Permit No. UGW370004

STATE OF UTAH
DIVISION OF WATER QUALITY
DEPARTMENT OF ENVIRONMENTAL QUALITY
UTAH WATER QUALITY BOARD
SALT LAKE CITY, UTAH 84114-4870

GROUND WATER DISCHARGE PERMIT

In compliance with the provisions of the Utah Water Quality Act, Title 19, Chapter 5, Utah Code Annotated 1953, as amended, the Act,

Denison Mines (USA) Corp.
Independence Plaza, Suite 950
1050 17th Street
Denver, Colorado 80265

is granted a ground water discharge permit for the operation of a uranium milling and tailings disposal facility located approximately 6 miles south of Blanding, Utah. The facility is located on a tract of land in Sections 28, 29, 32, and 33, Township 37 South, Range 22 East, Salt Lake Base and Meridian, San Juan County, Utah.

The permit is based on representations made by the Permittee and other information contained in the administrative record. It is the responsibility of the Permittee to read and understand all provisions of this permit.

The milling and tailings disposal facility shall be operated and revised in accordance with conditions set forth in the permit and the Utah Ground Water Quality Protection Regulations.

This modified Ground Water Quality Discharge Permit amends and supersedes all other Ground Water Discharge permits for this facility issued previously.

This permit shall become effective on ________________.
This permit shall expire March 8, 2010.

Signed this 17th day of MARCH, 2008

[signature]
Co-Executive Secretary
Utah Water Quality Board

Table of Contents

List of Tables

PART I. SPECIFIC PERMIT CONDITIONS

A. GROUND WATER CLASSIFICATION - the ground water classification of the shallow aquifer under the tailings facility has been determined on a well-by-well basis, as defined in Table 1, below:

Table 1. Ground Water Classification

Class II Groundwater					Class III Groundwater				
Well ID	Average TDS (mg/l)					Average TDS (mg/l)			
	Permittee Data		DRC Data			Permittee Data		DRC Data[2]	
	Avg. Conc.[1]	No. of Data[3]	Avg. Conc.[2]	No. of Data[3]	Well ID	Avg. Conc.[1]	No. of Data[3]	Avg. Conc.[2]	No. of Data[3]
Historic Monitoring Wells									
MW-1	1,276	68	1,268	4	MW-2	3,031	67	3,103	4
MW-5	2,081	69	2,068	4	MW-3	5,200	67	5,289	4
MW-11	1,834	50	2,039	4	MW-12	3,939	50	3,756	4
MW-18	2,545	9	2,611	4	MW-14	3,582	30	3,589	4
MW-19[4]	2,697	9	3,120	4	MW-15	3,855	30	3,847	4
MW-20[5]	2,977	1	n/a	0	MW-17	4,538	11	4,542	4
					MW-22[5]	5,105	1	n/a	0
Recent Monitoring Wells									
					MW-26[6]	3,120	1	3,206	1
					TW4-16[7]	2,930	1	3,430	1
					MW-32[8]	3,190	1	3,650	1

Footnotes:

1) Based on historic total dissolved solids (TDS) data provided by Permittee for period between October, 1979 and May, 1999. Average concentrations calculated by Utah Division of Radiation Control (DRC) staff in a November 29, 1999 memorandum.
2) Based on average of DRC split samples collected from the White Mesa facility between May, 1999 and September, 2002.
3) Number of IUC or DRC samples used in the evaluation of average TDS concentrations.
4) Classification of well MW-19 based on the conservatively lower IUC data.
5) Wells MW-20 and MW-22 are not point of compliance monitoring wells, but instead are groundwater head monitoring wells as per Part I.E.2.
6) Well MW-26 was originally named TW4-15 and was installed as a part of a recent chloroform contaminant investigation at the facility. Under this Permit, MW-26 is defined as a Point of Compliance (POC) well for the tailings cells (see Part I.E.1) .
7) Well TW4-16 was installed as a part of a recent chloroform investigation at the facility, and has been included in the Permit as groundwater head monitoring well (Part I.E.2). Groundwater classification provided here based on average of both the IUC and DRC data (2 samples).
8) Well MW-32 was originally named TW4-17 and was installed as a part of a recent chloroform contaminant investigation at the facility. Under this Permit it is included as a POC well for the tailings cells in Part I.E.1.

B. BACKGROUND WATER QUALITY - background groundwater quality will be determined on a well-by-well basis, as defined by the mean plus second standard deviation concentration. After Executive Secretary approval of the Background Groundwater Quality Reports required by Part I.H.3 and 4, this permit will be re-opened and Table 2 revised to define background concentrations and groundwater compliance limits for all required contaminants.

C. PERMIT LIMITS - the Permittee shall comply with the following permit limits:

1. Ground Water Compliance Limits – contaminant concentrations measured in each monitoring well shall not exceed the Ground Water Compliance Limits (GWCL) defined in Table 2, below. Ground water quality at the site must at all times meet all the applicable GWQS and ad hoc GWQS defined in R317-6 even though this permit does not require monitoring for each specific contaminant.

2. Tailings Cell Operations - only 11.e.(2) by-product material authorized by Utah Radioactive Materials License No. UT-2300478 (hereafter License) shall be discharged to or disposed of in the tailings ponds.

3. Prohibited Discharges – discharge of other compounds such as paints, used oil, antifreeze, pesticides, or any other contaminant not defined as 11e.(2) material is prohibited.

Table 2. Groundwater Compliance Limits (GWCL)

		Upgradient Wells									Down or Lateral Gradient Wells								
		MW-1 (Class II)			**MW-18** (Class II)			**MW-19** (Class II)			**MW-2** (Class III)			**MW-3** (Class III)			**MW-5** (Class II)		
Contaminant	**GWQS** (1)	Mean (6)	SD (6)	GWCL (7)	Mean	SD	GWCL	Mean	SD	GWCL	Mean	SD	GWCL	Mean	SD	GWCL	Mean	SD	GWCL
Nutrients (mg/l)																			
Ammonia (as N)	25 (2)			6.25			6.25			6.25			12.5			12.5			6.25
Nitrate + Nitrite (as N)	10			2.5			2.5			2.5			5			5			2.5
Heavy Metals (ug/l)																			
Arsenic	50			12.5			12.5			12.5			25			25			12.5
Beryllium	4			1.0			1.0			1.0			2.0			2.0			1.0
Cadmium	5			1.25			1.25			1.25			2.5			2.5			1.25
Chromium	100			25			25			25			50			50			25
Cobalt	730 (5)			182.5			182.5			182.5			365			365			182.5
Copper	1,300			325			325			325			650			650			325
Iron	11,000 (5)			2,750			2,750			2,750			5,500			5,500			2,750
Lead	15			3.75			3.75			3.75			7.5			7.5			3.75
Manganese	800 (4)			200			200			200			400			400			200
Mercury	2			0.5			0.5			0.5			1			1			0.5
Molybdenum	40 (2)			10			10			10			20			20			10
Nickel	100 (3)			25			25			25			50			50			25
Selenium	50			12.5			12.5			12.5			25			25			12.5
Silver	100			25			25			25			50			50			25
Thallium	2			0.5			0.5			0.5			1.0			1.0			0.5
Tin	17,000 (10)			4,250			4,250			4,250			8,500			8,500			4,250
Uranium	30 (3)			7.5			7.5			7.5			15			15			7.5
Vanadium	60 (4)			15			15			15			30			30			15
Zinc	5,000			1,250			1,250			1,250			2,500			2,500			1,250
Radiologics (pCi/l)																			
Gross Alpha	15			3.75			3.75			3.75			7.5			7.5			3.75
Volatile Organic Compounds (ug/l)																			
Acetone	700 (4)			175			175			175			350			350			175
Benzene	5			1.25			1.25			1.25			2.5			2.5			1.25
2-Butanone (MEK)	4,000 (2)			1000			1000			1000			2000			2000			1000
Carbon Tetrachloride	5			1.25			1.25			1.25			2.5			2.5			1.25
Chloroform	70 (4)			17.5			17.5			17.5			35			35			17.5
Chloromethane	30 (2)			7.5			7.5			7.5			15			15			7.5
Dichloromethane	5 (3)			1.25			1.25			1.25			2.5			2.5			1.25
Naphthalene	100 (2)			25			25			25			50			50			25
Tetrahydrofuran	46 (4)			11.5			11.5			11.5			23			23			11.5
Toluene	1,000			250			250			250			500			500			250
Xylenes (total)	10,000			2,500			2,500			2,500			5,000			5,000			2,500
Others																			
Field pH (S.U.)	6.5 – 8.5			TBD (9)			TBD			TBD			TBD			TBD			TBD
Fluoride (mg/l)	4.0			1.0			1.0			1.0			2.0			2.0			1.0
Chloride (mg/l)				TBD			TBD			TBD			TBD			TBD			TBD
Sulfate (mg/l)				TBD			TBD			TBD			TBD			TBD			TBD
TDS (mg/l)				TBD			TBD			TBD			TBD			TBD			TBD

Table 2 Continued. Groundwater Quality Compliance Limits (GWCL)

		Down or Lateral Gradient Wells																	
		MW-11 (Class II)			MW-12 (Class III)			MW-14 (Class III)			MW-15 (Class III)			MW-17 Class III)			MW-26(Class III)		
Contaminant	GWQS [1]	Mean [6]	SD [6]	GWCL [7]	Mean	SD	GWCL	Mean	SD	GWCL	Mean	SD	GWCL	Mean	SD	GWCL	Mean	SD	GWCL
Nutrients (mg/l)																			
Ammonia (as N)	25 [2]			6.25			12.5			12.5			12.5			12.5			12.5
Nitrate + Nitrite (as N)	10			2.5			5			5			5			5			5
Heavy Metals (ug/l)																			
Arsenic	50			12.5			25			25			25			25			25
Beryllium	4.0			1.0			2.0			2.0			2.0			2.0			2.0
Cadmium	5			1.25			2.5			2.5			2.5			2.5			2.5
Chromium	100			25			50			50			50			50			50
Cobalt	730 [5]			182.5			365			365			365			365			365
Copper	1,300			325			650			650			650			650			650
Iron	11,000 [5]			2,750			5,500			5,500			5,500			5,500			5,500
Lead	15			3.75			7.5			7.5			7.5			7.5			7.5
Manganese	800 [4]			200			400			400			400			400			400
Mercury	2			0.5			1			1			1			1			1
Molybdenum	40 [2]			10			20			20			20			20			20
Nickel	100 [3]			25			50			50			50			50			50
Selenium	50			12.5			25			25			25			25			25
Silver	100			25			50			50			50			50			50
Thallium	2			0.5			1.0			1.0			1.0			1.0			1.0
Tin	17,000 [10]			4,250			8,500			8,500			8,500			8,500			8,500
Uranium	30 [3]			7.5			15			15			15			15			15
Vanadium	60 [4]			15			30			30			30			30			30
Zinc	5,000			1,250			2,500			2,500			2,500			2,500			2,500
Radiologics (pCi/l)																			
Gross Alpha	15			3.75			7.5			7.5			7.5			7.5			7.5
Volatile Organic Compounds (ug/l)																			
Acetone	700 [4]			175			350			350			350			350			350
Benzene	5			1.25			2.5			2.5			2.5			2.5			2.5
2-Butanone (MEK)	4,000 [2]			1000			2000			2000			2000			2000			2000
Carbon Tetrachloride	5			1.25			2.5			2.5			2.5			2.5			2.5
Chloroform	70 [4]			17.5			35			35			35			35			35
Chloromethane	30 [2]			7.5			15			15			15			15			15
Dichloromethane	5 [3]			1.25			2.5			2.5			2.5			2.5			2.5
Naphthalene	100 [2]			25			50			50			50			50			50
Tetrahydrofuran	46 [4]			11.5			23			23			23			23			23
Toluene	1,000			250			500			500			500			500			500
Xylenes (total)	10,000			2,500			5,000			5,000			5,000			5,000			5,000
Others																			
Field pH (S.U.)	6.5 –8.5			TBD			TBD			TBD			TBD			TBD			TBD
Fluoride (mg/l)	4.0			1.0			2.0			2.0			2.0			2.0			2.0
Chloride (mg/l)				TBD			TBD			TBD			TBD			TBD			TBD
Sulfate (mg/l)				TBD			TBD			TBD			TBD			TBD			TBD
TDS (mg/l)				TBD			TBD			TBD			TBD			TBD			TBD

Table 2 Continued. Groundwater Quality Compliance Limits (GWCL)

		Down or Lateral Gradient Wells			Future Wells To Be Installed [8]														
		MW-32(Class III)			MW-23 (Class TBD)			MW-24 (Class TBD)			MW-25 (Class TBD)			MW-27 (Class TBD)			MW-28 (Class TBD)		
Contaminant	**GWQS [1]**	Mean [6]	SD [6]	GWCL [7]	Mean	SD	GWCL	Mean	SD	GWCL	Mean	SD	GWCL	Mean	SD	GWCL	Mean	SD	GWCL
Nutrients (mg/l)																			
Ammonia (as N)	25 [2]			12.5			TBD			TBD			TBD			TBD			TBD
Nitrate + Nitrite (as N)	10			5			TBD			TBD			TBD			TBD			TBD
Heavy Metals (ug/l)																			
Arsenic	50			25			TBD			TBD			TBD			TBD			TBD
Beryllium	4.0			2.0			TBD			TBD			TBD			TBD			TBD
Cadmium	5			2.5			TBD			TBD			TBD			TBD			TBD
Chromium	100			50			TBD			TBD			TBD			TBD			TBD
Cobalt	730 [5]			365			TBD			TBD			TBD			TBD			TBD
Copper	1,300			650			TBD			TBD			TBD			TBD			TBD
Iron	11,000 [5]			5,500			TBD			TBD			TBD			TBD			TBD
Lead	15			7.5			TBD			TBD			TBD			TBD			TBD
Manganese	800 [4]			400			TBD			TBD			TBD			TBD			TBD
Mercury	2			1			TBD			TBD			TBD			TBD			TBD
Molybdenum	40 [2]			20			TBD			TBD			TBD			TBD			TBD
Nickel	100 [3]			50			TBD			TBD			TBD			TBD			TBD
Selenium	50			25			TBD			TBD			TBD			TBD			TBD
Silver	100			50			TBD			TBD			TBD			TBD			TBD
Thallium	2			1.0			TBD			TBD			TBD			TBD			TBD
Tin(	17,000 [10]			8,500			TBD			TBD			TBD			TBD			TBD
Uranium	30 [3]			15			TBD			TBD			TBD			TBD			TBD
Vanadium	60 [4]			30			TBD			TBD			TBD			TBD			TBD
Zinc	5,000			2,500			TBD			TBD			TBD			TBD			TBD
Radiologics (pCi/l)																			
Gross Alpha	15			7.5			TBD			TBD			TBD			TBD			TBD
Volatile Organic Compounds (ug/l)																			
Acetone	700			350			TBD			TBD			TBD			TBD			TBD
Benzene	5			2.5			TBD			TBD			TBD			TBD			TBD
2-Butanone (MEK)	4,000 [2]			2000			TBD			TBD			TBD			TBD			TBD
Carbon Tetrachloride	5			2.5			TBD			TBD			TBD			TBD			TBD
Chloroform	70 [4]			35			TBD			TBD			TBD			TBD			TBD
Chloromethane	30 [2]			15			TBD			TBD			TBD			TBD			TBD
Dichloromethane	5 [3]			2.5			TBD			TBD			TBD			TBD			TBD
Naphthalene	100 [2]			50			TBD			TBD			TBD			TBD			TBD
Tetrahydrofuran	46 [4]			23			TBD			TBD			TBD			TBD			TBD
Toluene	1,000			500			TBD			TBD			TBD			TBD			TBD
Xylenes (total)	10,000			5,000			TBD			TBD			TBD			TBD			TBD
Others																			
Field pH (S.U.)	6.5 –8.5			TBD			TBD			TBD			TBD			TBD			TBD
Fluoride (mg/l)	4.0			2.0			TBD			TBD			TBD			TBD			TBD
Chloride (mg/l)				TBD			TBD			TBD			TBD			TBD			TBD
Sulfate (mg/l)				TBD			TBD			TBD			TBD			TBD			TBD
TDS (mg/l)				TBD			TBD			TBD			TBD			TBD			TBD

Table 2 Continued. Groundwater Quality Compliance Limits (CL)

		Future Wells To Be Installed [8]								
		MW-29 (Class TBD)			MW-30 (Class TBD)			MW-31 (Class TBD)		
Contaminant	**GWQS** [1]	Mean	SD	GWCL	Mean	SD	GWCL	Mean	SD	GWCL
Nutrients (mg/l)										
Ammonia (as N)	25 [2]			TBD			TBD			TBD
Nitrate + Nitrite (as N)	10			TBD			TBD			TBD
Heavy Metals (ug/l)										
Arsenic	50			TBD			TBD			TBD
Beryllium	4.0			TBD			TBD			TBD
Cadmium	5			TBD			TBD			TBD
Chromium	100			TBD			TBD			TBD
Cobalt	730 [5]			TBD			TBD			TBD
Copper	1,300			TBD			TBD			TBD
Iron	11,000 [5]			TBD			TBD			TBD
Lead	15			TBD			TBD			TBD
Manganese	800 [4]			TBD			TBD			TBD
Mercury	2			TBD			TBD			TBD
Molybdenum	40 [2]			TBD			TBD			TBD
Nickel	100 [3]			TBD			TBD			TBD
Selenium	50			TBD			TBD			TBD
Silver	100			TBD			TBD			TBD
Thallium	2.0			TBD			TBD			TBD
Tin	17,000 [10]			TBD			TBD			TBD
Uranium	30 [3]			TBD			TBD			TBD
Vanadium	60 [4]			TBD			TBD			TBD
Zinc	5,000			TBD			TBD			TBD
Radiologics (pCi/l)										
Gross Alpha	15			TBD			TBD			TBD
Volatile Organic Compounds (ug/l)										
Acetone	700 [4]			TBD			TBD			
Benzene	5			TBD			TBD			
2-Butanone (MEK)	4,000 [2]			TBD			TBD			
Carbon Tetrachloride	5			TBD			TBD			
Chloroform	70 [4]			TBD			TBD			
Chloromethane	30 [2]			TBD			TBD			
Dichloromethane	5 [3]			TBD			TBD			
Naphthalene	100 [2]			TBD			TBD			
Tetrahydrofuran	46 [4]			TBD			TBD			
Toluene	1,000			TBD			TBD			
Xylenes (total)	10,000			TBD			TBD			
Others										
Field pH (S.U.)	6.5 –8.5			TBD			TBD			TBD
Fluoride (mg/l)	4.0			TBD			TBD			TBD
Chloride (mg/l)				TBD			TBD			TBD
Sulfate (mg/l)				TBD			TBD			TBD
TDS (mg/l)				TBD			TBD			TBD

Footnotes:

1) Utah Ground Water Quality Standards (GWQS) as defined in UAC R317-6, Table 2. Ad hoc GWQS also provided herein, as noted, and as allowed by UAC R317-6-2.2.
2) Ad hoc GWQS for ammonia (as N), molybdenum, 2-Butanone (MEK), chloromethane, and naphthalene based on EPA drinking water lifetime health advisories.
3) Ad hoc GWQS for nickel, uranium, and dichloromethane (methylene chloride, CAS No. 75-09-2) based on final EPA drinking water maximum concentration limits (MCL).
4) Ad hoc GWQS for manganese, vanadium, acetone, chloroform (CAS No. 67-66-3), and tetrahydrofuran based on drinking water ad hoc lifetime health advisories prepared by or in collaboration with EPA Region 8 staff.
5) Ad hoc GWQS for cobalt and iron based on EPA Region 3 Risk Based Concentration limits for tap water.
6) Mean concentration and standard deviation (S.D.) to be determined on a well-by-well and individual parameter basis at some future date.
7) Ground Water Compliance Limits (GWCL) based on one of the following formulas: for Class II Groundwater, GWCL = 0.25 * GWQS, for Class III Groundwater, GWCL = 0.5 * GWQS. After submittal and approval of the Background Groundwater Quality Reports, required by Part I.H. 3 and 4 of this Permit, the Executive Secretary will re-open and modify the Ground Water Compliance Limit (GWCL) to be equal to the mean concentration plus two standard deviations ($X+2\sigma$) for each well and contaminant.
8) Future monitoring wells to be installed in accordance with Part I.H.1 of this Permit.
9) TBD = to be determined after Executive Secretary approval of the Background Groundwater Quality Reports for existing and new monitoring wells required by Part I.H.3 and I.H.4, respectively
10) Ad hoc GWQS for tin of 17,000 ug/l based on an ad-hoc drinking water lifetime health advisory prepared by EPA Region 8 staff (see 10/27/05 EPA Region 8 memorandum by Robert Benson to Dean Henderson).

D. DISCHARGE MINIMIZATION AND BEST AVAILABLE TECHNOLOGY STANDARDS - the tailings disposal facility must be built, operated, and maintained according to the following Discharge Minimization Technology (DMT) and Best Available Technology (BAT) standards:

1. DMT Design Standards for Existing Tailings Cells 1, 2, and 3 - shall be based on existing construction as described by design and construction information provided by the Permittee, as summarized in Table 3 below for Tailings Cells 1, 2, and 3:

Table 3. DMT Engineering Design and Specifications

Tailings Cell	Report Type	Engineering Report	Design Figures	Construction Specifications
Cell 1	Design	June, 1979 D'Appolonia Consulting Engineers, Inc (1)	Appendix A, Sheets 2, 4, 8, 9, 12-15	Appendix B
Cell 2	Design	June, 1979 D'Appolonia Consulting Engineers, Inc (1)	Appendix A, Sheets 2, 4, 7-10, 12-15	Appendix B
	As-Built	February, 1982 D'Appolonia Consulting Engineers, Inc (2)	Figures 1, 2, and 11	N/A
Cell 3	Design	May, 1981 D'Appolonia Consulting Engineers, Inc (3)	Sheets 2-5	Appendix B
	As-Built	March, 1983 Energy Fuels Nuclear, Inc. (4)	Figures 1-4	N/A

Footnotes:
1) D'Appolonia Consulting Engineers, Inc., June, 1979, "Engineers Report Tailings Management System White Mesa Uranium Project Blanding, Utah Energy Fuels Nuclear, Inc. Denver, Colorado", unpublished consultants report, approximately 50 pp., 2 figures, 16 sheets, 2 appendices.
2) D'Appolonia Consulting Engineers, Inc., February, 1982, "Construction Report Initial Phase - Tailings Management System White Mesa Uranium Project Blanding, Utah Energy Fuels Nuclear, Inc. Denver, Colorado", unpublished consultants report, approximately 7 pp., 6 tables, 13 figures, 4 appendices.
3) D'Appolonia Consulting Engineers, Inc., May, 1981, "Engineer's Report Second Phase Design - Cell 3 Tailings Management System White Mesa Uranium Project Blanding, Utah Energy Fuels Nuclear, Inc. Denver, Colorado", unpublished consultants report, approximately 20 pp., 1 figure, 5 sheets, and 3 appendices.
4) Energy Fuels Nuclear, Inc., March, 1983, "Construction Report Second Phase Tailings Management System White Mesa Uranium Project Energy Fuels Nuclear, Inc.", unpublished company report, 18 pp., 3 tables, 4 figures, 5 appendices.

a) Tailings Cell 1 – consisting of the following major design elements:

1) Cross-valley Dike and East Dike – constructed on the south side of the pond of native granular materials with a 3:1 slope, a 20-foot crest width, and a crest elevation of about 5,620 ft above mean sea level (amsl). A dike of similar design was constructed on the east margin of the pond, which forms a continuous earthen structure with the south dike. The remaining interior slopes are cut-slopes at 3:1 grade.

2) Liner System - including a single 30 mil PVC flexible membrane liner (FML) constructed of solvent welded seams on a prepared sub-base. Top elevation of the FML liner was 5,618.5 ft amsl on both the south dike and the north cut-slope. A protective soil cover layer was constructed immediately over the FML with a thickness of 12-inches on the cell floor and 18-inches on the interior sideslope.

3) Crushed Sandstone Underlay – immediately below the FML a nominal 6-inch thick layer of crushed sandstone was prepared and rolled smooth as a FML sub-base layer. Beneath this underlay, native sandstone and other foundation materials were graded to drain to a single low point near the upstream toe of the south cross-valley dike. Inside this layer, an east-west oriented pipe was installed

to gather fluids at the upstream toe of the cross-valley dike.

b) Tailings Cell 2 – which consists of the following major design elements:

   1) Cross-valley Dike – constructed at the south margin of Cell 2 of native granular materials with a 3:1 slope, a 20-foot crest width, and crest elevation of about 5,615 ft amsl. The east and west interior slopes consist of cut-slopes with a 3:1 grade. The Cell 1 south dike forms the north margin of Cell 2, with a crest elevation of 5,620 ft amsl.

   2) Liner System – includes a single 30 mil PVC FML liner constructed of solvent welded seams on a prepared sub-base, and overlain by a slimes drain collection system. Top elevation of the FML liner in Cell 2 is 5,615.0 ft and 5,613.5 ft amsl on the north and south dikes, respectively. Said Cell 2 FML liner is independent of all other disposal cell FML liners. Immediately above the FML, a nominal 12-inch (cell floor) to 18-inch (inside sideslope) soil protective blanket was constructed of native sands from on-site excavated soils.

   3) Crushed Sandstone Underlay – immediately below the FML a nominal 6-inch thick layer of crushed sandstone was prepared and rolled smooth as a FML sub-base layer. Beneath this underlay, native sandstone and other foundation materials were graded to drain to a single low point near the upstream toe of the south cross-valley dike. Inside this layer, an east-west oriented pipe was installed to gather fluids at the upstream toe of the cross-valley dike.

   4) Slimes Drain Collection System immediately above the FML a nominal 12-inch thick protective blanket layer was constructed of native silty-sandy soil. On top of this protective blanket, a network of 1.5-inch PVC perforated pipe laterals was installed on a grid spacing interval of about 50-feet. These pipe laterals gravity drain to a 3-inch diameter perforated PVC collector pipe which also drains toward the south dike and is accessed from the ground surface via a 24-inch diameter, vertical non-perforated HDPE access pipe. Each run of lateral drainpipe and collector piping was covered with a 12 to 18-inch thick berm of native granular filter material. At cell closure, leachate head inside the pipe network will be removed via a submersible pump installed inside the 24-inch diameter HDPE access pipe.

c) Tailings Cell 3 – consisting of the following major design elements:

   1) Cross-valley Dike – constructed at the south margin of Cell 3 of native granular materials with a 3:1 slope, a 20-foot crest width, and a crest elevation of 5,610 ft amsl. The east and west interior slopes consist of cut-slopes with a 3:1 grade. The Cell 2 south dike forms the north margin of Cell 3, with a crest elevation of 5,615 ft amsl.

   2) Liner System – includes a single 30 mil PVC FML liner constructed of solvent welded seams on a prepared sub-base, and overlain by a slimes drain collection system. Top elevation of the FML liner in Cell 3 is 5,613.5 ft and 5,608.5 ft amsl on the north and south dikes, respectively. Said Cell 3 FML liner is independent of all other disposal cell FML liners.

   3) Crushed Sandstone Underlay – immediately below the FML a nominal 6-inch

thick layer of crushed sandstone was prepared and rolled smooth as a FML sub-base layer. Beneath this underlay, native sandstone and other foundation materials were graded to drain to a single low point near the upstream toe of the south cross-valley dike. Inside this layer, an east-west oriented pipe was installed to gather fluids at the upstream toe of the cross-valley dike.

4) Slimes Drain Collection Layer and System – immediately above the FML, a nominal 12-inch (cell floor) to 18-inch (inside sideslope) soil protective blanket was constructed of native sands from on-site excavated soils (70%) and dewatered and cyclone separated tailings sands from the mill (30%). On top of this protective blanket, a network of 3-inch PVC perforated pipe laterals was installed on approximately 50-foot centers. This pipe network gravity drains to a 3-inch perforated PVC collector pipe which also drains toward the south dike, where it is accessed from the ground surface by a 12-inch diameter, inclined HDPE access pipe. Each run of the 3-inch lateral drainpipe and collector pipe was covered with a 12 to 18-inch thick berm of native granular filter media. At cell closure, leachate head inside the pipe network will be removed via a submersible pump installed inside the 12-inch diameter inclined access pipe.

2. Existing Tailings Cell Construction Authorized – tailings disposal in existing Tailings Cells 1, 2, and 3 is authorized by this permit as defined in Table 3 and Part I.D.1, above. Authorized operation and maximum disposal capacity in each of the existing tailings cells shall not exceed the levels authorized by the License. Under no circumstances shall the freeboard be less than three (3) feet, as measured from the top of the FML. Any modification by the Permittee to any approved engineering design parameter at these existing tailings cells shall require prior Executive Secretary approval, modification of this Permit, and issuance of a construction permit.

3. Existing Facility DMT Performance Standards - the Permittee shall operate and maintain certain mill site facilities and the existing tailings disposal cells to minimize the potential for wastewater release to groundwater and the environment, including, but not limited to the following additional DMT compliance measures:

   a) DMT Monitoring Wells at Tailings Cell 1 –at all times the Permittee shall operate and maintain Tailings Cell 1 to prevent groundwater quality conditions in any nearby monitoring well from exceeding any Ground Water Compliance Limit established in Table 2 of this Permit.

   b) Tailings Cells 2 and 3 – including the following performance criteria:

      1) Slimes Drain Maximum Allowable Head – the Permittee shall at all times maintain the average wastewater head in the slimes drain access pipe to be as low as reasonably achievable (ALARA) in each tailings disposal cell, in accordance with the currently approved DMT Monitoring Plan. Compliance shall be achieved when the average annual wastewater recovery elevation in the slimes drain access pipe, determined pursuant to the currently approved DMT Monitoring Plan, meets the conditions in Equation 1, below:

Equation 1:

$$[\sum E_y + \sum E_{y-1} + \sum E_{y-2}] / [N_y + N_{y-1} + N_{y-2}] < [\sum E_{y-1} + \sum E_{y-2} + \sum E_{y-3}] / [N_{y-1} + N_{y-2} + N_{y-3}]$$

Where:

$\sum E_y$ = Sum of all slimes drain tailings fluid elevation measurements made at the end of each 90-hour recovery test collected during the calendar year of interest. Hereafter, these water level measurements are referred to as slimes drain recovery elevations (SDRE). Pursuant to the approved DMT Monitoring Plan, these recovery tests are to be conducted monthly and the SDRE values reported in units of feet above mean sea level (amsl).

$\sum E_{y-1}$ = Sum of all SDRE measurements made in the year previous to the calendar year of interest.

$\sum E_{y-2}$ = Sum of all SDRE measurements made in the second year previous to the calendar year of interest.

$\sum E_{y-3}$ = Sum of all SDRE measurements made in the third year previous to the calendar year of interest.

N_y = Total number of slimes drain 90-hour recovery tests conducted during the calendar year of interest.

N_{y-1} = Total number of slimes drain 90-hour recovery tests conducted in the year previous to the calendar year of interest.

N_{y-2} = Total number of slimes drain 90-hour recovery tests conducted in the second year previous to the calendar year of interest.

N_{y-3} = Total number of slimes drain 90-hour recovery tests conducted in the third year previous to the calendar year of interest.

Prior to January 1, 2011, the following values for E and N values in Equation 1 shall be based on SDRE data from the following calendar years.

Report for Calendar Year	Source of Data By Calendar Year for Equation 1 Variables (right side)					
	E_{y-1}	E_{y-2}	E_{y-3}	N_{y-1}	N_{y-2}	N_{y-3}
2008	2007	2007	2007	2007	2007	2007
2009	2008	2007	2007	2008	2007	2007
2010	2009	2008	2007	2009	2008	2007

Failure to satisfy conditions in Equation 1 shall constitute DMT failure and non-compliance with this Permit. For Cell 3, this requirement shall apply after initiation of de-watering operations.

c) Maximum Tailings Waste Solids Elevation – upon closure of any tailings cell, the Permittee shall ensure that the maximum elevation of the tailings waste solids does not exceed the top of the FML liner.

d) DMT Monitoring Wells – at all times the Permittee shall operate and maintain Tailings Cells 2 and 3 to prevent groundwater quality conditions in any nearby monitoring well from exceeding any Ground Water Compliance Limit established in Table 2 of this Permit.

e) Roberts Pond –the Permittee shall operate this wastewater pond so as to provide a minimum 2-foot freeboard at all times. Under no circumstances shall the water level in the pond exceed an elevation of 5,624 feet amsl. In the event that the wastewater elevation exceeds this maximum level, the Permittee shall remove the excess wastewater and place it into containment in Tailings Cell 1 within 72 hours of discovery. At the time of mill site closure, the Permittee shall reclaim and decommission the Roberts Pond in compliance the final Reclamation Plan approved under the License (hereafter Reclamation Plan).

f) Feedstock Storage Area –open-air or bulk storage of all feedstock materials at the facility awaiting mill processing shall be limited to the eastern portion of the mill site area described in Table 4, below. Storage of feedstock materials at the facility outside this area, shall meet the requirements in Part I.D.11. At the time of mill site closure, the Permittee shall reclaim and decommission the Feedstock Storage Area in compliance with an approved Reclamation Plan.

Table 4. Feedstock Storage Area Coordinates (1)

Corner	Northing (ft)	Easting (ft)
Northeast	323,595	2,580,925
Southeast	322,140	2,580,920
Southwest	322,140	2,580,420
West 1	322,815	2,580,410
West 2	323,040	2,580,085
West 3	323,120	2,580,085
West 4	323,315	2,580,285
West 5	323,415	2,579,990
Northwest	323,600	2,579,990

Footnote: 1) Approximate State Plane Coordinates beginning from the extreme northeast corner and progressing clockwise around the feedstock area (from 6/22/01 IUC Response, Attachment K, Site Topographic Map, Revised June, 2001.)

g) Mill Site Chemical Reagent Storage – for all chemical reagents stored at existing storage facilities and held for use in the milling process, the Permittee shall provide secondary containment to capture and contain all volumes of reagent(s) that might be released at any individual storage area. Response to spills, cleanup thereof, and required reporting shall comply with the provisions of an approved Emergency Response Plan as found in an approved Stormwater Best Management Practices Plan, stipulated by Parts I.D.10 and I.H.16 of this Permit. For any new construction of reagent storage facilities, said secondary containment and control shall prevent any contact of the spilled or otherwise released reagent or product with the ground surface.

4. Best Available Technology Requirements for New Construction – any construction, modification, or operation of new waste or wastewater disposal, treatment, or storage facilities shall require submittal of engineering design plans and specifications, and prior Executive Secretary review and approval. All engineering plans or specifications submitted shall demonstrate compliance with all Best Available Technology (BAT) requirements stipulated by the Utah Ground Water Quality Protection Regulations (UAC R317-6). Upon Executive Secretary approval this Permit may be re-opened and modified to include any necessary requirements.

5. BAT Design Standards for Tailings Cell 4A - the BAT design standard for Tailings Cell 4A shall be defined by and construction conform to the requirements of the June 25, 2007 Executive Secretary design approval letter for the relining of former existing Tailings Cell No. 4A, and as summarized by the engineering drawings, specifications, and description in Table 5, below:

Table 5. Approved Tailings Cell 4A Engineering Design and Specifications

Engineering Drawings			
Name	Date	Revision No.	Title
Sheet 1 of 7	June, 2007		Title Sheet
Sheet 2 of 7	June 15, 2007	Rev. 1	Site Plan
Sheet 3 of 7	June 15, 2007	Rev. 1	Base Grading Plan
Sheet 4 of 7	June 15, 2007	Rev. 1	Pipe Layout Plan
Sheet 5 of 7	June 15, 2007	Rev. 1	Lining System Details I
Sheet 6 of 7	June 15, 2007	Rev. 1	Lining System Details II
Sheet 7 of 7	June 15, 2007	Rev. 1	Lining System Details III

Engineering Specifications		
Date	Document Title	Prepared by
June, 2007	Revised Technical Specifications for the Construction of Cell 4A Lining System	Geosyntec Consultants
June, 2007	Revised Construction Quality Assurance Plan for the Construction of Cell 4A Lining System	Geosyntec Consultants
March 27, 2007	Revised Geosynthetic Clay Liner Hydration Demonstration Work Plan (1)	Geosyntec Consultants
November 27, 2006	Cell Seismic Study (2)	MFG Consulting Scientists and Engineers
October 6, 2006	Calculation of Action Leakage Rate Through the Leakage Detection System Underlying a Geomembrane Liner	Geosyntec Consultants
June 22, 2006	Slope Stability Analysis Cell 4A – Interim Conditions	Geosyntec Consultants
June 23, 2006	Settlement Evaluation of Berms (2)	Geosyntec Consultants
August 22, 2006	Pipe Strength Calculations	Geosyntec Consultants
September 27, 2007	DMC Cell 4A – GCL Hydration	Geosyntec Consultants

Footnotes:
1) As qualified by conditions found in May 2, 2007 Division of Radiation Control letter.
2) As clarified by February 8, 2007 Division of Radiation Control Round 6 Interrogatory.

Tailings Cell 4A Design and Construction – approved by the Executive Secretary will consist of the following major elements:

a) Dikes – consisting of existing earthen embankments of compacted soil, constructed by the Permittee between 1989-1990, and composed of four dikes, each including a 15-foot wide road at the top (minimum). On the north, east, and south margins these dikes have slopes of 3H to 1V. The west dike has an interior slope of 2H to 1V. Width of these dikes varies, Each has a minimum crest width of at least 15 feet to support an access