

**Final Plan-Geological Survey of Canada South Rae mapping project
Permit MV2015X0006**

1.0 Lands upon which the operation was conducted.

The South Rae mapping project was conducted over two summers in 2015 and 2016. The work constituted two years of geology research project in southeastern Northwest Territories, by a group of geologists and university students conducting bedrock geological and surficial mapping.

Daily bedrock work consisted of collecting fist-sized rock samples and making observations over the broader region at sites that were selected on the basis of visual elements that explained how the rocks were formed and what happened to them. Walking and collecting samples occurred from set-out locations accessed by helicopter, with mapping crews picked up by helicopter at the end of the day's work. Some sampling was conducted by flying between selected sites by helicopter. Surface samples were collected with a geological hammer or a sledgehammer for more resistant rocks. Locations were taken with precise GPS location and will be reported in an upcoming Open File report by the Northwest Territories Geological Survey. No drilling was conducted.

Daily surficial research involved collecting glacial sediment samples using shovels and 5 gallon pails. The scientists dug shallow pits less than a meter deep to collect dirt, with the topmost organic layer restored afterward. These data are to be published by the Geological Survey of Canada in an Open File report.

Preliminary summaries of year summer's activities can be found in the Bibliography at the end of this report.

Originally planned activities for 2017 were not undertaken.

2015 activities were conducted from a camp on Wignes Lake from June 30 to August 7. 2016 activities were conducted from June 25- July 29 from a base camp on McArthur Lake. Both these activity periods utilized planned locations as laid out in the permit application. Detailed and regional maps of activity areas follow.

1.1 Regional area.

Figure 1 below illustrates the location of the 2015 camp at Wignes Lake and related 4 fuel cache sites, as well as the 2016 McArthur Lake camp and 4 fuel cache sites. For reference their location relative to the NWT/Saskatchewan border and community of Stony Rapids, SK is shown. Stony Rapids was the base of resupply and flight origin for the project.

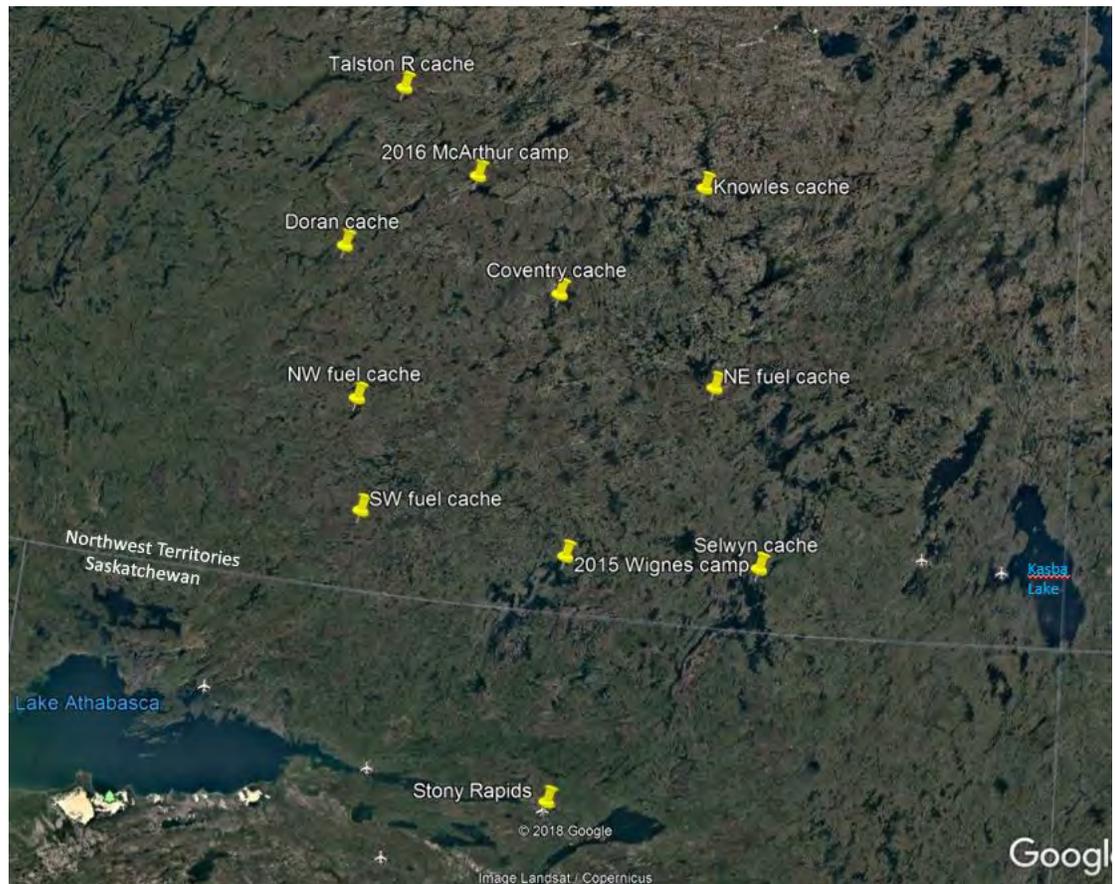


Figure 1: Location map from satellite image in Google Earth showing the locations of 2015 and 2016 camp sites and related fuel cache localities.

Selwyn, NW, NE and SW fuel caches were used in 2015 and Talston R, Doran, Coventry and Knowles caches were used in 2016.

1.2 Specific usage locations.

1.1 2015 Camp operations

The 2015 main camp was located at Wignes Lake (60°10' 40.9"N 105°52'45" W). Operations commenced June 30 with crew mobilization into Stoney Rapids. Discovery Mining services and GSC crew conducted two days of camp set up. Full crew occupied site on July 3. Helicopters were mobilized on July 4. Crew numbers in camp varied from 11 people to 17 depending on activities through the period. Camp demobilization commenced on August 7 and was complete August 10th.

Figure 2a illustrates planned layout. Figure 2b below illustrates the occupied layout of Wignes camp and related usage areas: helicopter pad, tent set ups, 2 dug pit latrines, main kitchen tent, office tent and dry.

Figure 3 is a photograph of the camp site with final layout. The perimeter of the camp was 0.74 kilometres circumference. The surface area of camp usage was 22,435 square meters (149 x 149 m).

The camp site was used to house temporary tent shelters and equipment storage, all of which were flown out and cleared at the end of the activity.

Modifications to the site included clearing of an area of approximately 14,000 square meters (approx. 118m by 118m) for helicopter landing pads. While not originally planned in the camp layout, pilots on site deemed it necessary for safety in reduced visibility conditions concomitant with the regional wildfires across northern Saskatchewan and parts of SE NWT in the summer of 2015.

2 latrine pits covered a total of 32 square meters were dug and subsequently filled in with sand.

The small amount of grey water stemming from dish washing and personal showers was disposed of in a dug pit occupying less than 5 square meters. The pit was predominately sand with some peat.

All garbage was flown out.

2015 Fuel cache operations

Fuel caches (of no more than 7 sealed drums of Jet fuel at a time) were set initially in in March 2015 by Air Tindi of Yellowknife, utilizing a Twin Otter on skiwheels. Resupply during active operations was accomplished by Transwest Air of Stoney Rapids utilizing a Twin Otter or Single Otter on floats. No modifications were made to the sites. Transient and short term occupation for refueling by helicopters of no more than 30 minutes at a time ensured no significant disturbance of the sites. One cache (labelled NW fuel cache in Figure 1) was not far from an area of active fire in May, 2015 but inspection of the drums in June 2015 determined no issues. Empty drums were backhauled when periodic resupply was completed and Transwest Air completed backhaul of all remaining empty, partial or full fuel drums out of cache locales by August 31st.

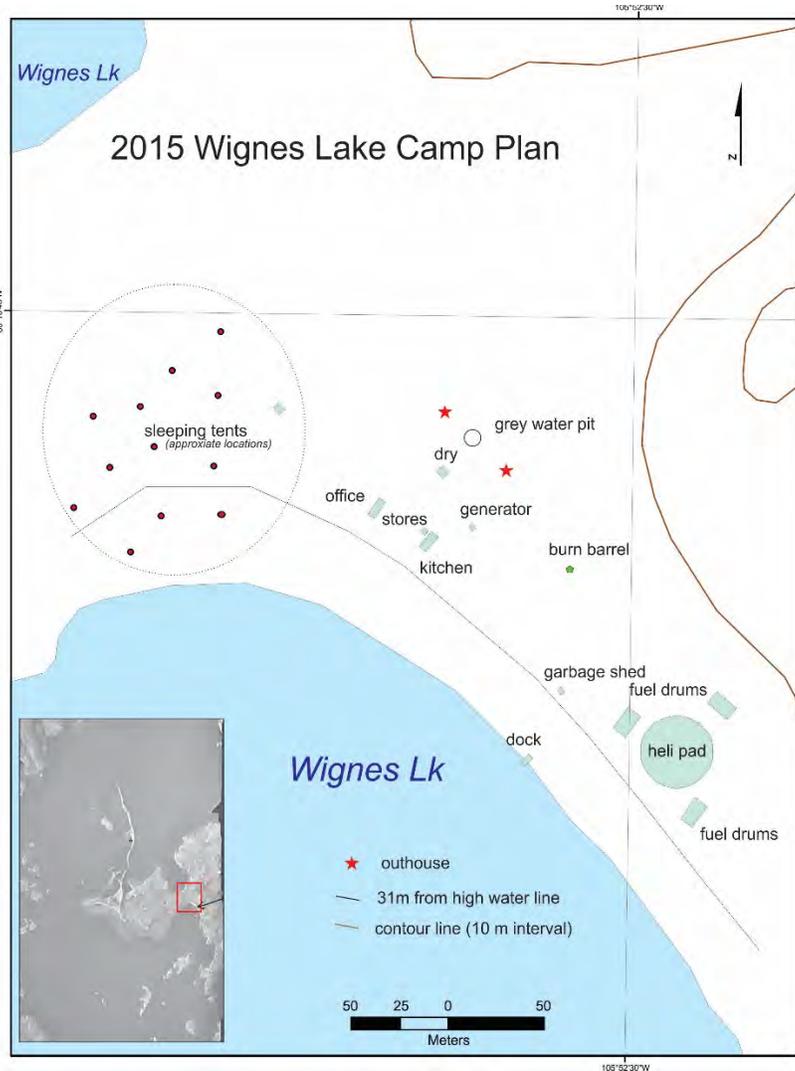


Figure 2a: Planned Layout of Wignes camp 2015.

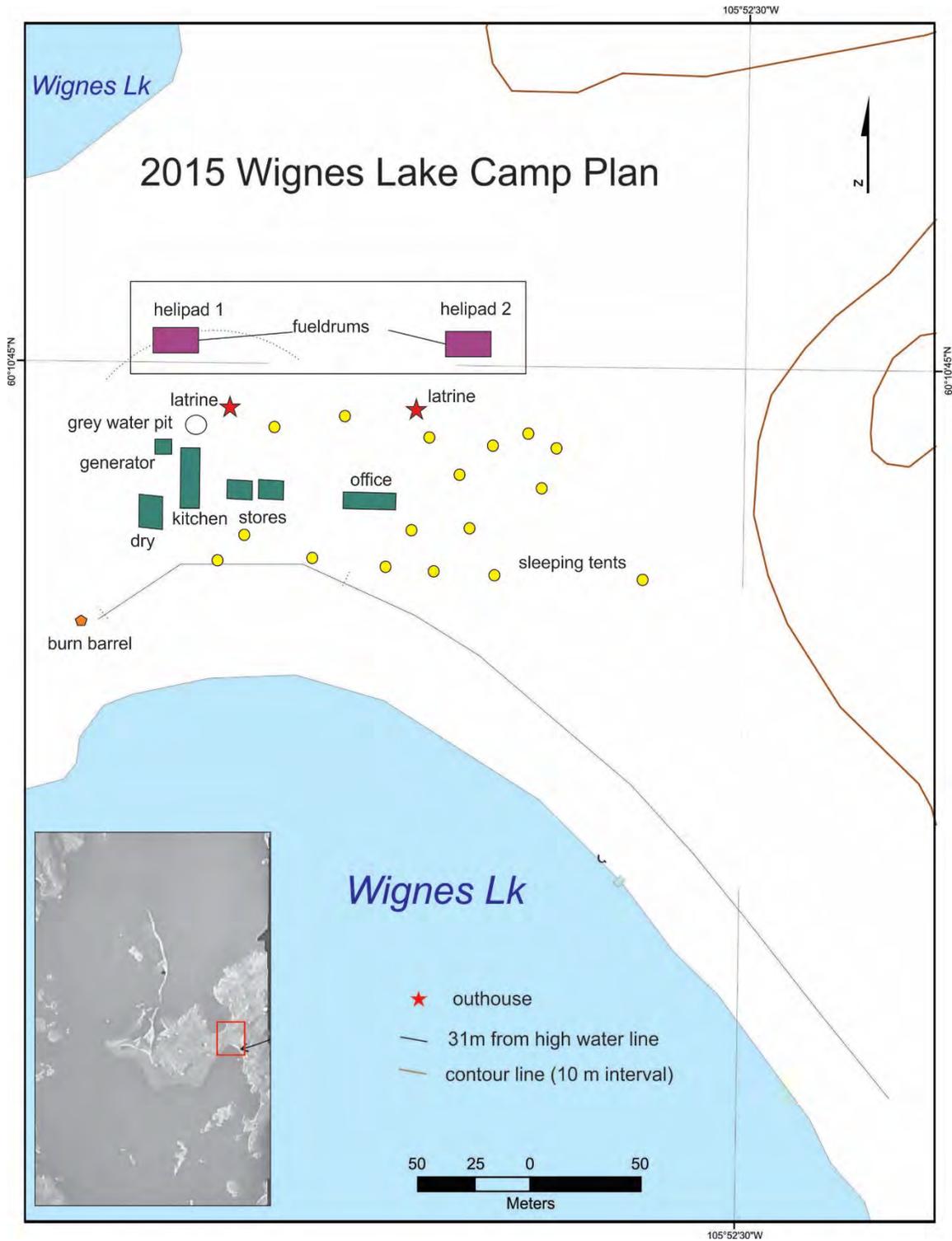


Figure 2b: Actual Layout of Wignes camp 2015. Unexpected wet ground on the eastern shore of the bay necessitated moving sleeping tents and helipad placement. Note tents, generator and grey water pit symbols not to scale.



Figure 3: Photograph of Wignes camp as occupied.

1.2 2016 Camp operations.

The 2016 main camp was located at McArthur Lake (61° 34' 30.841"N 106°54'8.345"W). Operations commenced June 25 with crew mobilization into Stoney Rapids. Discovery Mining services and GSC crew conducted two days of camp set up. Full crew occupied site on June 27. Helicopters were mobilized in on June 28. Crew numbers in camp varied from 11 people to 13 depending on activities through the period. Camp demobilization commenced on June 27 and was complete August 9th.

Figure 4 below illustrates the layout of McArthur camp and related usage areas: helicopter pad, tent set ups, 2 dug pit latrines, main kitchen tent, office tents and dry.

The camp site was used to house temporary tent shelters and equipment storage all of which were flown out and cleared at the end of the activity.

2016 McArthur Lake Camp Plan

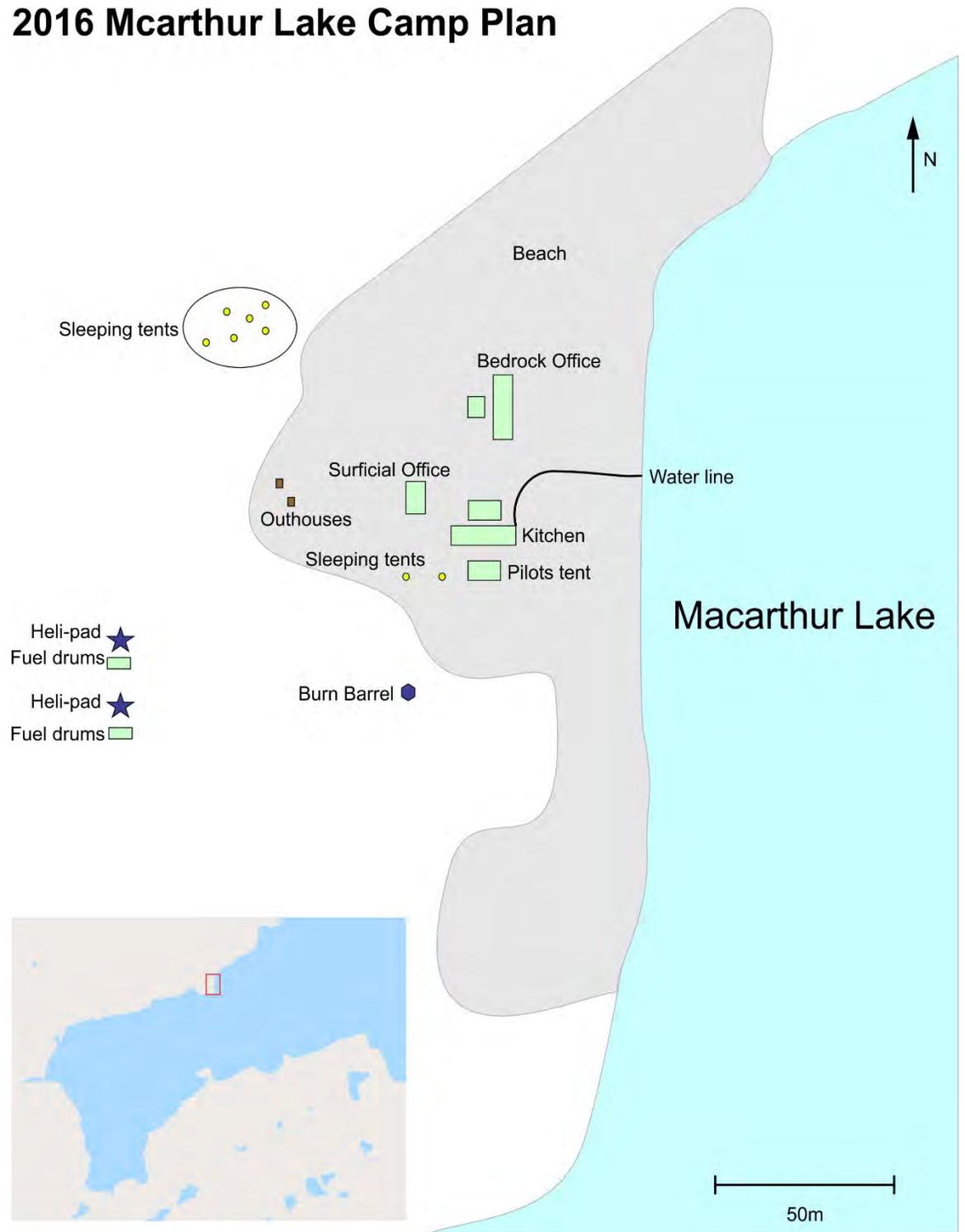


Figure 4: McArthur Lake camp site in 2016 as occupied. Note tents not to scale. Greywater pit was located behind kitchen tent. Generator was situated immediately south of the Pilot tent.

Figure 5-8 below show photographs of the camp site with final layout. The perimeter of the camp was 0.70 kilometres circumference. The surface area of camp usage was 30,450 square meters (150 x 203 m). No areas were cleared to construct or use the camp.

Distances:

- a) from shore to Kitchen tent: 35 m
- b) From shore to latrines: 80 m
- c) From shore to cached fuel drums at helipads. 175 m

Two latrine pits covered a total of 32 square meters and were filled in with sand on demobe.

The small amount of grey water stemming from dish washing and personal showers was disposed of in a dug pit occupying less than 5 square meters. The pit was predominately sand.

Garbage and all materiel were flown out, except for some surplus lumber donated to a local cabin owner.



Figure 5: Photography of main McArthur camp set up, showing from left: dry, Kitchen tent, storage tent, office 1 and office/storage 2.



Figure 6: Photograph of McArthur camp showing latrine placement beyond office tent and several personal sleeping tents.



Figure 7: Helipads at McArthur camp.



Figure 8: Overall site set up at McArthur camp showing open sandy conditions.

1.3 2016 Fuel cache operations.

Fuel caches (of no more than 7 sealed drums of Jet fuel at a time) were set initially in in June 2016 by Transwest Air of Stoney Rapids, utilizing a Twin Otter on floats. Resupply during active operations was accomplished by Transwest utilizing a Twin Otter or Single Otter on floats. No modifications were made to the sites. Transient and short term occupation of no more than 30 minutes at a time for refueling by helicopters, ensured no significant disturbance of the sites. Empty drums were backhauled when periodic resupply was completed and Transwest Air completed backhaul of all remaining empty, partial or full fuel drums out of cache locales by August 31st.

2.0 Calculations of area of lands used.

(a) the lands on which the land-use operation was conducted

2015 area of land used: main camp (36,435m square) and four fuel caches (14.4 m square) combine for a total of roughly 36,450 m square.

2016 area of land used: main camp (30,000 m square) and four fuel caches (14.4 m square) combine for a total of roughly 30,014 m square.

(b) the location of cleared areas

See figures 2b and 4 for 2015 and 2016 site locations and usage. In 2016 no areas were cleared, all existed prior to the operation and totaled the amount given in a) above. In 2015 of total used area of 36,450 m square, 22,435 m square existed prior to occupation and 14,000 m square were cleared by the permittee.

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