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JUL 28 1982

MEMORANDUM FOR: Hubert J. Miller, Chief
High-Level Waste Technical
Development Branch
Division of Waste Management

THRU: John T. Greeves, Section Leader
Design Section
High-Level Waste Technical
Development Branch
Division of Waste Management

FROM: David Tiktinsky
High-Level Waste Technical
Development Branch
Division of Waste Management

SUBJECT: DEEP UNDERGROUND MINES

The enclosed table has been prepared in response to your request to locate and describe some domestic and foreign underground mines.

I have limited the selection of mines shown in the table only to those that are approximately the size of the proposed BWIP repository. Although other mines do exist, information of interest was not available.

"ORIGINAL SIGNED BY"

David Tiktinsky
High-Level Waste Technical
Development Branch
Division of Waste Management

OFC : WMHT : WMHT : WMHT : : : :
NAME : TIKTINSKY:cfm CHASE : MILLER : : : :
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DATE OF DOCUMENT 06 25 82	DATE RECEIVED 06 28 82	DUE DATE 07 02 82	REVISED DUE DATE	COMPLETION DATE	CONTROL NUMBER 820639
OFFICE ASSIGNED WM		NAME OF ORIGINATOR AND OFFICE Davis JG NMSS			
REFERRED TO <i>WMT</i>		DESCRIPTION Actions Taken to Improve Access to DOE Information			
TRANSITION TYPE (Code Option) 1. Add new items 2. Delete items 3. Change item date 4. Update item status (close out) 5. Revised due date 6. Correct item status		REMARKS 7/1 Sent to Davis for Concurrence and to Dircks for signature. CLOSED 7/7/82 Memo to Palladino from Dircks			
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NRC FORM 300 (1-79) U.S. NUCLEAR REGULATORY COMMISSION

WORK ITEM TRACKING SYSTEM (WITS, NMSS)

Name of Mine	Shafts	Production	Employees Ug.	Hoisting System	Ventilation System	Type of Mine	Mining Methods Used
Homestake Mine Lead, South Dakota	4 Shafts 1950-5000 ft. deep	6233 TPD	969	Double drum friction hoist	900,000 cfm	Gold	Cut and Fill*
San Manuel, Magma Copper Co. Arizona	7 Shafts 2700-4100 ft. deep	52,000 TPD	1600	Double drum friction hoist	1.2 million cfm	Copper	Block Caving**
Allan Potash Mines Allan, Saskatchewan, Canada	2 Shafts 3178 ft. deep	11,000 TPD	135	Double drum	192,000 cfm	Potash	Cut and Fill ***

- * Cut and Fill - Involves a sequence of operations consisting of 1) breaking a slice of ore from the back, 2) removing the broken ore, and 3) introducing fill.
- ** Block Caving - A method of caving in which a thick block of ore is partly cut off from surrounding blocks by a series of drifts, one above the other, and then undercut by removing a slice of ore of a series of slices separated by small pillars underneath the block.
- *** Room and Pillar - A mining method where the roof is supported by pillars left at regular intervals.

Name of Mine	Shafts	Production	Employee Ug.	Hoisting System	Ventilation System	Type of Mine	Minig Method Used
Brunswick Mining and Smelting Co.	2 Shafts 3150-3800 ft. deep	9400 TPD	540	Double drum	790,000 cfm	Zn, Pb, Cu, Ag	Room and Pillar***
Central Canada Potash Co., Colonsay, Saskatchewan	2 Shafts 3576 ft.	11,700 TPD	201	Friction hoist	240,000 cfm	Potash	Room and Pillar***
Creighton Mine Creighton, Ontario	N/A	9500 TPD	1325	Double Drum	980,000 cfm	Cu/Ni	Cut and Fill*

* Cut and Fill - Involves a sequence of operations consisting of 1) breaking a slice of ore from the back, 2) removing broken ore, and 3) introducing fill

** Block Caving - A method of caving in which a thick block of ore is partly cut off from surrounding blocks by a series of drifts, one above the other and then undercut by removing a slice of ore a series of slices separated by small pillars underneath the block.

*** Room and Pillar - A mining method where the roof is supported by pillars left at regular intervals.

Name of Mine	Shafts	Production	Employees Ug.	Hoisting System	Ventilation System	Type of Mine	Mining Method Used
Denison Mines Elliot Lake, Ontario	2 Shafts 1000-2700 ft. deep	N/A	1375	Double drum	4.5 million cfm	Uranium	Room and Pillar***
Levack Mine Levack, Ontario	1 Shaft 2800 ft.	5000 TPD	1122	Double Drum	570,000 cfm	Cu/Ni	Cut and fill*
P.C.S. Cory Div., Saskatoon, Saskatchewan	2 Shaft 3500 ft. deep	8500 TPD	200	Friction hoist	200,000 cfm	Potash	Room and pillar***

* Cut and Fill - Involves a sequence of operations consisting of 1) breaking a slice of ore from the back, 2) removing the broken ore, and 3) introducing fill.

** Block Caving - A method of caving in which a thick block of ore is partly cut off from surrounding blocks by a series of drifts, one above the other and then undercut by removing a slice of ore or a series of slices separated by small pillars underneath the block.

*** Room and Pillar - A mining method where the roof is supported by pillars left at regular intervals.

Name of Mine	Shafts	Production	Employees Ug.	Hoisting System	Ventilation System	Type of Mine	Mining Method Used
MacLeod Mine, Algoma Ore Div. Wawa, Ontario	1 Shaft 2800 ft. deep	N/A	227	Friction Hoist, conveyor	450,000 cfm	Siderite (Fe)	Sublevel Blast-hole ^A
Buffelsfontein Gold Mining Co. Stilfontein, South Africa	4 Shafts 1600 m deep	18,000 TPD	N/A	Double drum hoist	3.5 million cfm	Gold/Uranium	Placer ^B
Fasdalens Bergverks, A/S Malm, Norway	1 Shaft 1176 m	4,000 TPD	233	Friction hoist	150,00 cfm	Iron (Magnetite)	Sublevel ^C caving

A - Sublevel blasthole - A mining method that uses a blasting hole that takes a heavy charge of explosives.

B - Placer - A mining method that uses gravity separation to recover the metal ore.

C - Sublevel caving - A stoping method in which relatively thin blocks of ore are caused to cave by successively undermining small panels.