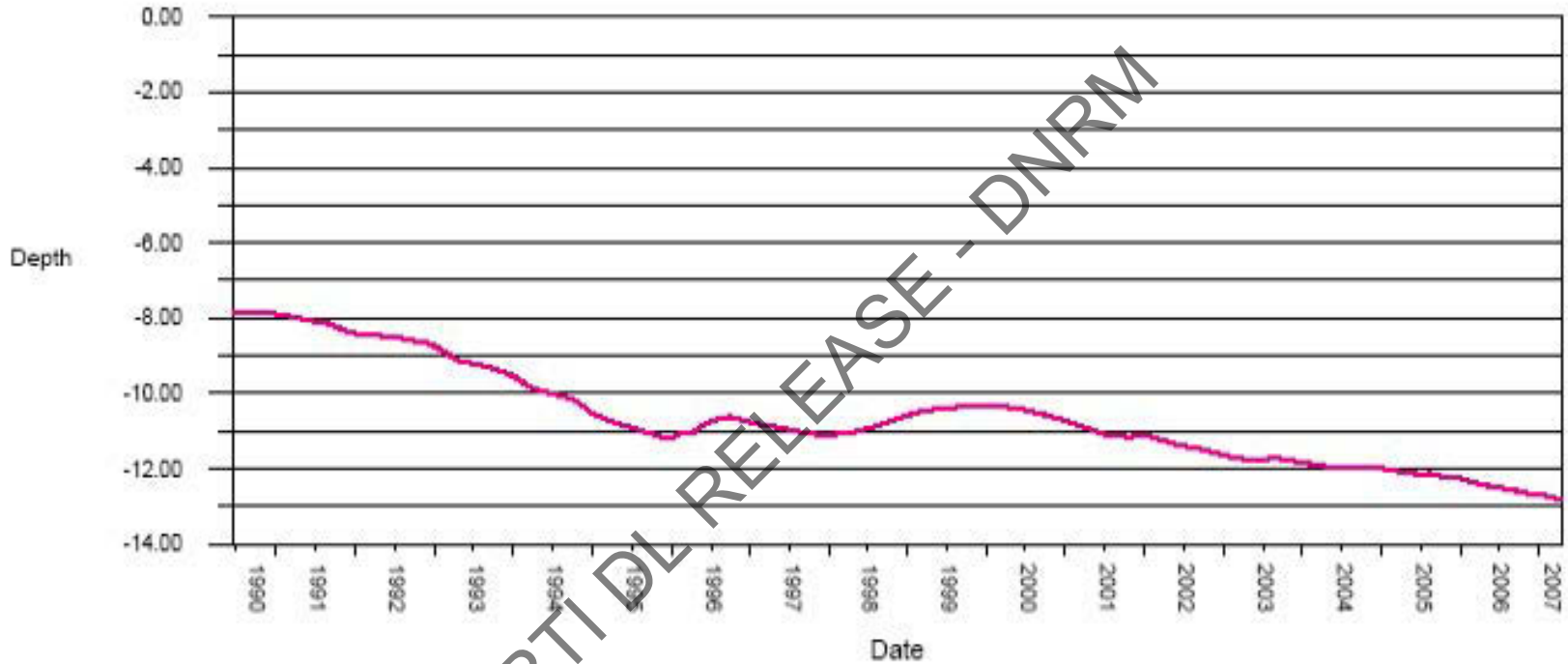
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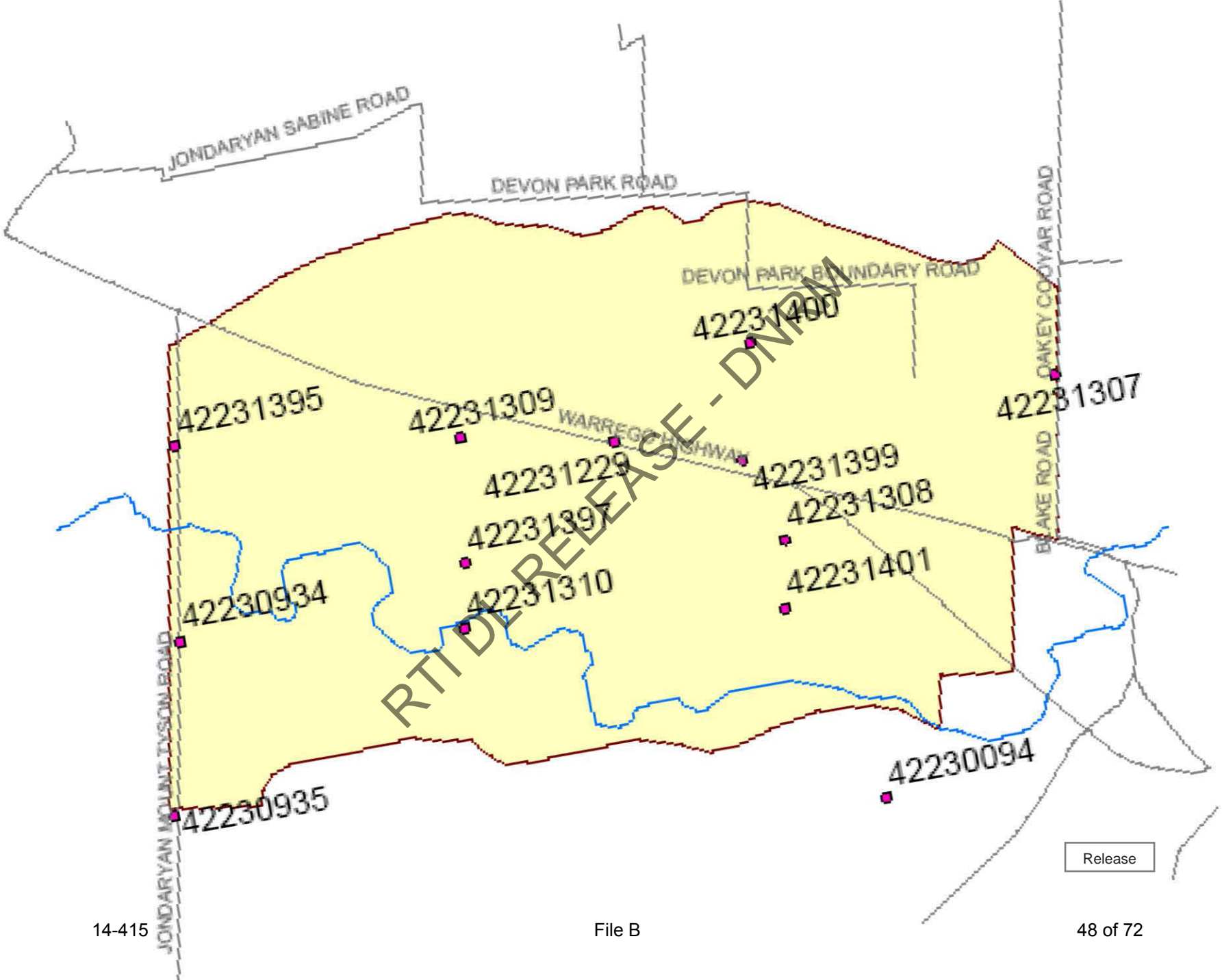
Water Level Below Measurement Point

RN: 42231401

Pipe: A



Release



Release

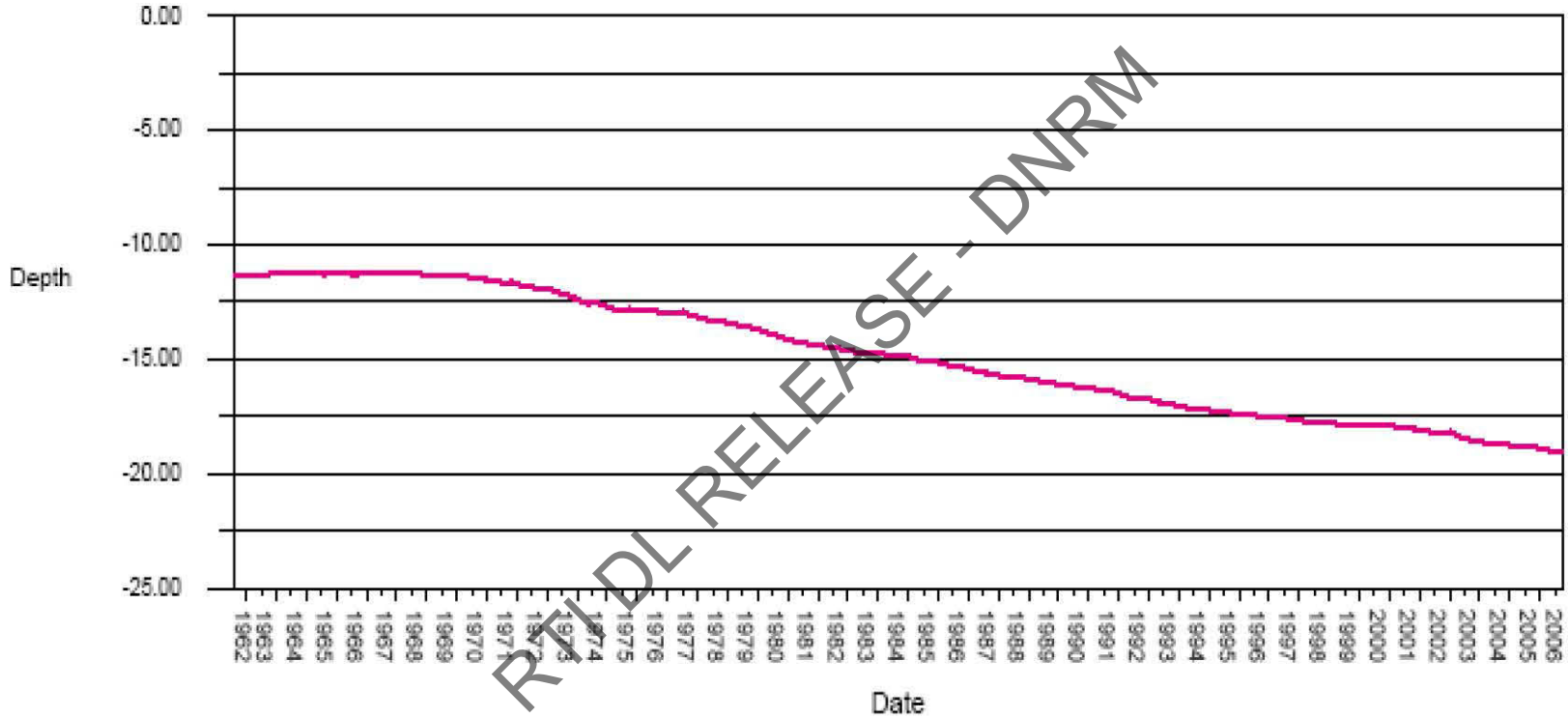
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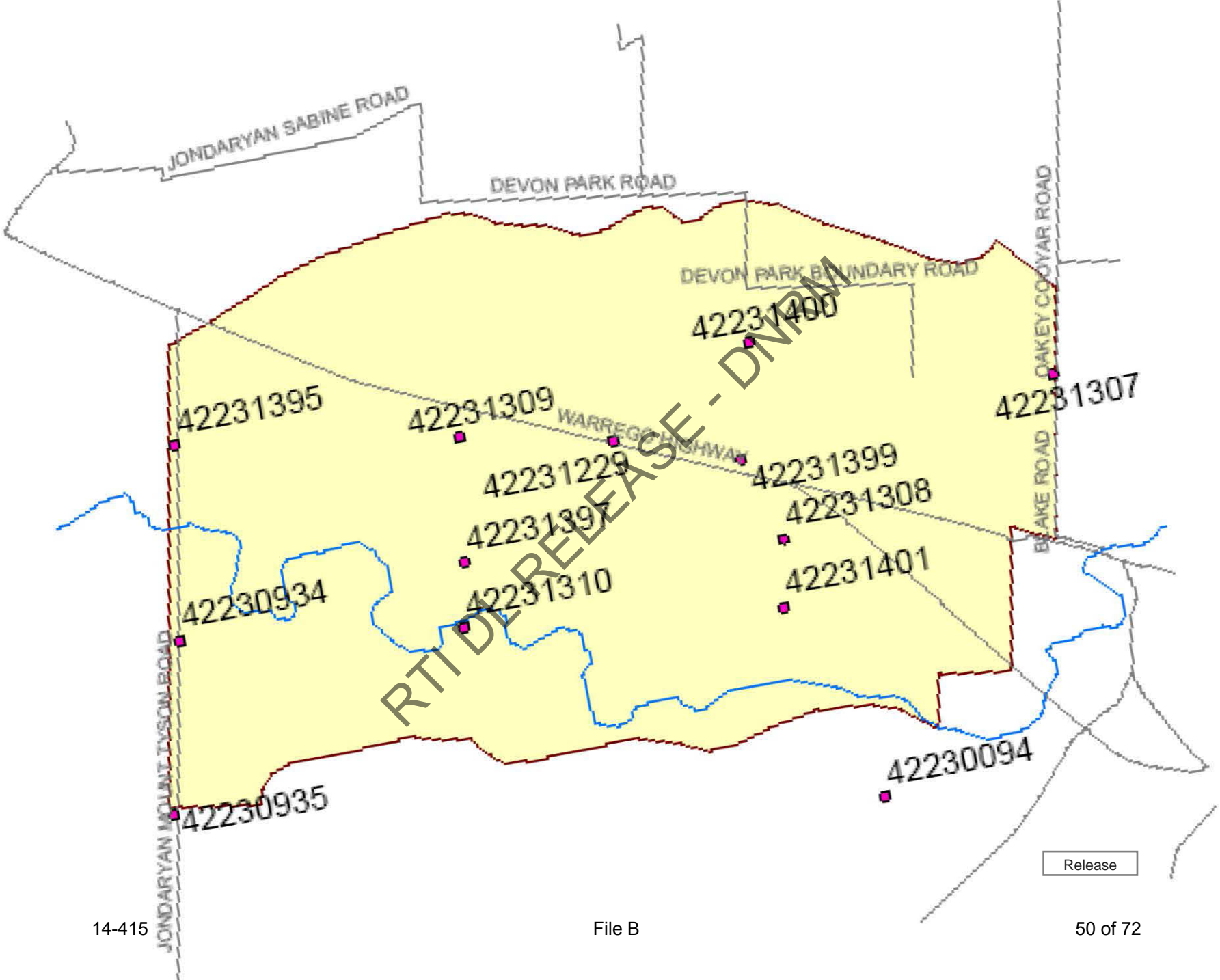
Water Level Below Measurement Point

RN: 42230094

Pipe: A



Release



Release

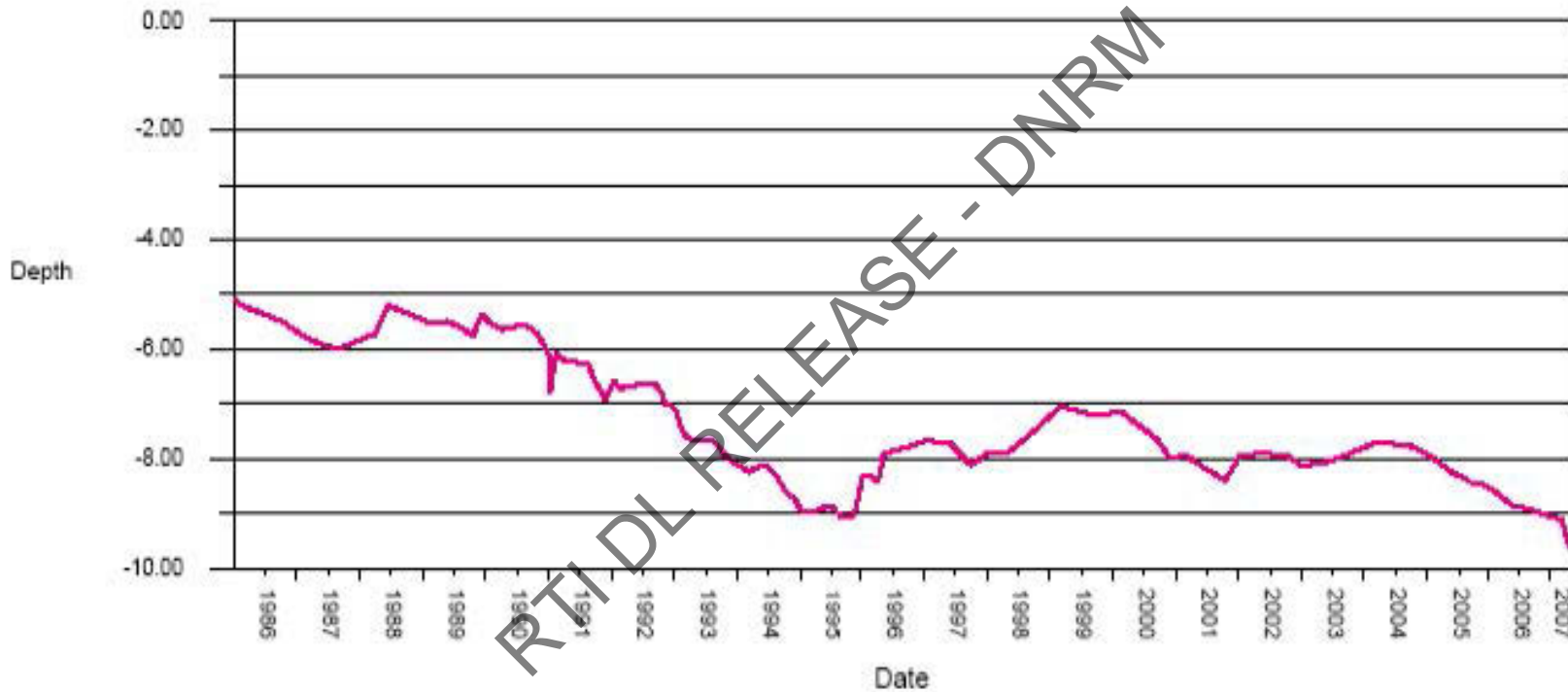
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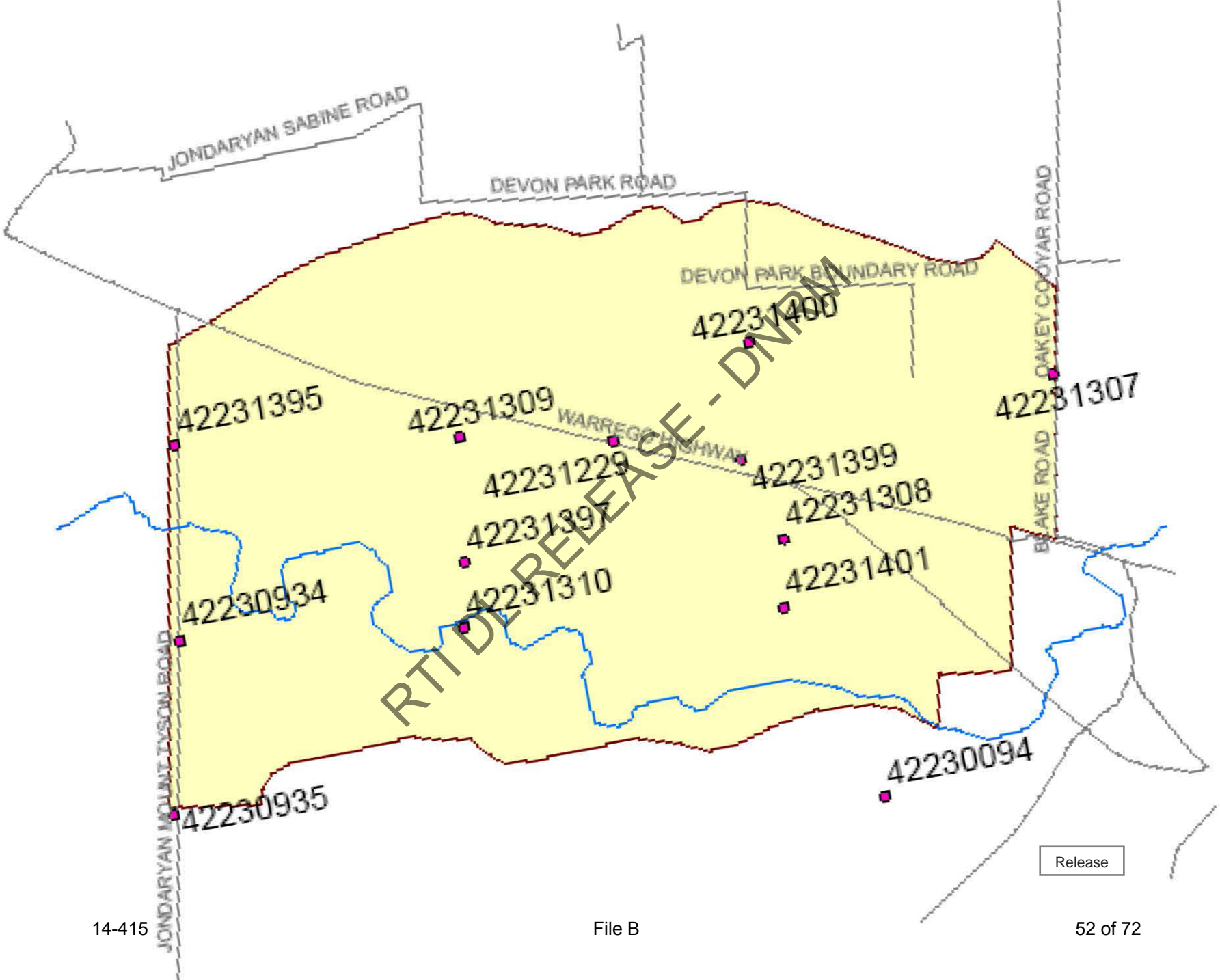
Water Level Below Measurement Point

RN: 42231310

Pipe: A



Release



Release

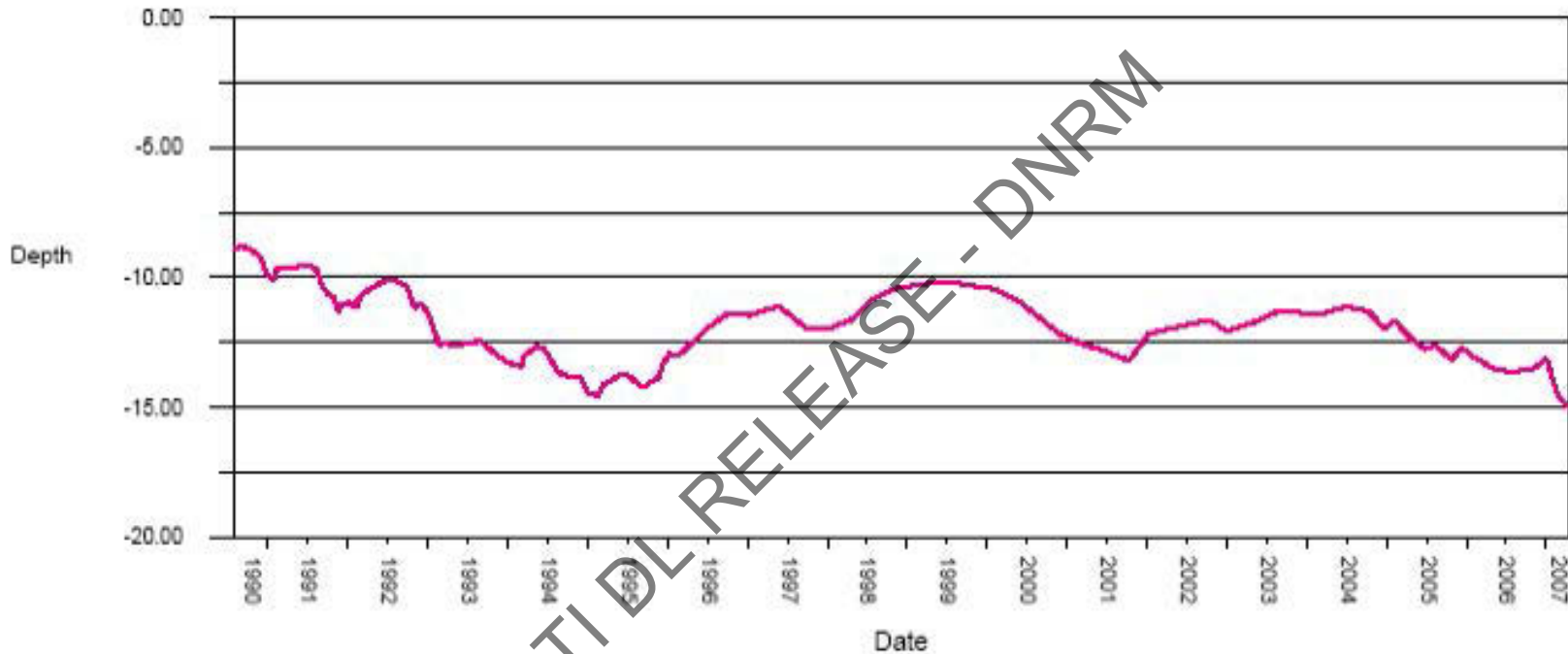
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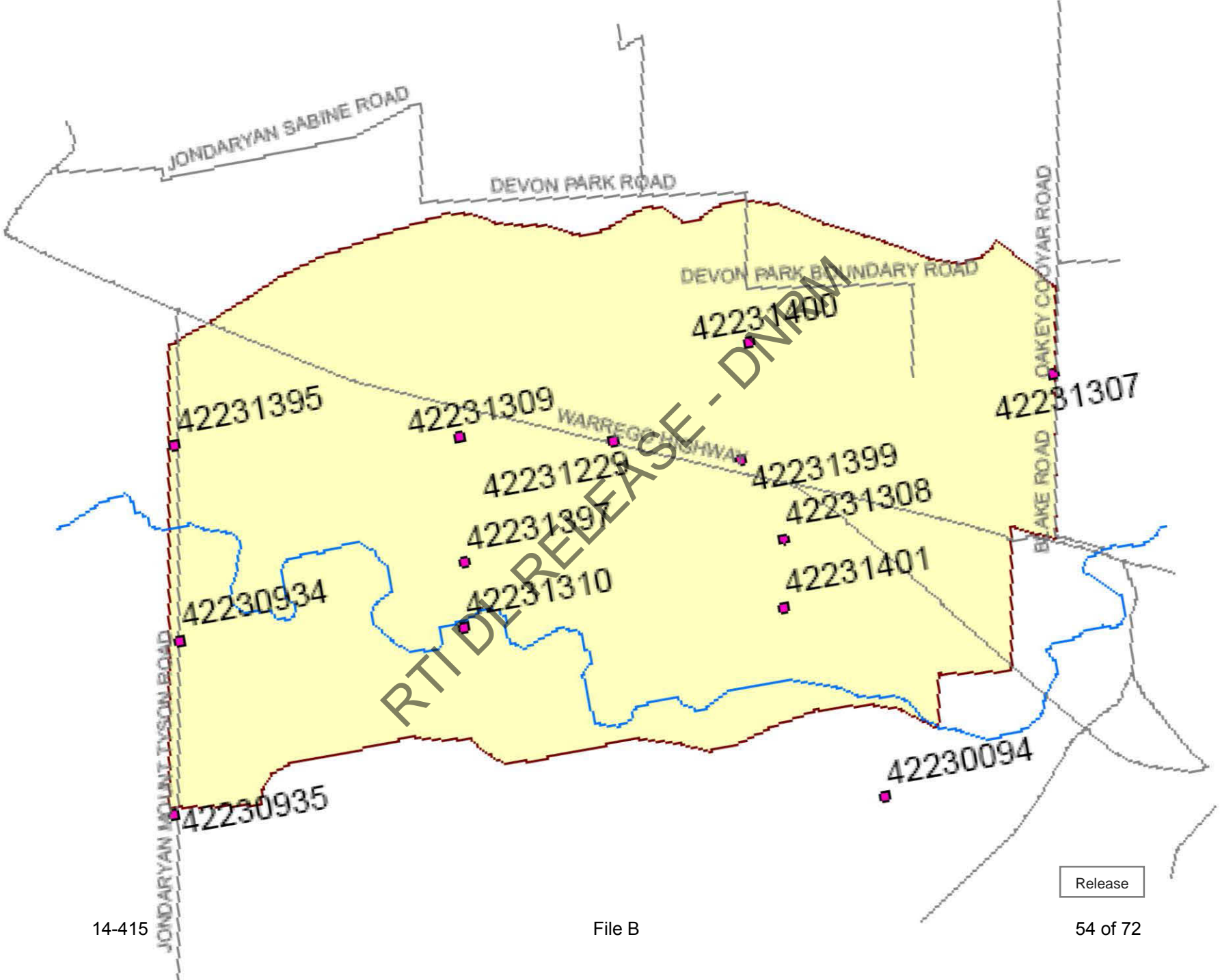
Water Level Below Measurement Point

RN: 42231397

Pipe: A



Release



Release

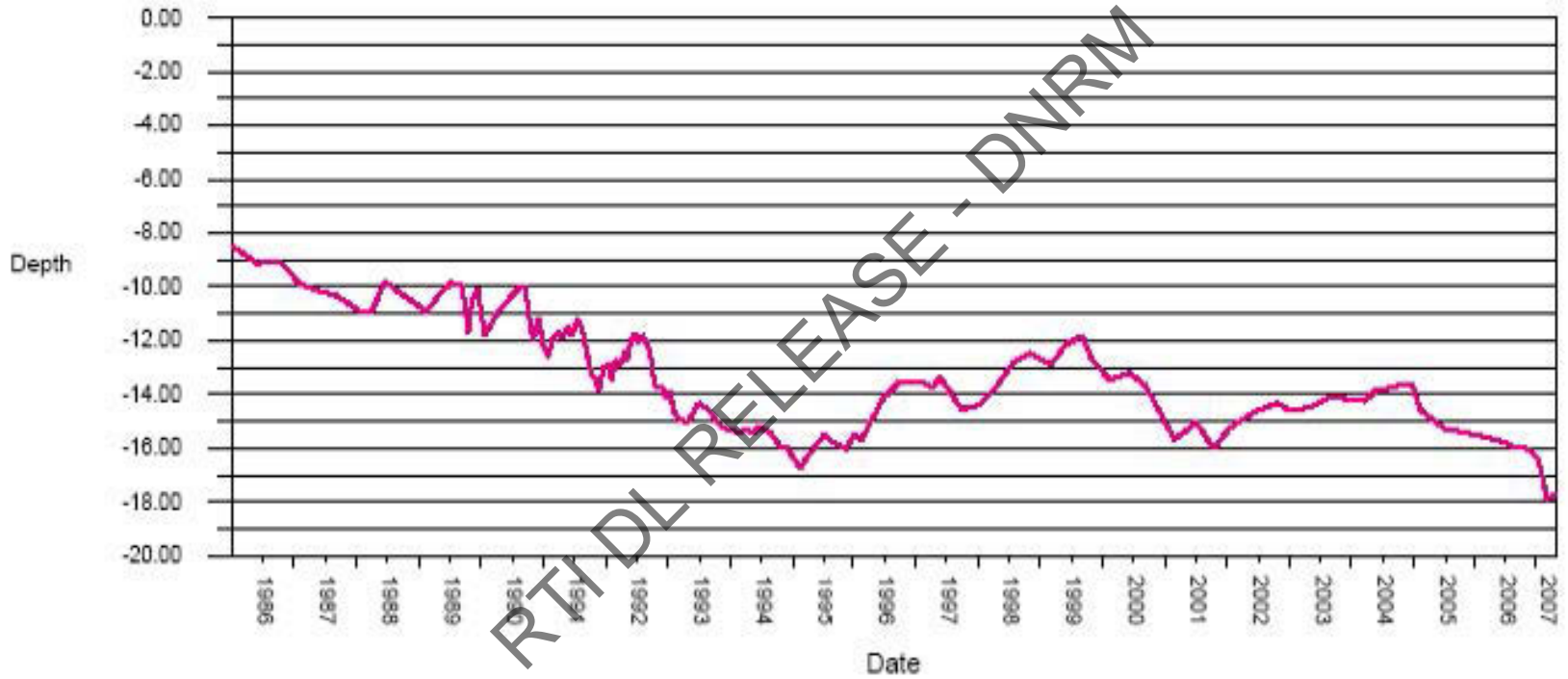
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Water Level Below Measurement Point

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Pipe: A

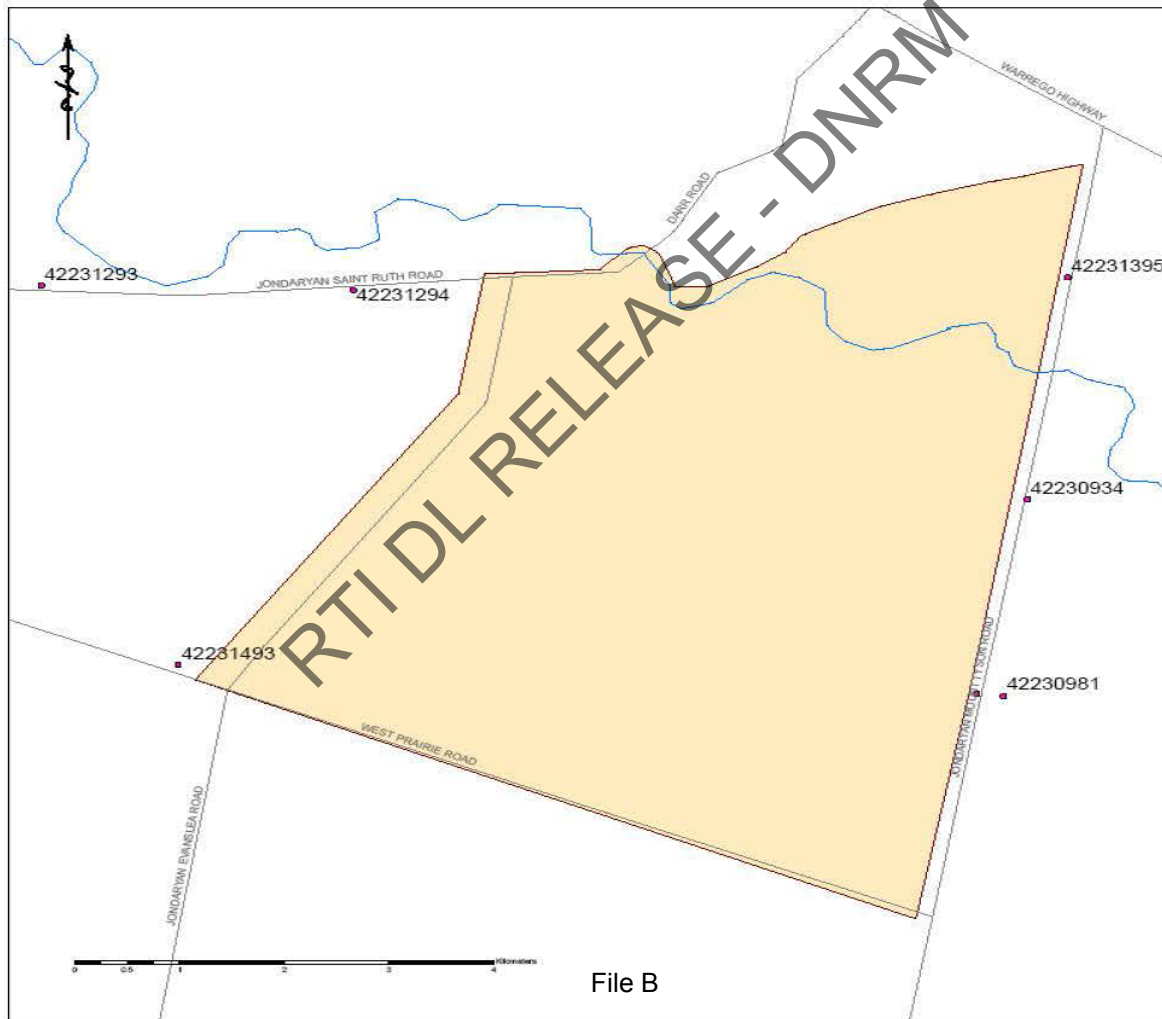


Release

Oakey Creek Groundwater Management Area 4 Observation Bores

Legend

- Departmental Monitoring Bores
- Oakey Creek
- Major Roads
- OCGMA Area 4



Release

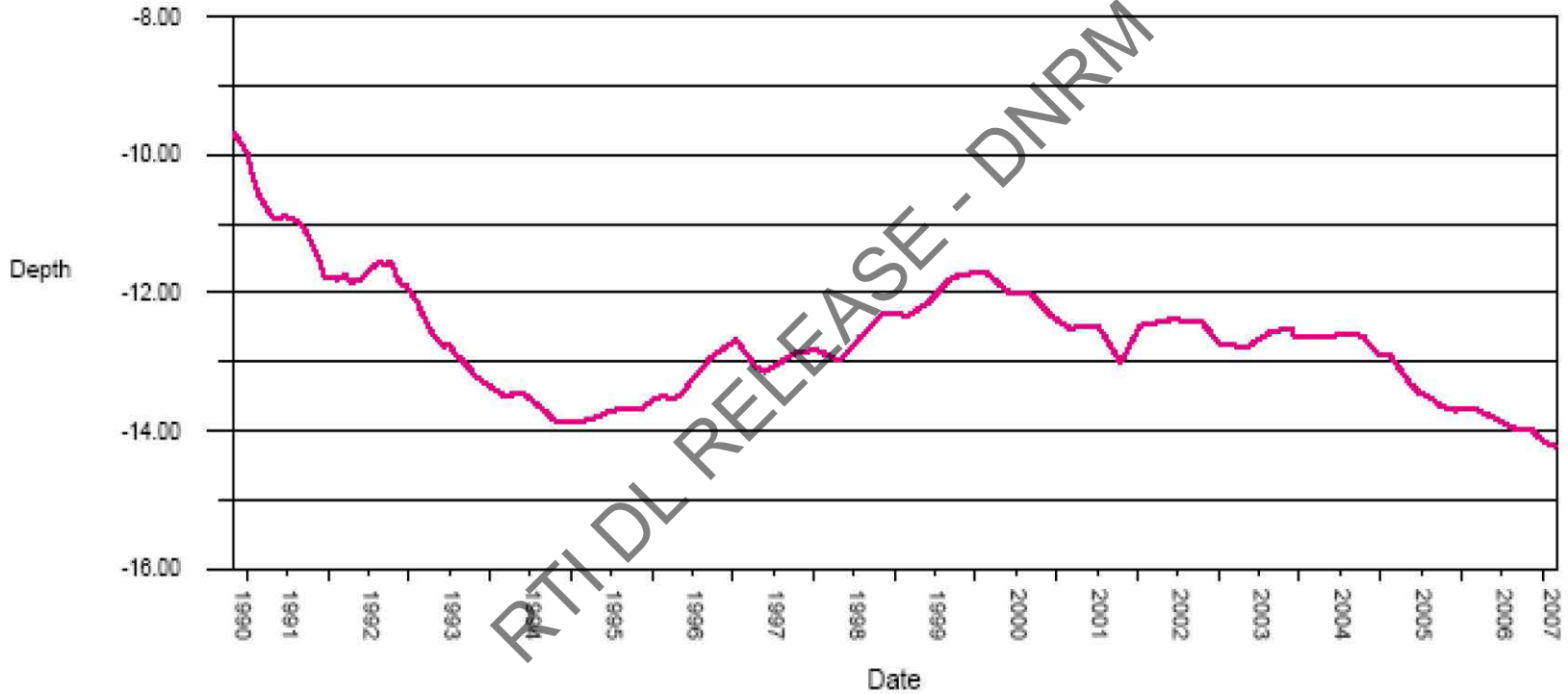
SUB AREA 4 – Observation Bore No. 42231395

Date: 24/05/2007 09:26:36

Water Level Below Measurement Point

RN: 42231395

Pipe: A

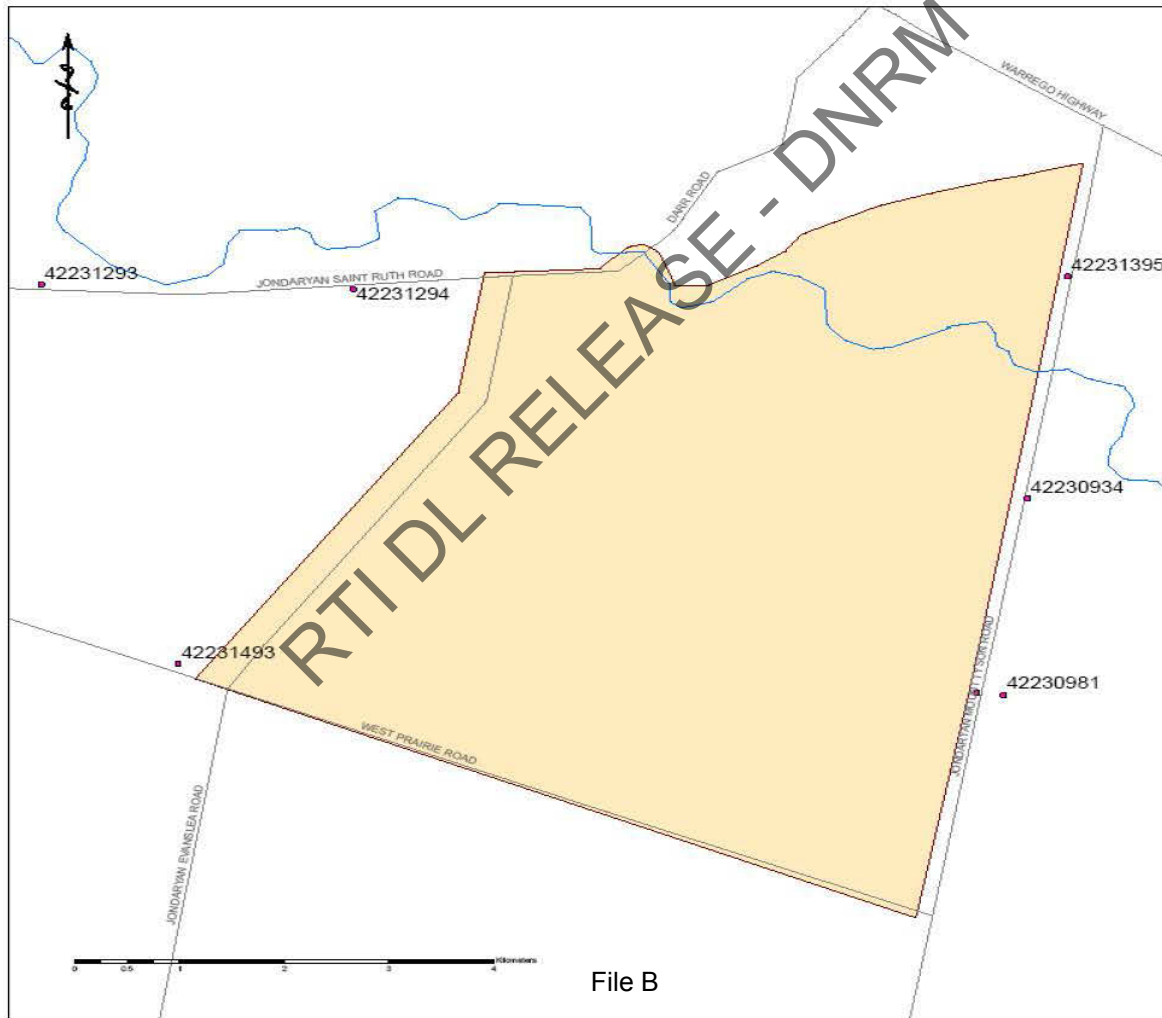


Release

Oakey Creek Groundwater Management Area 4 Observation Bores

Legend

- Departmental Monitoring Bores
- Oakey Creek
- Major Roads
- OCGMA Area 4



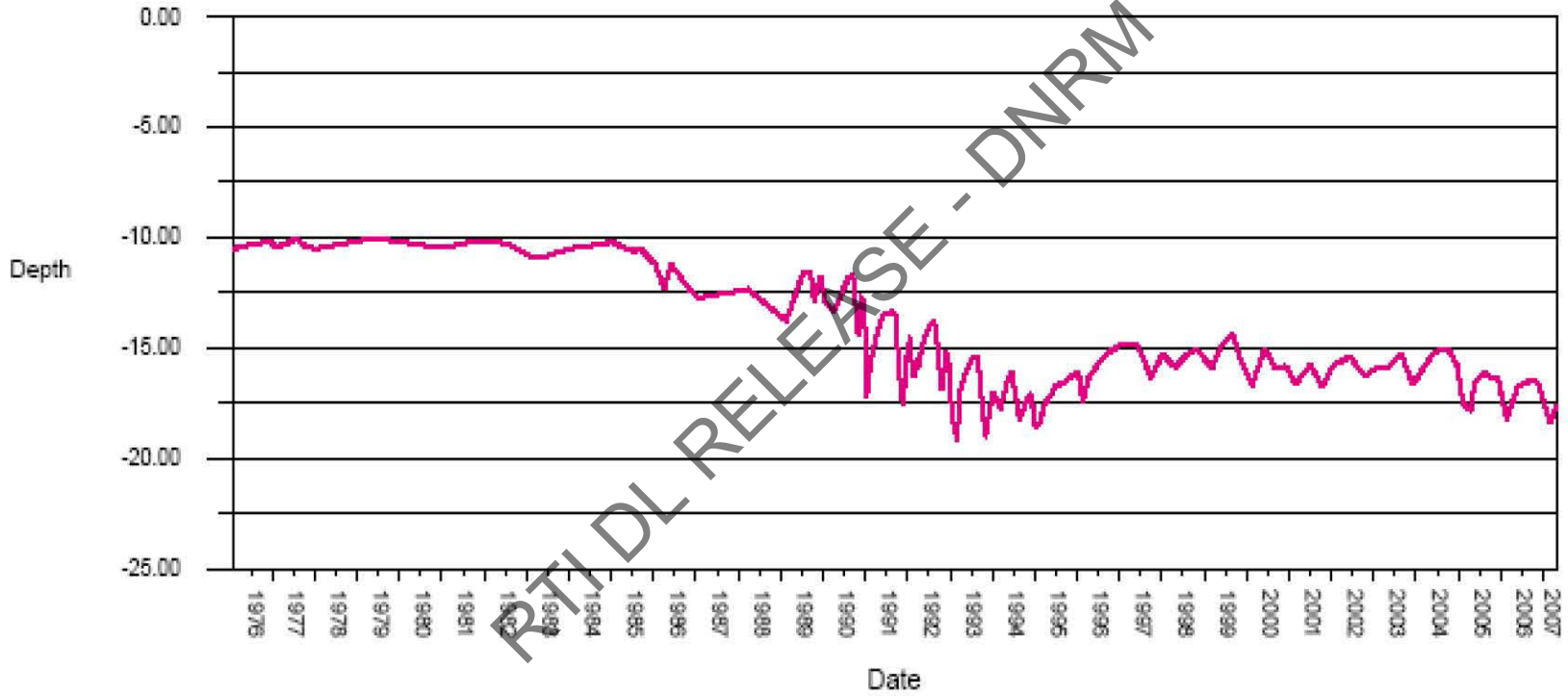
SUB AREA 4 – Observation Bore No. 42230934

Date: 24/05/2007 09:33:28

Water Level Below Measurement Point

RN: 42230934

Pipe: A

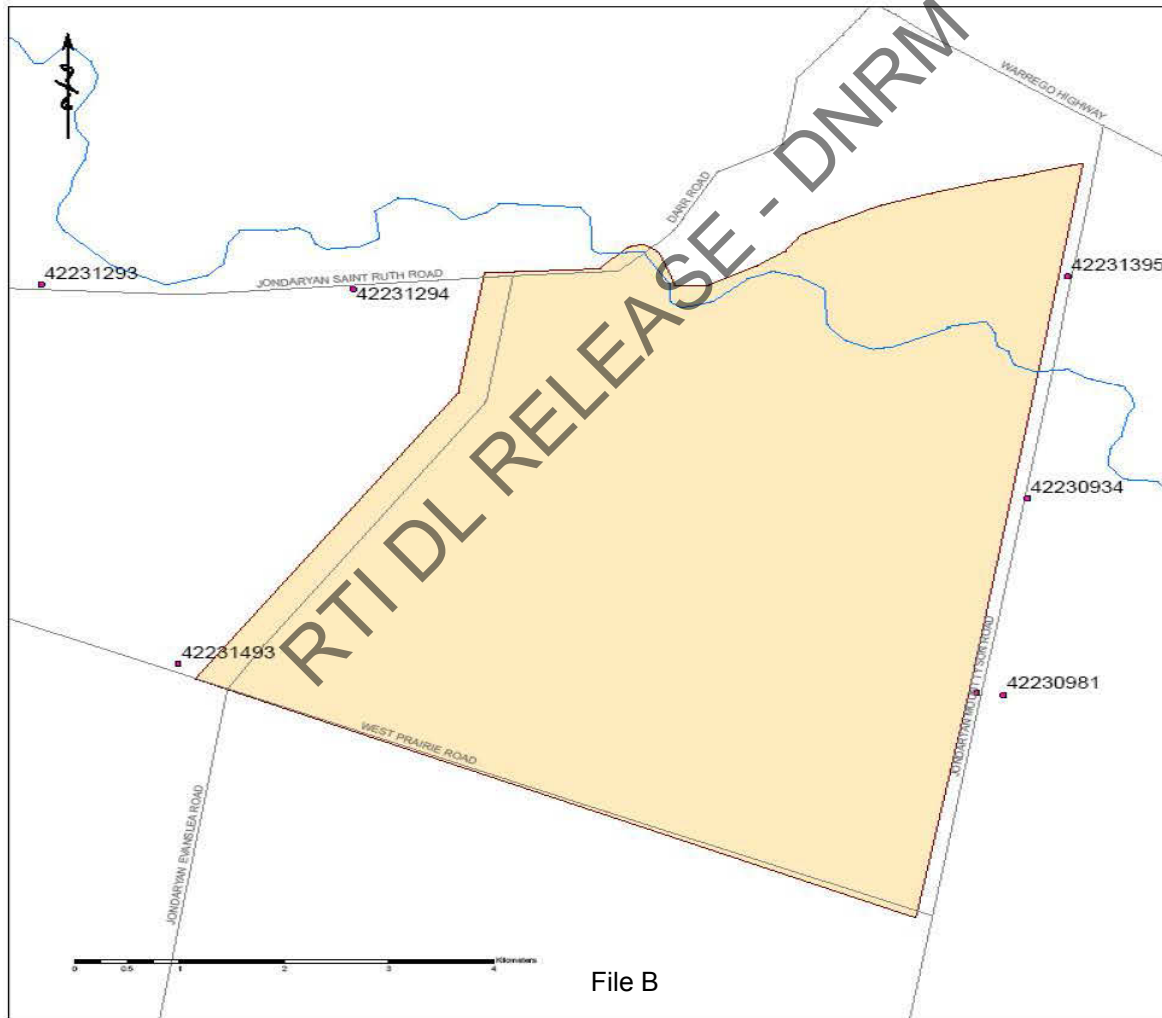


Release

Oakey Creek Groundwater Management Area 4 Observation Bores

Legend

- Departmental Monitoring Bores
- Oakey Creek
- Major Roads
- OCGMA Area 4



Release

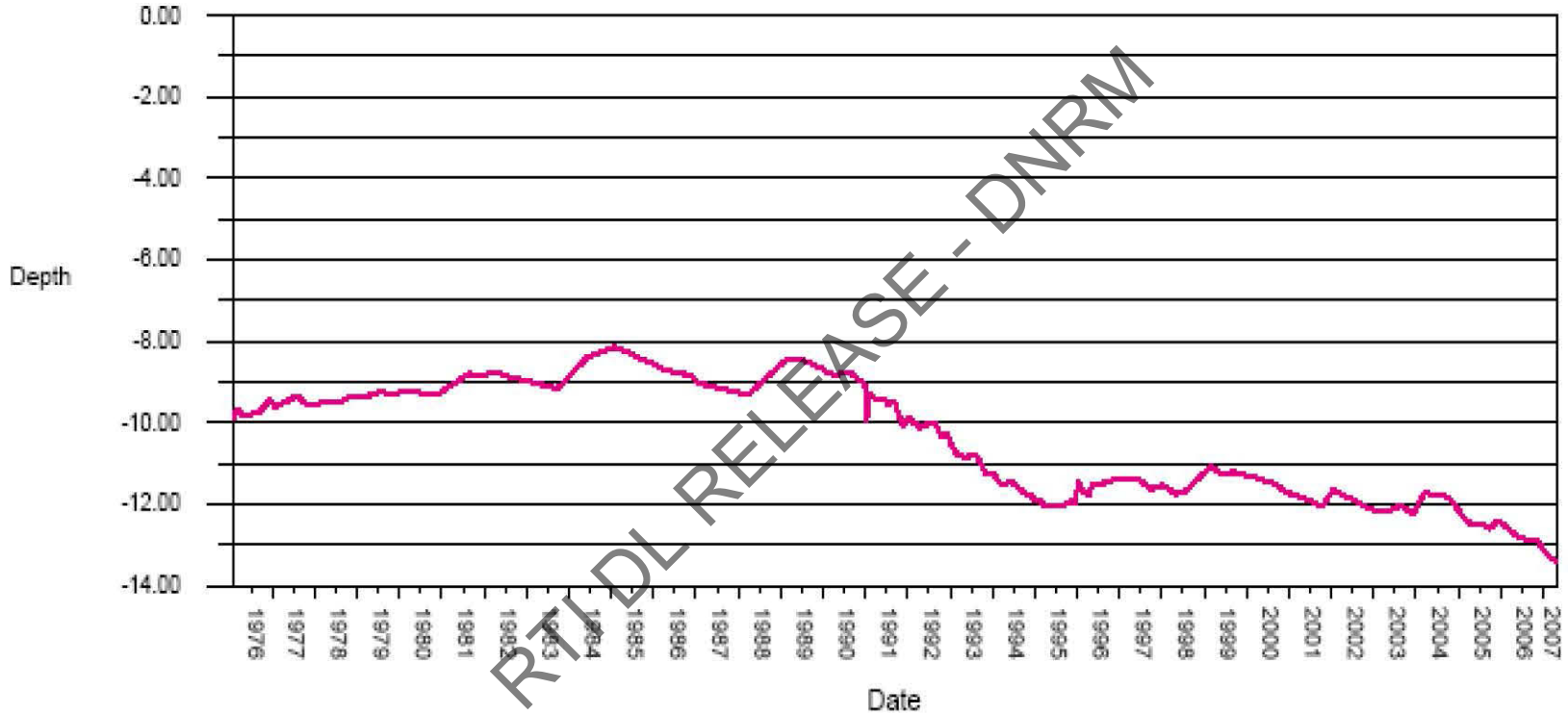
SUB AREA 4 – Observation Bore No. 42230935

Date: 24/05/2007 09:35:07

Water Level Below Measurement Point

RN: 42230935

Pipe: A

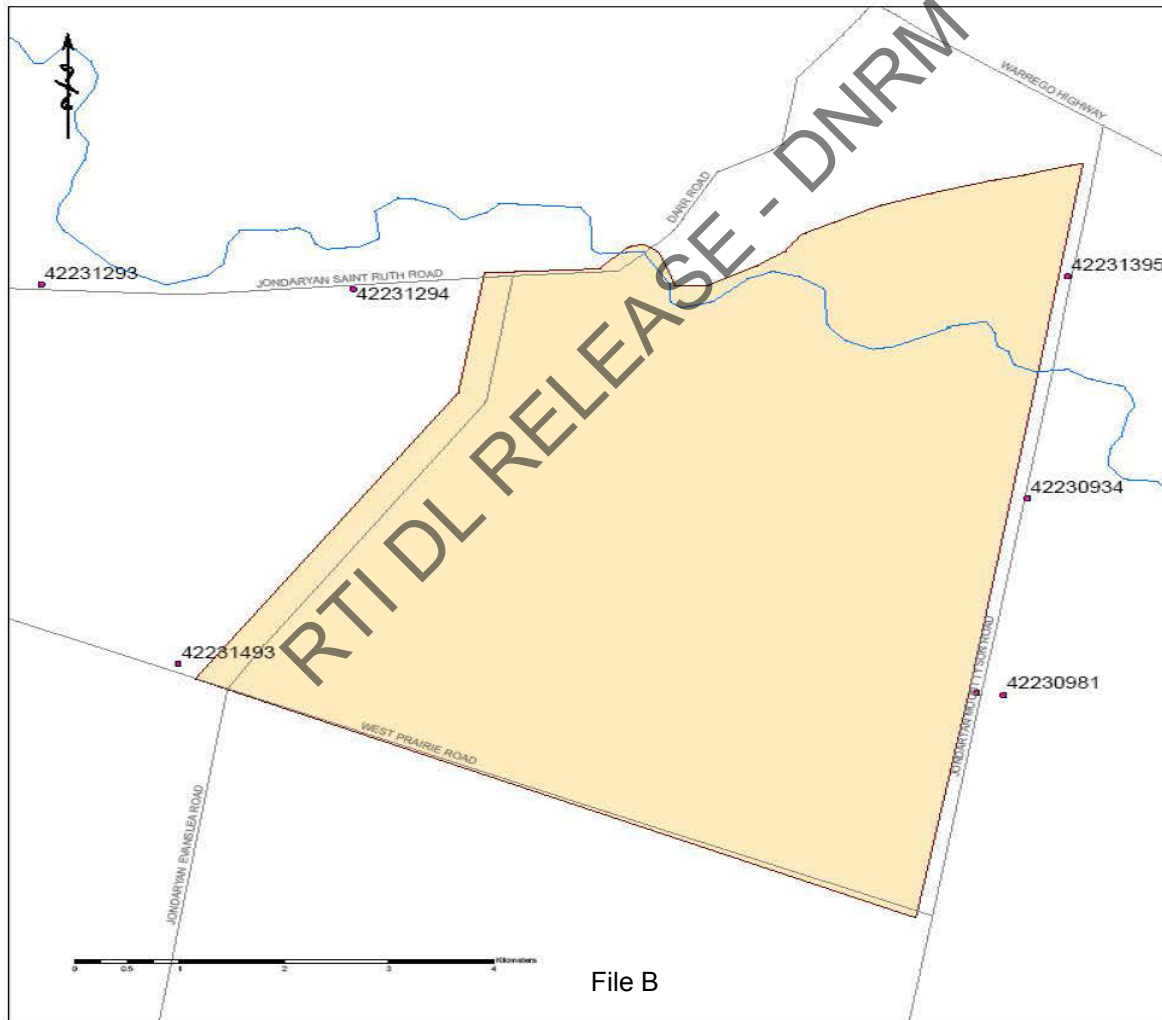


Release

Oakey Creek Groundwater Management Area 4 Observation Bores

Legend

- Departmental Monitoring Bores
- Oakey Creek
- Major Roads
- OCGMA Area 4



Release

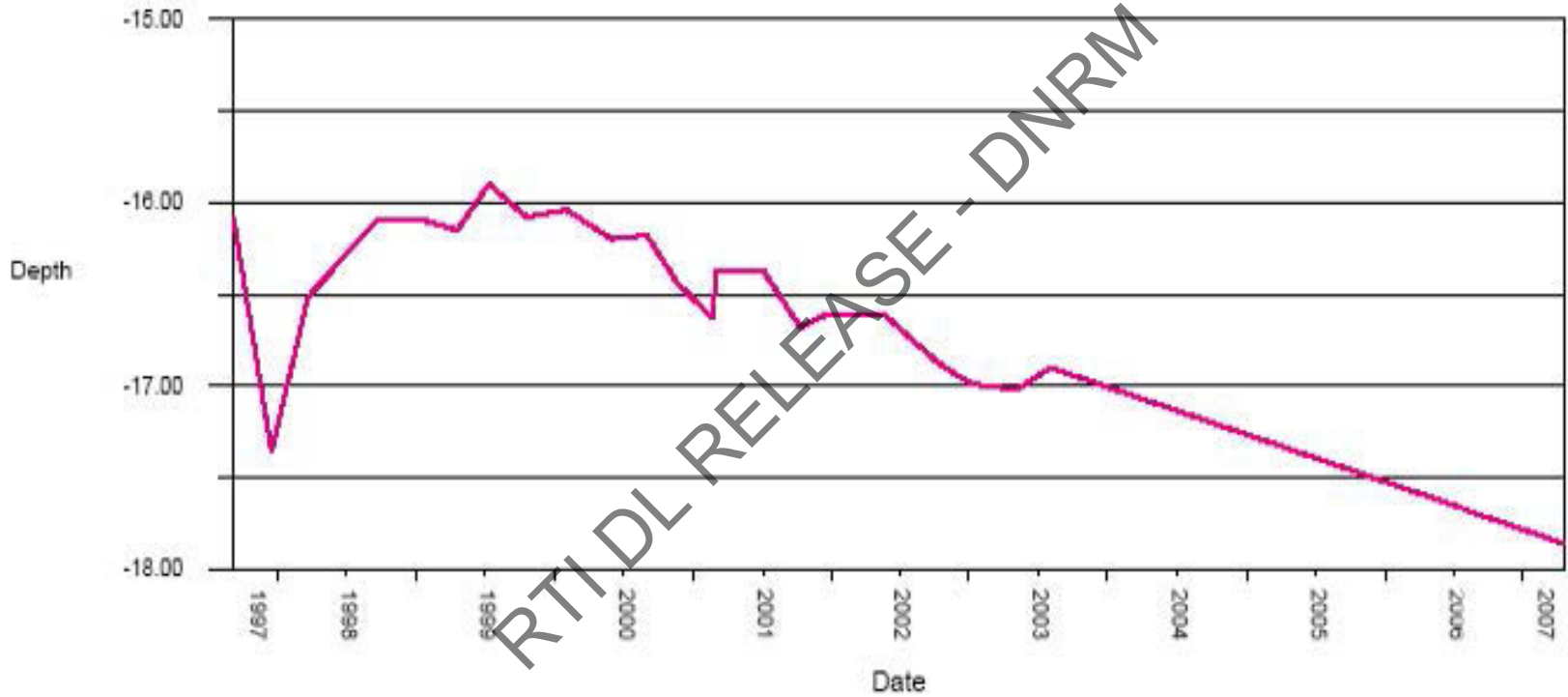
SUB AREA 4 – Observation Bore No. 42231493

Date: 24/05/2007 09:25:50

Water Level Below Measurement Point

RN: 42231493

Pipe: A

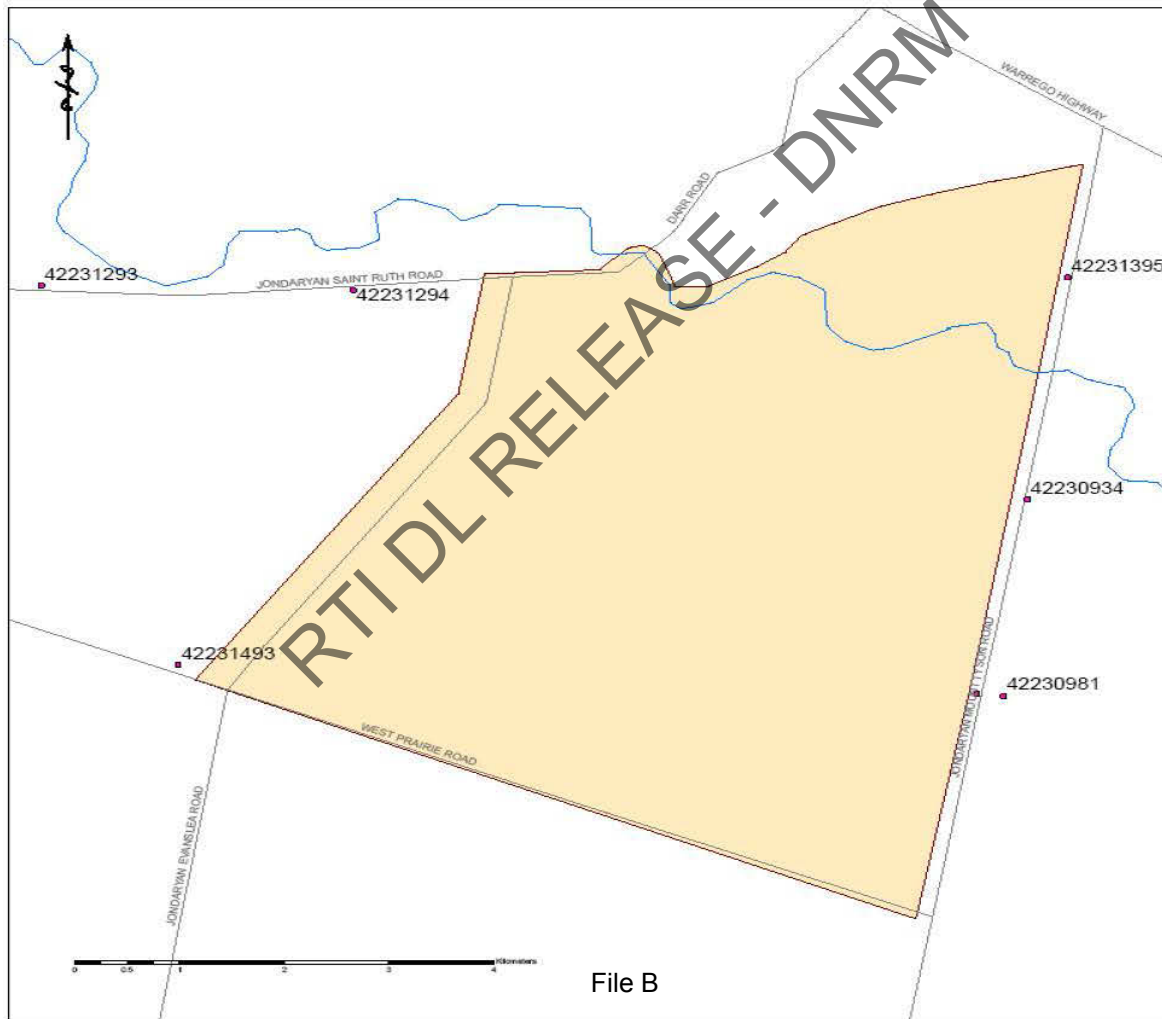


Release

Oakey Creek Groundwater Management Area 4 Observation Bores

Legend

- Departmental Monitoring Bores
- Oakey Creek
- Major Roads
- OCGMA Area 4



Release

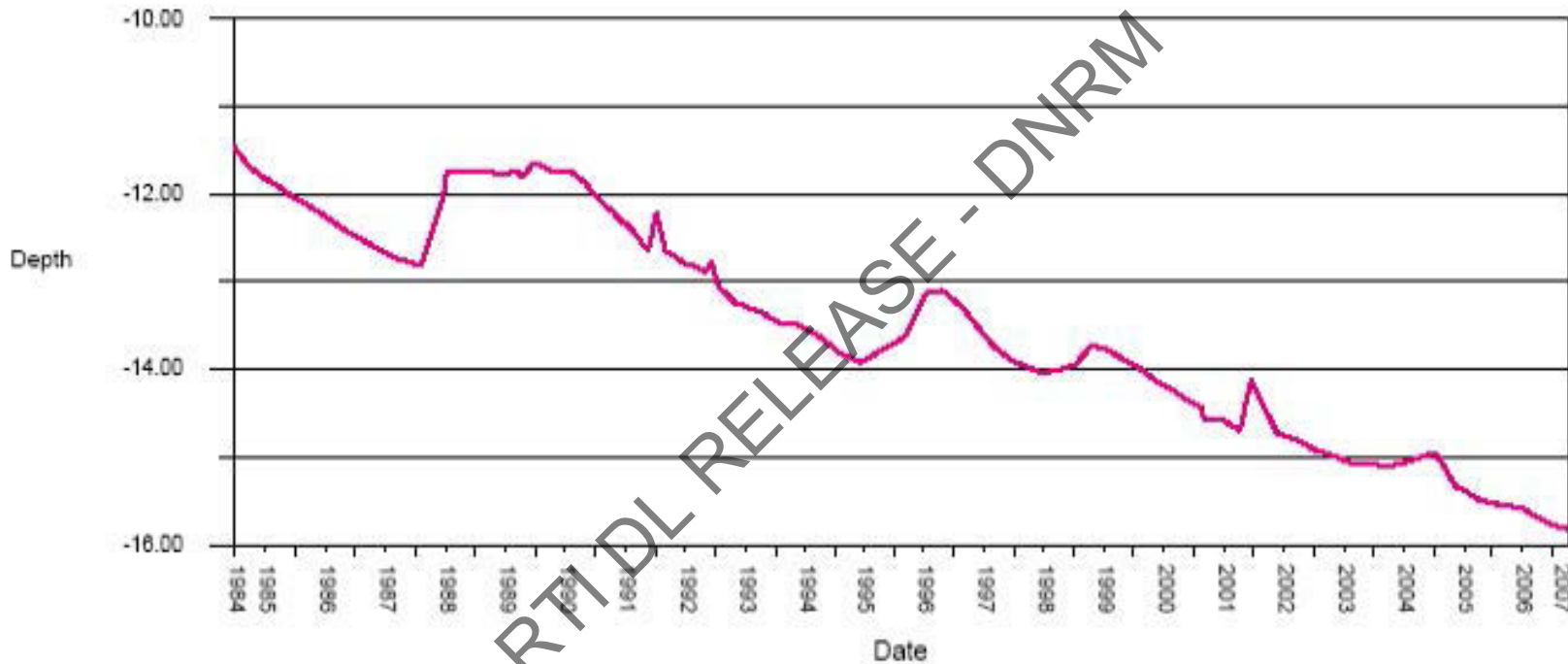
SUB AREA 5 – Observation Bore No. 42231294

Date: 28/05/2007 15:33:57

Water Level Below Measurement Point

RN: 42231294

Pipe: A

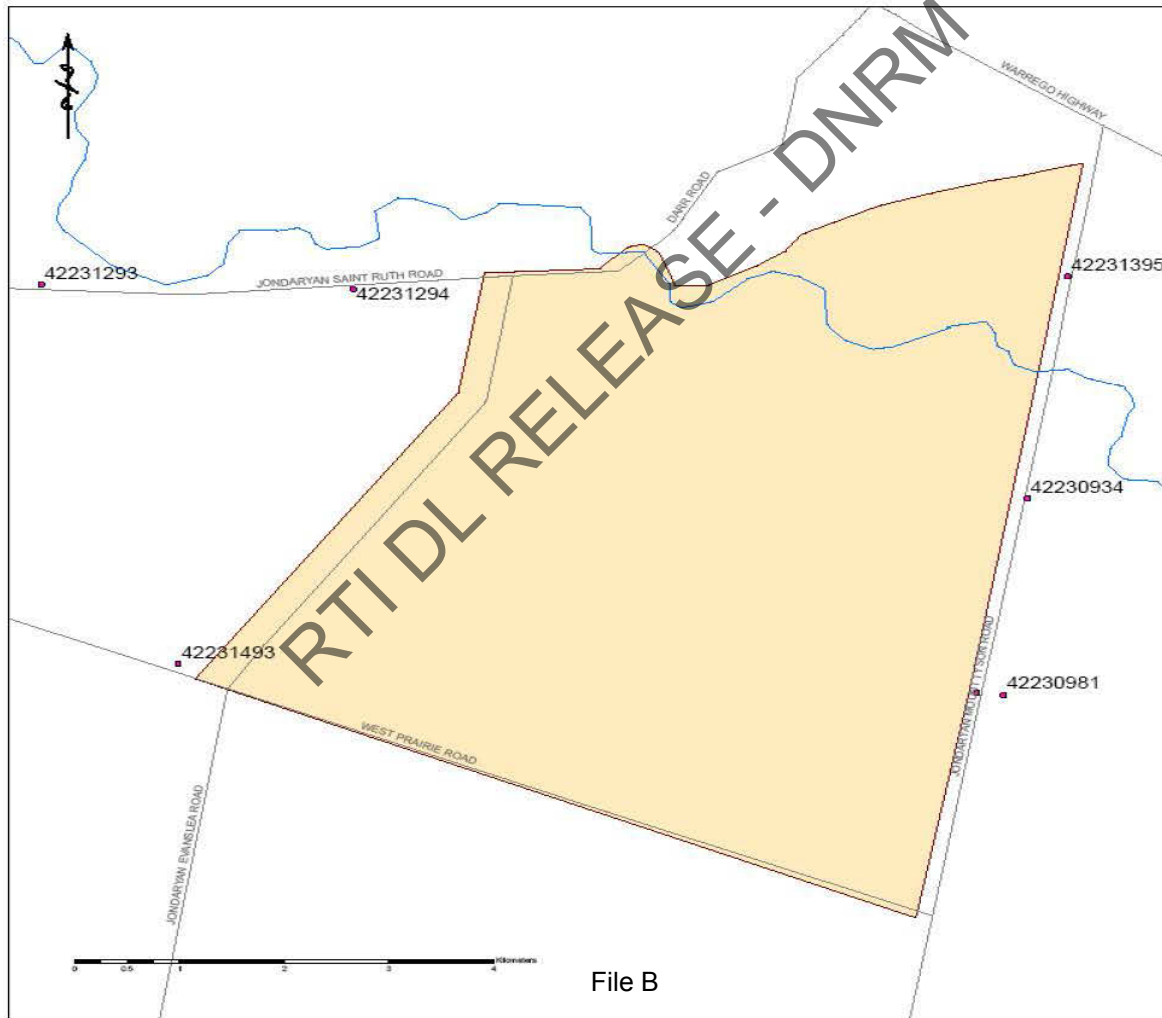


Release

Oakey Creek Groundwater Management Area 4 Observation Bores

Legend

- Departmental Monitoring Bores
- Oakey Creek
- Major Roads
- OCGMA Area 4



Release

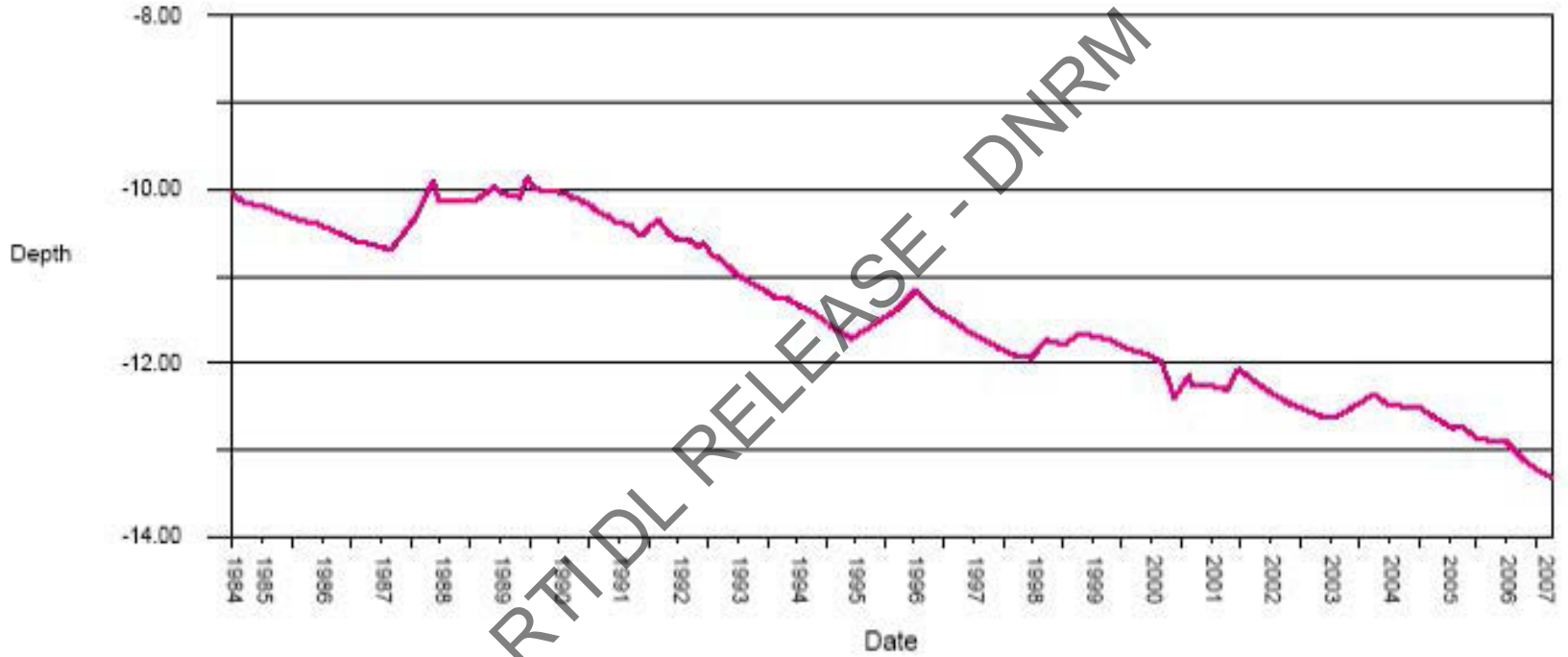
SUB AREA 5 – Observation Bore No. 42231293

Date: 24/05/2007 09:22:30

Water Level Below Measurement Point

RN: 42231293

Pipe: A



Release

% usage v's Nominal Entitlement by Sub Area

	Sub Area 1	Sub Area 2	Sub Area 3	Sub Area 4	Total all SA
2005/06 water year	44%	24%	60%	72%	50%
2000/01 to 05/06	56%	22%	56%	71%	48%
1996/97 to 05/06	55%	22%	50%	50%	45%

Release

Proposed Announced Entitlement for the 2007/08 water year

- Sub Area 1 – 45%
- Sub Area 2 – 60%
- Sub Area 3 – 60%
- Sub Area 4 – 70%

RTI/D/RELEASE - DNRM

Minutes from Oakey Creek Groundwater Management Area Trading Rules Meeting – Wednesday 29th October 2014

Chair: Braden Bullock

Minutes: Ashton Beeby & Caitlin Harris

Meeting Opened: 7:10pm

Agenda Items	Discussion	Actions/Outcomes
1. Attendees	<p>DNRM Staff Members: Orren Farrington, Melissa McLean, Caitlin Harris, Ashton Beeby.</p> <p>Community Members: Rooney Willson, Ben Willson, Daniel Meacham, Ian Speed, Jim Cruise, Alan Kleinschmidt, Neil Nass, Russel Grundy, Lindsay Evans and Braden Bullock.</p>	
2. Apologies	<p>Pat Gleeson (Daniel Meacham attended on his behalf), Ray Clarke (Jim Cruise attended on his behalf), Jenny Gordon</p>	
3. Minutes from last meeting	<div style="text-align: center; vertical-align: middle;"> <p>s.73</p> </div>	
4. Trends and current state of Sub-area's – Caitlin		
5. Meter reading and Telemetry		

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6. Introduction to trading - Orren

7. Permanent Water Transfer Trading model - Melissa
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8. Water Licence Transfer Rules - Orren
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	s.73	
9. Defence Force Contamination	<p>Jim Cruise on behalf of Pat Gleeson for Defence – Oakey provided an update on groundwater contamination. Testing finished from baseline to railway. The contamination is moving through the groundwater. The airbase is no longer utilising bore water, but now on town mains. Stressed that this is not an Oakey issue but an Australian wide contamination issue. Oakey is being used for preliminary investigations and research. Updates available on Website: www.defence.gov.au/ld/oakey ; Email: defence.oakey.anz@aecom.com; Phone: 1800 136 129.</p>	
10. Close of Meeting	<div style="border: 1px solid black; width: fit-content; margin: 0 auto; padding: 2px;">s.73</div> <p>Meeting closed: 9:40pm.</p>	<p>Caitlin & Braden to organise date for next meeting.</p>

RTI DL RELEASE - DNIRM