

# B3-06 Stope void backfilling

## Conceptual Mitigation Plan

Revision 1 – February 7, 2014



**NOT FOR CONSTRUCTION**

Note: Level plans shown are for illustrative purposes only, Use full size level plans and 3D digital model for planning purposes.

PROJECT	PWGSC	
	GIANT MINE INTERIM U/G STABILIZATION PROJECT	
	YELLOWKNIFE, NWT	
TITLE	B3-06 Stope	
	Conceptual Mitigation Plan	
	PROJECT No.	13-1426-010
	PHASE No.	5000
	DESIGN	FM
	DATE	05/JAN/14
	SCALE	N.T.S.
	REV.	1
	DRAWN	ZALP
	DATE	23/JAN/14
	CHECKED	DTK
	DATE	24/JAN/14
	REVIEWED	DTK
	DATE	24/JAN/14
	Page 1	



# Underground Development Access - Legend

DCNJV main travel way / work areas

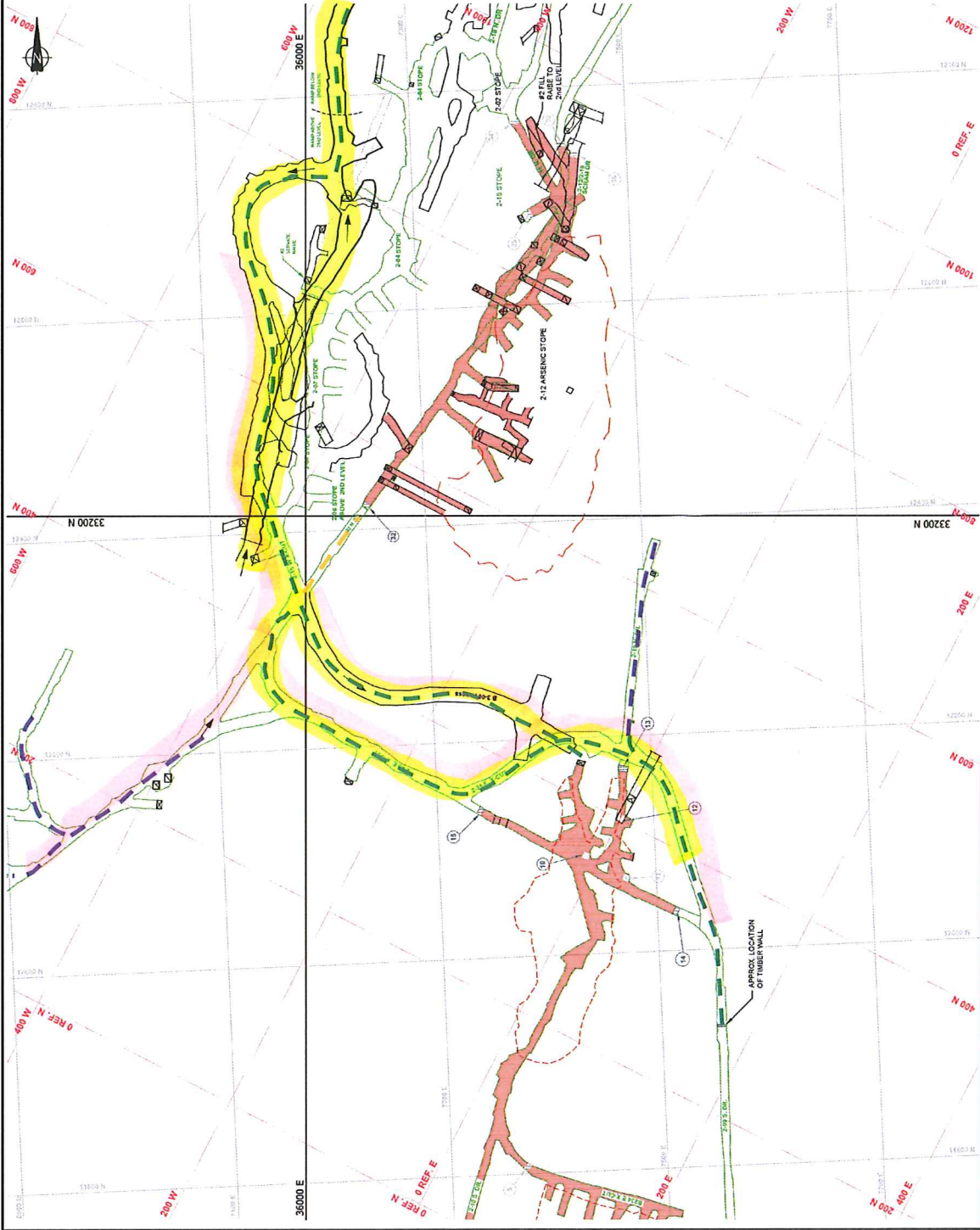
Not regularly travelled by DCNJV. Discuss entry procedures with DCNJV

Hazard(s) present. Discuss entry procedures with DCNJV

Major hazard(s) present. Discuss entry procedures with DCNJV

### Notes:

- 1) Underground development access notes are for planning purposes only, Care and Maintenance Contractor Determines Safety of Access to Giant Mine Underground.
- 2) Areas not marked are inaccessible or have not been assessed



PROJECT	PWGSSC GIANT MINE INTERIM U/G STABILIZATION PROJECT YELLOWKNIFE, NWT			
TITLE	B3-06 Stope Underground Access - 2nd Level			
PROJECT No.	13-1425-010	PHASE No.	5000	
DESIGN	RM	DESIGNER	SCALE	N.T.S.
DRAWN	ALP	DRAWN BY	DATE	REV. 1
CHECKED	DTK	CHECKED BY	DATE	
REVIEWED	DTK	REVIEWED BY	DATE	



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# Underground Development Access - Legend

DCNJV main travel way / work areas

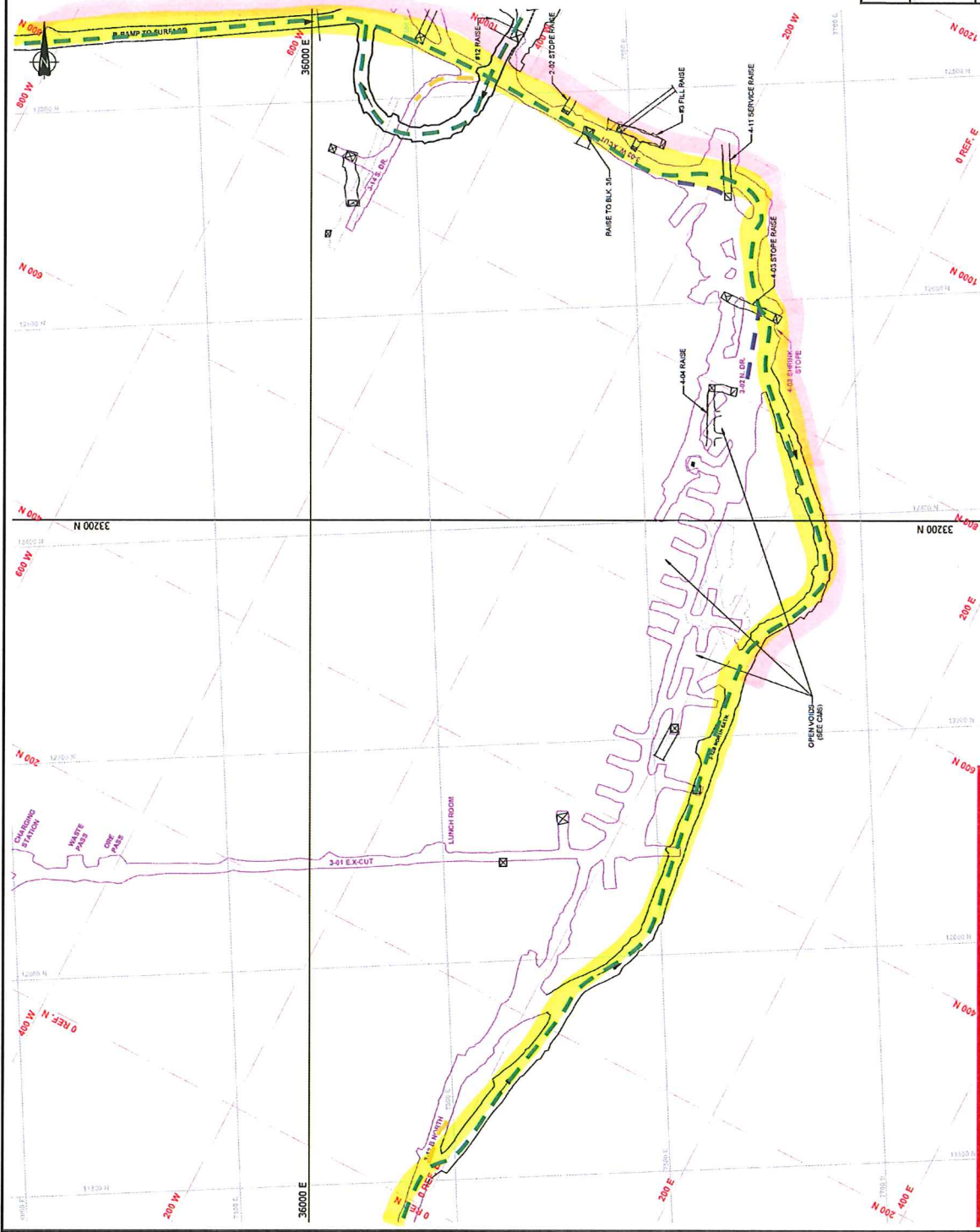
Not regularly travelled by DCNJV. Discuss entry procedures with DCNJV

Hazard(s) present. Discuss entry procedures with DCNJV

Major hazard(s) present. Discuss entry procedures with DCNJV

### Notes:

- Underground development access notes are for planning purposes only, Care and Maintenance Contractor Determines Safety of Access to Giant Mine Underground.
- Areas not marked are inaccessible or have not been assessed



PROJECT	PWGSC GIANT MINE INTERIM U/G STABILIZATION PROJECT YELLOWKNIFE, NWT		
TITLE	B3-06 Stope Underground Access - 3 <sup>rd</sup> Level		
PROJECT No.	13-1426-010	PHASE No.	5000
DESIGN	FM	DATE	05/JAN/14
DRAWN	ZALP	SCALE	N.T.S.
CHECK	DTK	DATE	23/JAN/14
REVIEW	DTK	DATE	24/JAN/14
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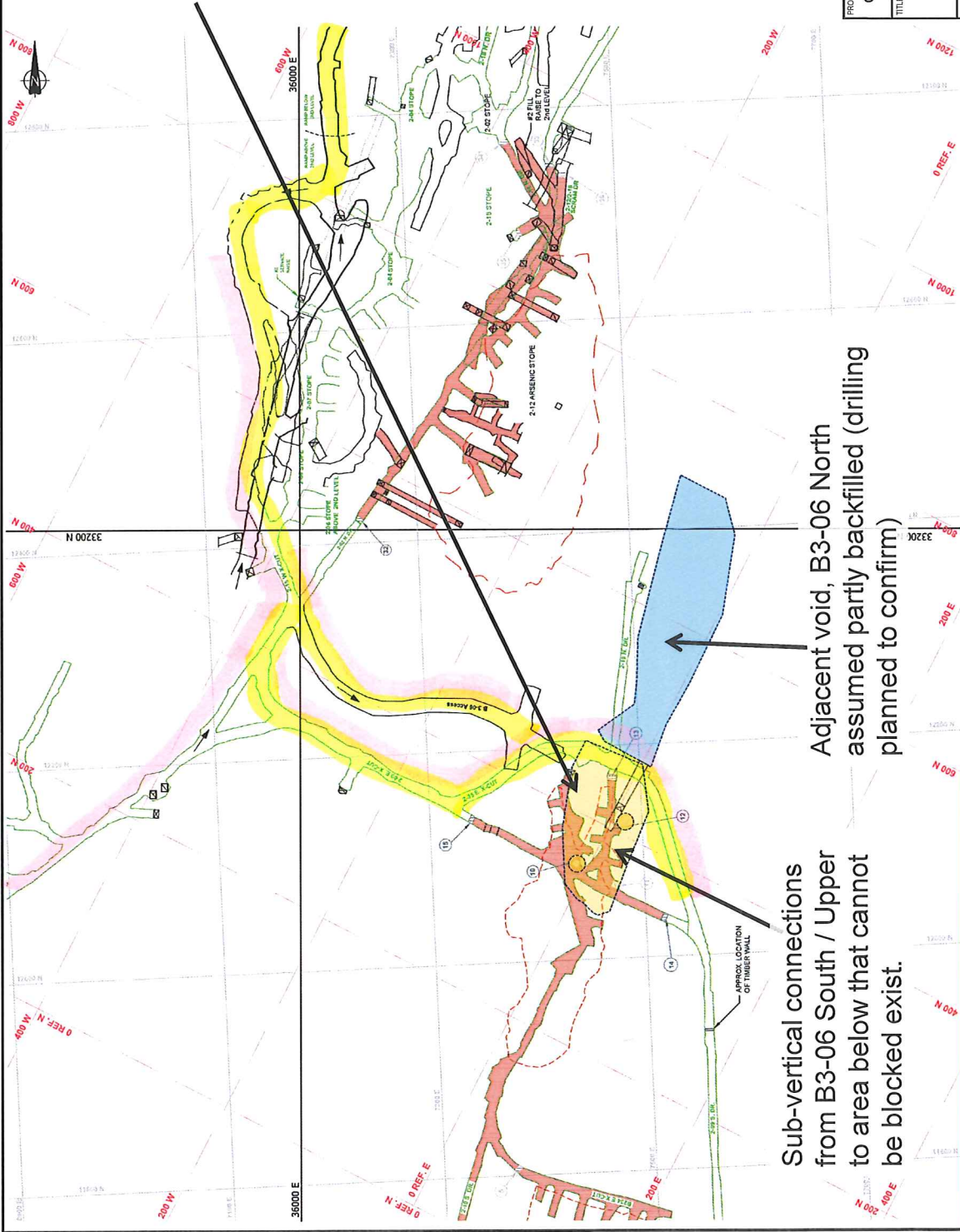
**Target Area to be Backfilled – B3-06 South / Upper**

Consists of several interconnected partially backfilled voids.

Void volume is not tightly constrained

Connections to 3rd level assumed to exist through in stope sub-vertical raises which could allow paste backfill to escape.

Position of possible exit voids ●



Sub-vertical connections from B3-06 South / Upper to area below that cannot be blocked exist.

Adjacent void, B3-06 North assumed partly backfilled (drilling planned to confirm)

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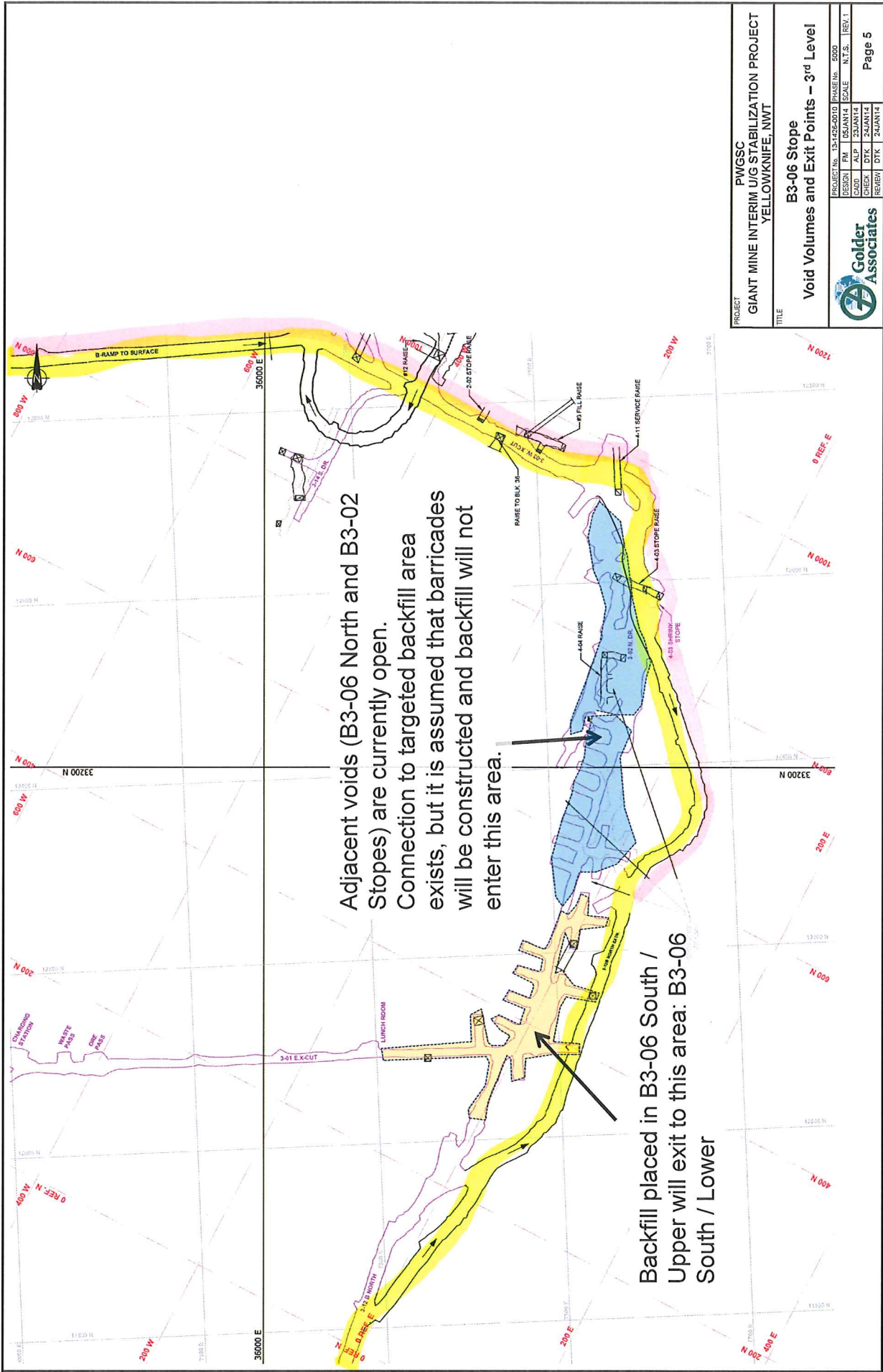
PROJECT PWGSC  
GIANT MINE INTERIM U/G STABILIZATION PROJECT  
YELLOWKNIFE, NWT

TITLE  
B3-06 Stope  
Void Volumes and Exit Points – 2nd Level

PROJECT No. 13-425-0010		PHASE No. 9000	
DESIGN	FM	05/JAN/14	SCALE N.T.S.
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CHECK	DTK	23/JAN/14	
REVIEW	DTK	24/JAN/14	



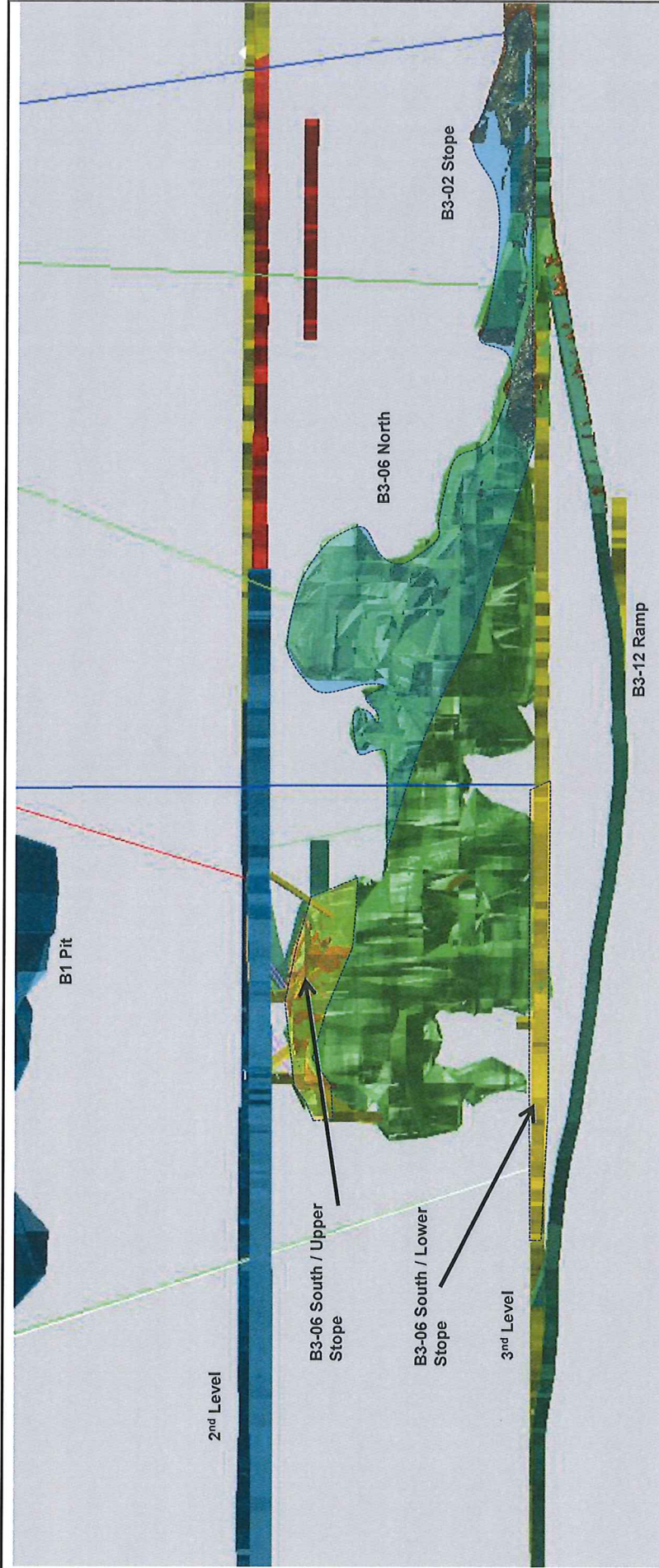
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Adjacent voids (B3-06 North and B3-02 Stopes) are currently open. Connection to targeted backfill area exists, but it is assumed that barricades will be constructed and backfill will not enter this area.

Backfill placed in B3-06 South / Upper will exit to this area: B3-06 South / Lower

PROJECT		PWGSC	
GIANT MINE INTERIM U/G STABILIZATION PROJECT		YELLOWKNIFE, NWT	
TITLE		B3-06 Stope	
Void Volumes and Exit Points - 3rd Level		PROJECT No. 15-123-010	
Golder Associates		DESIGN	SCALE
REV. 1		FM	05/JAN/14
REV. 2		ALP	23/JAN/14
REV. 3		DTK	24/JAN/14
REV. 4		DTK	24/JAN/14
REV. 5		DTK	24/JAN/14



View to West

Isometric view of 3D Model – Looking West

B3-06 South /Upper void volume: 1,500m<sup>3</sup>

B3-06 South / Lower Void volume on 3<sup>rd</sup> level: 2,800m<sup>3</sup>

B3-06 North / B3-02 Stope void volume: 12,500m<sup>3</sup>

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PROJECT PWGSC  
GIANT MINE INTERIM U/G STABILIZATION PROJECT  
YELLOWKNIFE, NWT

TITLE

B3-06 Stope  
Void Volume

PROJECT No.	13-1426-010	PHASE No.	5000
DESIGN	PM	DATE	05/JAN/14
CADD	ALP	SCALE	N.T.S.
CHECK	DTK	DATE	24/JAN/14
REVIEW	DTK	DATE	24/JAN/14



Timber Raise through fill is assumed open. Paste flow to the 3<sup>rd</sup> level.

Drop raise, drilled but not blasted

B3-06 South

Millhole B3-06 1a – Potentially open to 3<sup>rd</sup> level and paste escape towards "lunchroom"

2<sup>nd</sup> Level

Possible leak when filling into top of B3-06 South stope, potential for paste to flow to the B3-02 Stope.

B3-06 South Filled

B3-06 North

B3-02 Empty

3<sup>rd</sup> Level

B3-12 Ramp

Stope below B3-06 not investigated, assumed filled.

PROJECT  
 PWGSC  
 GIANT MINE INTERIM U/G STABILIZATION PROJECT  
 YELLOWKNIFE, NWT




TITLE  
 B3-06 Stope  
 Void Volumes

DESIGN	FM	05JAN14	PHASE No.	5000
CADD	ALP	23JAN14	SCALE	N.T.S.
CHECK	DTK	24JAN14	REV.	1
REVIEW	DTK	24JAN14		

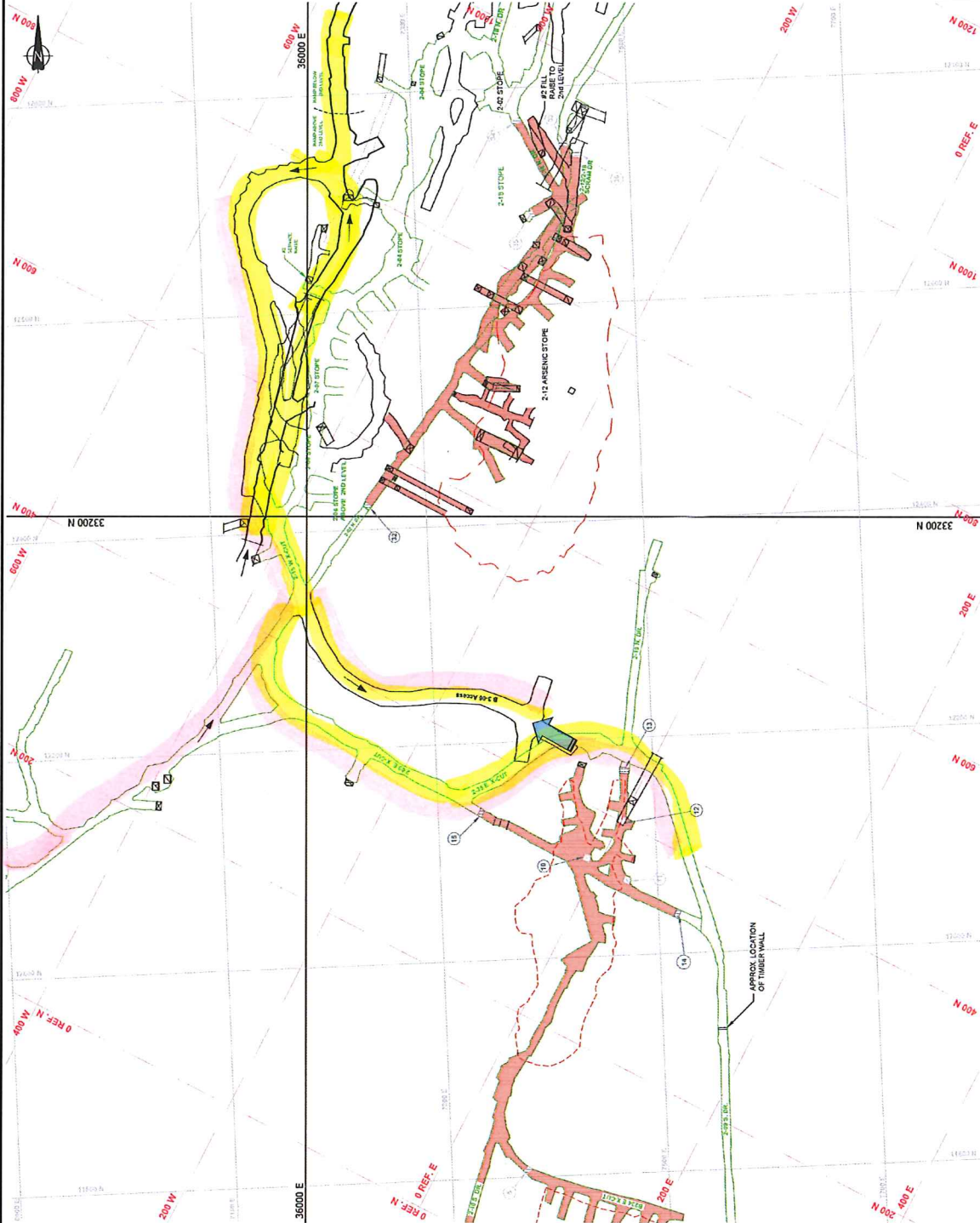
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# Mandatory Blockages and Fill Volume Containment Points - Legend

-  Mandatory paste blockage point
-  Volume constraint point - man-entry
-  Volume constraint point - no entry

Note: mandatory paste blockage points are required where known and obvious exit points from the target void to be backfilled are connected to critical mine development openings (e.g. access ramp or a ventilation shaft, etc.).



PROJECT		PMWGSC	
GIANT MINE INTERIM U/S STABILIZATION PROJECT		YELLOWKNIFE, NWT	
TITLE		Mandatory Blockages and Fill Volume Containment Points - 2 <sup>ND</sup> Level	
PROJECT No.	13-1262620	PHASE No.	3500
DESIGN	PM	QUANTITY	SCALE
CHECK	DKK	DATE	N.T.S.
REVIEW	DTK	DATE	24-JAN-14
Golder Associates			Page 8



# Mandatory Blockages and Fill Volume Containment Points - Legend



Mandatory paste blockage point

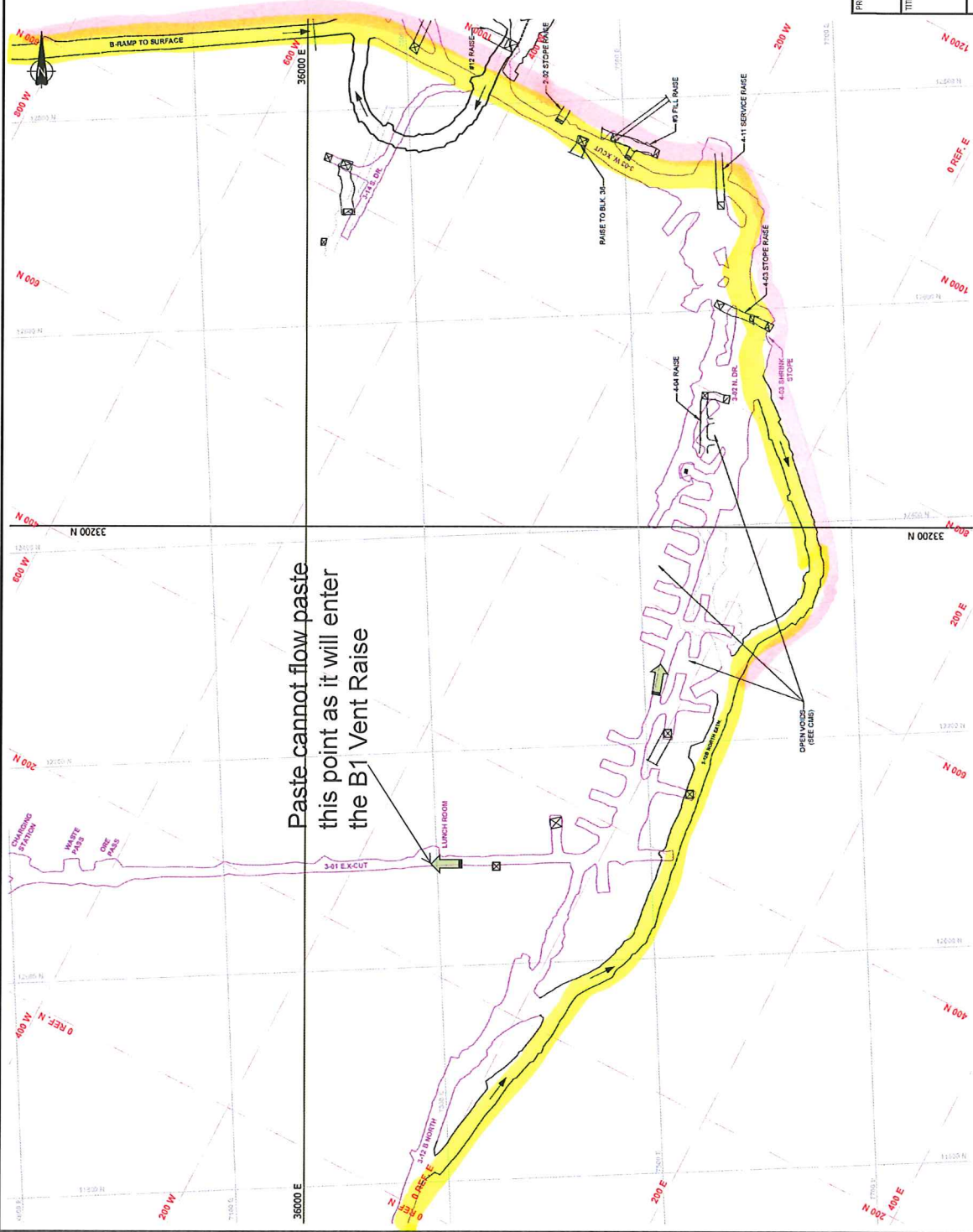


Volume constraint point - man-entry



Volume constraint point - no entry

Note: mandatory paste blockage points are required where known and obvious exit points from the target void to be backfilled are connected to critical mine development openings (e.g. access ramp or a ventilation shaft, etc.).



PROJECT: PMWGSC  
GIANT MINE INTERIM U/S STABILIZATION PROJECT  
YELLOWKNIFE, NWT

TITLE: Mandatory Blockages and Fill Volume Containment Points - 3rd Level

PROJECT No.	13-1232-010	PHASE No.	3000
DESIGN	PM	QUANTITY	SCALE
DATE	ALP	DATE	N.T.S.
REVISION	DATE	BY	REV. 1
REVISION	DATE	BY	REV. 1

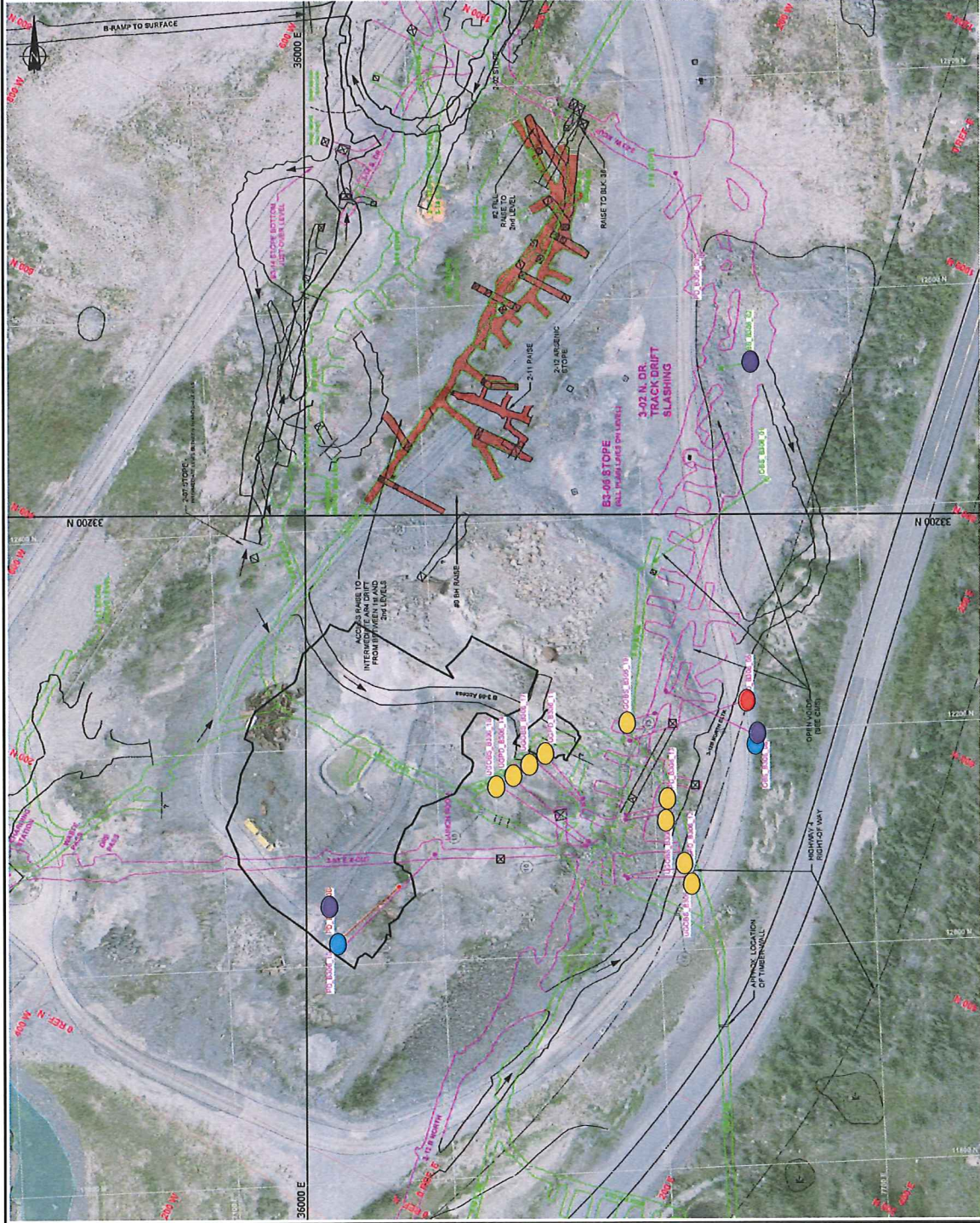
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**Surface and Underground Borehole Collar - Legend**

- Sub-vertical high slump bulk fill delivery borehole
- Sub-vertical low slump fill or foam delivery borehole
- Observation / breather / contingency high slump bulk fill delivery borehole
- Borehole drilled from underground

**\* Replace Drill plan – arsenic stopes should be shaded**



PROJECT PWGSSC  
GIANT MINE INTERIM U/G STABILIZATION PROJECT  
YELLOWKNIFE, NWT

TITLE  
B3-06 Stope  
Surface Borehole Collars

DESIGN	FW	05/JAN/14	SCALE	N.T.S.	REV. 1
DRAWN	ALP	23/JAN/14			
CHECK	DTK	24/JAN/14			
REVIEW	DTK	24/JAN/14			


PROJECT No. 13-1426-0010 PHASE No. 5000



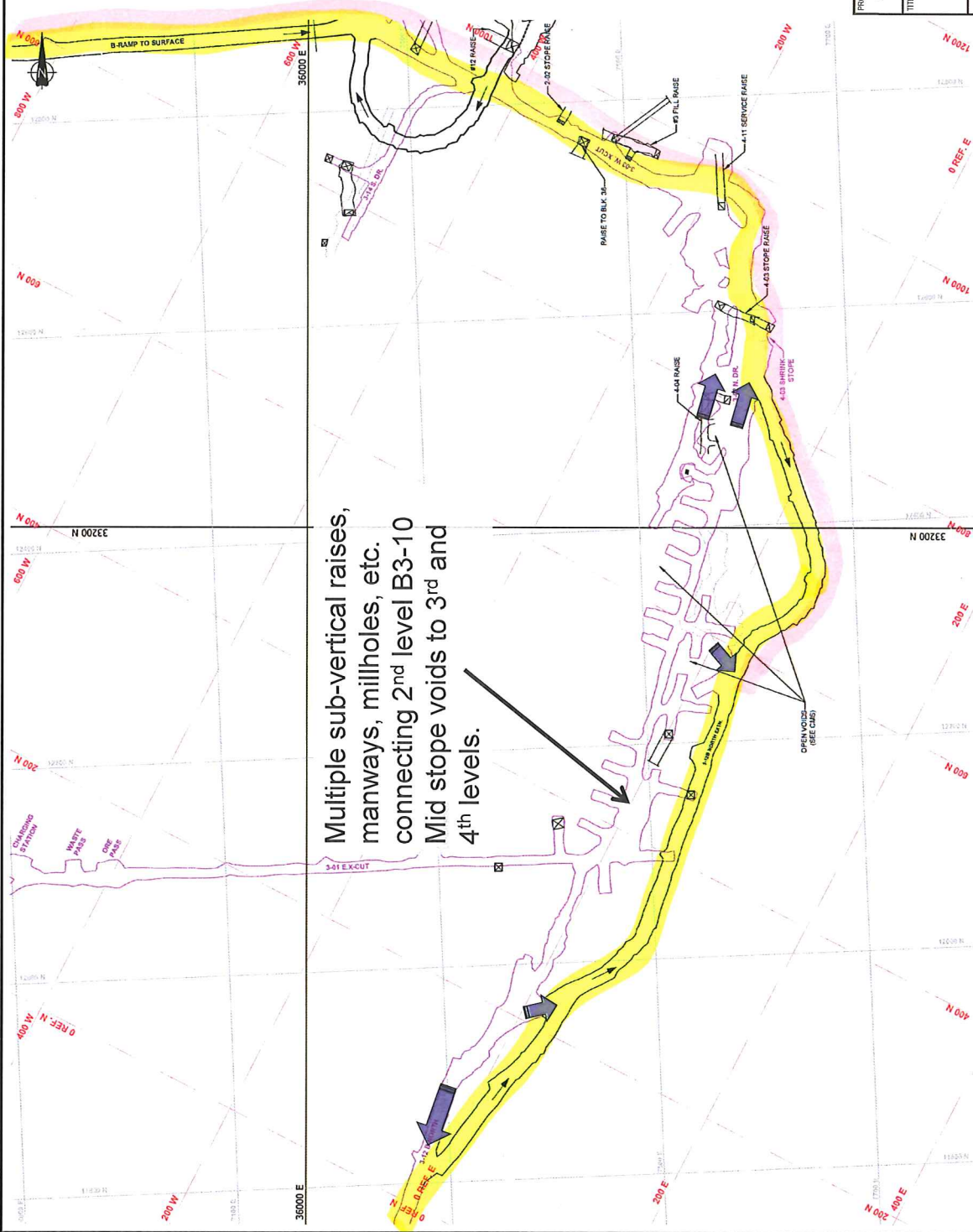
**NOT FOR CONSTRUCTION**

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**Possible Paste Backfill Leakage Points To Be Monitored - Legend**

-  Possible paste exit point to be monitored – man-entry
-  Possible paste exit point to be monitored – no entry

Note: These points show areas where paste may flow from the targeted void to be backfilled. These exit points must be monitored. Barricades or a change in paste delivery approach in the targeted void would be required to stop the leak.



PROJECT PWGSC  
GIANT MINE INTERIM U/G STABILIZATION PROJECT  
YELLOWKNIFE, NWT

TITLE  
**Possible Paste Exit Points To Be Monitored – 3<sup>rd</sup> Level**

PROJECT No.	15-126-0010	PHASE No.	5000
DESIGN	FM	ISSUANCE	SCALE
2000	ALP	2000/14	N.T.S.
DESIGN	ALP	2000/14	
REVISION	BY	DATE	
REVISION	BY	DATE	

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