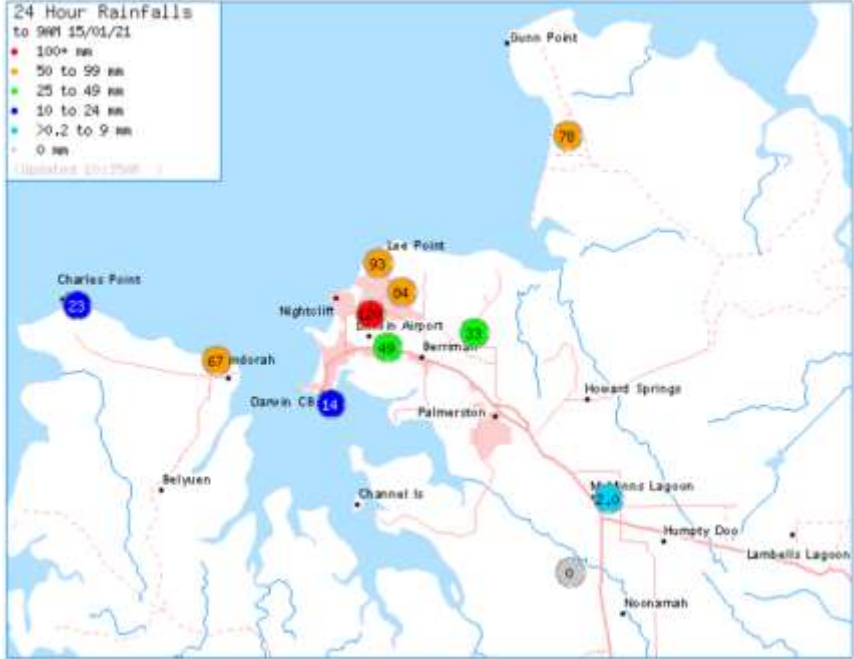


**SECTION 14 INCIDENT REPORT (*Waste Management and Pollution Control Act*)**

<b>Date and Time of Notification:</b>	Friday 15 <sup>th</sup> January 2021, 10:50hrs V2.0 17/01/21 V3.0 20/01/21
<b>Person / Company:</b>	Power and Water Corporation ( <b>PWC</b> )
<b>Incident:</b>	Discharge of highly diluted sewage from sewerage network due to wet weather

<p><b>(a) the incident causing or threatening to cause pollution</b></p>	<p><i>i. Description of the waste that was discharged.</i></p> <p>Highly diluted sewage.</p> <p><i>ii. Indicative wastewater quality for the discharge.</i></p> <p>Indicative wastewater quality for this overflow can be found in Table 1. Rainfall leading up to the overflow was 226mm for the previous 5 days (Marrara Weather Station – 14144), with high rainfall events occurring within short timeframes resulting in flash flooding – as shown in Figure 1 below several downpours up to 120mm were received throughout the Darwin region in a matter of hours. As a result inflows of up to 64ML/day were received at Ludmilla Wastewater Treatment Plant (WWTP) equating to &gt;4x (58ML/day) Average Dry Weather Flows (ADWF).</p> 
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Inflow volume	median inflow kL	median E coli	90th percentile inflow kL	90th percentile E coli
below ADWF	11,040	11,199,000	12,925	15,531,000
>ADWF (14.5 ML/day)	15,274	9,804,000	22,206	17,148,300
>2x ADWF (29.0 ML/day)	31,673	4,894,000	37,166	14,385,600
>3x ADWF (43.5 ML/day)	43,629	4,611,000	50,506	12,843,600
>5x ADWF (72.5 ML/day)	71,558	5,002,000	78,578	5,905,200
>10x ADWF (145 ML/day)	102,445	102,445	148,575	13,704,400

(ADWF= Average Dry Weather Flow ~14.5 ML/day in 2013/14)

*iii. Volume of the waste that was discharged.*

The volume of waste discharged at each discharge location is unknown. No telemetric monitoring occurs at these locations, with the exception of the overflow point for the Rapid Creek Road and Lakeside Drive Sewer Pump Station (SPS). This data will be downloaded.

**(b) the place where the incident occurred**

*i. Description of the PWC asset from which the discharge occurred.*

- 5 Robert Place, Milner - Manhole
- Cnr of Rapid Creek and Trower Road, Rapid Creek – Sewer Relief Point
- Ludmilla - Sewer Pump Station (SPS)
- Lakeside Drive, Rapid Creek - SPS
- Rapid Creek Road, Rapid Creek - SPS

*ii. GPS coordinates of the discharge point from the PWC asset, and the final coordinates of the final discharge point.*

As per mapped locations below, please click on location descriptions below for mapping of overflow locations:

5 Roberts Place, Millner - Manhole

1. Discharge Point: 12.391619 S, 130.867892 E
2. Final Point: 12.3915974 S, 130.8679374 E

Corner of Trower Road and Rapid Creek Road, Rapid Creek - Sewer overflow relief point

1. Discharge Point: 12.3856733 S, 130.8649635 E
2. Final Point: 12.3857337 S, 130.8659548 E

194 Casuarina Drive, Nightcliff (Aralia St, Jetty End)

1. Discharge Point: 12.3818052 S, 130.8413272 E
2. Final Point: 12.3818060 S, 130.8409924 E

Ludmilla – SPS

1. Discharge Point: 12.4145507 S, 130.8500919 E
2. Final Point: 12.4144254 S, 130.8458232 E

Lakeside Drive and Rapid Creek Road – SPS's

1. Discharge Point: 12.3806369 S, 130.8656139 E
2. Final Point: 12.3805596 S, 130.8665271 E

*iii. Indicate any locations nearby to the discharge point where public can gain ready-access, such as public open spaces through which the discharge moves.*

Public access is available to discharge locations throughout Darwin although due to wet weather conditions present the likelihood of people visiting these areas is low. Where possible signage was utilised to alert the public and deter access to sites. Clean up consistent with Sewage Spills/Overflow Response Work Instruction as appropriate to the location, and to minimise risk to the environment.

<p><b>(c) the date and time of the incident</b></p>	<p><i>i. The time and date of commencement and cessation of the discharges.</i></p> <table border="1" data-bbox="598 320 1453 674"> <thead> <tr> <th>Location</th> <th>Approx. Start time</th> <th>Approx. Stop time</th> </tr> </thead> <tbody> <tr> <td>5 Roberts Place, Millner – Manhole</td> <td>First observed 07.30hrs 15/01/21</td> <td>11.00hrs 15/01/21</td> </tr> <tr> <td>Corner of Trower Road and Rapid Creek Road, Rapid Creek - Sewer overflow relief point</td> <td>Relief point opened 07:30hrs 15/01/21</td> <td>Relief point closed 11:00hrs 15/01/21</td> </tr> <tr> <td>194 Casuarina Drive – Sewer overflow relief point</td> <td>Relief point opened 07:30hrs 15/01/21</td> <td>Relief point closed 11:00hrs 15/01/21</td> </tr> <tr> <td>Ludmilla – SPS</td> <td>23:20hrs 14/01/21</td> <td>01:47hrs 17/01/21</td> </tr> <tr> <td>Lakeside Drive - SPS</td> <td>23:20hrs 14/01/21</td> <td>17:00hrs 16/01/21</td> </tr> <tr> <td>Rapid Creek Road – SPS</td> <td>23.20hrs 14/01/21 21:20hrs 15/01/21</td> <td>16:45hrs 15/01/21 03:20hrs 16/01/21</td> </tr> </tbody> </table> <p>NOTES:</p> <ol style="list-style-type: none"> <li>TBD – These details are still to be received from the operations teams. They are currently responding to operational requirements on the ground. When available these details will be provided. Once provided an amended S14 report will be submitted to DEPWS.</li> <li>Lakeside Drive and Rapid Creek Road SPS's discharge from the same discharge point as per map below.</li> </ol> <p><i>ii. How PWC were notified, or became aware of the discharge.</i></p> <p>PWC Operations staff were alerted by sewer system high level alarms.</p> <p><i>iii. The process by which the discharge occurred.</i></p> <p>Due to significant rainfall in the Darwin catchment over the past few days, and in particular significant downpours within short periods of time, sewage volumes within the sewerage system have increased significantly due to inflow and infiltration of stormwater.</p> <p>As a result of this, sewer overflows have occurred from sewer infrastructure. Power and Water also undertook opening sewer relief points to relieve pressure in the system and manage potential human health/environmental impacts.</p> <p><i>iv. The reason why the discharge occurred.</i></p> <p>As per (c) iii. Sewerage network infrastructure has been designed to overflow with the best public health and environmental outcomes possible. Design focuses on not overflowing directly inside houses; rather discharge is designed to occur in a controlled manner at locations which can be accessed for infrastructure repair and clean up and with minimal public health or environmental impacts.</p>	Location	Approx. Start time	Approx. Stop time	5 Roberts Place, Millner – Manhole	First observed 07.30hrs 15/01/21	11.00hrs 15/01/21	Corner of Trower Road and Rapid Creek Road, Rapid Creek - Sewer overflow relief point	Relief point opened 07:30hrs 15/01/21	Relief point closed 11:00hrs 15/01/21	194 Casuarina Drive – Sewer overflow relief point	Relief point opened 07:30hrs 15/01/21	Relief point closed 11:00hrs 15/01/21	Ludmilla – SPS	23:20hrs 14/01/21	01:47hrs 17/01/21	Lakeside Drive - SPS	23:20hrs 14/01/21	17:00hrs 16/01/21	Rapid Creek Road – SPS	23.20hrs 14/01/21 21:20hrs 15/01/21	16:45hrs 15/01/21 03:20hrs 16/01/21
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<p><b>(d) how the pollution has occurred, is occurring or may occur</b></p>	<p>As per (c) iii &amp; (c) iv.</p> <p>The risks of environmental harm from the overflows is low as the wastewater discharged was highly diluted and discharged into a receiving environment also swollen with intense rainfall and urban stormwater runoff.</p> <p>Minimal environmental harm resulting from the discharge is anticipated as the effluent discharged was highly diluted due to the intense rainfall</p>																					

	<p>and discharged into areas already significantly impacted due to catchment/ stormwater runoff due to intense rainfall.</p> <p>It is not possible to prevent overflows in extreme rainfall events and the system is designed to permit overflows rather than resulting in structural collapse and public health impacts from sewage backing up in homes.</p>
<p><b>(e) the attempts made to prevent, reduce, control, rectify or clean up the pollution or resultant environmental harm caused or threatening to be caused by the incident</b></p>	<p><i>i. Confirmation signage and fencing has been erected, as appropriate.</i></p> <p>Where possible signage and fencing was installed to alert the public and prevent access to the sites as per Sewage Spills/Overflow Response Work Instruction.</p> <p><i>ii. Decontamination of the site as appropriate.</i></p> <p>Clean up consistent with Sewage Spills/Overflow Response Work Instruction as appropriate to the location, and to minimise risk to the environment. Sites inspected for gross pollutants and removal undertaken as required. Reports thus far are that no gross pollutants are visible.</p>
<p><b>(f) the identity of the person notifying the NT EPA</b></p>	<p>PWC Environmental Team on behalf of Water Services</p>



Corner of Trower Road and Rapid Creek Road, Rapid Creek - Sewer overflow relief point



Corner of Trower Road and Rapid Creek Road, Rapid Creek - Sewer overflow relief point – Photo – Warning Sign



194 Casuarina Drive, Nightcliff (Aralia St, Jetty End)

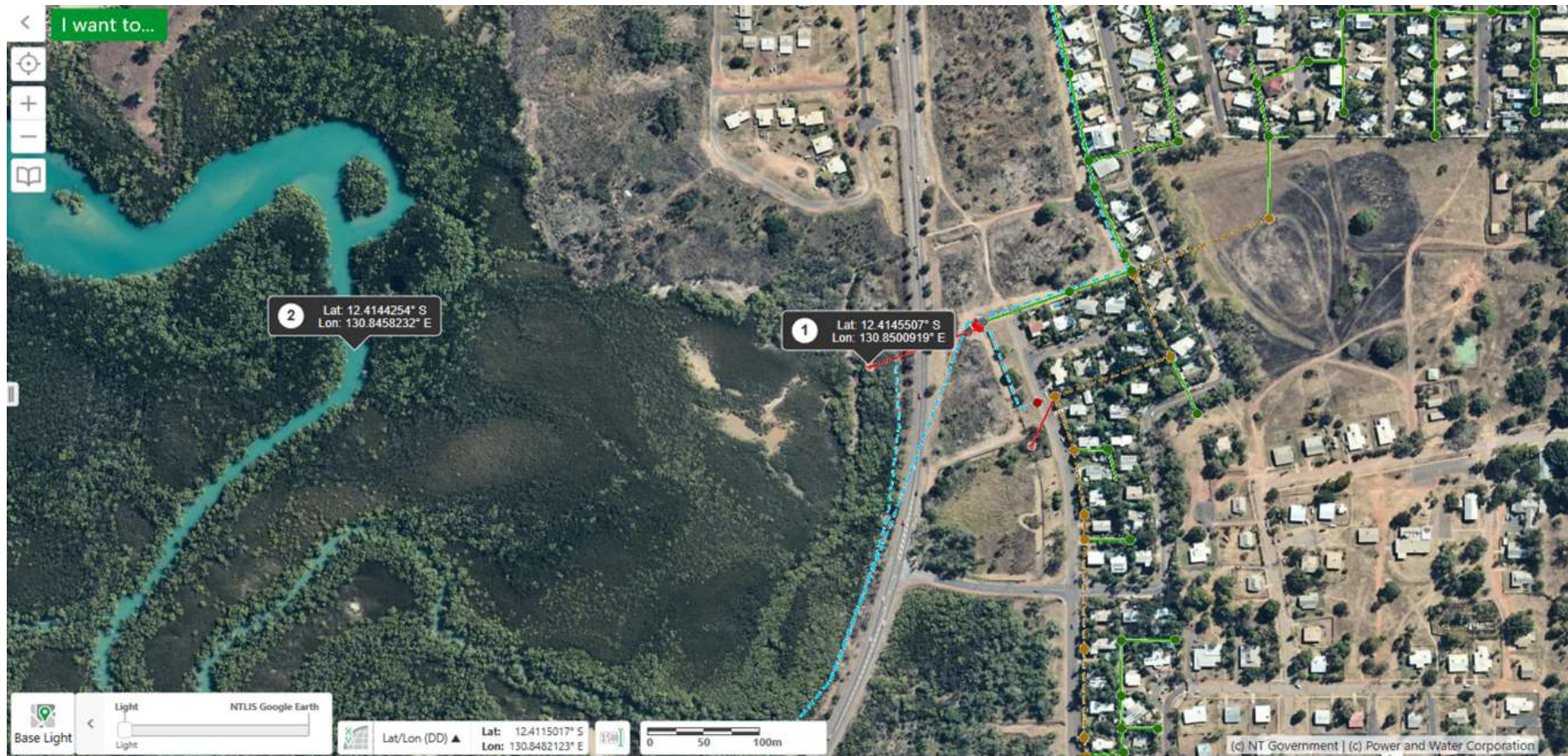




194 Casuarina Drive, Nightcliff (Aralia St, Jetty End) – Photo Warning Sign



Ludmilla – SPS



Lakeside Drive and Rapid Creek Road – SPS



Lakeside Drive and Rapid Creek Road SPS Photo – Warning Signs



Lakeside Drive and Rapid Creek Road SPS Photo – Discharge Point within swollen creek

