

1/10/14

**Basis Statement**

**Chapter 200 Metallic Mineral Exploration, Advanced Exploration and Mining**

**Commenters**

C-1 Sevee and Maher Engineers  
4 Blanchard Road  
P.O. Box 85A  
Cumberland Center, Maine 04021  
Tel: (207)829-5016  
[www.smemaine.com](http://www.smemaine.com)

C-2 Maine Conservation Voters  
Beth Ahearn  
Olde Federal Building  
295 Water Street, Suite 9  
Augusta, ME 04330  
Tel: (207) 620-8811  
[info@maineconservation.org](mailto:info@maineconservation.org)

C-3 Kathy Rimmel  
41 Thomas Street  
Portland, ME

C-4 Jennifer Burns Gray  
Maine Audubon  
20 Gilsland Farm Road  
Falmouth, ME 04105

C-5 Cara O'Donnell  
Water Resources Specialist  
Houlton Band of Maliseet Indians

C-6 Linda Raymond  
Council Member  
Houlton Band of Maliseet Indians

C-7 Brenda Commander  
Chief  
Houlton Band of Maliseet Indians

C-8 The Natural Resources Council of  
Maine  
Nick Bennett

3 Wade Street  
Augusta, ME 04330  
Tel: (207)622-3101  
[nbennet@nrcm.com](mailto:nbennet@nrcm.com)

C-9 Phyllis Coelho  
Belfast, ME

C-10 Stephen Miller  
709 Westmanland Road  
Westmanland, ME

C-11 Linda Monroe  
Blue Hill, ME  
Tel: (207) 374-5595

C-12 Lew Kingsbury  
Pittston, ME

C-13 Jeanie L. McGowan  
382 Fuller Rd  
Easton, ME  
[jlmcgowan@gmail.com](mailto:jlmcgowan@gmail.com)

C-14 Trout Unlimited  
Jeff Reardon  
Manchester, ME  
Tel: (207) 430-8441  
[jreardon@tu.org](mailto:jreardon@tu.org)

C-15 Steve Pinette, Principal  
Pineterra Consulting, LLC  
7 Oak Hill Terrace, Suit 8C  
Scarborough, ME 04074  
Tel: (207) 650-7482  
[spinette@pineterra.com](mailto:spinette@pineterra.com)

C-16

Ben Gilman  
Maine State Chamber of Commerce  
125 Community Drive  
Suite 101  
Augusta, ME 04330-8010

C-17 Susan Davies  
21 Boynton Road  
Liberty, Maine 04949  
Tel: (207)660-1323

C-18 Henry John Bear  
Maliseet Tribal Representative

C-19 Catherine Roberts  
21 Starflower Lane  
Brunswick, ME 04011

C-20 Jane E. Edwards  
Vassalboro, ME

C-21 Maine Rivers  
Landis Hudson  
Executive Director  
P.O. Box 782  
Yarmouth, ME 04096

C-22 Sandra Wright  
1664 North Road  
Mount Vernon, Maine 04352  
Tel: (207)293-2582  
[scwright@fairpoint.net](mailto:scwright@fairpoint.net)

C-23 Alex Briggs  
Mechanical engineer

C-24 Lindsay Newland Bowker, CPCU  
Bowker Associates Science and Research in  
the Public Interest  
15 Cove Meadow Road  
Stonington, ME 04681  
Tel: (207) 367-5145  
[lindsaynewlandbowker@gmail.com](mailto:lindsaynewlandbowker@gmail.com)

C-25 Ann Flewelling  
189 Bagaduce Lane  
Sedgewick, ME

C-26 Theresa M. Fowler  
Executive Director  
Central Aroostook Chamber of Commerce  
3 Houlton Road  
Presque Isle, ME 04769

C-27 Jeffrey C. McBurnie, P.E.  
Director of Permitting and Regulatory  
Affairs  
Casella Organics  
135 Presumpscott St.  
Portland, ME 04103

C-28 Matthew Scott  
29 Gowell Road  
Belgrade, ME 04917  
Tel: (207)495-3409  
[msscott.afs@gmail.com](mailto:msscott.afs@gmail.com)

C-29 Gail Maynard  
Orchard Hill Farm  
Woodland

C-30 Karen Fletcher  
14 South Freeport Road,  
Freeport, Maine 04032  
Tel: (207) 865-3611  
[karenofletcher@myfairpoint.net](mailto:karenofletcher@myfairpoint.net)

C-31 Brownie Carson  
Resident, Harpswell, ME

C-32 Stephen Heinz  
Resident, Cumberland, ME

C-33 Evelyn deFrees  
Searsmont, Maine  
[bradev@fairpoint.net](mailto:bradev@fairpoint.net)

C-34 Marylyn Wentworth  
259 Log Cabin Road

Arundel, ME 04046  
Tel: 207-985-3745  
[marylynw@gwi.net](mailto:marylynw@gwi.net)

C-35 Representative Jeff McCabe  
Skowhegan  
[RepJeff.McCabe@legislature.maine.gov](mailto:RepJeff.McCabe@legislature.maine.gov)  
Tel: (207)287-1430  
Fax: (207)287-8338

C-36 Senator Christopher Johnson  
3 State House Station  
Augusta, ME 04333-0003  
3230 Turner Ridge Road  
Somerville, ME 04348  
Tel: Home (207) 549-3358  
Tel: (207) 287-1515  
[senchrisjohnson@legislature.maine.gov](mailto:senchrisjohnson@legislature.maine.gov)

C-37 Dick Wathers  
5 Bow Steet  
Otis, ME 04270

C-38 Carol Korty  
32 Fox Run  
Lamoine, ME 04605-4619  
Tel: (207)677-4441  
[carol@carolkorty.com](mailto:carol@carolkorty.com)

C-39 Betsey Terrell Bishop  
Representing Carr Pond

C-40 Shelly Mountain  
1572 Parsons Road  
Mapleton, ME 04757  
Tel: (207)764-2309  
[shellym@ainop.com](mailto:shellym@ainop.com)

C-41 George Kendrick  
Stantec Consulting Services, Inc.  
30 Park Drive  
Topsham, ME 04086  
Tel: (207)729-1199  
[george.kendrick@stantec.com](mailto:george.kendrick@stantec.com)

C-42 Thomas Doyle

Pierce Atwood  
Merrill's Wharf  
254 Commercial Street  
Portland, ME 04101  
[tdoyle@pieceatwood.com](mailto:tdoyle@pieceatwood.com)

C-43  
Sidney Quarrier  
785 Appleton Ridge Rd.  
Appleton, ME 04862

C-44 Alice Bolstridge  
Resident, Presque Isle

C-45 Carol Monroe  
5 Mahany Road  
Easton, ME 04740

C-46 Carolyn Michaud

C-47 Allan A. and Kathleen Bennett

C-48 Lindsay Newland Bowker, CPCU  
Bowker Associates Science and Research in  
the Public Interest  
15 Cove Meadow Road  
Stonington, ME 04681  
Tel: (207) 367-5145  
[lindsaynewlandbowker@gmail.com](mailto:lindsaynewlandbowker@gmail.com)

C-49  
Lois Winter  
50 Alden Circle  
Portland, ME 04102  
[lwinter@maine.rr.com](mailto:lwinter@maine.rr.com)

C-50 Elery Keene  
3 Pat Street, Winslow, Maine 04901  
Tel: (207) 872-5231  
[wekeene@me.acadia.net](mailto:wekeene@me.acadia.net)

C-51 Jane E. Edwards  
Vassalboro, ME  
[jeewhiz@roadrunner.com](mailto:jeewhiz@roadrunner.com)

C-52 Jody Spear

Harborside

C-53 Tom Whittle  
P.O. Box 149  
West Boothbay Harbor, ME 04575

C-54 Kathryn Olmstead  
PO Box 626  
Caribou, ME 04736-0626  
[olmstead@maine.edu](mailto:olmstead@maine.edu)

C-55 Lindsay Newland Bowker, CPCU  
Bowker Associates Science and Research in  
the Public Interest  
15 Cove Meadow Road  
Stonington, ME 04681  
Tel: (207) 367-5145  
[lindsaynewlandbowker@gmail.com](mailto:lindsaynewlandbowker@gmail.com)

C-56 Bud and Sue Oliveira  
PO Box 854  
Camden, ME 04843-0854

C-57 Gabrielle Bellegarde  
55 Sand Island Ln  
Otisfield, ME 04270-6226

C-58 Kathryn Olmstead  
PO Box 626  
Caribou, ME 04736-0626

C-59 Kathryn Gaianguest  
128 Great Ledge Road  
Tel: (207)677-1282  
Lamoine, Maine

C-60 Brian Rod  
[brian\\_rod@hotmail.com](mailto:brian_rod@hotmail.com)

C-61 David P. Kirstein  
8 Phinneas Lane  
Scarborough, Maine 04074  
Tel: 207 883 6281  
[dkirstei@maine.rr.com](mailto:dkirstei@maine.rr.com)

C-63

Robert G. Marvinney  
Maine Geological Survey  
Department of Agriculture, Conservation  
and Forestry  
93 State House Station  
Augusta, ME

C-64 Edward S. Spencer  
PO Box 12  
Stillwater, ME 04489

C-65 Marc Choyt  
President, Reflective Images Inc.  
Director, Fair Jewelry Action, USA  
[reflective@cybermesa.com](mailto:reflective@cybermesa.com)

C-66 Pamela J. S. Sweetser  
52 Higgins Rd.  
Presque Isle, ME  
[pjsnowsweetser@gmail.com](mailto:pjsnowsweetser@gmail.com)

C-67 Mariana Tupper  
167 W Elm St  
Yarmouth, ME 04096-7982

C-68 Peter Garrett  
202 Eames Road  
Winslow, ME 0490  
[peter.garrett@eggi.com](mailto:peter.garrett@eggi.com)

C-69 Michelle and Stanley Moody  
237 Foreside Road  
Topsham, ME 04086-5103

C-70 Rebecca Stanley  
39 Macomber Rd  
Monmouth, ME 04259

C-71 David Wylie  
St. David, ME

C-72 Elizabeth Hays  
57 Demariano Rd.  
Mount Vernon, ME 04352

C-73 Bruce Taylor

Sweden, ME  
[Bdtaylor2@hotmail.com](mailto:Bdtaylor2@hotmail.com)

C-74 Debbie McCarthy  
188 Hare St  
Phillips, ME 04966-4340

C-75 Priscilla Jenkins  
67 Mallard Lane  
Winthrop, ME

C-76 David E. Wood  
Hallowell, ME  
[outwood@roadrunner.com](mailto:outwood@roadrunner.com)

C-77 Anthony Hourihan  
Aroostook Resources, Inc.  
P.O. Box 5777  
Saint John, N.B. E2L 4M3

C-78 Dotty Caldwell  
679 N Penobscot Rd.  
Penobscot, ME 04476  
[Dcaldwell.maine@gmail.com](mailto:Dcaldwell.maine@gmail.com)

C-78 Dotty Caldwell  
679 N Penobscot Rd  
Penobscot, ME 04476-3011

C-79 Sarah Lozanova  
45 Edgecomb Rd  
Belfast, ME 04915-7502

C-80 Jackie Moreau  
Tel: (207)878-1216  
[moreauann@ymail.com](mailto:moreauann@ymail.com)

C-81 Ernest W. Hilton  
P.O. Box 162,  
31 Weston Ave.  
Farmington, ME 04950

C-82 Tony M Sousa, Jr  
174 Water St  
Hallowell, ME 04347-1315

C-83 Carolina Gold Resources  
138 Hunters Ridge Road  
Chapel Hill, North Carolina 27517  
Tel: (919)240-4607  
Tel: (919)632-0444  
[jpowers@carolinagoldresources.com](mailto:jpowers@carolinagoldresources.com)

C-84 Donald & Linda West  
PO Box 654  
Raymond, ME 04071-0654

C-85 Susan Davies  
21 Boynton, Road  
Liberty Maine 04949  
Tel: (207)660-1323

C-86 Maine Forest Products Council  
535 Civic Center Drive  
Augusta, Maine 04330  
Tel: (207)622-9288  
[info@maineforest.org](mailto:info@maineforest.org)  
[www.maineforest.org](http://www.maineforest.org)

C-87 Sr. Patricia Pora, RSM  
Hispanic Ministry  
Portland Diocese  
Tel: (207)615-2522

C-88 Mark F. Norton  
New Gloucester, ME 04260

C-89 Barb Biscone  
PO Box 209  
Lincolnton, ME 04849-0209

C-90 Jeremiah Leary,  
Tangle Ridge Rd  
Perham Maine 04766

C-91 Jeffrey Mabee  
290 Northport Ave  
Belfast, ME 04915-6016

C-92 Juliette Dzija  
Durham, Maine

C-93 Donna Twombly  
163 Somerset Ave  
Pittsfield, ME 04967-4304

C-94 Diane H. Messer  
67 Liberty Inn Rd  
Liberty, ME 04949-3427

C-95 Karin Sargent  
17 Brunswick Ave  
Gardiner, ME 04345-2123

C-96 Karen Demers  
639 River Rd # 2  
Brunswick, ME 04011-7117

C-97 Judith McKernan  
30 Grant St.  
Farmingdale, ME 04344-2822

C-98 Gwen Doak  
10 Doak St  
Wilton, ME 04294-4420

C-99 Arthur Allen  
53 Alan A Dale Rd  
Brewer, ME 04412-1707

C-100 Malcolm Hunter  
31 Haynes Brook Ln  
Amherst, ME 04605-8345

C-101 Jared Kline, Colonel US Army,  
Retired  
CMR 450  
Box 781  
APO, AE 09705

C-102 Christina Tarr  
1512 Spruce Street  
Berkeley, CA 94709-1552

C-103 Elly Pepper  
PO Box 1121  
Northeast Harbor, ME 04662-1121

C-104 Joshua W. Jackson  
622 Santa Clara Ave Apt 2  
Venice, CA 90291-3465

C-105 Gary M. Boone  
136 Canterbury Street  
Presque Isle, ME  
Tel: (207)768-3501  
[gmcgboone@gmail.com](mailto:gmcgboone@gmail.com)

C-106 Alex Fouliard  
64A Cedar St  
Belfast, ME 04915-6303

C-107 Ken Oberholtzer  
398 Old County Road  
Stockton Springs, ME 04981-4018

C-108 Barbara B. Clark  
17 Birch Meadow Rd  
Brunswick, ME 04011-2955

C-109 Ed Friedman, Chair  
Friends of Merrymeeting Bay  
P. O. Box 233  
Richmond, ME 04357

C-110 Nina Pike  
PO Box 41  
Caribou, ME 04736

C-111 David Smith  
5 Seaview Terrace  
Belfast, ME 04915

C-112 Houlton Band of Maliseet Indians  
No address or e-mail provided

C-113 Len Clarke  
PO Box 294  
Port Clyde, ME 04855-0294

C-114 Ruth E. Cyr  
483 Medford Rd  
Milo, ME 04463-1520

C-115 Jean English  
662 Slab City Rd  
Lincolntonville, ME 04849-5211

C-116 Fred Beck  
F.M. Beck, Inc.  
One Main Street  
Yarmouth, ME 04096  
[fmbeck@fmbeck.net](mailto:fmbeck@fmbeck.net)

C-117 Deb Boxer Sebago Lake, ME  
416 Cole Hill Rd  
Standish, ME 04084-5662

C-118 Bill Kreamer  
129 Miller Sreet  
Belfast, ME 04915-6407

C-119 Christina Walsh Braheney  
381 Beaver Hill Rd  
North Windham, CT 06256-1254

C-120 Bernd Heinrich  
Box 153  
Weld, ME 04285-0153

C-122 Jacqueline Grohoski, R.N.  
110 Hanson Landing Road  
Ellsworth, ME 04605-3080

C-123 Sally Trice  
100 Dorset Street  
Portland, ME 04102-1103

C-124 Alan R Solander, M.D.  
2 Tavern Way  
Falmouth, ME 04105

C-125 Bliza Bowman  
47 Gott Brook Hts.  
Orland, ME 04472-5121

C-126 Heather Omand  
881 Greenfield Road  
Greenbush, ME 04418-3512

C-127 Jenny Gray  
Wiscasset, ME  
[vertical11ift@gmail.com](mailto:vertical11ift@gmail.com)

C-128 Neil Gallagher  
4 Stowe Lane  
Brunswick, ME 04011-3439

C-129 Richard Thomas, Ph.D.  
3 Big Sky Lane  
Waterville, ME 04901-4340

C-130 Molly Foshay  
41 Beaver Lodge Lane  
Phippsburg, ME 04562-4441

C-131 Beth Peary  
24 Franklin Ter  
South Portland, ME 04106-2258

C-132 Polly T Labonte  
PO Box 326  
10 Main St  
Sangerville, ME 04479-0326

C-133 Steve Barker  
178 Rogers Rd  
Yarmouth, ME 04096-7147

C-134 Lucy Hull  
426 Bald Head Road  
Arrowsic, ME 04530-7520

C-135 Aleta Mckeage, M.S.  
101 State Highway 3  
Bar Harbor, ME 04609-7584

C-136 Edith K. Manns  
170 Beaucaire Ave  
Camden, ME 04843-4122

C-137 Joan Yates  
120 Starbird Road  
Portland, ME 04102-1758

C-138 Greg Kimber  
PO Box 525  
Temple, ME 04984

C-139 Lawrence Fischman  
102 Starboard Reach  
Yarmouth, ME 04096-6159

C-140 Barbara Russell  
654 Rome Road  
Rome, ME 04963-3220

C-141 Robert Fritsch  
255 Upper Garland Road  
Dexter, ME 04930-2680

C-142 Peter D. Lemay  
174 Myrtle Street  
Westbrook, ME 04092-2308

C-143 John Gow  
27 Running Springs Rd.  
Gorham, ME 04038-1603

C-144 Tarik Sivonen  
6 Sokokis Circle  
Saco, ME 04072-1874

C-145 Allan E. Strouss  
121 Dover Road  
Boothbay, ME 04537-4306

C-146 Jenny Orr  
112 Tuelltown Road  
West Paris, ME 04289-5502

C-147 Abi Morrison  
20 Mill Street  
Rockland, ME 04841-6310

C-148 Barbara Baeslack  
PO Box 221  
Carmel, ME 04419-0221

C-149 John P. Grillo  
3 Marsh Ln Apt 21

Orono, ME 04473-5620

C-150 Alan Pooley  
125 Hales Hill Road  
Brooklin, ME 04616-3112

C-151 Bettie Kettell  
103 Rabbit Road  
Durham, ME 04222-5241

C-152 Luisa Scott  
Hedgehog Hill Road  
Sumner, ME 04292

C-153 Jayne Lello  
651 North Road  
Sebec, ME 04481-3007

C-154 Donald Holmes  
215 Carter Point Road  
Sedgwick, ME 04676-3024

C-155 Jeff Reynolds  
382 Buck Street  
Bangor, ME 04401-5933

C-156 John Bernard  
56 Mildred Street  
South Portland, ME 04106-2727

C-157 Nicholas Barth  
Boothbay, Maine  
[nbarth@myfairpoint.net](mailto:nbarth@myfairpoint.net)

C-158 Mary Anne Mitchell  
31 Sterling Street  
Peaks Island, ME 04108-1125

C-159 Mark Jacobs  
133 Back Road  
Shapleigh, ME 04076-4236

C-160 Paul Sheridan  
88 Hart Road  
Northport, ME 04849  
[sheridanpa@earthlink.net](mailto:sheridanpa@earthlink.net)

C-161 William D. Strathmann, M.D.  
PO Box 548  
Casco, ME 04015-0548

C-162 Pam and Bryan Wells  
32 Gilman Falls Ave  
Old Town, ME 04468-1311

C-163 Shealagh Gray  
14 Manson Road  
Kittery, ME 03904-5534

C-164 Gary McGrane  
310 E Dixfield Road  
Jay, ME 04239-4034

C-165 Ann Staples Waldron  
PO Box 748  
Southwest Harbor, ME 04679-0748

C-166 Flo Wilder  
PO Box 436  
Hancock, ME 04640-0436

C-167 Ro Bloom  
35 Drake Lane  
Scarborough, ME 04074-7414

C-168 Barbara Snowadzky  
96 Pamela Drive  
Winthrop, ME 04364-4036

C-169 Alex Mendelsohn  
164 Sea Road  
Kennebunk, ME 04043-7321  
[alexmm@roadrunner.com](mailto:alexmm@roadrunner.com)

C-170 Bob Kohl  
199 Stevens Pond Road  
Liberty, ME 04949-3705  
[kohl.bob@gmail.com](mailto:kohl.bob@gmail.com)

C-171 Barry Monroe  
53 Glad Farm Road  
St. George, ME 04860-4604

C-172 P. Remsen  
103 Cobb Road  
Camden, ME 04843-4328

C-173 Pat Perrier  
PO Box 10873  
Portland, ME 04104-6873

C-174 Bets Brown, Ph.D.  
PO Box 6  
South China, ME 04358-0006

C-175 Jaremy Lynch  
160 Allen Point Road  
Harpwell, ME 04079-3056

C-176 Joel Pelletier  
1295 Forest Ave Apt 2  
Portland, ME 04103-1968

C-177 Rev. Brian J Schrader  
108 Foss Street  
Biddeford, ME 04005-3366  
[wizard7285@zwi.net](mailto:wizard7285@zwi.net)

C-178 Cindy Curran  
481 Ridge Road  
Bowdoinham, ME 04008-5203

C-179 Bruce Taylor  
PO Box 91  
Lovell, ME 04051-0091

C-180 Ellen R Wolf  
43 High Street  
Kennebunk, ME 04043-6930

C-181 Laura Sholtz  
384 Fogler Road  
Exeter, ME 04435-3409

C-182 Siri Beckman  
PO Box 765  
Stonington, ME 04681-0765

C-183 Shirley Davis  
64 Gardner Road  
Orono, ME 04473-3403

C-184 Delene Perley  
7 Hanna Brook Dr  
Windham, ME 04062

C-185 Gabrielle Rigaud  
16 Shady Lane  
Jefferson, ME 04348-4031

C-186 A. James Lougee  
1196 North Road  
Parsonsfield, ME 04047-6450

C-187 Bill & Marilyn Voorhies  
PO Box 156  
Bernard, ME 04612-0156

C-188 Russell Buker  
6 Birch Ln  
Alexander, ME 04694-6306

C-189 Nancy Earle  
46 Charlie Star Lane  
Orland, ME 04472

C-190 Kathleen Pinard  
8 Amherst Street  
Biddeford, ME 04005-2916

C-191 Semena Curlik  
PO Box 1223  
Blue Hill, ME 04614-1223

C-192 Sheila Leavitt  
Cummings Road  
Buckfield, ME 04220

C-193 Nathaniel Hilliard  
11 Rockwood Ave  
Bar Harbor, ME 04609-1014

C-194 Barbara Ryland  
69 Kaler Road

South Portland, ME 04106-6621

C-195 Sue Jagels  
875 N Main Street  
Winterport, ME 04496-3415

C-196 Marsha Stultz  
107 Tucker Ave  
Portland, ME 04103-1479

C-197 Sam Saltonstall  
21 Elizabeth Street  
Peaks Island, ME 04108-1168

C-198 Ruth Provost  
151 Tibbetts Road  
Exeter, ME 04435-3420

C-199 Elizabeth McPherson  
17 Church Street  
P.O. Box 292  
Damariscotta ME 04543-0292  
[beth1@tidewater.net](mailto:beth1@tidewater.net)

C-200 Glenn Vaillancourt  
170 Warren Road  
Buxton, ME 04093-3052

C-201 Mary L Narbus  
Po Box 152  
Rockwood, ME 04478-0152

C-202 Leslie Clapp  
PO Box 341  
Blue Hill, ME 04614-0341

C-203 Sally Williams  
PO Box 105  
Hiram, ME 04041-0105

C-204 Steve Wright  
410 Falls Bridge Road  
Blue Hill, ME 04614-6524

C-205 Richard K Jennings, M.D.

26 Moore Ave  
Brunswick, ME 04011-2911

C-206 Marianne Vandiver  
178 Dunbar Road  
Penobscot, ME 04476-3635

C-207 Sarah S. Harvey  
167 Old Stage Rd  
Woolwich, ME 04579-4429

C-208 David A. White  
1552 State Highway 102  
MDI Imported Car Service, Inc.  
Bar Harbor, ME 04609-7149

C-209 natasha mayers  
538 Townhouse Rd  
Whitefield, ME 04353-3410

C-210 Janet E. Ordway  
40 Macintosh Ln  
Old Orchard Beach, ME 04064-1481

C-211 Martha Goodale  
126 Saco Street  
Westbrook, ME 04092-2713

C-212 Sue Newlin  
54 Clear Field Ln  
Deer Isle, ME 04627-3420

C-213 Kate Rush  
60 Roussin Rd PO Box 92  
Newport, ME 04953-0092

C-214 Bonnie Frye  
125 Morning Street #4  
Portland, ME 04101-3250

C-215 Craig Terrell  
Care of Postmaster  
Portage Lake, ME 04768 –

C-216 Beth Comeau  
9B Antietam Street  
Brunswick, ME 04011-2763

C-217 James St. Pierre  
Restore: The North Woods  
9 Union Street  
Hallowell, ME 04347  
[restore@restore.org](mailto:restore@restore.org)

C-218 Maine Conservation Voters  
Beth Ahearn  
Olde Federal Building  
295 Water Street, Suite 9  
Augusta, ME 04330  
Tel: (207)620-8811  
[info@maineconservation.org](mailto:info@maineconservation.org)

C-219 Jennifer Burns Gray  
Maine Audubon  
20 Gilsland Farm Road  
Falmouth, ME 04105

C-220 Appalachian Mountain Club  
30 Exchange Street  
Portland, Maine 04101  
(207)899-0150  
[www.outdoors.org](http://www.outdoors.org)

C-221 Lorette and Darrell Adams  
350 West Ridge Road  
Mars Hill, ME 04758

C-222 David E. Wood  
Hallowell, ME  
[outwood@roadrunner.com](mailto:outwood@roadrunner.com)

C-223 Steve Kahl, Ph.D  
PO Box 145  
Old Town, Maine 04468  
[jskahl@gmail.com](mailto:jskahl@gmail.com)

C-224 Fred Kircheis  
300 Horseback Road  
Carmel, Maine 04419

C-225 Jane Edwards  
[jeewiz@roadrunner.com](mailto:jeewiz@roadrunner.com)

C-226 Doreen Conboy  
P.O. Box 538  
Alna, Maine 04535

C-227 Carol McKnight  
12 Church St. Rm. 203  
Presque Isle, ME 04769

C-228 Carol Korty  
32 Fox Run  
Lamoine, ME 04605-4619  
Tel: (207)677-4441  
[carol@carolkorty.com](mailto:carol@carolkorty.com)

C-229 Sevee and Maher Engineers  
4 Blanchard Road  
P.O. Box 85A  
Cumberland Center, Maine 04021  
Tel: (207)829-5016  
[www.smemaine.com](http://www.smemaine.com)

C-230 Brian Rod  
[brian\\_rod@hotmail.com](mailto:brian_rod@hotmail.com)

C-231 Marian A. Zimmerman, RSM  
133 Hills Beach Road  
Biddeford, Maine 04005  
[mzimmermanrsm@yahoo.com](mailto:mzimmermanrsm@yahoo.com)

C-232 Lois Winter  
50 Alden Circle  
Portland, ME 04102  
[lwinter@maine.rr.com](mailto:lwinter@maine.rr.com)

C-233 The Nature Conservancy  
Thomas Abello, Senior Policy Advisor

C-234 Charles FitzGerald  
Resident, Atkinson, ME

C-235 Jane E. Edwards  
Vassalboro, ME  
[jeewhiz@roadrunner.com](mailto:jeewhiz@roadrunner.com)

C-236 Peter Triandafillou  
Huber Resources Corp.  
1141 Main St.  
Old Town, ME 04468

C-237 Andrew A. Cadot  
73 Calf Point  
Roque Bluffs, ME 04654

C-238 Kate Nordstrom  
1690 Alna Rd  
Alna ME 04535  
[knpaintings@gmail.com](mailto:knpaintings@gmail.com)

C-239 Dennis Portzline  
246 East Main Street  
Dover-Foxcroft, ME 04426

C-240 Doug Comstock  
[04401me@gmail.com](mailto:04401me@gmail.com)

C-241 Meredith Bruskin, FNP  
[dscampc321@gmail.com](mailto:dscampc321@gmail.com)

C-242 John Avila  
[sacredcod\\_1999@yahoo.com](mailto:sacredcod_1999@yahoo.com)

C-243 Sarah Kasprzak Lachance  
[slkasprzak@roadrunner.com](mailto:slkasprzak@roadrunner.com)

C-244 Autumn Brook  
39 Cathance Farm Lane  
Bowdoin ME 04287  
[autumn279@live.com](mailto:autumn279@live.com)

C-245 No name provided  
[greenman@myfairpoint.net](mailto:greenman@myfairpoint.net)

C-246 Paula Kee  
Bucksport, Maine

C-247 Prudence B. Barry  
[prudencebbarry@gmail.com](mailto:prudencebbarry@gmail.com)

C-248 Christy Emmons Zavasnik  
19 Arnold Road

Freeport, Maine

C-249 Cheryl Hoffman  
[cherylahoff@gmail.com](mailto:cherylahoff@gmail.com)

C-250 Susan Levine  
[llevine101@aol.com](mailto:llevine101@aol.com)

C-251 Jane Whitney  
Richard Hero  
Brooklin, ME 04616

C-252 Richard Kane  
[www.KaneLewis.com](http://www.KaneLewis.com)  
189 Rope Ferry Road  
Sedgwick, ME. 04676

C-253 Richard Thomas  
[richard.thomas@mainegeneral.org](mailto:richard.thomas@mainegeneral.org)

C-254 Brian Hirst  
Harpwell, ME

C-255 Elizabeth McPherson  
17 Church Street  
P.O. Box 292  
Damariscotta, ME 04543-0292  
Tel: (207)563-5487  
[beth1@tidewater.net](mailto:beth1@tidewater.net)

C-256 Carol Masterson  
South Portland, ME  
[cheapartcarol@gmail.com](mailto:cheapartcarol@gmail.com)

C-257 Jeanie Barnard  
[jtbarnardmsw@maine.rr.com](mailto:jtbarnardmsw@maine.rr.com)

C-258 Alice Ingraham  
[aislandart@icloud.com](mailto:aislandart@icloud.com)

C-259 Craig Terrell  
T13 R8 Portage, ME

C-260 Errol Terrell  
[nsd3-141@live.com](mailto:nsd3-141@live.com)

C-261 Henry R Heyburn, Jr.  
215 Pennellville Rd  
Brunswick, ME Road-7929

C-262 The Natural Resources Council of  
Maine  
Nick Bennett  
3 Wade Street  
Augusta, ME 04330  
[nbennet@nrcm.com](mailto:nbennet@nrcm.com)

C-263 Trout Unlimited  
Jeff Reardon  
Manchester, ME  
[jreardon@tu.org](mailto:jreardon@tu.org)

C-264 Jeffrey C. McBurnie, P.E.  
Director of Permitting and Regulatory  
Affairs  
Casella Organics  
135 Presumpscott St.  
Portland, ME 04103

C-265 Kathy Cerick  
Atkinson, Maine  
Tel: (207)564-0280

C-266 BRP LLC  
Raymond Kaczorowski  
7600 W. Tidwell, Suite 300  
Houston, TX 77040

C-267 Ward Gerow  
56 Dyer Street  
Presque Isle, Maine  
[wgerow07@myfairpoint.net](mailto:wgerow07@myfairpoint.net)

C-268 Lawrence Fitzgerald, CG  
P.O. Box 512  
Winthrop, ME 04364  
[LFitzgerald@TRCSolutions.com](mailto:LFitzgerald@TRCSolutions.com)

C-269 Shelagh Delphyne  
94 Wagner Road  
Montville, ME 04941-4651

C-270 Land Use Planning Commission  
(LUPC)

C-271 Ward Gerow  
56 Dyer Street  
Presque Isle, Maine  
Tel: (207)764-0113  
[wgerow07@myfairpoint.net](mailto:wgerow07@myfairpoint.net)

C-272 Senator Geoff Gratwick  
District 32

C-273 Phil Daggett  
Co-owner of Hewes Brook Lodge  
T14/R7, Aroostook County  
Oral testimony only

C-274 Barbara Pitcairn  
Resident, Portage Lake, ME  
Oral testimony only

C-275 Betsy Bishop Terrell  
“Representing” Carr Pond  
Oral testimony only

C-280 Representative Chapman  
District 37  
Oral testimony only

C-282 Sam Smith  
Master Blacksmith,  
Maine Blacksmiths Guild  
Oral testimony only

C-284 Carly Anderson  
Resident, Biddeford, Maine  
Oral testimony only

C-286 Rhonda London  
Resident, Houlton, ME  
Oral testimony only

C-287 Christopher Sewall  
Maine Resident  
Oral testimony only

C-288 Margaret Hoyt  
Maine resident  
Oral testimony only

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## GENERAL COMMENTS

- (1) *Comment:* The Board should adopt very stringent rules that would preclude another disaster such as the Callahan mine in Brooksville, which only operated for four years (1968 - 1972), yet the environmental effects are still being felt more than 40 years later and huge amounts of public monies are being spent in attempts to clean up the site, because the mining company is long gone. It is questionable whether it was worth the four years of employment for a few people in exchange for loss of the environment that Maine is so rightly proud of. The lands and waters surrounding hard rock mining sites cannot be replaced and once degraded are lost for many generations to come. The laws/rules to protect ground water and air quality cannot be made too stringent because once our land and water quality is gone it is nearly impossible to bring back. (C-52, C-224,C-279, C-31, C-286, C-288)

*Response:* The Department recognizes the commenter's concerns, and has developed a rule that provides for stringent environmental protections while adhering to the statutory requirements established in the Maine Metallic Mineral Mining Act. No changes were made as a result of this comment.

- (2) *Comment:* The commenter suggests that the mining industry should provide information now, prior to loosening of rules, what type of mine is proposed, what treatment process will be used for the water, where the water for any dilution or rinsing will come from, where exactly it will be located, and where the power source will be. (C-90)

*Response:* The Department's proposed rules will apply to exploration activities in organized areas of the State, along with advanced exploration and mining activities on a statewide basis. Detailed information on a specific mining proposal (or proposals), would be required as part of the application process for a mining permit. No change.

- (3) *Comment:* A number of commenters expressed concerns that the proposal weakens Maine's mining regulations, would result in widespread environmental damage, and ultimately impose Maine taxpayers with the cost of cleaning up mining pollution. (C-19, C-49, C-56, C-57, C-58, C-61, C-67, C-69, C-73, C-74, C-75, C-78, C-79, C-82, C-84, C-88, C-89, C-91, C-93, C-94 , C-95, C-96, C-97, C-98, C-99, C-100, C-101, C-102, C-103, C-104, C-106, C-107, C-108, C-113, C-114, C-115, C-117, C-118, C-119, C-120, C-122, C-123, C-124, C-125, C-126, C-129, C-130, C-131, C-132, C-133, C-134, C-135, C-137, C-138, C-139, C-140, C-141, C-142, C-143, C-144, C-145, C-146, C-147, C-148, C-149, C-150, C-151, C-152, C-153, C-154, C-155, C-156, C-158, C-159, C-160, C-161, C-162, C-163, C-164, C-165, C-

166, C-167, C-168, C-170, C-171, C-172, C-173, C-174, C-175, C-176, C-178, C-179, C-180, C-181, C-182, C-183, C-184, C-185, C-186, C-187, C-188, C-189, C-190, C-191, C-192, C-193, C-194, C-195, C-196, C-197, C-198, C-200, C-201, C-202, C-203, C-204, C-205, C-206, C-207, C-208, C-210, C-211, C-212, C-213, C-214, C-215, C-216, C-232, C-237, C-259, C-261 C-269, C-272, C-274, C-275, C-276, C-277, C-278, C-280, C-282, C-283, C-284, C-285, C-286, C-287, C-288).

*Response:* The Department recognizes the commenter’s concerns, and has developed a rule that provides for stringent environmental protections while adhering to the statutory requirements established in the Maine Metallic Mineral Mining Act. No changes were made as a result of this comment.

- (4) *Comment:* The Central Aroostook Chamber of Commerce urges you to proceed with the development of mining regulations based on the latest scientific information, the latest technology and with an awareness of constantly improving technology and mining practices. (C- 26)

*Response:* The Department’s proposal utilizes performance based standards whenever practicable to maximize environmental protections while allowing the flexibility to use the latest and most protective technologies. No change.

- (5) *Comment:* Please turn down any attempts to weaken laws concerning Maine waters, including groundwater. Think of the door you will open if you start issuing permission to possibly pollute the groundwater beneath any other industry. Should all the landfills in Maine who struggle with liners and leaks now have permission to ruin the water below if they own the ground and can claim they will prevent surface water run off? (C-90, C-284, C-287)

*Response:* The Department’s proposal has been crafted to provide environmentally appropriate protections while adhering to the statutory requirements established in the Maine Metallic Mineral Mining Act. 38 M.R.S. § 490-OO(4)(D) states (in relevant part):

D. “...Notwithstanding sections 465-C and 470, *discharges to groundwater from activities permitted under this article may occur within a mining area*, but such discharges may not result in contamination of groundwater beyond each mining area.” (emphasis added)

Recognizing that statute does not prohibit discharges to the groundwater in a mining area, the Department instead crafted its proposal to minimize and prevent the release of contaminants. For example, Section 20.A requires that all mine operations and waste units shall be designed, constructed, operated and maintained during the development, operation, closure, and post-closure maintenance period in a manner that minimizes acid generation, metal leaching, and acid rock drainage within the mining areas.

- (6) *Comment:* There needs to be clear transparency and responsibility so that environmental disasters can’t be shuttled from the company to its subsidiaries or sub-contractors and back to the company so that in the end no one takes full responsibility. (C-87)

*Response:* The Department's proposed substantial changes of December 7, 2013 include a requirement for the applicant to identify all entities with a financial interest in the proposed activity (see section 9(B)(1)(d)). This requirement, coupled with the financial assurance requirements in section 17, will ensure that the appropriate corporate entity takes full responsibility for the remediation of any environmental damage.

- (7) *Comment:* The fact that reputable scientists say that it is possible to carry out a procedure without harming the environment does NOT mean that the procedure will in fact be carried out that way. Human error has resulted in significant damage in recent history. Examples known to us all include the Bhopal gas leak, the Fukushima nuclear meltdown, the leveling of Lac Megantic, and the Deep Horizon oil spill. Contamination of Maine's water supply, while less dramatic, would be similarly irreparable. (C-272)

*Response:* See response to comment #5.

- (8) *Comment:* Experience with metallic mineral mines in other areas of the country shows that only 10 – 20% of them operate in a way that meets water quality standards. Thus careful rules are extremely important. (C-272)

*Response:* See response to comment #5.

- (9) *Comment:* A primary concern with the draft mining rules is organization of the document. Discussions of permitting are interspersed with financial assurances, mining standards, etc. such that the applicant must sort through several different sections to understand what the requirements are for mining and what must be submitted. An example in Subchapter 1 is that sections labeled "Prohibition(s)" are found on pages 1 and 9. The document should be reorganized to first discuss all the standards for mining and reclamation, materials that must be submitted in the application, the permitting process, and financial assurances. (C-63, C-220, C-272))

*Response:* In general, the Department's proposal follows the general structure of the Maine Metallic Mineral Mining Act at 38 M.R.S. § 490-LL *et seq.* This structure was chosen to provide consistency between the Department's proposed rules and the statutory requirements. It should also be noted that the proposed structure is not significantly different than that of the existing Chapter 200. No changes were made in response to this comment.

- (10) *Comment:* Commenters concerned that metal mining in Maine could pollute our water and harm our woods and wildlife. Commenters urges the Board to strengthen the proposed metallic mining rules to ensure stronger protection of Maine's environment and to ensure Maine taxpayers are not stuck with the cost of cleaning up mining pollution. Mining is not a good investment for long term jobs. The dollar value of minerals is too sporadic. Maine people depend on tourism and our state's vibrant natural resources to make their living such as guides, lobstermen, and sporting camp owners. Poorly regulated metal mining in Maine is

a direct threat to those industries and to the natural resources they depend on. (C-54,C-50, C-40, C-275)

*Response:* See response to comment #5.

- (11) *Comment:* The commenter suggests that if newer technologies that will mitigate degradation to the environment are available, the DEP has an obligation to specifically identify those to the public before moving forward on this measure. Neither Sen. Saviello nor the mining-industry proponents who testified at the hearing specified exactly what “advancements in water treatment and other mining technologies” are proposed to make resource extraction at Bald Mountain and elsewhere “safe and responsible.” Saviello offers no proof; rather, he would have us take on faith—considering other technical advances over the last two decades, such as GPS, internet, etc. (cited in his original online version)— that there MUST be new methods for mining without unacceptable adverse impacts. The that claims of so-called “new technology” that will make mining very safe are suspect since reverse osmosis filtration and other high tech means were all available by the 1990’s when the previous owners were considering mining Bald Mountain. The commenter suggests that relaxing environmental protections seems to be reckless. At the hearing, many examples were presented of mines that have turned into environmental disasters, with communities and governments left to deal with the consequences. The commenter notes that there was no mention, even by defenders of the proposed rules, of mines that had been well tended by their owners, that had provided local communities with large numbers of good jobs over many years, and that had completed their life cycle with no damage to the environment. The commenter wants to know where are the successful models (C-271, C-66, C-52, C-18, C-128)

*Response:* Although technologies such as ultrafiltration and reverse osmosis are now being used to treat mine wastes, the Department is unaware of any study or plans to utilize these (or other) technologies in Maine. Any application for a mining permit would need to include detailed documentation that a proposed technology would meet the performance standards of the rule. No changes were made.

- (12) *Comment:* The rules should incorporate stronger air quality control and monitoring requirements to ensure that toxic dust from a mining site does not spread and make people sick, including requirements for fugitive dust emissions and ambient air quality monitoring. The existing Chapter 200 rules include such requirements, given that mining activities can generate a large amount of dust, and that many ores contain significant amounts of toxic metals, mining operations should be required to conduct ambient air quality monitoring to ensure that air quality standards and public health and safety near the mine are not compromised. (Commenters #: C-19, C-49, C-56, C-57, C-58, C-59, C-67, C-69, C-73, C-74, C-75, C-78, C-79, C-82, C-84, C-89, C-91, C-93, C-94 , C-95, C-96, C-97, C-98, C-99, C-100, C-101, C-102, C-103, C-104, C-106, C-107, C-108, C-111, C-113, C-114, C-115, C-117, C-118, C-119, C-120, C-122, C-123, C-124, C-125, C-126, C-129, C-130, C-131, C-132, C-133, C-134, C-135, C-137, C-138, C-139, C-140, C-141, C-142, C-143, C-144, C-145, C-146, C-147, C-148, C-149, C-150, C-151, C-152, C-153, C-154, C-155, C-156, C-157, C-158, C-159, C-160, C-161, C-162, C-163, C-164, C-165, C-166, C-167, C-168, C-

170, C-171, C-172, C-173, C-174, C-175, C-176, C-178, C-179, C-180, C-181, C-182, C-183, C-184, C-185, C-186, C-187, C-188, C-189, C-190, C-191, C-192, C-193, C-194, C-195, C-196, C-197, C-198, C-200, C-201, C-202, C-203, C-204, C-205, C-206, C-207, C-208, C-210, C-211, C-212, C-213, C-214, C-215, C-216, C-232, C-237, C-257, C-259, C-262, C-269, C-40, 287).

*Response:* The Department has amended its proposal to include explicit requirements for controlling fugitive dust emissions in Section 20(C)(3). In addition, the Department has amended its proposal to include a new section addressing air quality performance standards in Section 20(L) of the proposal. Finally, the proposal has been amended to include the air monitoring requirements in Section 22(B)(17) of the proposal:

[NOTE: The numbering of the comments in this location skips comment #'s 13 and 14. These numbers are intentionally left out of this document.]

(15) *Comment:* The commenter recommends that the mining rules include strict and very specific rules for noise. (C-259)

*Response:* Although noise impacts could be addressed by the requirement to identify potential impacts to resources and settings (section 9(G)(3) of the proposal), the Department agrees with the commenter that a more explicit requirement to address noise impacts would provide greater certainty to both the regulated community and interested parties. The Department has amended its proposal to include the noise standards in section 20(M).

(16) *Comment:* Aroostook County, for example, has experienced historic levels of rainfall in two of the last three years (30 and 36 inches between May and September). The site proposed for an open pit mine in Aroostook is known to contain high levels of arsenic, as well as the elements that become sulfuric acid when exposed to air and water. Just one extreme rainfall event in the region of a mine's tailing pond could damage ground and surface water permanently. (C-54)

*Response:* The Department has included stringent design standards for water management systems throughout the proposed rule. By way of example, the design storm event for run-on/runoff control systems is the 24-hour; 500-year storm event as compared to the more frequently used 24-hour, 100-year storm event. This same larger storm event is required for designing the capacity for the leachate pond. The leachate pond storage capacity also requires the design to be based off of the most recent 15-year historical precipitation database. Both of these design standards are in recognition of the increased frequency of larger precipitation events that have been observed recently.

(17) *Comment:* Commenter has witnessed open pit mining, or mountain top removal turn into a wasteland, accompanied by a bright orange brook. Concern expressed about preventing acid rock drainage (C-34)

*Response:* See response to comment # 5, above. The rule requires that all mine waste is evaluated for its potential to generate acid rock drainage and classified according to the test results. Based on its classification, specific design and financial assurance requirements are required.

- (18) *Comment:* Reference to protection and monitoring of aquatic life, and attainment of biological standards, is largely lacking in these proposed rules. The commenter recommends that transport through, and the effects on the natural food chain be monitored and have immediate intervention not only to protect the environment, but also to protect human health. Animals will not only directly injured by toxins, but will serve as indicator species for humans. Fish, mammals and especially birds and bats must be prevented from exposure and monitored very closely during and long after a site is closed. Animal vectors are also important because they can help to physically disseminate toxins to areas of human habitation and activity or enter directly into the human food chain. (C-17, C-73)

*Response:* The Department's proposal provides for the monitoring of biological resources in section 22( B)(4)as follows:

- (1) Biological Resources. Biological resources of the background locations, mining areas and affected areas shall be monitored where mining activities have a reasonable potential for measurable impact to these resources. This monitoring must include analyses of fish tissue, fish population, invertebrate population and abundance, and any other measure of ecological health determined to be necessary by the Department.

No change.

- (19) *Comment:* The commenter notes that Maine's favored fishing areas overlap potentially significant ore deposits. Waters in those areas should be protected to the greatest degree possible by proposed and future revisions to Maine's mining laws. The commenter suggests that the best way to ensure protection of surface waters and groundwater is to limit and control the actions of mining companies, and require the most stringent cleanup standards possible. The commenter points out that in the 1970's when geologists first started to explore Bald Mountain for mineral deposits, the commenter saw the silt that built up where Moose Brook flows into Carr Pond; knowing if Bald Mountain is mined, the water quality of Carr Pond and the Fish River Chain would be in trouble. Moose Brook feeds into the lake from the south side, the side that faces Bald Mountain. Carr Pond is the headwaters for the Fish River Chain. On the other side of Bald Mountain, I have stood on the shore of Greenlaw Pond with my back to Bald Mountain watching the stream flowing toward the Machias River and on into the Aroostook River. This area has some of the best brook trout fishing in the country. There are many guides in this area that make their living guiding fishermen and hunters who stay at the local inns and sporting camps. The commenter points out that wild trout and wild salmon spawn in the brooks that feeds their lake, this is one of the wonders we need to protect, seasonal waterfowl also use this area for nesting and rearing their young. I counted more mergansers and Loons this year than ever. The bald eagle lives and hunts these waters along with the massive golden eagle not to mentions the myriad of smaller birds along with the three toe and the rare black back woodpecker. The commenter points out that

Maine is home to over 95% of the native brook trout in this country. Surface mining and pollution from acid mine drainage would endanger the brook trout, streams, lakes, and other wildlife. My major concern from large scale mining is habitat fragmentation and loss of ecosystem interconnectivity between terrestrial and aquatic systems. It is a very high risk to accept due to the after effects of mining that are historically long term. These potential mining sites are located in Wild Eastern Brook Trout habitat. Maine has 90% of this remaining habitat for this species in the northeast. Therefore mining in these habitats is highly risky to the survival of this species. (C28, C-76, C-61, C-259, C-258, C-23)

*Response:* See response to comment #5, above.

(20) *Comment:* The commenter urges the Board to exercise caution when opening Maine to mining and describes effects of mining in other areas of the world, including: very large areas of what used to be called Lapland covered with nickel dust from a large mine in Russia; the death of thousands of charr and salmon when a holding lagoon failed at the Red Dog mine in the Alaskan Arctic; rivers of various color hues and devoid of life. and air quality so bad that whole towns have been abandoned, in the mountains of Tenn., W. Virginia, etc. throughout the Appalachians; large areas of desert scrub land dyed various hues of orange, green and red and devoid of life from the tailing piles of now defunct copper mines in Arizona; the largest open-pit mine in the world near Salt Lake City whose tailings piles are larger than the nearby mountains and where, once the mine was stopped from dumping directly into the Great Salt Lake, the Gov. of Utah just gave the mining company access to a wildlife protection area for dumping its byproduct. (C-224)

*Response:* The Department recognizes the potential environmental impacts of mining operations. The proposed rule provides a flexible performance-based platform for ensuring that mining activities are conducted in an environmentally responsible manner. No change.

(21) *Comment:* Why was the public not offered opportunities to participate and be informed during the rule development stages? (C-17)

*Response:* Although the Department did not schedule a workshop or conduct rulemaking through a stakeholder process due to time constraints, on August 15, 2013 it published a staff working draft (pre-hearing) for public review.

(22) *Comment:* The Department should provide information about the professional freedom and the extent of involvement of technical staff during rule development. The simplest way to ask the question is “Who led and directed the process?” Was it a high-level MDEP staff scientist who supervised and managed the contractor, was it the commissioner who okayed activities of the consultant, with or without considerations of staff scientist input, or was it the project director of the consulting firm contracted to draft the rule? (C-17)

*Response:* The Department’s proposal was developed by the Department’s mining team consisting of Jeff Crawford, Mark Stebbins, David Burns, Stacy Ladner, John Hopeck, and Tracy Kelly. Working from a draft prepared by its consultant, North Jackson, Inc., the team made numerous changes to the contractor’s draft to develop a rule that protects the

environment and public health and safety while adhering to the statutory requirements established in the Maine Metallic Mineral Mining Act. No changes were made as a result of this comment.

- (23) *Comment:* Does the Department plan to submit the mining rule to the U.S. EPA for approval as an addition to the Water Quality Standards docket? If not, how has that decision been justified? (C-17)

*Response:* The Department does not plan to submit the mining rule to the U.S. EPA for approval as part of the Water Quality Standards docket. Both the mining framework law and the proposed rule clearly allow for separate permits and regulations with respect to EPA-delegated or authorized programs. Statute at 38 M.R.S. § 490-NN(1)(A) states:

490-NN(1)(A). The provisions of articles 6, 7 and 8-A, chapter 13 and section 420-D do not apply to projects reviewed under this article. Projects reviewed under this article do not require any other permits from the department except for permits required under section 490-OO; permits required under article 5-A; waste discharge licenses required under section 413 for discharges of pollutants to groundwater via an underground injection well or discharges of pollutants to surface waters of the State, including permits for construction and industrial discharge issued by the department pursuant to 40 Code of Federal Regulations, Section 122.26; licenses required under chapter 4; and other permits or licenses issued pursuant to any United States Environmental Protection Agency federally delegated program(emphasis added). This article does not prohibit the department from adopting rules to implement standards for mining that are necessary to protect human health and the environment.

Section 4 of the rule has been amended to further clarify the applicability of all other state, federal and local statutes.

- (24) *Comment:* Decision-making in our state has been undermined by our governor's refusal to let the state's own experts testify in front of government committees. It is my understanding that the legislature lacks critical information about mining risks that past consultants have furnished to the Department of Environmental Protection. I need to review those reports. (C-62)

*Response:* All Department records are available to the public for review during normal business hours. No changes were made as a result of this comment

- (25) *Comment:* Can all decisions made by the DEP be appealed to the BEP? (C-272)

*Response:* Final license or permit decisions of the Commissioner may be appealed to the Board of Environmental Protection pursuant to 38 M.R.S. §§ 341-D(4), 344(2-A) and 06-096 CMR 2§24. Maine law at 38 M.R.S. § 345 and 5 M.R.S. § 11001 also provides for appeal of certain Commissioner and Board decisions to Superior Court. No changes were made as a result of this comment.

(26) *Comment:* The commenter suggests that the Department should have supplied to the Legislature two studies from the 1990s by the Boliden and Black Hawk applicants to mine Bald Mountain which indicated that “Bald Mountain mining (was) likely to pollute rivers lakes and streams with sulfuric acid run off and arsenic pollution, acid leaching out heavy metals including arsenic, lead, cadmium, mercury, copper and zinc” and that the economic benefits to Mainers were grossly exaggerated. The commenter recommends that the Department provide these studies to the Legislature so that Maine lawmakers have an opportunity to reconsider the mining rules. (C-52, C-265, C-76, C-80, C-92, C-160, C-166, C-272, C-234)

*Response:* The Department’s proposal is a major substantive rule. As a major substantive rule, it must first be provisionally adopted by the Board of Environmental Protection, and then reviewed by the Maine Legislature’s Joint Standing Committee on Natural Resources before final adoption. The Legislature may direct the Department to revise or amend its proposal before said adoption. No change.

(27) *Comment:* The commenter recommends that rules be passed that have human and environmental health as a priority while allowing economic prosperity for the mining company and surrounding community. (C-72)

*Response:* The Department recognizes the commenter’s concerns, and has developed a rule that provides for stringent environmental protections while adhering to the statutory requirements established in the Maine Metallic Mineral Mining Act. No changes were made as a result of this comment.

[NOTE: The numbering of the comments in this location skips comment #'s 28. This number is intentionally left out of this document.]

(29) *Comment:* The commenter points out that the processing/smelting of minerals adds an airborne threat that can impact our environment far from the site, and I’m thinking of what dust and heavy metal deposition would do to the productive agricultural resources of Northern Maine. Plus, bear in mind that the workers would bear the brunt of damage to their lungs and other organs. (C-64)

*Response:* The Department’s proposal has been revised to include comprehensive requirements for the control and monitoring of air emissions, including fugitive dust. See also, comment # 12).

(30) *Comment:* The Summitville Gold Mine in Colorado and the Kennecott Copper mine in Utah are prime examples of the need to hold mining companies responsible for both preventing and for mitigating the hazards of mining along with public health and environmental impacts. Both of these sites will require ongoing monitoring, operations maintenance and repairs in perpetuity, and will never be restored to anything resembling a pre-mining condition nor will the damage ever be completely reversed. Summitville is a classic example of a large-scale open pit mine and a company that made clams of a bold new technology and promises of tax revenue, jobs and a vibrant economy. Shortly after its

construction in 1986, leak developed in the leach pad that led to a catastrophic failure and contaminated water in downstream locations. The highly mineralized character of the site further resulted in acid generation sending a wide variety of heavy metals into the Alamosa river system. Shortly after the failure, the company abandoned the site, claimed bankruptcy, and received immunity from prosecution. Because the owners were Canadian citizens. In the end, all the communities got was a contaminated and ruined river system, and the cleanup bill. The Kennecott mine is another example of large scale contamination. Kennecott is the fourth largest contributor of toxic contaminants in the country, with nearly 193 million pounds of releases based on EPA's Toxic release Inventory. It is also responsible for nearly 30% of the industrial air pollution that has contributed to the Salt Lake City Area being classified as nonattainment for the PM2.5 standard. (C-19)

*Response:* The Department recognizes the need for stringent environmental protections coupled with the requirement for strong financial assurances. The requirement for mining operations to meet stringent performance-based standards will go far towards eliminating serious environmental impacts from mining operations, while strong financial assurance requirements will ensure that all funding necessary for investigation, monitoring, closure, post closure, treatment, remediation, corrective action, reclamation, operation and maintenance activities will be available for every phase of a mine's operation. No change.

(31) *Comment:* The commenter recommends the rules include rules that legally bind the Department of Environmental Protection to commit sufficient staff to all aspects of permitting and monitoring metallic mineral mining. (C-59)

*Response:* The Department's \$500,000 initial processing fee, established in statute at 38 M.R.S. § 352(4-A), along with annual fees from \$20,000 to \$50,000 are intended to provide sufficient resources for all aspects of permitting and monitoring activities, including contracts with third party experts. No change.

(31A) *Comment:* The rules should request reliable information on how many mining related jobs might be here for a while and request information about where the ore will be processed and how it will be transported. Building a smelter in Maine or moving the ore out of state would have major impacts. (C-35, C-217)

*Response:* The purpose of the rule is to ensure environmental standards will be achieved and that the activity does not pose a threat to human health. The framework law does not provide that the rules must or should require information on the number of mining related jobs. Subchapter 3 subsection I requires the applicant to submit a mine plan for consideration in processing the application that will address all aspects of the mining activity, including beneficiation. No changes were made based on this comment.

(32) *Comment:* The commenter suggests that estimates of number of jobs created (700+) and economic benefits from the proposed Bald Mountain project appear to be vastly exaggerated, and should not be a reason for unrealistic relaxation of mining rules. The commenter recommends the rules require the mine operator to estimate the number of jobs created, differentiating those from Maine and those from elsewhere. The rules include clawbacks

requiring payments/refunds to the state should promised jobs not materialize if tax breaks are given a mine operator. (C-109, C-271)

*Response:* Under the proposed rules, applicants for a mining permit are not required to provide an assessment of the number of jobs created by a proposed mine, or a project's overall economic impacts. It should also be noted that the criteria for approving a permit to mine are established in statute at 38 M.R.S. § 490-OO(4), and do not include an economic assessment. With respect to "clawbacks", neither the statute nor the proposed rule provides a tax break to a mine operator. No change.

(33) *Comment:* The commenter points out that Maine's largest industry is tourism. Our economy rests in large part on the public's perception that Maine is wild and beautiful, unspoiled and natural, especially compared with wherever they are from. So, we need to set a high standard for our industry and small businesses. If you want to see what happens when a State is more lenient with mining rules, take a ride through Pennsylvania, along Interstate 81 from Wilkes-Barre to the junction of Interstate 78. There you will see miles of mine tailings exposed to the elements hovering above pastoral villages. When the coal is gone, they often fill them with garbage brought by train and truck from the major cities of the northeast. (C-64)

*Response:* The Department recognizes the commenter's concerns, and has developed a rule that provides for stringent environmental protections while adhering to the statutory requirements established in the Maine Metallic Mineral Mining Act. No changes were made as a direct result of this comment.

(34) *Comment:* The rules should prohibit the use of acidic waste rock in building roads. (C-109)

*Response:* The Department's proposal prohibits the use of waste rock for road construction.

(35) *Comment:* The commenters generally support the rule in terms of the economic opportunities mining will bring to the State. (C-273,C-274,C-40)

*Response:* The Department recognizes the commenter's support. No change.

(36) *Comment:* The commenter points out that the Bald Mountain project will be a sulfide metals mine potentially releasing arsenic and other dangerous heavy metals and chemicals into the environment and should argue for more regulation not less regulation. (C-271)

*Response:* The Department recognizes the commenter's concerns, and has developed a rule that provides for stringent environmental protections while adhering to the statutory requirements established in the Maine Metallic Mineral Mining Act. No changes were made as a direct result of this comment.

(37) *Comment:* The commenter points out that in regard to mining at Bald Mt., the site has already been rejected by Boliden Resources in the early 1990's. The site would generate large amounts of acid. Huge sulfide rock deposits make the Bald Mt. Site unsuitable for mining. There is in fact no provision for sites that are not suitable to mine. (C-111)

*Response:* The Department's proposal contains a wide range of performance standards that must be met by any prospective mining operation. A mining applicant must meet these performance standards, and the permit approval criteria in Section 11 of the proposal before a mining permit may be issued. Whether a specific site can be safely mined in accordance with these rules and the Mining Framework Law will be assessed when, and if, an application to mine is submitted to the Department. No change.

- (38) *Comment:* The commenter states that Moose Brook flowed gray when they test drilled in the 90's and silt surrounded the lake shores covering the spawning beds. This is the water that the young fingerlings were living in that stock the fish river via Mud pond. Clayton lake down river experienced the same, with holding ponds unlined and directly dumping into the Little Clayton, head waters to the Fish river, as they do to this day. Greenlaw Pond lies on the Southeast shore of Bald Mountain with its massive flow heading for the Aroostook via the Machias River. One look at the elevation of the area tells you there is no way to contain the seasonal peak flow of run off of leach-ate. What I have learned from living there is it's a spring fed pond and water travels downhill to us. The commenter states that he has seen first-hand Bald Mountain bleed red into the drainage along the roads and it doesn't take a scientist to know that a mine in this location would lead to a Superfund clean-up project that will cost Maine taxpayers and the usefulness of the area. Will the aquatic creatures that live in these waters ever come back, will the migrating flocks of geese survive the acid waters, will future generations get to see this area the way we have? This site is too dangerous to open up and could never be contained. Two mining companies have already walked away from this site stating its dangers. This information was withheld from the public and needs serious consideration. (C-259)

*Response:* The Department's proposal contains a wide range of performance standards that must be met by any prospective mining operation. A mining applicant must meet these performance standards, and the permit approval criteria in Section 11 of the proposal before a mining permit may be issued. Whether a specific site can be safely mined in accordance with these rules and the Mining Framework Law will be assessed when, and if, an application to mine is submitted to the Department. No change.

- (39) *Comment:* A major risk and continuing failure at mining sites around the world is the fluidization of fine grained mining wastes in extreme precipitation events leading to catastrophic collapse of containment structures and flooding of downstream areas with mine waste. It would seem that a robust approach to reducing this risk would be to design for future changes in storm intensity, or even plan for secondary containment structures designed to back-up the primary structures holding fine-grained wastes. I do not see these provisions in the proposal. C-43

*Response:* The Department has included stringent design standards for water management systems throughout the proposed rule. By way of example, the design storm event for run-on/runoff control systems is the 24-hour, 500-year storm event as compared to the more frequently used 24-hour, 100-year storm event. This same larger storm event is required for designing the capacity for the leachate pond. The leachate pond storage capacity also

requires the design to be based off of the most recent 15-year historical precipitation database. Both of these design standards are in recognition of the increased frequency of larger precipitation events that have been observed recently.

- (40) *Comment:* With respect to the use of cyanide at a mining facility, how will cyanide be delivered, what will be done with the used cyanide and what will the levels be in the tailings and how will that be monitored? (C-73)

*Response:* Sections 9(D) and 9(K) of the rule require a beneficiation (processing) plan that describes type, methods, as well as associated materials, reagents, wastes, products, equipment, and processes used to extract the ore. In addition, a Contingency Plan is also required as part of the application, which includes response measures that will be followed for potential accidents or failures at facility.

- (41) *Comment:* The transport through, and the effects on the natural food chain must be monitored and have immediate intervention not only to protect the environment, but also to protect human health. Fish, mammals and especially birds and bats must be prevented from exposure and monitored very closely during and long after a site is closed. (C-73)

*Response:* A monitoring plan is generally developed on a case-by-case basis for a specific project. Section 22 of the rule specifies monitoring requirements for biological resources. As with any project, the Department, as a condition of approval, can require additional monitoring of protected natural resources.

- (41A) *Comment:* Underground Mining. These draft regulations appear to target open pit mining, whereas, some metal deposits in the State may be more amenable to underground mining. Should some parts of the regulations be more specifically tailored to address underground mining? (C-15)

*Response:* The rule is designed to apply to both open pit and underground mining and contains general performance standards that are applicable to both types of mining.

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## COMMENTS ON SPECIFIC SECTIONS OF THE PROPOSAL

### Section 1- Applicability

- (42) *Comment:* The prohibition of mining in or under waters of the state is too simplistic a standard, and given that the “waters of the state” include all “subsurface water” or groundwater, could result in a de facto ban on all mining, since the bulk of most metal deposits occur below the water table. Managing the surface and subsurface waters of a site is a critical component of mining operations. For example, surface waters may require diversion as part of the water management program. Additionally underground mines may tunnel below existing streams or ponds if technically appropriate. As long as it can be

demonstrated that the mining operation would not cause a drawdown of the waterbody or result in the contamination of surface water, it would seem reasonable to allow this type of mineral extraction. In fact, the Natural Resources Protection Act may already provide appropriate safeguards for water quality. (C-15) (C-86) (C-83), (C-1) (C-268) (C-63)

*Response:* The Department agrees with the Commenters and has amended its proposal to state:

B. ~~Prohibition.~~ No permit shall be issued under this Chapter to a mining operation that includes:

(1) Heap or percolation leaching.

(2) Mining for thorium or uranium ore.

(3) ~~Mining in or under the waters of the state.~~ Removal of ore from great ponds, rivers, brooks and streams, and coastal wetlands as defined in 38 M.R.S. § 480-B, except that gold panning and recreational motorized gold prospecting are permitted pursuant to 38 M.R.S. §§ 480-Q(5) and 480-Q(5-A) and are exempt from the requirements of this Chapter.

(4) ~~Mining in or under coastal wetlands.~~

The amended proposal allows for mining in areas with groundwater, mining underneath these resources, and the management of surface and subsurface waters (with approval pursuant of the Natural Resources Protection Act and other applicable requirements) and mining under the identified resources. Excavation, dredging and other methods of removing metallic mineral ore from these resources is not allowed.

(42A) *Comment:* In Subchapter 1 §1(B)(3) and (4), the prohibitions on mining in and under the waters of the state, and the prohibition on mining in or under coastal wetlands are important protections for water quality and should be kept in the rules. (C-272)

*Response:* The Department recognizes that some mining activities would have an unreasonable impact on protected natural resources, including surface waters and coastal wetlands. At the same time, it should be recognized that there is a wide range of activities associated with mining operations (e.g., stream crossings) that would not have an unreasonable impact on these resources, and could be permitted under the Natural Resources Protection Act and other applicable requirements. The Department has amended its proposal (see comment above) to prohibit the removal of ore from great ponds, rivers, brooks and stream, and coastal wetlands. The amended proposal would allow stream crossings and other alterations of these resources pursuant to the Natural Resources Protection Act and other applicable requirements. The amended proposal would also allow mining underneath these resources, and in freshwater wetlands (again with Department approval).

(43) *Comment:* The commenter suggests not prohibiting uranium and thorium mining, which already contribute to background conditions. The commenter finds it unlikely that there are

economically mineable quantities of these substances in Maine unless there was a national need, but wonders what the reason is for excluding them when the U.S. Dept. of Energy has previously assessed these substances in Maine as part of a strategic mineral reserve in the event of a national crisis. (C-268).

*Response:* Uranium and thorium mining are prohibited by statute at 38 M.R.S. § 489-B. No change.

(44) *Comment:* All prohibitions should be very clearly spelled out. A list simply isn't enough guidance for anyone. (Prohibition is an unfortunate heading). Further it must be clearly stated that the basis for all prohibitions, restrictions limitations is scientifically evidenced environmental risk that cannot be resolved with any known technology or technology /methodology that has not proven consistently reliable in preventing or mitigating environmental risks in VMS deposits with Maine's climate. The basis for any stated "prohibitions" must be a "proven and reasonable" scientifically informed. Uncertainty is what the process of mine development addresses and attempt to resolve. Uncertainty is not a basis for prohibitions. (C-24)

*Response:* Section 1(B) of the proposal prohibits two categories of mining activities: 1) activities that are already prohibited by statute; and 2) activities that pose an unreasonable risk to protected natural resources. No changes were made in response to this comment.

(45) *Comment:* It should be very clear that the Department may add to any established specifically named prohibitions/restrictions at any time it becomes aware of new widely accepted/verified scientific information justifying prohibitions. It should have expressed authority to do this by advisory and executive decision with or without an interim technical rule change. In its present structure there is the implication that anything not specifically prohibited is fine or open to approval. Similarly it should be able to remove any prohibition against the same standard by the same method. It's an ongoing discovery process, finding ways to make technologies work more reliably under challenging conditions, discovering that at the extremes technologies believed failsafe fail at the extremes or under specific combinations of conditions that were unforeseen. (C-24)

*Response:* The Department cannot modify any rule without complying with the requirements of the Maine Administrative Procedures Act, 5 M.R.S. Chapter 375. No change.

(46) *Comment:* The rule should also include a general prohibition on any technology that is not proven to be effective for the attainment of natural resource protections at a site of comparable ARD/toxic metals leaching risk in a comparable climate. Our list of specific prohibitions is not only undeveloped but it is incomplete with reference to known science and should be prohibited including at a minimum block caving, and in-situ leaching. (C-24)

*Response:* The proposal requires an analysis of alternatives to be undertaken as part of the application process. Section 9(H)(1) of the proposal states:

- (1) The alternatives analysis must demonstrate the consideration of siting alternatives as well as alternative technologies, modified scale or magnitude, and alternatives incorporating practicable mitigation measures for portions of a metallic mineral mining operation ancillary to the removal of material in connection with the commercial production of metallic minerals, and for which there is some flexibility in site selection, such as storage piles, tailings basins, water reservoirs, beneficiation operation processing plants, chemical and fuel storage and handling areas, wastewater treatment plants and disposal alternatives, offices, roadways, and auxiliary facilities.

The analysis of alternatives requires each applicant to assess best available practices, including proven technologies. With respect to prohibitions against block caving and in-situ leaching, the Department believes that these should be assessed on a case-by-case basis. No change.

- (47) *Comment:* A great deal of confusion on the heap leach prohibition since the rule clearly anticipates electrowinning beneficiation which requires a sulphuric acid leaching to prepare for the electrowinning process. Although the leach liquid is recycled and reused in the end it is a highly toxic mine waste (which this rule exempts altogether declaring electrowinning wastes as not “mining wastes). SW/EX (the name for the entire process) is being touted and promoted by top global consultant SRK as a “green Technology” and a high yield process in low grade ores but there are many unresolved issues with its waste stream. (C-24)

*Response:* Heap leaching is prohibited in statute at 38 M.R.S. § 490-OO(4)(J). No change.

- (48) *Comment:* What is a “portion” of a mining operation? Should say something clearer like all ongoing or approved operations must be brought into compliance with all provisions of this rule. (C-24)

*Response:* The word “portion” has been deleted from section 1(A).

- (49) *Comment:* Prohibitions are very significant; each should be clearly explained. Should be clear that all prohibitions/limitations/restrictions based on clear and widely e accepted evidence of a non-resolvable conflict between natural resource protection and best available science/technology and may also be based on criteria such as visual impacts or loss of future use, degradation of present use. Should provide for both new prohibitions can be added by written notice by Commissioner based on new evidence (per standard above) without a change in rule or law and that this also applies to removal of a prohibition where a preponderance of science shows previous concerns have been resolved. Should include all of siting standards (20B) all of which need to be rewritten and developed into clearer language. The visual standards referenced are completely apart from any consideration of environmental risk.

- Heap or percolation leaching.
- Electrowinning is included in the definition of beneficiation and then addresses again as a proposed exemption from the definition of mine wastes so it seems clear the intent is not to preclude electrowinning, indeed, that it is anticipated. In order for

- material to be prepared for electro winning it goes through a sulfuric acid leach, usually in a covered building and with a constructed impermeable liner as well as open troughs with hard impermeable compacted liners that deliver the liquid containing all leached metals in suspension to the electrowinning facility. SX/EW.
- Mining for thorium or uranium ore: Explain basis of restriction (against standards set forth as above)
  - Mining in or under the waters of the state: Agree with commenters at October 17th hearing that this requires clarification especially with respect to ground waters. Is the intent to disallow underground mining that is below ground water? Does it apply to all extraction technologies?
  - Mining in or under coastal wetlands: Amend to include no mining on or under any intertidal zone if not included in “waters of the state above.
  - Add the following prohibitions: No fracking or in situ leaching of any kind whether using air, water or chemicals; Block caving.

The block-caving method of mine development utilizes the natural forces of gravity to cause the ore to break on its own accord without being drilled and blasted. Holes are drilled insufficient quantity until the structure of the drilled portion of the ore body is weakened enough so that gravity causes it to fall into the underlying drifts. The ore is collected from the drifts and removed using loaders. Block Caving is a method that attempts to lower the costs of underground mining especially where the quality of the ore presents a possible economic risk or challenge which would be the case in most Maine VMS deposits. It is very risky and unpredictable method even with the most meticulous engineering and pre-engineering and because of this there is no financial risk transfer (reclamation bonds and insurance) for subsidence the almost inevitable end result. (C-24)

*Response:* As noted above, Section 1(B) of the proposal prohibits two categories of mining activities: 1) activities that are already prohibited by statute; and 2) activities that pose an unreasonable risk to protected natural resources.

- A. Heap or Percolation Leaching.** “Heap or percolation leaching” means a process used for the primary purpose of recovering metallic minerals in an outdoor environment from a stockpile of crushed or excavated ore by percolating water or a solution through the ore and collecting the leachate.

Only heap or percolation leaching performed in an outdoor environment is prohibited by statute and this proposal. Vat or tank leaching, which would be performed indoors, would be allowable under the proposal. No change.

- (51) *Comment:* I concur with the current language that prohibits use of waste rock for road building (C-35)

*Response:* The Department recognizes the Commenter’s support.

## **Section 2- Definitions**

- (52) *Comment:* “Active Treatment” is not defined in the draft rule. We recommend defining Active Treatment in Section 2, and modifying this Section 2.JJJ definition to read “Perpetual treatment means active treatment for more than 30 years post-closure.” (C-41, C-42, C-77)

*Response:* The Department agrees with the Commenter with respect to the definition of active treatment and has made the suggested changes. The amended proposal defines “active treatment” as follows:

Active Treatment System. “Active treatment system” or “active treatment” means a system that treats water or wastewater with the active addition of chemical reagents or the application of external energy.

The Department has not modified Section 2(JJJ) (the definition of “perpetual treatment”) as proposed by the Commenters, since passive treatment will likely require some level of maintenance beyond the post-closure period, depending on the form of passive treatment chosen.

[NOTE: The numbering of the comments in this location skips comment #53. This number is intentionally left out of this document.]

- (54) *Comment:* The terms “performance standards” and “performance requirements” must be precisely defined to mean water quality criteria in Maine water quality standards and/or discharge permits. (C-17)

*Response:* The Department disagrees with the Commenter since the terms “performance standards” and “performance requirements” are applicable to a range of requirements, and are not limited to water quality criteria in Maine water quality standards and/or discharge permits. No change.

(55) *Comment:* “Baseline” needs to be defined as “background”, “reference condition”, or pre-mined condition. The rule should clearly state that baseline is the standard against which statistical change is measured, and is the target for remediation goals. (C-17)

*Response:* The Department agrees with the Commenter and has amended its proposed definition of “baseline conditions” to state:

- A. Baseline Conditions.** “Baseline conditions” or “baseline site conditions” means pre-mining reference or background conditions for a specific location and shall include, but not be limited to, characterization of the following resources: wildlife; surface water and groundwater quality and quantity; vegetation, including the presence or absence or rare, threatened or endangered species; and air quality.

(56) *Comment:* In most cases the term “existing uses” is used by itself. This should be replaced with “existing and designated uses”. These are federally defined terms, pertinent to interpretation of water quality standards: Existing uses: “are those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards.” Existing uses means documentation, for example, that propagation of brook trout has actually occurred in a given waterbody as the entry point for determining what will be protected. In general, the term is only used in specific situations to establish applicability of standards. Designated uses: “are those uses specified in water quality standards for each water body or segment whether or not they are being attained.” Rules in support of Maine water quality standards are designed to protect the existing and designated aquatic life uses for each water quality classification. Designated uses are much more precisely defined than the concept of “existing uses”, and clear rules have been passed to direct how attainment is measured. This is not the case for “existing uses.” (C-17)

*Response:* The State’s antidegradation policy requires that existing in-stream water uses and the level of water quality necessary to protect those existing uses must be maintained and protected. Determinations of what constitutes an existing in-stream water use on a particular water body must be made on a case-by-case basis by the Department. 38 M.R.S.A. § 464(4)(F)(1). Designated uses are defined in water quality law based on the classification of each waterbody. The Department has amended its proposal to include the term “existing and designated uses” in the appropriate sections.

(57) *Comment:* The Definitions section of the rule needs a great deal of work informed by expertise in mine development terminology and mine development phases. It is missing definitions for certain frequently used terms, misuses terms of art in mining including some very basic ones like “overburden” and makes up terms and concepts that have no basis or relevance as best practices or state of the art in metallic mining like “reactive mine wastes.”

**MISSING DEFINITIONS** The following terms are used in the rule two or more times without definition and should be included in definitions:

**DEVELOPMENT ROCK:** This is used three times in the rule. (a) In the section on mining plan to require a characterization of “development rock” and estimated volume

(2) to state that monitoring starts when any overburden or development rock is extracted in either advanced exploration or mining (3) in reclamation to distinguish piles. It is a term of art usually referring to the equivalent of overburden for underground mining, i.e. everything you have to go through to get to the part you intend to extract. Development Rock includes both barren rock and “lean ore” and is usually returned to an underground mine either contemporaneously after each extraction phase or at closure. It should be geochemically classified for its ARD generation potential & toxic metals leaching and its storage area designed accordingly. The term for this storage area “TEMPORARY DEVELOPMENT ROCK STORAGE AREA (TDRSA) should also be defined and performance standards set for the TDRSA within the rule itself. The ARD/Toxic Leaching analysis ( static & kinetic testing) advise on whether all of the development rock may be handled in the same way and what design parameters the TDRSA must have to prevent any ARD or toxic leaching. Depending on the mine plan a TDRSA may be in use, in whole or in part for 10 years or more.

Response: The term “development rock” has been removed from the rule and replaced with the term “mine waste” which has been defined in the rule.

(57A) *Comment:* ELECTROWINNING: used several times in the rule importantly as excluded from the definition of mine waste while acknowledged in the definition of “beneficiation” is not defined. Electrowinning can be either an ancillary process to water treatment for removal of metals or a primary beneficiation process producing very high quality zinc or copper in sheets and potentially allowing extraction of lower grade ores that might otherwise not be profitable to extract. SRK is touting it as the “green extraction method”. In both cases, the sulphuric acid solution containing the extractable metals, when it is finished being recycled is hazardous waste and must be handled accordingly. Also the definition needs to be clarified against the apparent conflict with the heap leach exclusion. The process of placing the metals in solution for beneficiation by electrowinning is a heap leach process. Each of the main components of electrowinning ( the leach pad, the delivery of fluids to the electrowinning, the post electrowinning system for reuse need to be defined and each needs to have specified performance standards in the body of the rule .

*Response:* The definition of mine waste has been changed, which is the only place in the rule where electrowinning is referenced. See definition of mine waste above. In addition, the Department does not agree that electrowinning is a heap leach process and is prohibited by statute. The statute specifically prohibits heap leaching in an outdoor environment. No changes were made as a result of this comment.

(57B) *Comment:* See definition at **hhh** and move to there. EXPLORATION IS NOT CLEARLY DEFINED. Wisconsin offers this very excellent definition “Exploration· means the onsite geologic examination from the surface of an area by core, rotary, percussion, or other drilling, where the diameter of the hole does not exceed 1 8 inches, for the purpose of searching for metallic minerals or establishing the nature of a known metallic mineral deposit and includes associated activities such as clearing and preparing sites or constructing roads for drilling. For the purposes of the definition of exploration,

geologic examination does not include drill holes constructed for the purpose of collecting soil samples or for determining radioactivity by means of placement of radiation-sensitive devices

[http://docs.legis.wisconsin.gov/code/admin\\_code/nr/I\\_00/130.pdf](http://docs.legis.wisconsin.gov/code/admin_code/nr/I_00/130.pdf)

*Response:* The definition of “exploration” is statutory and cannot be changed through rulemaking. See 38 M.R.S. § 490-MM(6).

(57C) *Comment:* MINING OPERATIONS used many, many times throughout in many contexts most of which I have red highlighted. Normally a clear term of art but in the context of this rule in particular the inclusion of Tier 11 advanced explorations in “mining” it may be advisable to create definition of “mining operations”. Definition AAA Mining helps somewhat but the term that is used most often in the rule is “mining operations”. As used throughout should include all on site activity related to mining as defined in AAA “mining.

*Response:* The definition of “mining”, which includes the term “mining operation” is statutory and cannot be changed through rulemaking. See 38 M.R.S. §490-MM(11). The terms “mining,” “mining operation,” or “mining activity” can be used interchangeably in the rule.

(57D) *Comment:* REACTIVE WASTE is used in definition of mine wastes but is not a “term of art” and is not included in definitions. “Reactive” in metallic mining generally refers to samples representative of specific materials or part of the deposit which are expected to immediately start generating acid on exposure to air or water, generally materials with an NP:AP ratio <1. The term “Reactive” should be in “definitions” the term “reactive waste” is confusing and confused. Materials that are not waste, eg TDRSA, or other materials temporarily stored and later to be returned to the mine may also be “reactive”. All materials that are stored on site, whether for a temporary period or permanently that are “reactive” should have specific performance standards and requirements (eg segregation from all other materials (piles and on site storage by similar geochemical profile . Additionally the rule should include performance standards on when off- site handling processing or storage is necessary. So the term “reactive” should be defined broadly enough and in geochemical terms so that it can be applied to any materials that are reactive, waste or not. The term reactive is used at I (4) and I (5) Storage Piles “reactive mine materials” and is a chapter heading in two different chapters: “reactive mine materials classification” and “reactive mine materials management systems.” (C-24)

*Response:* The Department has changed the definition of “reactive mine material” to read “reactive mine waste” as follows:

**Reactive Mine Waste Material.** “Reactive mine waste material” means any natural geologic formation or mined material that, when exposed to air and water, may develop acid rock drainage, or any other natural geologic or mined material that is shown through characterization studies to release substances that may adversely impact natural resources and the environment.

The definition of “mine waste” has also been revised.

- (58) *Comment:* The Department has stated that the draft rules do not allow groundwater contamination over an entire mining site, but only in small areas encompassing individual mining activities. However, the draft rules allow unlimited groundwater contamination in a mining area, which is defined as follows:

**Mining area.** "Mining area" means an area of land described in a permit application and approved by the department, including but not limited to land from which earth material is removed in connection with mining, the lands on which material from that mining is stored or deposited, the lands on which beneficiating or treatment facilities, including groundwater and surface water management treatment systems, are located or the lands on which water reservoirs used in a mining operation are located.

This definition does not match the small circles around individual activities shown by Department staff in their presentations. The Board must amend the rules to make them consistent with the Departments interpretation; this can best be accomplished by including a definition for “activity unit,” as proposed in last session’s LD 1302. (C-262, C-63)

*Response:* The Department has amended its proposal in Section 9(1)(G)(1)(a) to clarify that each mining activity must have a defined mining area:

- (a) A map showing the metallic mineral mining area and affected area, including a rationale and basis supporting the proposed mining area boundaries and affected area boundaries and locations of protected natural resources as defined at 38 M.R.S. §480-B(8) within, adjacent to or potentially impacted by the mining area or affected area. Each mining activity must have a defined mining area;

The Department has also clarified at numerous locations throughout the proposed rule that there may be mining areas<sub>2</sub> and affected areas<sub>2</sub> (emphasis added).

- (59) *Comment:* Applicant/Permittee confusion. Throughout the rule most responsibility is assigned to applicant, some to “applicant & Permittee”, a few to permittee. Must be clear that the permittee is financially and otherwise responsible for actions of the applicant and if not qualified to directly oversee create an internal mechanism for independent oversight. Only a qualified, reputable experienced mining company can qualify for the insurance and bonding for mining operations or attract and hold the confidence of investors. The normal and preferred relationship between a non- experienced owner like JD Irving and a qualified mining company is via lease with royalties payable to the owner of the property. This is preferred from a risk management point of view as well. In any event applicant and permittee are one in the same company. It is “applicant” until the permits granted and “permittee” after that. It is and must be one in the same company. If Maine anticipates allowing a completely inexperienced company like Irving to hire a qualified mining company then the terms and conditions of that arrangement must provide for qualified independent oversight. No problem with qualifications and mining related binds and insurance being evidenced though a qualified mining company but the applicant and permittee can’t be two different companies.

The non-qualified applicant/permittee must designate a specific company as the Mining Operator and a qualified Independent overseer of the mining operator) as a resident engineer for an owner hiring a contractor to do specialized heavy construction work). (C-24)

*Response:* The Department has reviewed its proposal and made all relevant corrections.

(60) *Comment:* The commenter suggests increasing the 5,000 tons or less threshold for advanced exploration activities to 20,000 tons. (C-268)

*Response:* The Department's proposal is consistent with the current advanced exploration tonnage limits in Chapter 200 and in other political jurisdictions. No change.

(61) *Comment:* The definition of advanced exploration and bulk sampling is not clear. We assume that the 5,000-ton figure refers to material physically removed from the site for testing, as opposed to including in the figure any waste rock material excavated and stockpiled in order to get at the bulk sample. Also, the bulk sample tonnage cutoff of 5,000-tons may be too low to accommodate deposit types and this may have an impact on feasibility decisions. If a larger sample size is required, an applicant would need to complete all of the requirements for a Mining permit. The data requirements, timetable and costs for obtaining a Mining permit rather than an Advanced Exploration permit, as well as the absence of final mine design information at the bulk sampling stage, would likely preclude the project from moving forward. We recommend adding clarifying language that the bulk sample tonnage figure does not include waste rock removed to access the bulk sampling area, and increasing the bulk sampling cutoff to be 10,000 tons before requiring a mining permit. (C-41, C-42, C-77)

*Response:* The Department has amended its proposal to clarify that all mine waste is included in the tonnage limits for either Tier One or Tier Two advanced exploration activities. With respect to the 5,000 ton limit on bulk sampling, the Department's proposal is consistent with the tonnage limits in the existing Chapter 200 and in other political jurisdictions. The definition of "advanced exploration" has been amended to state:

**A. Advanced Exploration.** "Advanced exploration" or "advanced exploration activity" means any metallic mineral bulk sampling or exploratory activity that exceeds those activities that are exploration activities, but remove 5,000 tons or less of mine waste material. Samples taken as part of "exploration" are not considered bulk sampling.

(62) *Comment:* The commenter recommends that the definition of "adverse impact" or "adverse effect" should also include consideration of the alternatives to the impact in addition to the factors such as economic, employment, etc..., in other words, if the mineral is needed commercially, allowing or not allowing mineral extraction should be viewed in a larger context

impact on the economy in another jurisdiction, these impacts should remain outside the scope of the Department's review. No change.

- (63) Revise (G) to read "Adverse Impact" or "adverse effect to an associated existing attribute such as economic, employment, sociologic, environment, scenic character, natural resource, or public health and safety, means an unacceptable level of measurable impact or effect on the associated attribute, as determined by the Department based on an evaluation of information that considers excursions of water quality standards of the waterbody, the value of the resource, and the degree of impact or effect. (C-17)

*Response:* As the terms "adverse impact" or "adverse effect" relates to waters of the State, the attributes associated with these waters are the designed water quality standards as described to each classification. In issuing a mining permit, the applicant must demonstrate that the proposed activities will not violate applicable surface water quality standards within or outside the mining areas, or groundwater standards outside the mining areas. No changes were made based on this comment.

- (64) *Comment:* From the proposed definitions of "mining area" and "affected area", it is unclear in the Rules whether the small strips of land between the various mining elements would be considered "affected areas" or can be included in the "mining area". Our concern has to do with the point of compliance for monitoring. The proposed Rules should allow aggregation of the various mining elements into the "mining area" so the entire area can be monitored as one area. Otherwise it would be impractical to monitor each mining element individually. (C-1)

*Response:* The Department's proposal allows aggregation of separate mining areas for compliance purposes on a case-by-case basis that is dependent on the hydrogeology and other site characteristics. No change.

- (65) *Comment:* K. Change K.Aquifer to read "Aquifer" means a geologic formation composed of rock or sand and gravel that stores and transmits significant economically important quantities of recoverable water. (C-1)

*Response:* The Department's proposal has been amended to provide greater consistency with the definition of "aquifer" at 38 M.R.S. 361-A. The Department's proposal now states: "Aquifer" means a geologic formation composed of rock or sand and gravel that stores and transmits significant quantities of recoverable water as identified by the Division of Geology, Natural Areas and Coastal Resources, Maine Geological Survey within the Department of Agriculture, Conservation and Forestry.

- (66) *Comment:* The commenter asks if all Assurance Instruments are insured or protected against the possibility of bank failure? (C-272)

*Response:* Generally bank deposits are insured for \$250,000. Mining operations of any size are likely to be far in excess of this insured amount. Therefore assessing the financial health of any involved institution is an important consideration in approving a financial assurance

proposal. This assessment will be important initially during an application review and throughout the life of the financial assurance requirement. No change.

- (67) *Comment:* The commenter suggests that the definition of “beneficiation” be limited to those activities that involve chemicals, chemical reactions and electrical methods, to clearly exclude gold panning which is a popular recreational activity in several Maine rivers. (C-268)

*Response:* The definition of “beneficiation” is established in statute at 38 M.R.S. 490-MM(3). Gold panning is not mining and is regulated under the Natural Resources Protection Act. No change.

- (68) *Comment:* The definition states: “Closure” means activities undertaken to manage a mining area and, if necessary, an affected area, pursuant to an environmental protection, reclamation and closure plan approved by the Department. “Closure” includes, but is not limited to, actions taken to contain metallic mineral wastes on site and to ensure the integrity of waste management structures and the permanent securement of pits, shafts, and underground workings. This should include that only closure plans that are self-sustaining natural systems will be considered for approval. (C-24)

*Response:* The definition of “closure” is established in statute at 38 M.R.S. 490-MM(4). No change.

- (69) *Comment:* The definition of “closure” is vague but appears to be entirely focused on permit-holder activities. The rule needs to define closure as restoration to attain water quality standards in the mining area and affected areas. (C-17)

*Response:* The definition of “closure” is established in statute at 38 M.R.S. 490-MM(4). No change.

- (70) *Comment:* The commenter recommends that all definitions of coastal wetlands should allow for the certainty that the sea level will be rising in future years. (C-272)

*Response:* The definition of “coastal wetlands” is established in statute at 38 M.R.S. 480-B(2). No change.

- (71) *Comment:* The commenter recommends that the definition be altered as follows: Commencement of construction. “Commencement of construction” means that a Permittee or other person has physically altered a mining area or proposed mining area, including but not limited to the clearing of trees and other vegetation, site preparation work, and the construction of roads and other infrastructure upgrades. (C-24)

*Response:* The Department’s proposal already includes this language. No change.

- (72) *Comment:* The definition of “commencement of construction” would prevent any forestry activities once a location was identified as a proposed mining area, although it could be a

very long time before any mining activity begins. In addition, based on the draft permit requirements for advanced exploration, any forestry activities in an advanced exploration area would trigger a 50% deposit of that permit's financial assurance amount. Both situations could negatively affect traditional, ongoing forest harvesting jobs. We recommend modifying the language to allow forest harvesting to continue under existing forestry regulations by adding the following sentence: Routine timber harvesting does not constitute 'commencement of construction'." (C-41, C-42, C-77)

*Response:* The Department notes that routine timber harvesting activities would not be precluded once a location was identified, nor would these same activities trigger a 50% (or other increment) deposit of the financial assurance. It should be noted however, that at least some routine forestry activities, including the construction of roads and clearings, would be precluded upon the Department's acceptance or an application for either an advanced exploration or mining permit. No change.

(73) *Comment:* The commenter suggests wording be added to the definition of "contamination" to allow that these referenced standards may not be met through no fault of any exploration or mining activity, and that there will be consideration for preexisting background conditions, which are generally compromised in surface and ground water in close proximity to naturally occurring metallic. (C-268)

*Response:* The definition of "contamination" is established in statute at 38 M.R.S. 490-MM(5)(B). No change.

(74) *Comment:* The definition of "contamination" is inadequate to drive ongoing management, or after-the-fact remediation. Drinking water standards for groundwater are orders of magnitude higher than acute or chronic water quality criteria to protect aquatic life. The mining law, and therefore the rule, makes allowance for "some" groundwater contamination as determined by drinking water standards. This sounds reasonable but is dangerously misleading because acute and chronic impacts to aquatic life from many contaminants occur at concentrations that are several orders of magnitude lower than drinking water standards. Groundwater and surface waters are not separate systems – they exist in three dimensions and are fundamentally connected. Surface water flow...nearly always has a significant proportion of its volume contributed as ...flow that comes from groundwater. Allowing metal or other contamination of groundwater up to drinking water standards essentially guarantees that surface waters will be contaminated beyond the acute and/or chronic limits for aquatic life protection. Obviously, groundwater contamination can only be detected after it has occurred, and once groundwater is contaminated, it is at best extremely expensive, and worse, often impossible to remedy. Monitoring well data will inevitably have a lag effect, due to the time of travel of groundwater, such that impacts to groundwater and surface waters beyond the mining area may be set in motion long before problems are detected there. Unexpected and unfixable impacts to streams have occurred in other parts of the country having extensive acid mine drainage issues. (C-17)

*Response:* The definition of "contamination" is established in statute at 38 M.R.S. 490-MM(5)(B). No change.

[NOTE: The numbering of the comments in this location skips comment #75. This number is intentionally left out of this document.]

(76) *Comment:* Revise the definition of contamination for surface water to state that “...discharge that causes or contributes to non-attainment of applicable water quality AND/or licensing standards under 38 MRS§414-A or 420...”. “Or”, in the existing definition, implies that if permit limits are met then water quality standards do not need to be met. The definition needs to specify that “contamination” exists if non-attainment of water quality standards are caused directly or indirectly by the mining activity. (C-17)

*Response:* The definition of “contamination” is established in statute at 38 M.R.S. 490-MM(5)(B). No change.

(77) *Comment:* Delete “assessment” from Section 2(W)(1)(b); assessment monitoring is not defined in this Chapter and is unnecessary. (C-1)

*Response:* The definition of “contamination” is established in statute at 38 M.R.S. 490-MM(5)(B). No change.

(78) *Comment:* “Designated chemical materials” means toxic or acidic chemicals used within the mining area in extractive metallurgical processing, the use of which, at certain concentrations, represents a potential threat to human health, property or the environment. Preferably within the definition there should be some sort of reference list or referral to a section of the rule where the process for identifying which materials to be used on site attain to this level is described and the procedure/reference standards for handling of these materials is defined. (C-24)

*Response:* The commenter points out that there is no list of chemicals that would meet the definition of “designated chemical materials”. The Department sees the “designated chemical materials” term being implemented as the mining applicant has the initial burden to list those chemicals that are toxic or acidic and which could cause harm. If the Department believes the applicant has not been all inclusive, the Department can require the addition of chemicals to the list. If at some point in the future, the Department believes that mining applicants are underreporting the chemicals that need to be included, the Department may consider adding a specific list to the rule. No change was made.

(79) *Comment:* Under CC: The word “threat” is used multiple times in this Chapter, and sometimes threat is modified by words like “substantial,” “potential,” and/or “unreasonable.” It would be useful to define threat more concretely, to avoid interpretive difficulties when the mine is in question. (C-1)

*Response:* A definition of “threat” is not necessary. The term is used in many Department statutes and rules without definition. The word “threat” is a common word that can be applied without further definition. No change was made.

(80) *Comment:* The definition of “drilling” seems to exclude drilling for the purpose of evaluating water quality or collecting hydrogeological and geotechnical data. It is unclear if this is intentional. (C-1)

*Response:* The Department agrees with the commenter and has amended its proposal to eliminate this unintentional restriction. The amended definition states:

- (1) **Drilling.** “Drilling” means the making of holes with a drill for exploration, development of a metallic mineral deposit, evaluating water quality or collecting hydrogeological and geotechnical data.

(81) *Comment:* The definition of “drilling” should consider that these activities continue beyond the exploration phase. We recommend modifying the sentence to say “...for exploration or development of a metallic mineral deposit.” (C-41, C-42, C-77)

*Response:* The Department agrees and has made the suggested change.

(82) *Comment:* The commenter recommends that the rules allow early, minor intrusive or non

- (83) *Comment:* The commenter points out that climate change predictions are that the northeast will become wetter and experience more and more severe floods in future years. The delineation of “flood plains” should take account of this. Same comment for NNN. (C-272)

*Response:* The Department has included stringent design standards for water management systems throughout the proposed rule. By way of example, the design storm event for run-on/runoff control systems is the 24-hour; 500-year storm event as compared to the more frequently used 24-hour, 100-year storm event. This same larger storm event is required for designing the capacity for the leachate pond. The leachate pond storage capacity also requires the design to be based off of the most recent 15-year historical precipitation database. Both of these design standards are in recognition of the increased frequency of larger precipitation events that have been observed recently. In addition, containment structures are also required to “...be designed, constructed, and maintained to prevent embankment overtopping, with adequate freeboard, during the Probable Maximum Flood (PMF) precipitation and snowmelt event considering maximum wind and fetch.” The PMF is defined in Subchapter 1, section 2, NNN, “...to be the most severe that are reasonably possible at a particular location...” These two design examples are indicative of the robust approach that the commenter desires. No change.

- (84) Groundwater definition. (p. 5)- We cannot think of one example of groundwater that would meet the requirements for the exception - “confined or retained completely on the property of one person and do not drain into or connect with any other waters of the State.” This exception should be struck from the definition. (C-1, C-63)

*Response:* The definition of “groundwater” is established in statute at 38 M.R.S. § 361-A.

- (85) *Comment:* The commenter supports the Department’s proposed waste classification system and definitions for Group A, B and C wastes. (C-268)

*Response:* The Department recognizes the Commenter’s support. No change.

- (86) *Comment:* The method of characterization of mine wastes as Group A, B, or C wastes is unclear and could pose significant risks to water quality. Any material from a sulfide ore body has the potential to generate acid. Some waste rock or ore may also have neutralizing capacity in the ore rock, but it is extremely difficult to tell exactly how much neutralizing capacity there will be in a particular section of waste rock from a sulfide ore body using only laboratory test. The Board should require that all materials from a sulfide ore body be considered Group A waste, because mining companies have such a poor record of predicting the extent and onset of acid mine drainage from any particular waste. As stated previously, a recent study looked at 25 mines, and the owners of all 25 mines predicted their operations would not have acid mine drainage problems that would cause water quality violations. However, 76% of the mines had pollution that exceeded water quality standards. Separating truly non-reactive wastes that are not part of the sulfide ore body, such as topsoil, makes sense to NRCM. However, allowing mining companies to claim that large portions of waste

rock are not acid generating based on laboratory tests that show neutralizing potential in addition to acid generating potential concern us greatly. (C-262)

*Response:* See Comment #17.

(87) *Comment:* The Department's proposed definition of "Group A waste" states: "Group A waste" means a mine waste having net acid-producing potential or exhibiting a characteristic of hazardous waste as defined in 06-096 CMR 850. Net acid-producing potential should be defined. An example method for determining acid production has been defined by EPA and others. (C-1)

*Response:* The term net acid-producing potential has been change to acid generation potential and a definition has been added to the definition section of the rule.

**A. Acid Potential.** "Acid potential" or "acid generating potential" means the ability of a rock or geologic material to produce acid leachates.

Section 20. F now reads as "The mine waste has ~~net an acid-producing-generating~~ potential or exhibits a characteristic of hazardous waste as defined in 06-096 CMR 850. Such waste shall be classified as Group A wastes".

(88) *Comment:* The definition of Group C waste should be tightened to reflect that sedimentation and turbidity may also harm stream habitat. (C-272)

*Response:* The Department recognizes that sedimentation and turbidity may also harm stream habitat, however it is important to remember that the proposed mine waste characterization scheme is designed for reactive wastes, not sedimentation or turbidity. Sedimentation or turbidity would be addressed by a separate permit issued under the Natural Resources Protection Act. No change.

(89) *Comment:* "Group B waste" means a mine waste having no net acid-producing potential that may release soluble pollutants at concentrations which exceed performance requirements for groundwater or surface water. At the same time, "Group C waste" means a mine waste that does not have the potential to violate water quality standards other than sedimentation or turbidity. There is a confusion of terms and intent in the definitions and use of these terms in the rule. It is best practice to require that all materials stored on site whether temporarily or permanently be of like ARD and toxic metals leaching potential as determined by ABA accounting and Kinetic tests. This policy applies not just to "wastes" but to all materials of any kind stored on site. Each pile of any material at the surface should be homogenous in terms of likely ARD & toxic metals leaching. The management of each pile, whether temporary or permanent, whether ores waiting to be processed or material that is wastes should be determined by its ARD Risk and its toxic metals leaching risks. Best practices on ARD generation potential are "Not Likely to generate ARD" (NP:AP ratio >3 + %sulfur <0.3% most commonly used); "Likely to Generate ARD" ( NP:AP Ratio <3 >2 sulfur >0.3%); Likely Immediately ARD on Oxidation ( NP:AP ratio <.1 +sulfur >0.3%) and "Uncertain". The only material considered to be non ARD generating is NP:AP ratio >5 sulfur <0.05% Hazardous Materials issues and ARD Generation /Toxic Metals Leaching

issues are entirely separate considerations and should not be co-mingled in this way for waste classification or for long or short term on site storage of materials or for any tailings impoundment, and or subaqueous or on land or for any consideration of treatments that would be required to meet discharge standards. This is a confused, confusing and inappropriate structure for waste or any other materials classification for metallic mining of sulfide ores. (C-24)

*Response:* See response to comments # 87. No change.

(90) *Comment:* “Heap or percolation leaching” means a process used for the primary purpose of recovering metallic minerals in an outdoor environment from a stockpile of crushed or excavated ore by percolating water or a solution through the ore and collecting the leachate. *Here again confusion as to intent introduced by the ambiguity of the word primary when the statutory prohibition on leaching is considered. SW/EX (Electrowinning) involves a preliminary percolation of ore with sulphuric acid to suspend copper or zinc in solution which is then fed to the electrowinning process.* (C-24)

*Response:* The definition of “heap or percolation leaching” is established in statute at 38 M.R.S. § 490-MM(7). No change.

(91) *Comment:* This definition of “historic site” expands the Site Law rule definition, which is limited to NRHP registered sites as opposed to eligible sites, sites on the Maine Historic Resource Inventory, or a site which is established by qualified testimony, as being of historic significance. We suggest that the Site Law definition of “historic site” be used here. (C-41, C-42, C-77)

*Response:* The Department’s believes that it is appropriate to use this more inclusive definition, since there are a number of high value historic sites that have not been registered due to property value concerns or other considerations. No change.

(92) *Comment:* The definition of “lean ore in section 2(TT) states: ‘Lean ore’ means rock containing metallic mineralization that is not profitable to process using technologies that exist at the mining operation. It is not clear what this definition anticipates. If there is to be any on site storage of any material including lean ore its management must be based on its ARD generating potential and all storage piles, whether temporary or otherwise should have the same ARD potential so that each is amenable to the same treatment with some level of certainty of contaminant prevention. (C-24)

*Response:* The Department does not believe it is appropriate to delete this definition since it is used in the definition of mine waste. In addition, as required by the rule, all mine waste is required to be geochemically tested to determine its acid generation potential. No change.

(93) *Comment:* In the definition of “Life of Mine”, post-closure is not clearly defined relative to the mine itself or associated facilities. Clarification of this timeline is necessary for estimating financial assurance and post-closure expensing. (C-1)

*Response:* The term “post-closure” draws upon the definition of “closure”, as established in statute at 38 M.R.S. § 490-MM(4). Post closure denotes the temporal period beginning with the conclusion of closure activities, and continuing thereafter. No change.

- (94) *Comment:* The definition of “metallic mineral operator” could unintentionally capture individuals involved in gold panning activities. (C-268)

*Response:* The definition of “metallic mineral operator” is established in statute at 38 M.R.S. § 490-MM(9). The Department’s revised proposal includes the following language in Section 1(B)(3):

Removal of ore from great ponds, rivers, brooks and streams, and coastal wetlands as defined in 38 M.R.S. 480-B, except that gold panning and recreational motorized gold prospecting are permitted pursuant to 38 M.R.S. §§ 480-Q(5) and 480-Q(5-A) and are exempt from the requirements of this Chapter.

No change.

- (95) *Comment:* “Metal leaching” means the dissolution and removal of metals and metalloids as a result of chemical processes commonly associated with minerals containing sulphides. Could the Department clarify the use and definition of this term with respect to “heap leaching”? (C-24)

*Response:* “Metal leaching” is a general term with applicability to several processes, whereas “heap leaching” is a specific technology that is prohibited in statute at 38 M.R.S. § 490-OO(4)(J). No change.

- (96) *Comment:* The commenter suggests requirements for the “mine plan” to include “all aspects” of the mine may require disclosures of information that the U.S. Department of Homeland Security may prohibit from disclosure, especially when dealing with certain chemicals and explosives under regulations such as CFATS, AN Rule, etc., and that the Department will need to develop a process to protect certain aspects of this information from Freedom of Access Act and similar disclosure requests. (C-268)

*Response:* The Department recognizes that the Department of Homeland Security may prohibit the public disclosure of information related to certain chemicals and explosives, and will work with the Maine Attorney General to develop a process to protect these and similar disclosures. No change.

- (97) *Comment:* The definition of “mining area” is too expansive and will allow ground water and surface water contamination. Trout Unlimited suggested adding the following new definition to the rule: Mining activity unit. “Mining activity unit” means an area of/and within a mining area where a particular mining activity takes place. including. but not limited to. an area from which earth material is removed; an area where overburden. waste rock and ore are stored; a tailings impoundment or other tailings storage area; an area where ore is processed; an area where groundwater and surface water management treatment systems are

located; a waste disposal area; and an area where any other activity associated with mining occurs. (C-112, C-263)

*Response:* The Department has amended its proposal Section 9(1)(G)(1)(a) to clarify that each mining activity must have a defined mining area:

- (a) A map showing the metallic mineral mining area and affected area, including a rationale and basis supporting the proposed mining area boundaries and affected area boundaries and locations of protected natural resources as defined at 38 M.R.S. §480-B(8) within, adjacent to or potentially impacted by the mining area or affected area. Each mining activity must have a defined mining area;

In addition, the Department has amended the proposal to reference mining areas and affected areas (emphasis added).

- (98) *Comment:* Trout Unlimited also commented that the following sentence should be added to the existing definition of “Mining area”: *A mining area may include more than one activity unit.* (C-263)

*Response:* See response to comment above. No change.

- (99) *Comment:* Trout Unlimited stated that “during [the legislative] Work Sessions with the Natural Resources Committee there was broad agreement, including by DEP staff, that the intent of the rules being developed would be to apply the [ground water contamination] standard to each activity, and not to allow contamination within the entire ‘mining area’.” Trout Unlimited suggested “adding a definition for ‘mining activity area’ to identify the discrete units within the mining area where each mining activity occurs, and to apply surface water and groundwater monitoring to each of them.” (C-263)

*Response:* See response to comment # 58, above. No change.

- (100) *Comment:* **EEE. Mine Waste.** “Mine waste” means all waste materials (solid, semi-solid, or (liquid) associated with exploration, advanced exploration, and mining activities. Such wastes include, but are not limited to, rock, tailings, and other process waste such as leachate and wastewater treatment plant residuals. Land clearing debris, wood waste, wastes from solvent extraction and electrowinning are not considered mine waste for purposes of this rule. Notwithstanding 06-096 CMR 850, mine waste is not hazardous waste to the extent mine waste has been excluded by Subchapter 3 of the Resource Conservation and Recovery Act, 42 CFR 6901, et seq. All needs to be reworked...temporary and permanent storage piles are established at the surface that are not “waste” the relevant standards for these on site storage units is their end use and their similar ARD /toxic metals leaching for each pile. (C-24)

*Response:* The definition of “mine waste” has been revised to state:

**Mine Waste.** “Mine waste” means all material, including but not limited to, overburden, rock, lean ore, leached ore, or tailings that in the process of mining and beneficiation has been exposed or removed from the earth during all waste materials (solid, semi-solid, or liquid) associated with exploration, advanced exploration, and mining activities. Such wastes include, but are not limited to, rock, tailings, and other process waste such as leachate and wastewater treatment plant residuals. Land clearing debris, wood waste, wastes from solvent extraction and electrowinning are not considered mine waste for purposes of this rule. Notwithstanding 06-096 CMR 850, mine waste is not hazardous waste to the extent mine waste has been excluded by Subchapter 3 of the Resource Conservation and Recovery Act, 42 CFR 6901 *et seq* and 40 CFR 261.4(b)(3) and (b)(7) (July 1, 2013).

(101) *Comment:* The definition and delineation of a proposed “Mining Area” versus an “Affected Area” is a critical item. According to the Mining Act, a “groundwater compliance” boundary should be the outer perimeter of a defined Mining Area. DEP staff, however, appears to consider Mining Areas as separate “bubbles” within a project site, as shown in their presentations to the Board on September 12 and October 17. Based on their conceptual diagram, the DEP staff appears to consider areas between operational elements, even narrow ribbons or small isolated “islands” of land, to be Affected Areas, subject to groundwater compliance. We believe the Department’s conceptual diagram presents an unrealistic and unachievable situation. The Rules should ensure consistency in definitions, and should accommodate a Mining Area that is sufficiently encompassing to allow a compact mine design that minimizes cumulative impacts, allows full use of permitted pit, mine waste unit footprints, and treatment systems, and reduces the potential for groundwater non-compliance under the law. (C-41, C-42, C-77)

*Response:* The Department has amended Section 9(G)(1) of the proposal to state:

(1) Project Description. The project description shall include:

- (a) A map showing the metallic mineral mining area and affected area, including a rationale and basis supporting the proposed mining area boundaries and affected area boundaries and locations of protected natural resources as defined at 38 M.R.S. §480-B(8) within, adjacent to or potentially impacted by the mining area or affected area. Each mining activity must have a defined mining area;

See also, response to comment # 58, above.

(102) *Comment:* Under the definition of mine waste, we suggest adding to this definition “overburden and topsoil” in the list of items that are not considered mine waste. These would be characterized and stockpiled for use in reclamation. (C-41, C-42, C-77)

*Response:* The Department has redefined “mine waste” (See Comment # 100). Overburden has been included in this definition.

(103) *Comment:* The definition of “Mine waste unit” should exclude underground workings that have been paste backfilled as part of a mining plan. Paste backfill is a mining methodology

that backfills and permanently seals mine workings using a mixture of mine tailings and Portland cement. Paste backfilling is seeing increased use in the mining industry because of environmental benefits, such as reducing surface impacts, neutralizing future acidity, stabilizing underground stopes and drifts. We recommend adding the sentence “Paste backfilled underground workings are not considered a Mine waste unit.” (C-41, C-42, C-77)

*Response:* Paste backfilling using cementitious mixtures of Portland cement and mine wastes is currently utilized at mining operations internationally, but there is only limited information with respect to its efficacy in reducing and/or eliminating leachates. Although ASTM C1308-08 has recently been used to assess cemented tailings backfilled at a site in Nevada, and it was suggested that cemented tailings will not negatively affect waters of the state, the Department does not believe there is sufficient technical documentation to categorically exempt this method of mine waste disposal from the definition of “mine waste unit. No change.

(104) *Comment:* “Mine waste unit” means any land area, structure, location, equipment, or combination thereof on or in which mine wastes are managed. A land area or structure shall not become a mine waste unit solely because it is used to store wastes generated on the site for 90 days or less. *Again a fundamental confusion between on-site storage piles and what will become waste. Needs to be reworked and sorted out with all other on site storage related issues. This same confusion plagued the 1991 rules. The important reference standards are homogeneity of the piles with respect to ARD toxic metals leaching. With end use a secondary consideration (two different piles might be created with the ARD generation potential and same containment requirements but treated differently because one is to become waste and other is to be placed back in the adit or mine shaft. The term “waste” only means what is not going to be reused as backfill, fill, or cover.* (C-24)

*Response:* The Department agrees that the wording lacks clarity, and has redefined “storage pile”, “containment structure”, and “mine waste unit” as follows:

**Storage Pile.** “Storage pile” or “mine waste unit” means a manmade landform used for the disposal or temporary storage of material generated during mining, such as overburden, waste rock, lean ore, ore, tailings, or topsoil, provided that these materials have an identified final destination in the facility’s mine plan or are part of the materials to be processed through beneficiation.

**Containment Structure.** “Containment Structure” is an engineered structure or system designed to prevent the release of materials or substances from a designated area. Containment structures may be utilized to prevent releases from a variety of stored materials including, but not limited to: overburden, ore, tailings and hazardous substances. Hazardous substances must be stored in accordance with the federal Resource Conservation Recovery Act (RCRA) and state laws and regulations.

**Mine Waste Unit.** “Mine waste unit” means any land area, structure, location, equipment, or combination thereof on or in which mine wastes are managed. A land area or structure shall

not become a mine waste unit solely because it is used to store wastes generated on the site for 90 days or less.

With these distinctions now made in the rule, the Department believes the commenters concern has been addressed.

(105) *Comment:* QQQ. To clarify and maintain consistency with the language in § 2.QQQ, we recommend changing “reactive wastes” to read “reactive mine material” for the definition of overburden. ( C-41, C-42, C-77)

*Response:* The Department has changed the term to “reactive mine waste” in Section 2(VVV) of the proposal.

(106) *Comment:* “Overburden” means all of the earth and other materials which lie above the natural mineral deposits to be mined. Overburden does not include reactive wastes, lean ore, or other waste rock. A more customary and appropriate definition of “overburden” is: “OVERBURDEN designates material of any nature, consolidated or unconsolidated, that overlies a deposit of useful materials, ores, or coal--esp. those deposits that are mined from the surface by open cuts.” “Overburden” is a geologic term and refers to all that material of any nature between the target ore for extraction and the surface where the excavation will be initiated. By definition it could include soils of varying character, reactive rocks, mineralized rock, and barren rock. Ore to be mined and the mine portal in an underground mine, includes, barren rock, and rock with low levels of mineralization. The ratio of overburden ( as conventionally defined) to ore is a key and universal indicator of whether a mine is amenable to open pit mining and also whether the grade and amount of target ore justify the removal and handling necessary for the amount of non-ore excavation. Simply put overburden is all non-ore. There is absolutely no useful or clarifying reason to have such an odd and idiosyncratic definition of “overburden” in Maine’s mining rule. Also as used throughout rule the intent is inconsistent with respect to this idiosyncratic and odd definition of a very fundamental mining term,” overburden” in some places it seems that they are going for overburden= clean fill but in general not at all clear or consistent. (C-24)

*Response:* The Department has amended the definition of “overburden as follows:

**GGG. Overburden.** “Overburden” means soil, rock or all of the earth and other materials which lie above or between the natural mineral deposits to be mined. ~~Overburden does not include reactive mine material wastes, lean ore, or other waste rock.~~

(107) *Comment:* “Passive treatment system ., means the process of removing metals and/or acidity through the use of chemical, biological, and physical removal processes that occur naturally in the environment. What is envisioned here? Is this {hopefully} pointing to a naturally self-sustaining post-closure plan? (C-24)

*Response:* The Department agrees that natural, passive systems are a desirable feature during post-closure. The Department has included language in Section 20 under

‘Performance Standards’ that requires an applicant to ‘minimize the need for perpetual care’, language under the design portion of Section 20(H) aimed at maximizing contemporaneous reclamation (with similar language under Sections 21, 23, and 24), and specific language in Section 22(B)(7) stating, “...and that implemented reclamation or mitigation measures are self-sustaining.” No change was made.

(108) *Comment:* “Perpetual treatment’ means treatment for more than 30 years post-closure. This completely misses the point of expert consensus that disallowing perpetual treatment mines. It is not about whether 7 years or 30 years should be allowed for post closure treatment of water, it is about requiring that a the reclamation plan post closure be a self-sustaining ecosystem of the same quality and habitats as pre-mining. It is about decisions made early on in mine planning and development that lead to and aim for this self-sustaining post closure reclamation. The point is to disallow perpetual water treatment or any other continuous care based plans as an approved reclamation plan. The reasons for this are as much economic as environmental. No one will bond or finance or guarantee expenditures of \$10 to \$20 million per year into perpetuity and it is a profound violation of the public interest to allow a reclamation plan that most likely will become a public cost and a public liability. (C-24)

*Response:* The Department agrees that natural, passive systems are a desirable feature during post-closure. The Department has included language in Section 20 under ‘Performance Standards’ that requires an applicant to ‘minimize the need for perpetual care’, language under the design portion of Section 20(H) aimed at maximizing contemporaneous reclamation (with similar language under Sections 21, 23, and 24), and specific language in Section 22(B)(7) stating, “...and that implemented reclamation or mitigation measures are self-sustaining.”

The Department has established a 30-year post-closure period as the acceptable time period for monitoring and maintenance activities, including water treatment. The proposed rule has performance standards directed at minimizing formation of acid rock drainage and metals leaching, as well as minimizing the need for perpetual treatment. In addition, the applicant is required to demonstrate that the ‘Environmental Protection, Reclamation, and Closure Plan’ submitted as part of the application will, “...minimize and mitigate actual and potential adverse impacts to natural resources, the environment, and public health and safety” during all phases of the life of mine, including closure and post-closure. This same plan also requires the applicant to show how contemporaneous reclamation is incorporated into the mine plan.

The Department recognizes that some length of time after closure may be necessary for facilities to conduct water treatment. Rather than arbitrarily set a short time-frame, the Department elected to allow up to 30 years, recognizing that it will be in the facility’s best economic interest to minimize this time period. The only exception the Department has built into the proposed rule is for cases where a ‘wet cover’ is the most appropriate choice of technology for preventing acid rock drainage. In this narrowly defined circumstance, the proposed rule requires, “...a Department-approved long-term monitoring and maintenance plan...” to be in effect as well as, “...a Department-approved financial assurance

mechanism...in effect...for the length of term determined to be necessary by the Department.” With all of these measures in place, the Department believes adequate safeguards are incorporated into the rule. No change was made.

- (109) *Comment:* The commenter recommends that the word “**entity**” be substituted for “person” when the rules refer to a corporation, agency, or other nonhuman legal entity. (C-272)

*Response:* “Person” is defined in statute at 38 M.R.S. § 361-A(4) as:

**Person.** “Person” means an individual, firm, corporation, municipality, quasi-municipal corporation, state agency, federal agency or other legal entity.

No changes were made in response to this comment.

- (110) *Comment:* The definition of “perpetual treatment” should be revised from “30 years post closure” to 10 years, to avoid acid mine drainage. DEP must not permit any mining operation that cannot complete wastewater treatment within ten (10) years of mine closure (C-263, C-14, C-115, C-105)

*Response:* The Department has established a 30-year post-closure period as the acceptable time period for monitoring and maintenance activities, including water treatment. The proposed rule has performance standards directed at minimizing formation of acid rock drainage and metals leaching, as well as minimizing the need for perpetual treatment. In addition, the applicant is required to demonstrate that the ‘Environmental Protection, Reclamation, and Closure Plan’ submitted as part of the application will, “...minimize and mitigate actual and potential adverse impacts to natural resources, the environment, and public health and safety” during all phases of the life of mine, including closure and post-closure. This same plan also requires the applicant to show how contemporaneous reclamation is incorporated into the mine plan.

The Department recognizes that some length of time after closure may be necessary for facilities to conduct water treatment. Rather than arbitrarily set a short time-frame, the Department elected to allow up to 30 years, recognizing that it will be in the facility’s best economic interest to minimize this time period. The only exception the Department has built into the proposed rule is for cases where a ‘wet cover’ is the most appropriate choice of technology for preventing acid rock drainage. In this narrowly defined circumstance, the proposed rule requires, “...a Department-approved long-term monitoring and maintenance plan...” to be in effect as well as, “...a Department-approved financial assurance mechanism...in effect...for the length of term determined to be necessary by the Department.” With all of these measures in place, the Department believes adequate safeguards are incorporated into the rule. No change was made.

- (111) *Comment:* The definition of “perpetual treatment” creates “way too much opportunity for treatment system failure and resulting water quality contamination. We believe this definition vastly increases the already high likelihood of water quality contamination from mining activity.” (C-112)

*Response:* The Department has established a 30-year post-closure period as the acceptable time period for monitoring and maintenance activities, including water treatment. With the limited exception of wet mine waste units, the rule prohibits water treatment beyond this 30-year period. The Department recognizes that some length of time after closure may be necessary for facilities to conduct water treatment. Rather than arbitrarily set a short time-frame, the Department elected to allow up to 30 years, recognizing that it will be in the facility's best economic interest to minimize this time period. The proposed rule has performance standards directed at minimizing formation of acid rock drainage and metals leaching, as well as minimizing the need for perpetual treatment. In addition, the applicant is required to demonstrate that the 'Environmental Protection, Reclamation, and Closure Plan' submitted as part of the application will, "...minimize and mitigate actual and potential adverse impacts to natural resources, the environment, and public health and safety" during all phases of the life of mine, including closure and post-closure. This same plan also requires the applicant to show how contemporaneous reclamation is incorporated into the mine plan. The permittee is required to have adequate financial assurance in place matching the post-closure needs for the mine. During post-closure, water quality monitoring is required to detect releases to the environment, as well as on-going monitoring of any leachate collection systems, corrective actions, and water treatment facilities. With these measures in place the Department believes that the likelihood of water quality contamination will be minimized. As part of any application including a wet mine waste unit, an applicant will need to define the period of time needed for treatment, and as part of the Department's review of the proposal, the Department must determine that the proposal is the most practicable method of mine waste management. The Department believes this language provides an appropriate balance between consideration of available technologies and environmental protection and has changed the rule accordingly.

- (112) *Comment:* Climate change predictions are that the northeast will become wetter and experience more and more severe floods in future years. The delineation of "floodplains" should take account of this. (C-272)

*Response:* See response to comment # 16. No change.

- (113) *Comment:* The definition of reactive mine material is too broad and should be dropped from the definitions list because all minerals weather (i.e., react to air and water) over time. (C-268)

*Response:* The term has been changed to reactive mine waste. While it is true that all minerals will weather, not all will create acid rock drainage.

- (114) *Comment:* "Reactive mine material" means any natural geologic formation or mined material that, when exposed to air and water, may develop acid rock drainage, or any other natural geologic or mined material that is shown through characterization studies to release substances that may adversely impact natural resources and the environment. The term "reactive" normally means likely to immediately generate ARD on oxidation, a common

standard used by top analysis and consultants like SRK is NP:AP ratio<0.1 sulfur>0.3% . It is never used to mean the same as having any potential to generate ARD. (C-24)

*Response:* The Department has changed this term to “reactive mine waste”:

Reactive Mine ~~Waste Material~~. “Reactive mine waste material” means any natural geologic formation or mined material that, when exposed to air and water, may develop acid rock drainage, or any other natural geologic or mined material that is shown through characterization studies to release substances that may adversely impact natural resources and the environment

(115) *Comment:* Revise the definition of “Storage Pile” to read “Storage pile” or “mine waste unit” means a manmade landform used for the disposal or storage of material generated during mining, such as waste rock, lean ore, ore, or tailings, where leachate collection is necessary. (C-1)

*Response:* The Department has amended its proposed definition of “storage pile” to state:

“Storage pile” or ~~“mine waste unit”~~ means a manmade landform used for the ~~disposal or temporary~~ storage of material generated during mining, such as overburden, waste rock, lean ore, ore, ~~tailings~~, or topsoil, provided that these materials have an identified final destination in the facility’s mine plan or are part of the materials to be processed through beneficiation.

Since leachate collection may not be a categorical necessity, leachate and other requirements are included in Section 20(I) of the proposal. No change.

(116) *Comment:* Using “storage pile” and “mine waste unit” interchangeably will be misleading relative to environmental controls...recommend storage piles be reserved for inert materials such as overburden, and mine waste unit be reserved for situations where leachate collection is necessary. (C-1)

*Response:* The Department agrees and has revised the definition of “storage pile” in Section 2(YYY).

(117) *Comment:* Including “mine waste unit” in the definition of storage pile creates a conflict with the definition of mine waste (mine waste does not include overburden or topsoil). As written, this definition mixes mining and non-mining materials. We recommend striking the phrase “or mine waste unit.” (C-41, C-42, C-77)

*Response:* The Department agrees and has made the suggested change in Section 2(YYY) of the proposal.

(118) *Comment:* “Storage pile” or “mine waste unit” means a manmade landform used for the disposal or storage of material generated during mining, such as overburden, waste rock, lean ore, ore, tailings, or topsoil. NO!!! Storage piles are not the same as waste. They exist at different times for different reasons over the life of the mine. (C-24)

*Response:* The Department agrees and has made the suggested change in Section 2(YYY) of the proposal.

(119) *Comment:* “Tailings” means those portions of a metallic mineral deposit remaining after extraction of minerals by physical or chemical means. For the purpose of this Chapter, “tailings” are reactive mine material. By best practices, all material including tailings are subject to ARD classification by ABA accounting methods. Whether tailings are deemed reactive depends entirely on the inherent ARD risk of the mined ores and the beneficiation process used. (C-24, C-41, C-42, C-77, C-268)

*Response:* The Department agrees with the commenter and has made the suggested change in Section 2(BBBB) of the proposal.

(120) *Comment:* “Tailings impoundment” means land on which is deposited, by hydraulic or other means, material that is separated from the metallic product in the beneficiation or treatment of minerals, including any surrounding dikes constructed to contain the material. Tailings impoundments can and should be subaqueous for certain high ARD risk materials, not limited to land based. (C-24)

*Response:* The Department has amended this definition to clarify that tailings impoundments may be subaqueous:

**A. Tailings Impoundment.** “Tailings impoundment” means an area-land on which is deposited, by hydraulic or other means, material that is separated from the metallic product in the beneficiation or treatment of minerals, including any surrounding dikes constructed to contain the material.

(121) *Comment:* “Topsoil” means the material at the earth’s surface which has been so modified and acted upon by physical, chemical and biological agents that it will support rooted plants necessary to achieve reclamation goals. Topsoil is top soil however it is used...the phrase “necessary to achieve reclamation goals” is not properly a part of the the commonly understood meaning of the word “topsoil”. (C-24)

*Response:* The Department agrees with the Commenter and has made the suggested change in Section 2(DDDD) of the proposal. The amended definition states:

**Topsoil.** “Topsoil” means the material at the earth’s surface which has been so modified and acted upon by physical, chemical and biological agents that it will support rooted plants. ~~necessary to achieve reclamation goals~~

(122) *Comment:* “Underground mine openings” or “mine openings” means all openings and voids in the earth created in the process of mining, during development, or operation of the site. “Underground mine openings” do not include drilling or drill holes used solely for exploration. The phrase “solely for exploration” adds confusion here. Is this meant to include or exclude to block caving? Is the intent to limit the size of an opening? Isn’t a shaft or large

tunnel often used at the end of advanced explorations for metallurgical purposes also an “underground opening”? (C-24)

*Response:* The Department agrees with the commenter and has amended this definition in Section 2(EEEE) as follows:

**Underground Mine Openings.** “Underground mine openings” or “mine openings” means all openings and voids in the earth created in the process of mining, during development, or operation of the site. ~~“Underground mine openings” do not include drilling or drill holes used solely for exploration.~~

(123) *Comment:* Based on this definition of “waste rock”, we assume that the “rock material” stated above (although undefined in the Chapter) does not include unconsolidated overburden or topsoil, and thus those materials can be stockpiled and used in the construction of roads or for other construction purposes including reclamation, without violating Section 3.E prohibition on using waste rock for those purposes. (C-41, C-42, C-77)

*Response:* The Department’s proposal does not preclude the use of unconsolidated overburden (i.e, overburden that is not in contact with or between the natural mineral deposits to be mined) or topsoil for the construction of roads or other construction purposes. It should be noted that the revised definition of “mine waste” includes overburden, and that all mine waste must be tested for acid generating potential. The use of any reactive mine materials for these purposes are prohibited.

(124) *Comment:* Waters of the State. “Waters of the State” means any and all surface and subsurface waters that are contained within, flow through, or under, or border upon this State, or any portion of the State, including the marginal and high seas, except such waters as are confined and retained completely upon the property of one person and do not drain into or connect with any other waters of the State, but not excluding waters susceptible to use in interstate or foreign commerce, or whose use, degradation or destruction would affect interstate or foreign commerce. This highlighted last clause is not a customary or consistently used part of the definition of “waters of the state” as used elsewhere in state law. Whatever the reason for its inclusion should be dealt with elsewhere in the rule and not as part of the definition of “Waters of the State”. (C-24)

*Response:* This definition is contained in statute at 38 M.R.S. § 361-A(7). No change.

(125) *Comment:* The commenter contends that Waters of the State is such a broad term that essentially covers the entire state it constitutes an outright prohibition on mining. (C-268)

*Response:* The Department recognizes that some mining activities would have an unreasonable impact on protected natural resources, including surface waters and coastal wetlands. However, the original prohibition against mining in or under waters of the State would have had the unintended consequence of prohibiting virtually all mining activities, since the bulk of most metal deposits occur below the water table.

At the same time, it should be recognized that there is a wide range of activities associated with mining operations (e.g., stream crossings) that would not have an unreasonable impact on these resources, and could be permitted under the Natural Resources Protection Act and other applicable requirements. The Department has amended its proposal to prohibit the removal of ore from great ponds, rivers, brooks and stream, and coastal wetlands. The amended proposal would allow stream crossings and other alterations of these resources pursuant to the Natural Resources Protection Act and other applicable requirements. The amended proposal would also allow mining underneath these resources, and in freshwater wetlands (again with Department approval).

(126) *Comment:* With respect to the definition of “waters of the State”, the commenter questions how one can guarantee that waters will be retained on only one person’s property, given the possibility of earthquakes. This needs clarification. (C-272)

*Response:* The definition of “waters of the State” is contained in statute at 38 M.R.S. § 361-A(7). No change.

(127) *Comment:* Using this definition, all naturally-occurring waters are waters of the State and, as such, mining would be prohibited at all locations in Maine under Section 1.B(3) of this Subchapter. (C-1)

*Response:* See response to comment #42, above

### Section 3- Prohibitions

(128) *Comment:* In the prohibition section of the rule, it states that the Department may not approve a permit for a mining project in the unorganized territory unless the LUPC certifies to the Department that the project is an allowed use within the LUPC district and “the proposed mining project meets any land use standard established by the Maine Land Use Planning Commission.” Omitted from subsection 2, however, is the following important language from the Mining Act in Section 490-NN(2)(B): “and applicable to the project that is not considered in the Department’s review.” This language should be added to Section 3.B(2) to be consistent with the statute. (C-41, C-42, C-77)

*Response:* The Department agrees with the Commenters and has made the suggested change in Section 3(B)(2).

(129) *Comment:* The Department may not authorize a discharge of pollutants to waters of the United States under this Chapter. This blanket prohibition is problematic since we lack a definition of “waters of the United States,” and certainly the DEP, under its waste discharge licensing powers can license a discharge of pollutants, subject to license terms and conditions. Why is this subsection needed at all? (C-41, C-42, C-77)

*Response:* The Department has revised this reference to clarify that, pursuant to the Mining Framework Law; the Department may not authorize a discharge of pollutants to waters of the State under this Chapter.

(130) *Comment:* A prohibition on discharge of “waste” onto the ground in Section 3.D seems too broad, given the liberal use of the word “waste” elsewhere throughout the Chapter. We suggest rewording to focus on chemicals and oil as opposed to ARD or mine waste, i.e., focus on hazardous waste, and reconfirm that “mine waste is not hazardous waste to the extent mine waste has been excluded by Subchapter 3 of the Resource Conservation and Recovery Act, 42 CFR 6901, et seq.” In addition, the proposed project’s spill plan and contingency plan should address the methods for prevention, containment and cleanup of any accidental spill of chemicals or oil products. ? (C-41, C-42, C-77)

*Response:* Section 3(D) of the rule has been modified to clarify that the prohibition on certain discharges relates to chemical products and chemical waste, as well as oil products and oil waste. The term “chemical” is however encompassing and is not limited to just those chemicals that meet the definition of a hazardous waste. The rule already includes language related to certain ore body mine wastes being excluded from the Resource Conservation and Recovery Act. The Department acknowledges that a spill prevention, control and countermeasure (SPCC) plan helps prevent spills and should address the immediate response to spills, including the containment and removal of spills. The SPCC plans do not authorize the discharges of such releases or take the place of proper chemical/oil management, and the plans do not address the long term actions related to a spill.

(131) *Comment:* Why prohibit the mining of thorium or uranium? These elements are used in many important applications (including medicine) in our society, not just nuclear bombs and nuclear power. They must be mined somewhere. A 1989 statute bans mining of these elements, but I feel this statute should be reviewed by the legislature. If trace amounts of uranium or thorium are found with other ores such as copper, tin, tungsten, and gold for example would this prohibit mining of these commodities, with or without the U and Th being potential co-products? (C-116)

*Response:* Uranium and thorium mining are prohibited by statute at 38 M.R.S. § 489-B. No change.

(132) *Comment:* If heap leaching can be performed in a way that can be environmentally controlled, it should not be prohibited. Synthetic liners, leachate collection systems, and soil stabilization techniques could allow such an operation to occur in a controlled manner. (C-1)

*Response:* Outdoor heap leaching is prohibited in statute at 38 M.R.S. § 490-OO(4)(J). No change.

(133) *Comment:* Since groundwaters are considered “waters of the State,” and because groundwater occurs essentially at all locations in Maine, and in most of these locations the depth to groundwater is only several feet, this prohibition essentially precludes metallic mining State-wide. (C-1)

*Response:* The Department recognizes that this prohibition would inadvertently prohibit all mining activities in the state, and on December 5, 2013, proposed substantial changes that would limit this prohibition to the removal of ore from great ponds, rivers, brooks and

streams, and coastal wetlands as defined in 38 M.R.S. § 480-B. These changes would prohibit ore removal from these protected natural resources, but allow other alterations (e.g., stream crossings) if approved under the Natural Resources Protection Act.

(134) *Comment:* The commenter recommends that it would be useful to the reader to add a clarifying sentence at the beginning of each section of subchapters 3 to 8 to state if the section applies to both mining and advanced exploration, or to mining (*sensu stricto*) only. (C-270).

*Response:* The Department revised Sections 3 and 4 of its proposal to clarify that these sections apply to all exploration, advanced exploration and mining activities. Sections 5 through 8 were not revised since the applicability is self-evident.

(135) *Comment:* The prohibition in section 1.B(3) prohibits a mining operation that would involve “(3) Mining in or under the waters of the state.” The term “Waters of the State” is defined in Section 2.EEEE to include “any and all surface and subsurface waters that are contained within, flow through, or under, or border upon this State.” We believe the combination of these two provisions would likely prohibit metallic mineral mining in Maine. Maine has abundant watercourses, making it very likely that a deep mine will pass underneath waters of the state. Further, the commenter points out that some valuable deposits are located underneath lakes. The commenter suggests that the rules require extra scrutiny in these cases to assure surface waters are not unduly disturbed, but that it is not necessary to ban mining activity that takes place far below any of the state’s waters. Section 1.B(3) should be eliminated from the Draft Rules. Potential impacts to waters of the State can be addressed by other provisions of the Mining Act, these rules and any consolidated permitting required under the Natural Resources Protection Act. (C-41, C-42, C-77, C-116, C-236)

*Response:* The Department recognizes that this prohibition would inadvertently prohibit all mining activities in the state, and on December 5, 2013, proposed substantial changes that would limit this prohibition to the removal of ore from great ponds, rivers, brooks and streams, and coastal wetlands as defined in 38 M.R.S. § 480-B. These changes would prohibit ore removal from these protected natural resources, but allow other alterations (e.g., stream crossings) if approved under the Natural Resources Protection Act.

(136) *Comment:* The commenter suggests that prohibiting surface mining within one mile of a park or public reserve land is too broad a standard because the rules already address the proper methods of protecting adjacent lands, and a one-mile prohibition will adversely and unnecessarily affect many private landowners. The commenter suggests that the one-mile prohibition along rivers designated as critical habitat for salmon exceeds federal requirements and is unnecessary. Further, the commenter contends that the prohibition for the listed great ponds adversely affects many landowners throughout the state and provides no added benefit because the rules already address water quality. (C-236)

*Response:* On December 5, 2013, the Department proposed substantial changes that revise the proposal to limit surface mining within ¼ mile of the following: 1) National and state parks; 2) National wilderness areas; 3) National wildlife refuges; 4) the Allagash Wilderness

Waterway; 4) State-owned wildlife management areas; 5) Public reserved lands, but not including public reserved lots ; 6) Any river designated pursuant to the federal Endangered Species Act as critical habitat for Atlantic salmon; 7) One of the 66 great ponds located in the State's organized area identified as having outstanding or significant scenic quality in the "Maine's Finest Lakes" study published by the Executive Department, State Planning Office in October 1989; and 8) One of the 280 great ponds in the State's unorganized or de-organized areas designated as outstanding or significant from a scenic perspective in the "Maine Wildlands Lakes Assessment" published by the Maine Land Use Regulation Commission in June 1987. In addition, the proposal also provides that the Department may require a greater setback if submission materials or other information demonstrate and increased setback is necessary to protect the environment and public health and safety.

[NOTE: The numbering of the comments in this location skips comment #137. This number is intentionally left out of this document.]

(138) *Comment:* The commenter points out that this section incorrectly references "unorganized territory". In PL 2011 Ch. 653, §490-NN of Title 38 (effective June 1) also uses "unorganized territories". 12 M.R.S.A. §685-B,1-A,B-2 correctly makes the reference to the "unorganized and deorganized areas of the state". Ch. 200 should be corrected; and the law should be corrected as well when possible. Other places in Ch. 200 where this reference should be corrected are in sections 23,L and 27. (C-270)

*Response:* The Department has amended its proposal to include the updated terminology "unorganized and deorganized areas of the State" wherever appropriate.

(139) *Comment:* Revise 3(B)(2) to read "The proposed mining project meets the land use standards established by the Maine Land Use Planning Commission."(C-1)

*Response:* The Department has amended its proposal as follows:

(2) The proposed mining project meets any land use standard established by the Maine Land Use Planning Commission that is applicable to the project that is not considered in the Department's review.

(140) *Comment:* How are conflicts between the Department and LURC resolved relative to obtaining a mining permit? (C-1)

*Response:* The framework law specifically states that the Department has the sole authority to regulate advanced exploration and mining. No change.

(141) *Comment:* Baseline characterization. (p. 19) At the public hearing, DEP staff indicated that 2 years of baseline monitoring would be required. This requirement should be clearly specified at the beginning of this section. C-63

*Response:* The rule only requires two years of baseline for both groundwater and surface (See Section 9(C)(4) . The sampling frequency of other required baseline studies, such as wildlife surveys, are described in the baseline work plan.

(142) *Comment:* Revise 3(C) to read “The Department may not authorize a discharge to waters of the United States under this Chapter that would cause contamination as defined herein.” “Pollutants” are not defined in this Chapter. Furthermore, given that the natural water quality in metallic mineral areas can be inherently in excess of water quality standards, “pollutants” should not be used. Any compound can become a pollutant even at environmentally acceptable levels. (C-1)

*Response:* “Pollutant” is a defined term in statute in 38 MRSA § 361-A, as follows:

**4-A. Pollutant.** "Pollutant" means dredged spoil, solid waste, junk, incinerator residue, sewage, refuse, effluent, garbage, sewage sludge, munitions, chemicals, biological or radiological materials, oil, petroleum products or by-products, heat, wrecked or discarded equipment, rock, sand, dirt and industrial, municipal, domestic, commercial or agricultural wastes of any kind.

No change was made.

(143) *Comment:* The commenter suggests that “chemical” and “waste” are undefined and could be interpreted narrowly or more broadly. For example, drillers often use Crisco as a lubricant on their drill rods, and this is released to the soil during the drilling process. Is this an oil? Would it be a waste? Would fertilizer used to support vegetative growth be considered a chemical? (C-268)

*Response:* The rule has been modified in Section 3(D) to clarify that the prohibition on certain discharges relates to chemical products and chemical waste, as well as oil products and oil waste. This prohibition does not include chemicals or oils used in a mining activity when they are identified in the permit application, or exploration work plan, documented as chemicals or oils that are the least toxic materials available for their intended purpose, being used in appropriate quantities and used only for their intended purpose and not as a means of disposal.

(144) *Comment:* “Chemical” should be defined to exclude natural occurrences such as acid drainage from existing metallic ore bodies. (C-1)

*Response:* Section 3(D) of the rule was modified to more clearly identify what was intended by the use of chemical:

**D.** No chemical or oil, products or waste, shall be discharged, mixed, or released onto, into, or under the ground or waters of the State. This prohibition includes, but is not limited to, discharges into or from onsite wastewater treatment plants, mine pits or tunnels, or beneficiation units. All chemicals and oils shall be managed so as to prevent their release and mishandling, including compliance with all applicable management rules and laws. Chemicals or oils utilized for their intended purpose as a part of the wastewater treatment process, exploration drilling, or ~~beneficiation process,~~ or other mining activities may be utilized only when identified in the permit application or exploration work plan, documented as chemicals or oils that are the

least toxic materials available for their intended purpose, being used in appropriate quantities, and used solely for their intended purpose and not as a means of disposal.

(145) *Comment:* Section 3.E appears to hold the premise that all waste rock is either Group A or B mine waste, and is aimed at addressing and preventing a contamination situation similar to the Blue Hill/Blackhawk Mine. However, the proposed rules include significant requirements for characterizing all excavated mine materials, evaluating reactive mine materials, and categorizing wastes by Group. If a portion of excavated Waste Rock (as defined above) is shown and accepted by the DEP to be non-reactive or otherwise benign, and thus is considered Group C waste and environmentally safe, we believe it should be allowed for construction purposes. (C-1, C-41, C-42, C-77) (C-116)

*Response:* The Department agrees that Group C waste may be used in construction and has changed the rule accordingly.

(146) *Comment:* With respect to the alternatives analysis in section 9(H), if open-pit mining is proposed, one alternative should be consideration of underground mining. C-63

*Response:* The Department's proposal (Section 9(H)(1)) requires the assessment of alternatives technologies, including underground mining:

- (1) The alternatives analysis must demonstrate the consideration of siting alternatives **as well as alternative technologies**, modified scale or magnitude, and alternatives incorporating practicable mitigation measures for portions of a metallic mineral mining operation ancillary to the removal of material in connection with the commercial production of metallic minerals, and for which there is some flexibility in site selection, such as storage piles, tailings basins, water reservoirs, beneficiation operation processing plants, chemical and fuel storage and handling areas, wastewater treatment plants and disposal alternatives, offices, roadways, and auxiliary facilities (emphasis added).

No change.

(147) *Comment:* The requirement to comply with other rules at Subchapter 1 Section 4.A should include a requirement to adhere to tribal rules and regulations. (C-112) (C-7)

*Response:* The Department's proposal already requires the Permittee to comply with all other applicable state, federal, or local statutes regulations or ordinances. This obligation would also apply to any mining project that is subject to tribal jurisdiction. No change was made as a result of this comment.

(148) *Comment:* This provision's reference to solid and hazardous waste management and waste oil is contrary to Section 490-NN.1 (A) of the Mining Act, which states specifically that "the provisions of article 6, 7 and 8-A, Chapter 13, and Section 420-D do not apply to projects reviewed under this article." (Emphasis added.) Chapter 13 of Title 38 includes statutes governing solid waste management, hazardous waste management and waste oil. This language is in the Mining Act because review of mining activities under those statutes will be

considered entirely under the Mining Act and its regulations. So any such wastes will be managed appropriately, but they will be managed under the review of the Mining Act provisions and these rules, not the separate statutes in Chapter 13 of Title 38 and regulations under those statutes. The draft rule should be revised accordingly. (C-41, C-42, C-77)

*Response:* The Department has redrafted Section 4(A) to clarify applicability and has added a note. Commenter should note that federally delegated and authorized programs still apply.

(149) *Comment:* The subchapter title “exploration and advanced exploration” sounds all encompassing...wouldn’t something like “...Environmental Requirements for Exploration and Advanced Exploration...” be more appropriate? (C-1)

*Response:* The Department agrees with the Commenter and has made the suggested change.

(150) *Comment:* The title of Subchapter 5: “5. Purpose of Exploration and Advanced Exploration Requirements” should be revised to read: “Purpose of Exploration and Advanced Exploration Requirements”, since the purpose of this subchapter is to establish environmental standards for exploration and advanced exploration activities.” (C-1)

*Response:* The Department agrees with the Commenter and has made the suggested change to the title of Subchapter 5.

(151) *Comment:* With respect to Subchapter 2 Section 8.C and requirements for Tier One advanced exploration, the HBMI stated that “All of the above activities should be required...including baseline monitoring, environmental assessments, water quality monitoring and other monitoring including a plan to...”prevent or minimize adverse impacts on the environment, including but not limited to control and monitoring of acid rock drainage, metal leaching and of areas impacted or potentially impacted by acid rock drainage.” (C-112)

*Response:* The Department disagrees with the need to require an Environmental Impact Report for both exploration and advanced exploration. The regulatory framework proposed by the Department is based on a graduated scale of lower impact activities such as drilling versus a moderate or higher level of impact (e.g., shafts, tunnels or excavations) with greater land disturbances. No change.

(152) *Comment:* What activity restrictions or resource protections apply to exploration activities of <1,000 tons or mining of <5,000 tons of excavation? (C-17)

*Response:* Exploration activities are limited to no more than 300 square feet disturbance and are limited to a maximum surface opening of 300 square feet per test pit or trench, and are subject to the standards of Section 7(B). Advanced exploration activities removing 5,000 tons or less of mine waste (please see definition of mine waste in proposal) would be subject to all applicable standards in Sections 7 and 8 of the proposed rule. Any mining operation that conducts on-site processing of bulk samples beyond mechanical size alteration and sorting would require a full mining permit, and be subject to all applicable requirements in Sections 9 through 33 of the proposal. No changes were made based on this comment.

(153) *Comment:* The rule should clearly state on page 1 under “Applicability” that it applies to all excavations (whether for exploration or mining) of X tons, or Y tons size, and that no excavations beyond X or Y size are permitted, if that is the intent. The applicability of the rule, in terms of the role of tonnage of excavation, is very unclear.... Are the only allowed exploration/mining activities those that excavate <1000 tons or <5000, and those activities require a permit as described by these rules? Or are all exploration or mining activities that excavate less than 1000 tons for exploration or <5000 tons for mining allowed without a permit? (C-17)

*Response:* The proposal establishes three levels of mining activity oversight. Exploration activities (see definition in proposal) are limited to no more than 300 square feet per excavation, and are subject to work practices standards and notification requirements. Advanced exploration activities are subject to tonnage and acreage restrictions, with Tier One advanced exploration limited to the removal of no more than 1,000 tons mine waste and Tier Two Advanced Exploration limited to the removal of no more than 5,000 tons mine wastes. All advanced exploration and mining activities require a permit from the Department. No changes.

(154) *Comment:* We think the structure of the exploration and advanced exploration rules is appropriate and consistent with the Act. We interpret the rules to differentiate between Tier I and II advanced exploration (DEP discretionary public hearings for Tier I applications, and baseline monitoring and environmental assessments only for Tier II applications) in an appropriate manner. (C-86)

*Response:* The Department acknowledges the comment.

## **Section 7- Exploration Activities**

(155) *Comment:* The requirement for submission of a work plan effectively prohibits meaningful prospecting and privacy with respect to land ownership. This could result in premature formation of land use opposition. It seems more reasonable to set standards that need be observed and if failure to observe occurs, penalties can be assessed and corrective actions be implemented. (C-1) (C-116)

*Response:* In most regulatory jurisdictions, mechanized exploration (drilling) typically requires some type of permit. The Department is not requiring a permit for exploration or a fee, but is requiring the submittal of a work plan that describes the activities that may occur at the exploration site. The work plan provides the Department notice that exploration activity may commence and allows us to perform compliance inspection to ensure compliance with the performance standards contained in the rule.

(156) *Comment:* In section 7(B)12, change “artesian” to naturally flowing. Artesian can have different definitions. The intent here is to eliminate flowing wells. Flowing wells should not be allowed by capping the wells to prevent the natural flow of groundwater onto the ground surface. (C-1)

*Response:* The Department recognizes the comment, but no change was made in the rule.

- (157) *Comment:* It is very important that all data and data collection methods related to hydrological conditions of the area [including] connectivity to surface water/flow data be easily accessible for external analysis and posted on MDEP's website. (C-112)

*Response:* In the event of a mine application, the Department will develop a website for sharing information concerning the mine with interested parties. At that time, the Department will determine the appropriate information for inclusion on the website including the use of the Electronic database information.

- (158) *Comment:* In general all elements of compliance,( permit or notice requirements, siting limitations, transfers required documentation submissions, performance standards pertaining to each major phase of mine development etc.) should be consolidated within each separately permitted or approved mining phase. The structure used in this rule simply added these on at the end instead of integrating all rules applicable to each separately authorized or permitted mine development phase. (C-24)

*Response:* Should the organization prove a problem in the future, the Department will provide guidance or other such information to bridge any gaps in understanding.

- (159) *Comment:* The "Tier I Tier II" approach based primarily on volumes of bulk sample misses the entire flow of mine development and of the critical opportunities to lay the right foundations in these stages for protection of our states Natural resources. This entire section needs to be recast to recognize, these two separate phases of mine development "Advanced Explorations" and "Pre-Feasibility" and to recognize and require the appropriate information/documentation that is the foundation for protecting off site natural resources and affording a realistic expectation of reclamation to a standard of a natural self-sustaining environment at closure. (The GARD guide 2 lays out the ARD Management plan elements which must be developed at each stage. Sampling standards, drill Log elements exact location, depth, azimuth geochemical profile, etc.). All data and documentation required for independent expert State analysis as to environmental risk should be transmitted in excel spreadsheet form and It should be clear that all required data submissions have full public access and will be available on line throughout all phases of work. Our rule is completely void on all these critical foundations for independently verifying and assessing environmental risks not only of the advanced exploration activities but of the conceptual mine and closure plans guiding these activities. (C-24)

*Response:* The regulatory framework proposed by the Department is based on a graduated scale of lower impact activities such as drilling versus a moderate or higher level of impact (e.g., shafts, tunnels or excavations) with greater land disturbances. The jurisdictional triggers are based on both volume and land disturbance and is similar to other regulatory jurisdictions in Canada and the United States. In addition, the rule requires all mine waste to be evaluated for its acid generation potential in both Tier I and Tier II Advanced Exploration. No change.

[NOTE: The numbering of the comments in this location skips comment #160. This number is intentionally left out of this document.]

(161) *Comment:* The appropriate reference here is “permit by rule” which applies to many other “routine” owner activities with possible impacts which should also apply to metallic mining explorations. (The standard of “equal treatment under the law” is also applicable.) The review and approval process involves an expenditure of public resources so a fee of \$300 and an additional annual fee of \$150 would seem appropriate to offset public costs. Also the scope of what is and isn’t minimal disturbance needs to be much more closely defined...drilling is routine, for instance, so there should be language on the maximum number of drill holes, and their size. (C-24)

*Response:* The framework statute does not specify a fee for exploration activities so a fee cannot be charged by the Department. In addition, it is the Department’s position that minor exploration activities conducted in a manner that does not pose a significant potential for environmental risk or harm may reasonably be conducted without an exploration permit provided that appropriate standards are followed as described in the rule. Placing a limit on the number of drill holes or their size is overly restrictive considering the low risk of exploration activity. Drilling programs are dynamic and change constantly and in a lot of cases never hit a mineralized zone.

(162) *Comment:* Exploration activities generally operate with site-specific health and safety plans that employees, contractors, and visitors must comply with. We recommend adding a sentence to Section 7.B(14) to address this topic as follows: “Any and all persons requesting or obtaining permission to access the site, at any time, including Department personnel, must meet and adhere to the Applicant’s health and safety plan requirements for the site, including demonstration of applicable current MSHA certifications where appropriate. The Applicant may restrict access to specific time periods or site locations from time to time to ensure the health and safety of visitors and minimize potential disruptions to mining or exploration activities.”

*Response:* The Department maintains training to ensure that its staff complies with all necessary health and safety requirements. Any site specific health and safety plan for a mine or exploration site should be submitted to the Department as a part of the mine application or work plan so that the Department is aware of any particular requirement. The suggested change was not made to the rule.

(163) *Comment:* The Department should conduct at least annual independent third party inspections based on at least annual complete reports of exploration activity by permittee. (C-24, C-282)

*Response:* The Department has existing in-house capacity to conduct routine inspections of exploration sites. In most cases, if an exploration work plan is submitted to the Department, an inspection will be conducted by the Department to ensure compliance with the performance standards.

(164) *Comment:* Section 7’s prefatory sentence implies that any activities at an exploration site, including those that are not considered “exploration activities”, require a work plan submittal. We recommend changing the clause to read “...prior to initiating any exploration activities at an exploration site.” (C-41, C-42, C-77)

*Response:* A permit is not required for exploration under this section; however, the submittal of an exploration work plan is required by the Department prior to initiating any activities at an exploration site. The exploration work plan must contain the submission requirements listed in Section 7(C) of this Chapter.

(165) *Comment:* As drafted, the language in Section 7.B would prohibit new drill roads or bringing in gravel to fill dips in existing forest roads under an exploration permit. As written, installing a temporary drill road, regardless of size, would constitute “Tier 1 Advanced Exploration” and thus would trigger a significant amount of data collection, a different permitting process, and extensive submission requirements that we would consider premature at the exploration stage. This situation would likely discourage anyone from pursuing routine exploration drilling in areas that do not have existing forest harvesting roads in place. We recommend changing this standard to focus on “avoiding and minimizing” impacts, rather than prohibiting recontouring and gravel additions. (C-41, C-42, C-77)

*Response:* The Department agrees with the commenter and has added language to Section 7(B)(1) that allows the maintenance of existing access ways. The revised proposal states:

(1) Existing aAccess ways shall be maintained to ensure that runoff is delivered immediately to stable ditches and vegetated buffer areas, involve little or no recontouring of the land or ditching, and shall not include the addition of gravel or other surfacing materials. Clearing of the vegetative cover shall be limited to the minimum necessary to allow for the movement of equipment.

(166) *Comment:* In Section 7.B(13)(c), please delete the word “surface” – both underground and surface mining are covered in this Chapter. (C-41, C-42, C-77)

*Response:* This change has been made to the rule.

(167) *Comment:* Exploration activities generally operate with site-specific health and safety plans that employees, contractors, and visitors must comply with. We recommend adding a sentence to Section 7.B(14) to address this topic as follows: “Any and all persons requesting or obtaining permission to access the site, at any time, including Department personnel, must meet and adhere to the Applicant’s health and safety plan requirements for the site, including demonstration of applicable current MSHA certifications where appropriate. The Applicant may restrict access to specific time periods or site locations from time to time to ensure the health and safety of visitors and minimize potential disruptions to mining or exploration activities.” (C-41, C-42, C-77)

*Response:* Existing law, 38 MRSA §347-C, allows employees and agents of the Department of Environmental Protection to enter any property at reasonable hours and enter any building with the consent of the property owner, occupant or agent, or pursuant to an administrative search warrant, in order to inspect the property or structure, including the premises of an industrial user of a publicly owned treatment works, and to take samples, inspect records relevant to any regulated activity or conduct tests as appropriate to determine compliance with any laws administered by the Department or the terms and conditions of any order, regulation, license, permit, approval or decision of the Commissioner or of the Board.

The Federal Mine Safety and Health Act of 1977 requires companies to provide basic awareness of mining hazards and safety procedure to visitors, outside service and other persons who are not employees of the company. No change was made to the rule.

- (168) *Comment:* Requiring notification to the Department and/or the Commission within 24 hours and in writing within 5 working days of any activity or occurrence during the course of exploration or reclamation “which has the potential to damage public health or the environment” is a broad and subjective standard. One could argue that digging a hole with a shovel causes potential damage to the environment. The phrase “potential to damage” adds subjectivity since virtually anything could be potentially damaging (e.g., drinking too much water is potentially damaging). We suggest using the widely-accepted standard in Section 343 of Title 38 which requires reporting by environmental professionals to “prevent significant threats to public health and the environment” so reporting would be required for occurrences which have “potential to significantly damage public health or the environment.” (C-41, C-42, C-77)

*Response:* The Department believes the current wording is more protective of the environment and public health and safety.

- (169) *Comment:* According to the draft language in Section 7.C(1), for exploration only the SUBMITTAL of a work plan is required. But there is no provision for Department review or approval, no statutory review period, and no default process like the current Permit by Rule. What happens when the Department gets a work plan and has comments on it, or wants to exercise the discretion found in Section 7.C(1)(g)? (C-41, C-42, C-77)

*Response:* Due to the low risk of exploration activity, the Department chose not to include a mandatory review and approval process for the work plan. The submittal of a work plan however, provides the Department notice that an exploration activity is occurring and allows the Department to inspect the site for compliance. No change.

- (170) *Comment:* Beneficiation is prohibited under an exploration work plan. Add “on site”. (C-24)

*Response:* As written the rule is clear that beneficiation is not allowed under an exploration work plan. No change.

- (171) *Comment:* In section 8C.1(d) Identification of any proposed new roads or clearings; New roads and clearing seem inconsistent with the definition/limitations on exploration. (C-24)

*Response:* The Department agrees with the commenter and has made a change to Section 8(C)(1) to include the identification of existing roads.

(172) *Comment:* Initial Exploration/Site Reconnaissance Phase (GARD GUIDE). The information collected during the initial exploration is not specifically interpreted for ARD/ML potential but becomes the foundation for subsequent evaluations. For example, geological mapping and mineralogical studies should consider the host or country rocks in addition to the ore. A core logging manual should be developed so that logs provide information that can be used for ARD/ML characterization. Core should be suitably stored to be available for future analyses. Rock samples should be analyzed using multi-element scans (including sulfur and carbon) in addition to the suspected commodity elements. Collection of environmental baseline data (soil, sediment, surface water, groundwater, and air) should begin during this phase. ([http://www.gardguide.com/index.php/Chapter\\_5](http://www.gardguide.com/index.php/Chapter_5)) This section needs to be amended to make it clear that all of these information elements are required for an advanced exploration permit so that the explorer has guidance on what information will be required and what standards that information will have to meet to submit an advanced exploration permit. The applicant should not necessarily be required to develop this information during the exploration phase but they should know what will be required to advance to that permittee can take that into consideration in planning exploration activities. It should also be very clear on the extent to which old drill core and old data may be used as part of the advanced exploration permit application requirements and that all drill core must meet certain sampling, documentation and storage standards for use in support of required application submissions for advanced explorations. Applicant should not be required to disclose any of the exploration data or conduct any baseline monitoring but should understand the level of baseline monitoring that needs to be completed to obtain an advanced exploration permit. (C-24)

*Response:* As with past projects, the stored drill core is analyzed for its acid rock and metal leaching potential. In addition, a pre-application meeting is required for all advanced exploration projects and it is at this stage that the requirements for geochemical analyses is required as part of an application to conduct advanced exploration activity or mining. No change.

(173) *Comment:* I strongly recommend that Subchapter 2 also include a section that requires an applicant to use material recovered during exploration and advanced exploration activities to perform large scale “bench tests” of the reactive mine and designated chemical materials management system, containment structures, storage piles and water management systems to be proposed under Subchapter 5, Mining Standards. The rules as written allow for removal of 1000 and 5000 tons of material for Tier One and Tier Two Advanced Exploration. A far smaller volume should be sufficient for such testing. Only if such tests are deemed successful by DEP staff, using Water Quality Criteria listed above, should full scale mining be allowed to proceed. (C-68)

*Response:* The rule specifically requires the applicant to submit a mine waste work plan to the Department for review and approval for any advanced exploration project. This plan may

include small scale bench test. In addition, the volume limits of 1000 and 5000 tons apply to all mine waste generated at the site. No change.

(174) *Comment:* The rules should require that each applicant include in their permit application an analysis and description of three mines that have applied “best practices” for preventing water pollution. The applicant should also be able to describe how such practices would be applied in their proposed time (C-35)

*Response:* Although some states (e.g., Wisconsin) require an assessment of best management practices (BMPs) as part of the mining application process, it is important to remember that best practice does not necessarily equate to state-of-the-art practice. Best management practice is instead a concept that there is a methodology that is more effective at delivering particular outcome than any other technique. At the same time, best management practices for complex problems (such as mining) are usually dependent on the context, and it is more appropriate to view best management practice as an adaptive learning process rather than a fixed set of rules or guidelines. Given that best management practices are site-specific, the proposed assessment at three other sites is of questionable value. At the same time, it should be recognized that specific best management practices may provide useful guidance for the applicant. For example, there are a number of BMPs that have been developed for reclamation of mined lands; one or more of these may provide the applicant with information on the most effective reclamation practices. No change.

(175) *Comment:* Tier 2 Environmental Impact Assessment. [page 15, D(d)] The two years of baseline monitoring and the environmental impact assessment that are required for a Tier 2 exploration permit appear to have the same rigor, detail and comprehensiveness as those required for a full mining permit application. This seems excessive considering that only about 2200 cubic yards of ore-bearing rock will be displaced (e.g., a plan area of 82 ft. by 82 ft. with a depth of 9 ft.) during Tier 2 exploration (This area is a little over 1.5 times the size of a high school basketball court (84 ft. x 50 ft.)). I believe that Tier 2 exploration should be allowed during the first year of baseline monitoring and that an abbreviated EIA focusing only on the impact of the Tier 2 activity (i.e., not the full mine) should suffice for permitting Tier 2 exploration. The findings of the Tier 2 exploration can then be used to help develop a more effective mine plan and a full EIA. (C-15)

*Response:* The framework statute defines mining to include advanced exploration activities. In addition, Tier II advanced exploration sites can include substantial underground workings to sample several ore zones. Due to the nature of advanced exploration i.e. higher risk and larger impacts, the Department chose to require baseline monitoring and environmental impact assessment as part of the application process. No change.

(176) *Comment:* Tier 1 Submission. [page 15 (3)] A “reactive mine materials characterization work plan” (which is the same as that required for a mining application) must be submitted with a Tier 1 exploration permit application. This seems excessive for the associated potential environmental impact and cannot be done without an inordinate amount of work. It

seems plausible that a more limited reactive mine materials characterization work plan focusing only on the Tier 1 target ore-bearing rock would suffice. (C-15)

*Response:* As written, the rule requires the applicant to submit a mine waste characterization plan to the Department for review and approval. Based on the language contain in Section 8(C)(3), flexibility has been already included with the existing language that states “if determined to be necessary by the Department”. No change.

(177) *Comment:* The commenter asks for clarification regarding whether a work plan for exploration activities in the unorganized and de-organized areas needs to be submitted to the DEP or to LUPC. If the work plan goes to the DEP, which doesn’t require a permit for exploration, then does it also go to the LUPC when a permit is required (*e.g.*, a Level B exploration that does not include bulk sampling)? It appears that neither PL 2011 Ch. 653, nor the draft Ch. 200 address this; and in particular, Section 2 is confusing in this regard. For example:

- Section 2.3.A – It is “unlawful for anyone to engage in exploration or mining unless authorized by the DEP”, and “qualified exploration activities do not need a [DEP? LUPC?] permit, but must submit a work plan”. [to DEP? to LUPC?]
- Section 2.7.A – A LUPC permit may be required for exploration activities.
- Section 2.7.B(3) – This section refers to erosion control per DEP’s statute; and then section 2.7.B(4) refers to an LUPC subdistrict and includes an old Ch.10, section 10.17 reference. Next, section 2.7.B(5) says a NRPA permit may be required, suggesting the language may have been brought forward from the original Ch. 200 (1991), prior to LURC adopting and implementing wetland rules in 1998. Then, section 2.7.B(7)(c) refers to the LUPC’s Ch10, Appendix B.
- Section 2.7.B(14) - DEP, but not LUPC, can enter an exploration site, and can require inspection reports; but then section 2.7.B(15) requires events to be reported to both DEP and LUPC.
- Section 2.7.C - Requires a work plan to be submitted to the DEP, not LUPC.

Provided as an aid for working through this issue, the working draft table below summarizes (a) the various categories that the LUPC’s Ch. 10 rules use throughout the subdistricts for activities involving metallic mineral **exploration**, **advanced exploration** and **mining**; and (b) the materials to be submitted to, or actions by the DEP and the LUPC. (C-270)

For the purposes of zoning, the LUPC’s Ch. 10 rules use three levels for mineral exploration: Level A, Level B and Level C. (*Note - The definitions for these terms are copied here, below the table.*)

- **Level A Mineral Exploration** and **Level B Mineral Exploration** refer to non-metallic mineral exploration as well as metallic mineral exploration. **Level C Mineral Exploration** is always for metallic minerals, and always meets the definition of “**advanced exploration**” found in PL 2011 Ch. 653.
- Note that **Level B Mineral Exploration w/out** bulk sampling = “**exploration**”, but that Level B w/bulk sampling = “**advanced exploration**”. (C-270)

**Metallic mineral exploration, advanced exploration and mining projects in LUPC jurisdiction**

<b>LUPC allowed use.</b> Note - “Allowed use” means Allowed w/out a permit according to standards, With a permit, or By special exception	<b>LUPC</b>	<b>DEP</b>
Exploration allowed w/out a permit		
Level A	Work plan?	?
Exploration allowed w/a permit		
Level A	Permit Work plan?	?
Level B w/out bulk sampling	Permit Work plan?	?
Advanced exploration		
Level B w/bulk sampling	Certify	Permit
Level C	Rezone Certify	Permit
Mining	Rezone Certify	Permit

**96. “Level A Mineral Exploration Activities:** Mineral exploration activities engaged in for purposes of determining the location, extent and composition of mineral deposits, provided that such activities are limited to test boring, test drilling, hand sampling, the digging of test pits having a maximum surface opening of 100 square feet, or other test sampling methods which cause minimum disturbance to soil and vegetative cover. Level A mineral exploration activities shall not include bulk sampling of mineral deposits.”

“Access ways for Level A mineral exploration activities shall include only access ways the creation of which involves little or no recontouring of the land or ditching, and does not include the addition of gravel or other surfacing materials. Clearing of the vegetative cover shall be limited to the minimum necessary to allow for the movement of equipment.”

**97. “Level B Mineral Exploration Activities:** Mineral exploration activities involving the bulk sampling of mineral deposits, or any mineral exploration activities which exceed those defined as Level A mineral exploration activities and which are not defined as Level C metallic mineral exploration activities.”

**98. “Level C Mineral Exploration Activities:** Metallic mineral exploration activities involving the disturbance of a site, by excavation, of more than two (2) acres of surface

area or the excavation or removal of more than ten thousand (10,000) cubic yards of soil, overburden, ore or other earthen materials from the site of exploration.” (C-270)

*Response:* The Department has added language to Section 7 of the rule to provide greater consistency with exploration activities in the unorganized and deorganized areas of the state regulated by the Land Use Planning Commission (LUPC) and removed standards that specifically apply to exploration sites regulated by LUPC.

(178) *Comment:* In Section 7(A)(3), References Maine Land Use Planning Commission Permits or Zoning Changes. The commenter recommends that instead of “Zoning”, the term be “Subdistrict”. Also, the rulemaking reference number should be 01-672 (it was recently changed). (C-270)

*Response:* The Department deleted this reference because the Department does not regulate exploration activities in unorganized and deorganized areas of the State.

(179) *Comment:* The commenter suggests that an exploration work plan is not appropriate for some activities that are not intrusive or minimally so. For example, electrical resistivity, seismic refraction and similar geophysical surveys do not create any lasting environmental damage since they use a small diameter (less than 1 inch) hole 1 to 2 feet into the ground and they are removed after a few hours. Once there is an understanding that site conditions might contain deposits that are of more interest, a work plan for more intrusive activities is appropriate. (C-268)

*Response:* The Department agrees that minor exploration activities conducted in a manner that does not pose a significant potential for environmental risk or harm may reasonably be conducted without an exploration work plan. The first, non-invasive instrumental geophysical prospecting techniques, utilize either airborne or ground-based technologies that do not excavate or otherwise impact an exploration site. The Department is also exempting hand sampling activities from the need for an exploration work plan, but notes that these activities may require approval under other laws and regulations administered by the Department (e.g., the Natural Resource Protection Act, 38 MRS Section 480-C). No change.

(180) *Comment:* Section 7B Standards. The sections on “Standards” (p.10) and “Performance Standards” (p. 49; p.69, etc.) are apparently focused on the *activities* of the permit holder rather than the end results in terms of environmental outcomes. Maine Water Quality Standards are largely impact, or results-based, for example, each water quality classification states expectations for the condition of aquatic life, as assessed *via* the biocriteria rule. Reference to protection and monitoring of aquatic life, and attainment of biological standards, is largely lacking. The rule should explicitly state that no provisions of the rule relieve the permit holder from the obligation to ensure that all applicable water quality standards and criteria are met. (C-17)

*Response:* Subchapter 1, section 4 describes relation of Chapter 200 to other rules. A separate waste discharge license pursuant to 38 M.R.S.A. § 413 is required for any discharge to waters of the State. The Department will evaluate proposals to discharge to waters of the

State under existing water quality law and rules and in accordance with application processing procedures of Chapter 2 and the Maine Administrative Procedures Act. In addition, approval criteria included in Chapter 200 require that “[t]he mining operation will not result in a direct or indirect discharge that, either by itself or in combination with other discharges, will cause or contribute to nonattainment of applicable surface water quality standards under the Water Classification Program, 38 M.R.S. §§ 464-469” and that “[t]he mining operation will not result in in a direct or indirect discharge that, either by itself or in combination with other discharges, will cause or contribute to nonattainment of groundwater standards outside the mining areas under the Water Classification Program, 38 M.R.S. §§ 464, 465-C and 470.” No changes were made based on this comment.

(181) *Comment:* In section 7B (10), the commenter contends that the requirement to contain all drilling fluids is more stringent than what is needed at most Superfund sites. Generally there is a risk management provision that says if the drilling fluids are impacted above a certain threshold, then the fluids, cuttings, etc. are contained, otherwise they are allowed to discharge to the ground surface. (C-268)

*Response:* The rule at Section 7(B)(9) was modified to require that drill additives should be biodegradable and the least toxic materials available to do the job. Any toxic drill fluids, additives and cuttings that could harm aquatic species, habitats or groundwater may not be released and must still be confined to the drill site in tanks or sumps unless the Department approves another method.

(182) *Comment:* In section 7B (12), the requirement to seal all drill holes within 30 days is a standard that Maine DEP does hold itself to meet. For example, we often will seal monitoring wells a year or two after the well is no longer needed and schedule the well abandonment for convenient weather and field conditions. Why should this be any different? (C-268)

*Response:* Most regulatory jurisdictions require a timeframe to seal drill holes. In addition, the rule provides flexibility in this requirement in Section 7(B)(11) if the drill hole is converted for use during baseline studies. No change.

(183) *Comment:* In section 7C (g), the last phrase in this section basically says you can do everything we ask above, but we still reserve the right to ask for something that we have not yet defined for any reason we want to in the name of protecting the environment. How is that fair? Suggest deleting the last sentence. (C-268)

*Response:* The standards in this section are designed to protect the environment. However, there may be cases depending on the location of an exploration site that warrant additional measures to protect environment. No change made.

(184) *Comment:* Exploration activities are iterative and the information gained from one boring will likely effect the placement, and depth of the next. The requirement to spell out the location and depth of all drilling beforehand in section 7 (C) (i), is not realistic unless then DEP wants to process daily revisions while drilling is occurring. I can understand the need to

know the total footage, as that is often a budget determination when the decision is made to drill. (C-268)

*Response:* The Department understands that the locations and depths of drill holes may change during the investigation of the prospect. If a change is made to the drill program, a simple revision to the site map is sufficient. A majority of regulatory jurisdictions require this type of information to be submitted with any drill program. No change.

## Section 8- Advanced Exploration Activities

(185) *Comment:* The size of the bulk sampling areas for advanced exploration should be eliminated. The applicant should be allowed to take the amount of material necessary in order to evaluate the feasibility of moving forward with the mine as long as they do not damage the environment. Rather than limiting the size of explorations, the Rules should prescribe environmental monitoring criteria and reclamation standards. (C-1).

*Response:* The Department's proposal established a two-tiered approach based on the potential impacts of advanced exploration activities. The Department believes that both tonnage and acreage restrictions are appropriate and necessary to ensure the protection of environmental resources both during and after the performance of advanced exploration activities. Similar approaches are used in other jurisdiction both in Canada and the United States.

(186) *Comment:* During any exploration phase there is no need to have public notification or input. This is a right of the landowner to conduct these explorations and should not be subject to public comment; rather, the MEDEP should have clear guidance as to how to protect the environment during exploration activities. (C-1)

*Response:* As written, exploration programs do not require any public notification. Pursuant to 38 M.R.S. 490-MM(11), advanced exploration is one type of mining. It therefore follows that advanced exploration activities are subject to the public notification requirements of 38 M.R.S. 490-OO(6). No change.

(187) *Comment:* Revise penultimate sentence of first paragraph to read “Any additional on-site testing and characterization must occur within enclosed, portable facilities.” (C-1)

*Response:* The requested change has been made in Section 8 of the rule.

(188) *Comment:* Delete D(1)(b), (c), and (d). These requirements are too far-reaching for an exploration phase. Rather they should be for an overall mining application. SME recommends a water quality monitoring plan be required for exploration instead of (b), (c), and (d). (C-1)

*Response:* See comment # 185.

(189) *Comment:* It must require an ARD management plan for each phase of operations from what is now called Tier 1 advanced exploration through closure and post closure. The ARD

Management plan is of the same importance as baseline and ongoing monitoring as an oversight tool for protecting the public interests. More important perhaps in that is the tool which informs each stage of mining from Tier I explorations on and insures that decisions are made early on which aim for solutions that can attain that balance between natural resources protection and economic development. (C-24)

*Response:* The rule as written requires the characterization of all mine waste for both Tier One and Tier Two Advanced Exploration activity. In addition, a Tier One project requires the submittal of a mitigation plan for any acid rock drainage (see Section 8(C)(3))

(190) *Comment:* The point where mine development shifts from “advanced explorations to “pre-feasibility” is a key point in mine development and the place where properly framed information exchange between the permittee and DEP can avoid or prevent costly mistakes that compromise the protection of natural resources. This should be a specifically referenced benchmark with required submissions of the mine and closure plans being considered in pre-feasibility and all of the supporting ABA accounting data that evidence the preliminary viability of those plans. The ARD environmental risk analysis required to assure protection of natural resources at this phase needs to address both the elevated level of on-site activity (test pits/test shafts larger drill cores etc.) as well as the environmental risk of the mine and closure plans guiding the pre-feasibility phase. Our rule doesn’t fully or clearly address the ARD risk in what it refers to as “Tier II Advanced explorations” and it doesn’t at all address or understand the importance of being on the same page with the mine and closure plans to which this phase aims. While DEP cannot foreclose a company’s consideration of a mine and closure plan that DEP considers not feasible in terms of environmental risks, it must at this point go on record expressing its concern about the mine and closure plans being considered and speak to the alignment of these plans with law and written policy. This is especially important should there be a transfer of ownership of the mineral rights during pre-feasibility. (C-24)

*Response:* Applications for advanced exploration activities must comply with all applicable requirements in Section 9 of the rule. A pre-application meeting between the applicant and the Department is required prior to submitting an application for an advanced exploration project. This pre-application requirement allows the exchange of important information between the applicant and Department. In addition, all Tier II applications require the geochemical testing of all mine waste and its ARD risk. Also in Section 8(D), the rule specifically requires the submittal of closure plan for all Tier II advanced exploration applications. The Department will provide appropriate feedback regarding any concerns it may have during any stage of this process.

(191) *Comment:* Our rule as written doesn’t really recognize or address all the events and circumstances that attend a mining application and how these affect environmental risks. At this stage there are three levels of risk that DEP’s hopefully independent outside expert team need to consider:(1) the risks of the onsite activities and the proper handling and on site storage of all materials (2) the environmental risks of the mine plan ( suitability of extraction and beneficiation, creation of waste and storage piles by like ARD/Toxic metals risk and with adequate protection based on risk (liners and enclosures, subaqueous holding ponds)for each

pie created, whether permanent or temporary. (3) whether the choices and methods give high confidence of a self-sustaining reclamation of the mine site itself post closure and whether the closure plan itself aims for this. Our draft Chapter 200 rule and the structure and specifics of our required mining application don't recognize or address any of this. (C-24)

*Response:* The rule is designed to address all the impacts of advanced exploration and mining by requiring upfront geochemical testing of all rock encountered. Based on the geochemical test results of each mine waste and its associated environmental risk, specific designs standards and financial assurance is required. The Department will provide appropriate feedback regarding any concerns it may have during any stage of this process. No change was made in the rule.

(192) *Comment:* This entire section needs to be reworked per the guidelines/issues in the main text of Bowker Associates Testimony October 28. All text on standards, transfers, insurance requirements, performance standards, records and notices should be integrated under relevant headings within the mine stage covered under the permit. See main testament of Bowker associates for further details...Tier I Tier II approach not in synch with flow of a mine development. (C-24)

*Response:* The Department believes that the rule is organized, and standards presented, in a clear manner under the appropriate sections. The Department recognizes that the commenter prefers to organize the rule differently, but does not see any increased clarity by organizing the rule as requested. The Department further believes that the use of the Tier I, Tier II approach is an appropriate means to address environmental concerns during development of a mining application. No change was made.

(193) *Comment:* I am in full agreement with the need for baseline sampling and surface and ground water protection as well as reclamation of areas disturbed by advanced exploration. It is important, in my judgment, to give the DEP some flexibility in determining the amount and type of baseline studies needed for advanced exploration since each mining project will be unique and the environmental protection requirements should be tailored to that project and commensurate with the risk. (C-116)

*Response:* As written, the rule requires the submission of a baseline work plan that describes how data will be collected. The details and amount of data required will depend on the size and scope of the advanced exploration project. No changes were made based on this comment.

(194) *Comment:* This site entry provision could be combined with Section 7(B)(14) to minimize duplication. We recommend adding the same language as in Section 7(B)(14) related to safety. (C-41, C-42, C-77)

*Response:* See response to comment # 167.

(195) *Comment:* The "Area of exploration" should be a defined term, since there is a 1-acre impact restriction. This section also needs to clarify the criteria for determining the

calculation of impact areas. For example, what about sequential investigations---work a half-acre area, close it out, move on to another, then another, then another, all within the “area of exploration.” Is it one acre of ACTIVE simultaneous exploration, or one acre cumulative, or within a specified time period? Same question goes for the three-acre limit in Sec 8.D. (C-41, C-42, C-77)

*Response:* The “area of exploration” is similar to the “exploration site” which is a defined term. The one acre is cumulative; therefore you could work ½ acre and move on to another ½ acre site. The total area worked cannot be larger than 1 acre. No change.

(196) *Comment:* We recommend adding clarifying language under advanced exploration that the bulk sample tonnage figure does not include waste rock removed to access the bulk sampling area, and increasing the bulk sampling cutoff to be 10,000 tons before requiring a mining permit. As noted for Section 8.C, the “Area of exploration” should also be a defined term, since there is a 3-acre impact restriction in Section 8.D. Again this section also needs to clarify the criteria for determining the calculation of impact areas, address sequential investigations, and clarify whether the acreage limit is for active simultaneous exploration, or three acres cumulative, or within a specified time period. (C-41, C-42, C-77) (C-116)

*Response:* See responses to comments # 185 and 208.

(197) *Comment:* Some standards in section 7.B are inconsistent with Tier 2 requirements contained in Section 8.D. (C-41, C-42, C-77)

*Response:* The Department has changed Section 7(B) of the rule to allow the maintenance of existing access roads in the exploration section of the rule.

Existing Access ways shall be maintained to ensure that runoff is delivered immediately to stable ditches and vegetated buffer areas. ~~involve little or no recontouring of the land or ditching, and shall not include the addition of gravel or other surfacing materials.~~ Clearing of the vegetative cover shall be limited to the minimum necessary to allow for the movement of equipment.

(198) *Comment:* Section 8.A’s prefatory language has some inconsistent elements. Tier One cannot meet all exploration standards, because (as stated in Section 8.C) advanced exploration allows some things that are prohibited under 7.B, such as road construction under 7.B(1). C-41, C-42, C-77`

*Response:* See response to comment #197.

(199) *Comment:* We assume the intent of the testing facility reference in Section 8’s prefatory paragraph is to eliminate onsite open-air bench testing of bulk samples that could pose a risk of contaminant or leachate spills. To clarify the testing options, we recommend changing this section to read “Any additional testing and characterization must occur offsite or within enclosed, portable facilities.” (C-41, C-42, C-77)

*Response:* A clarification in response to comment #187 was made to state that any additional ‘on-site’ testing must occur within enclosed, portable facilities. That change addresses the concern expressed with this sentence. No change was made.

(200) *Comment:* Overall, we found the proposed Section 8 to be somewhat disorganized and complexly written, with references that confuse and entangle standards, submissions, and statements about standard conditions of approval. We recommend performing a more thorough consistency and language review of this section to clarify the requirements for Applicants. (C-41, C-42, C-77)

*Response:* The Department has reviewed Section 8 and made a number of clarifications.

(201) *Comment:* The commenter suggests the Department add the following: (3) The Department, at Permittee’s expense, shall conduct at least annual, independent inspections by a qualified expert. (C-24)

*Response:* With the application fees at \$500,000, the Department will have sufficient funds to hire 3<sup>rd</sup> party inspectors.

(202) *Comment:* Specific elements should be listed in the submission requirements of section 8(B)b including (a) a log of all drill cores from which required supporting documentation on the work plan is derived (b) a conceptual overall geochemical profile of the deposit and the geologic structures around it (regolith, hanging wall, footwall, deposit (using proper and customary mining terminology) based on representative samples with the GARD guide as a reference standard (c) an ARD generation potential/toxic metals leaching analysis prepared by an accredited and experienced mining consultant and processed by an accredited lab with specific expertise in ABA accounting procedures and analytic standards. (Again GARD guide as the reference standard) (C) an independent accredited consultants evaluation of the ARD generation potential & toxic metals leaching potential of the advanced exploration work plan activities the adequacy of measures to prevent, control, mitigate ARD & toxic metals leaching risks. (d) clarification that all required documentation on the work plan are public documents and may be posted publicly at DEP’s web site and will be provided on request to any party. (C-24)

*Response:* Most of the information identified above is required as part of the mine waste work plan identified in Section 20(E) As with any project, application received by the Department are public documents and can be reviewed by the public.

(203) *Comment:* This section states that advanced exploration applications must comply with Section 9 application requirements, yet Section 9 is very inclusive and intensive in terms of data requirements and process, and includes submission of a complete Mining Plan that would not be available at the bulk sampling stage (see our comments above related to the bulk sampling relationship to feasibility studies and mine plans). Section 8.C(3) and 8.D(1) are in conflict with the first sentence of Section 8.B, by specifying different submission requirements than Section 9 does, focusing on information more appropriate for a bulk

sampling activity. We recommend deleting the first sentence of Section 8.B. (C-41, C-42, C-77)

*Response:* The Department has amended its proposal in section 8(B) to state:

**B. Submission Requirements.** Applications for advanced exploration activities must comply with all applicable requirements in section 9 of this Chapter. A pre-application meeting is required prior to submission to the Department of a new application for any advanced exploration activity pursuant to this Chapter. The Applicant must meet the requirements in section 10 of Rules Concerning the Processing of Applications, 06-096 CMR 2. A pre-submission meeting is required unless waived as provided in 06-096 CMR 2(10)(D).

(204) *Comment:* Need to add that the Departments aim in the advanced exploration phase is to insure that adequate information resources are provided for evaluating the environmental risks of the proposed advanced exploration activities and also to insure that required information which is based on samples and sampling plans meets best practices standards and that any core samples which will be used in future stages of mining development are properly stored and properly logged. GARD Guide as reference for all standards. (C-24)

*Response:* See response to comment # 182.

(205) *Comment:* The commenter generally likes this section. (C-268)

*Response:* The Department recognizes the Commenter's support.

(206) *Comment:* Sections 8.C(1), (2), and (3) appear to be saying the same or similar things. We recommend recrafting to just "submission" requirements and "standards," with listed subsections (like are listed in 8.D). Section 8.C(1) also includes redundant citations. C-41, C-42, C-77

*Response:* The Department elected to not make this clarification change.

(207) *Comment:* What is referred to as "Tier II" is really more akin to the "pre-Feasibility" phase of mine development. It is a movement from one stage to another and any applicant should have been first required to complete Tier I and report on the conclusions/implications. Refined geological model of the site is an important juncture and decision point in mine development, the place where either right or wrong decisions will be made that will have the greatest long term effect on protection of the public interests. This is where the tentative plan for the mine and its closure, informed by data and analysis of both ore assay and environmental risk, are "proofed" and refined. So, again with GARD guide as the reference, Tier II, pre-feasibility, should not be entered until all of the foundations for it have been properly laid and evidenced in Tier I. At This point all Tier I data should be in spread sheet format for use by DEP and its independent expert consultants to independently assess the Tier II work plan and the mine plan and closure plan it is aiming towards. This is the place, at the threshold to Tier II, where corrections need to be identified and made. This entire section

should be redeveloped and reframed with reference to that and to the GRA guide standards. In addition to an adequate application fee to completely defray all direct public costs (personnel, labs facilities etc.) it must be clear that the applicant must pay for an independent expert consultant to review the work plan for each Tier and remain available to the Department through final approval and issuance of the permit for each Tier. (C-24)

*Response:* Some projects may perform general exploration activity, such as drilling, and based on the drilling results; move directly to a more intensive program that includes a decline to bulk sample the deposit as was the case with the Alder Pond Project. To require a company to perform a Tier I project first is not warranted because it will not provide enough information needed to make an economic decision concerning the viability of the deposit. The choice to conduct different types of advanced exploration is a decision made by the exploration company and it is typically based on cost of the project to confirm grades, tonnage and of the deposit. No change.

(208) *Comment:* The entire submission section should be reworked with reference to above. (C-24)

*Response:* See response to comment #207 above. No change was made.

(209) *Comment:* (b) Reactive mine material characterization work plan as described in subsection 20(E) of this Chapter; see prior comments...this whole section is off center and out of alignment with professional best practices within the mining industry. (C-24)

*Response:* The terminology used in this section has been modified. The mine waste characterization program in the rule is modelled after MEND “Draft Acid Rock Drainage Guide, Vol. II, May 1990 prepared by SRK and the British Columbia Acid Mine Drainage Task Force. The classification scheme is the nuts and bolts of the rule, where each rock unit (mine waste) is classified according to risk. The classification scheme dictates the appropriate minimum design standards and financial assurance. This approach outlined in this Section 20(E) of the rule has been used with success in the past projects in adequately characterizing the acid generation potential of mine waste for these projects. No change.

(210) *Comment:* The citations in Section 8.D(1) are incorrect if they mean to reference previous “submission requirements” paragraphs. (C-41, C-42, C-77)

*Response:* The Department has corrected the citations in Section 8(D)(1) to properly reference previous submission requirements. The amended proposal states:

- (1) Submission Requirements. Prior to commencement of any Tier Two advanced exploration activities, an application shall be submitted for review and approval on forms provided by the Department that provides all information necessary and evidence to demonstrate that the proposed activity meets the standards set forth in 38 M.R.S. §490-OO (4) and those listed as applicable under subsections 8(A), ~~8(B)~~ ~~7(C)~~ and 8(C) of this Chapter, plus the following additional submissions:

(211) *Comment:* In Section 8.D.(1)(b), the characterization work plan is already required in Tier 1. (C-41, C-42, C-77)

*Response:* The Department recognizes this redundancy, but is not revising the rule at this time.

### **SUBCHAPTER 3: PERMITS**

(212) *Comment:* The Board should require, consistent with the recommendations in the LD 1302 Majority Report, that mining applicants complete best practices analysis as part of an application. An applicant for a mining operation in a sulfide ore body should include an analysis and description of at least 3 mines in the United States that the applicant believes represent responsible mining operations and demonstrate the use of best management practices for preventing contamination of the groundwater and surface water and other negative impacts on the environment. The analysis must describe the environmental issues present at each of the 3 mines, the practices and technologies used to minimize pollution and environmental impacts and how the applicant will use those best practices in its proposed mining operation in Maine. 10-years issue. C-49, C-82, C-84, C-262, C-19

*Response:* See Comment #174.

(213) *Comment:* With respect to baseline monitoring, the “draft rules contain no information regarding the frequency of baseline characterization sampling or the number of years of sampling required. Frequency should be at least monthly and more likely weekly for groundwater during all times of the year. Three years of background data are necessary.” (C-105)

*Response:* The rule requires that baseline studies must provide sufficient data to allow qualitative and quantitative analysis of the study areas under a baseline work plan approved by the Department. Documentation of groundwater and surface water quality must include at least two years baseline data. No changes were made based on this comment.

(214) *Comment:* With respect to acid mine drainage characterization, Gary Boone stated that, “Acceptable standards of maximum concentration of waste mine-water acidity must be stated in the mining proposal, and made public.” (C-105)

*Response:* Proposed water treatment standards are required as part of an application submittal. If a facility is licensed, the license will reference approved discharge standards. All of this information is public information, with opportunity for public review and comment. No change was made.

(215) *Comment:* The proposed rules currently require all detailed designs and plans to be submitted with an application. However, many details on such plans do not address issues associated with environmental protection. This is an expensive undertaking prior to getting some sense from the MEDEP that the proposed mine meets the fundamental siting and setback criteria. We would suggest a preliminary step be incorporated into the rules so the

MEDEP can confirm that the fundamental siting criteria of the rules are being met. This step would also be useful in terms of designing data collection plans. Once this preliminary approval is obtained then the mine developer can proceed with more confidence and have a sense that they are moving in the right direction with the detailed engineering, analysis, and data collection. (C-1)

*Response:* Subchapter 3 Section 9 contains requirements for pre-application meeting to provide opportunity for the Department to provide an overview of the Act; applicable rules and the permit application process; the fees for metallic mineral mining and the maximum fee for processing an application; and the relationship of the Act and rules to other laws and regulations. No changes were made based on this comment.

### **Third Party Verification**

(216) *Comment:* The commenter recommends that the rules assure that the permitting process, at all points, incorporate review by unbiased experts, including the consideration of a threshold and baseline criteria for determining if an area or site should ever be mined, prior to the mining company's involvement in exploration and sampling. (C-59)

*Response:* The Department's \$500,000 initial processing fee, established in statute at 38 M.R.S. § 352(4-A), along with annual fees from \$20,000 to \$50,000 are intended to provide sufficient resources for all aspects of permitting and monitoring activities, including contracts with third party experts. If the Department determines that it requires expertise in a particular area, it will hire such assistance. No change.

(217) *Comment:* The commenter recommends the rules require third party verification for mine closure cost estimates and ensure closure funds are secure before operation begins. (C-109)

*Response:* The Department has revised its proposal to further clarify that the Department may hire third parties to review all terms and conditions of the financial assurance requirements, including closure cost estimates. The Department's proposal requires that financial assurance be sufficient to address all potential costs (including closure, reclamation and corrective actions) at every stage of the mining operation.

### **9. Application Process Requirements**

(218) *Comment:* A mining application should only be accepted submitted where all the testing and feasibility data can be presented. Our rule does not recognize or provide for that. And an applicant should not be required to submit a complete EIR until it is determined that the mine plan and closure plan evidence, through appropriate ARD/Toxic metals analysis that the mine and closure plans actually have a high probability of achieving that balance between natural resources protection and economic feasibility for the mine developer/investors. Our rule accepts applications before that reasonable probability of balance has been determined. (C-24)

*Response:* The framework law at 38 M.R.S.A. § 490-OO(2) contains the criteria for application process. Subchapter 3 subsection 9.B-L contains the criteria for application contents that are consistent with the framework law. No changes were made based on this comment.

(219) *Comment:* Comment: MINE Application Requirements. See main statement...need separate spec for Underground vs Open pit...needs to make it clear that the mine and closure plans have been “proofed” in appropriate pre-feasibility and that supporting data, including all ARD data needs to support the plan description. This entire section needs to be reworked with reference to GARD guide and in better recognition of the fact that this activity can only be entered via satisfactory completion of Tier 1 and Tier 2 activity. It is often the practice that a mine developer will offer its lease for sale and take over at this stage of completed advanced explorations and address the procedures/processes for those transfers. The continuity into a mining permit (as redefined and reframed per above comments and those in the main statement of Bowker associates) and Tier II activity. On completion of advanced explorations (not as presently defined) there is a second stage, pre-feasibility, involving test pits or shafts, larger drill core, larger volumes of materials. The point isn’t just the tonnage referred to as Tier 2 but that it is a period of “proofing” mine plan and closure plan. A mine development has to recycle through advanced explorations and pre-feasibility before it can make a mine application. Pre-feasibility (what is improperly referred to as Tier 2) is not the same as mining and should not be subject to the same requirements as mining. It should have its own standards, transfer, insurance requirements, ARD phase to assess the more extensive disturbance at its location. But it is not a “mine plan”. No on site beneficiation except in enclosed portable units. It should have its own criteria for establishing temporary and permanent on site storage piles and its own standards/requirements for management of these piles. (Again, which may or may not be “waste”). (C-24)

*Response:* The framework law at 38 M.R.S.A. § 490-OO(2) and subchapter 3 subsection 9.B contain the requirements for application content and framework law at 38 M.R.S.A. § 490-OO(4) and subchapter 3 subsection 11 contain the criteria for permit approval. It is not clear from this comment what exactly is being suggested. The process requires extensive baseline study, monitoring plans, characterization and conditions for transfer of ownership. No changes were made based on this change.

(220) *Comment:* Hydrologic Conditions. [page 20, C(4)(a)] Hydrologic conditions will change as a result of climate change. How will the baseline upper and lower predictive limits for hydrologic conditions be adjusted to account for climatic precipitation changes? (C-15)

*Response:* All hydrologic data from the affected area will be compared to data from a reference location in the vicinity of the operation (See 22(B)(9)) and to other available data, such as U.S. Geological Survey stream gauge data, if determined by the Department to be relevant. Climatic changes should be apparent in the data from reference locations and the affected area, and necessary changes in operation of the site can be required by the Department. No change to the proposed text is necessary.

(221) *Comment:* Based on experience, history and precedent in Maine I suggest a three year minimum period of site evaluation be done for the collection of background data. (C-28)

*Response:* The Department understands the data requirements necessary to address uncertainties in background data and site-specific performance standards due to natural variation in values, sampling times, weather conditions, and other relevant factors; language to clarify the importance of this in assessment of data has been added to Section 22 of the proposed rule. The two-year requirement for background data collection is based on the most current information from jurisdictions with active mining programs, and represents a reasonable compromise between the need to assess the magnitude of natural variation and the maintenance of processing times expected for projects of this magnitude. The Department does not believe that a change to the proposed text is necessary.

(222) *Comment:* The draft rules prohibit perpetual treatment to meet water quality criteria. However, a future mine might utilize passive treatment systems that would be perpetual in nature. For instance, a mine might rely on natural subsurface chemical adsorption and/or precipitation to treat water migrating away from a mine pit. Furthermore, the mine might use a manufactured wetland to treat surface runoff in perpetuity. Therefore, this prohibition eliminates passive treatment that may be in place perpetually. (C-1)

*Response:* Reliance on treatment beyond the 30-year post-closure period, with the exception established for wet mine waste units, is prohibited. The commenter suggests that passive treatment systems be allowed perpetually, and further suggests that manufactured wetlands be allowed. The Department disagrees with this approach due to the uncertain longevity of treatment systems (i.e., manufactured wetlands will need periodic rejuvenation), and is prohibiting reliance on treatment systems (active or passive) in excess of the 30-year post-closure period. No change was made.

(223) *Comment:* We recommend deleting “legal” from Section 9.A(1)(a)(ii) to be clear that a metes and bounds survey description is not required at this early pre-application stage. (C-41, C-42, C-77)

*Response:* The Department agrees with the commenters and has struck the word “legal” from this pre-application requirement.

(224) *Comment:* At this stage in a pre-application process, information regarding title right or interest should not be required as it serves no purpose. (C-41, C-42, C-77)

*Response:* The Department agrees with the commenters and has relocated the title, right or interest submission requirement to the application submission section at subsection 9(B).

(225) *Comment:* At this stage in the exploration process (particularly for Tier One projects, which are subject to Section 9 requirements), some of this information may be proprietary and also subject to National Instrument 43.101 (NI 43.101) reporting limitations. We also recommend the Department clarify the process and policy for handling business confidential

information that may be submitted in a Chapter 200 application, particularly in terms of the Department's process for filing information, and responding to Freedom of Access Law requests. (C-41, C-42, C-77)

*Response:* The Department Standard Operating Procedure for Freedom of Access Law Responses would be followed. This document lays out the Department's responses including for the handling of confidential information. The Freedom of Access Law excepts certain types of records from the definition of "public record" pursuant to 1 M.R.S.A. § 402(3). To the extent that any of the information discussed in this comment would need to be considered confidential, it would typically be under the definition of "trade secret". The applicant would need to review the definition of trade secret and if it believed it qualified, the applicant would need to claim or designate such records as confidential. The Department staff would then handle the information according to the Standard Operating Procedures.

(226) *Comment:* At the bulk sampling stage for advanced exploration, it is unlikely that the applicant will have a complete mining, beneficiation, or reclamation plan available, since the project is still in the exploration and feasibility stage. For a pre-application meeting, conceptual plans should be appropriate. We recommend changing the language of 9.A(1)(a)(vii) to require conceptual plans only. Revise 9(A)(1)(a)(vii) to read "A conceptual advanced exploration plan, if necessary, and a conceptual metallic mineral mining, beneficiation, and reclamation plan." (C-1) (C-41, C-42, C-77)

*Response:* The Department agrees with commenters and has clarified that this pre-application requirement is for a conceptual metallic mineral mining, beneficiation, and reclamation plan.

(227) *Comment:* This is a confusing sentence. This language in Section 9.A(1)(b)(iv) suggests that the pre-application information must go through a submittal, review, and decision process before the pre-application submittal. This needs to be clarified. (C-41, C-42, C-77)

*Response:* The Department has determined that this provision was unintended and not necessary and has deleted it from the rule. The Department inserted a provision to provide an overview of other relevant information to ensure the overview is comprehensive.

(228) *Comment:* 06-096 CMR 2(13) states that the applicant "must hold a public informational meeting prior to filing that application. The purpose of this meeting is for the applicant to inform the public of the project and its anticipated environmental impacts, and to educate the public about the opportunities for public comment to the Department during the application process." This public information meeting can occur (and usually does) after the work plan has been negotiated, after all of the baseline work has been completed, and when an understanding of the potential impacts has been achieved by the Applicant, but prior to filing the permit application. Through this process, Applicants engage the public to provide information and identify concerns, but there is no provision in CMR 2(13) for any public comment on proposed work plans. This provision seems misplaced in the "pre-application meeting" section of the rules. (C-41, C-42, C-77)

*Response:* 06-096 CMR 2(1) states, “An applicant with an application that requires a pre-application meeting pursuant to this section shall hold a public informational meeting in accordance with section 13 of this rule prior to filing the application.” Although there is not an explicit provision in 06-096 CMR 2(13) for public comment on proposed work plans, it does allow public comment on all proposed aspects of the project, including plans and proposals that have not received final Department approval. A public meeting provision under the pre-application section of the rule is an appropriate place to include this requirement. No changes were made based on this comment.

- (229) *Comment:* Section 9.B(1)(f)(ii)’s requirement seems unrealistic, because the key personnel list readily could change over a multi-year period between application preparation and the beginning of exploration. It is particularly unrealistic for a mining permit, considering that closure and post-closure maintenance activities might not begin until a decade or more after the application is submitted. (C-41, C-42, C-77)

*Response:* The framework law at 38 M.R.S.A. § 490-OO(4) and the rule at subchapter 3 subsection 11.A(1) contain the permit approval criteria. One criterion is that the applicant demonstrates the financial capacity and technical ability to develop the project in a manner consistent with applicable state environmental standards and with the provisions of this Chapter and the Act. The Department must have information regarding the personnel who will be involved with site preparation, extraction, beneficiation, reclamation, closure, and post-closure maintenance in order to make this finding. No changes were made based on this comment.

- (230) *Comment:* This subsection requests information from the applicant, its responsible officers, and “related corporations.” Requesting such disclosure information for the applicant and its responsible officers is appropriate, but the idea of disclosure for “related corporations,” which is undefined, and could mean disclosure for corporations the applicant has no control over or that have no involvement in mining, is not contemplated by the language of Mining Act, nor is it contained in other similar provisions of Maine environmental law. See, for example, the civil and criminal disclosure statement requirement set forth in Chapter 400.12 of Maine’s Solid Waste Management Rules. (C-41, C-42, C-77)

*Response:* The application requirements require submission of information regarding the general organizational structure of the applicant, any parent companies, owners, principal stockholders, partners, and joint ventures. This application requirement seeks information from the applicant, any parent companies and related enterprises to assist in making the findings of fact for permit approval. No changes were made as a result of this comment.

- (231) *Comment:* This subsection requests information going back 10 years preceding the application. The civil and criminal disclosure provisions in the DEP’s solid waste rules request information back 5 years. We recommend that this section be revised to be consistent with both the Mining Act (sec. 490-OO.3) and the civil and criminal disclosure provision set forth in Maine’s Solid Waste Rules, which has been a protective regulation addressing this topic for over two decades. Conforming changes should also be made to Section 15.B(4) (Transfer of Permit) on page 41. (C-41, C-42, C-77)

*Response:* The Department has determined that providing a list and explanation of any felony convictions, any criminal convictions of environmental and land use laws, and any civil violations of environmental or land use laws administered by the Department, the State, other states, the United States, or another country, in the 10 years immediately preceding the filing of the application is a reasonable and prudent application requirement to ensure the applicant has demonstrated a long-term compliance history for consideration in making the findings of fact for permit approval. No changes were made as a result of this comment.

(232) *Comment:* We believe Section 9.C should be clarified and parsed into separate subsections describing the process, methods, and submission requirements for the baseline site characterization report. In addition, this section has conflated the baseline characterization report with mention of an environmental impact assessment report and public participation, which is already covered in and should be confined to Sections 9.G and 10. (C-41, C-42, C-77)

*Response:* This section of the rule has been clarified by removing items that relate directly to the baseline work plan and the EIA from section 9(C) and placing them into section 10(A) and 10(B).

(233) *Comment:* With regard to the specific areas to be studied (Mining Area and Affected Area), the proposed language infers that the applicant has defined the mining area and the affected area prior to submission of the work plan, and that the Department has approved those area designations during the pre-application meeting. But the environmental impact assessment (EIA) step is described in Section 9.G as the method through which the affected area is defined, and the EIA is usually completed after the baseline characterization report is completed. This conflict in timing may be a result of inserting an EIA process into the mine permitting process without combining the various review steps and timetables. (C-41, C-42, C-77)

*Response:* The baseline characterization report requires submission of a work plan prior to implementing. Both the baseline characterization report and EIA are application submittal requirements. The commenter is correct that there is an apparent conflict in timing, but the Department believes that the baseline characterization work plan submittal (which must be approved by the Department) is an appropriate time to discuss and evaluate what the preliminary mining areas and affected areas appear to be and become the basis for the baseline characterization work. No change was made.

(234) *Comment:* Section 9.C also discusses “pre-existing data”, but the Chapter does not define it with any parameters concerning timeframes, collection methods, or other technical limitations that would help an Applicant determine the need for supplemental data. We recommend modifying this section to accommodate the possibility that pre-existing data may prove acceptable for characterization, and clarify the step at which pre-existing data is approved by the Department (i.e., at pre-application stage, prior to submission of the baseline work plan.) (C-41, C-42, C-77)

*Response:* Clarification has been added to the rule to state that all pre-existing data must be approved by the Department prior to the approval of the baseline work plan. In addition, pre-existing data is evaluated on a case-by-case basis. Factors typically used in evaluating pre-existing data include: age of data, analytical method used, detection limit, representativeness of data and QA/QC documentation.

(235) *Comment:* In Section 9.C(1), it is not clear when the Department decides what is “necessary.” Again, there needs to be a defined review and approval process for the baseline characterization work plan. (C-41, C-42, C-77)

*Response:* The Department has added language in Section 10(A) and 10(B) that requires the submittal of a baseline work plan prior to the collection of any data and that this process occurs in the pre-application phase.

(236) *Comment:* Section 9.B(3) is redundant with Section 9.B(4). We recommend deleting 9.B(3). (C-41, C-42, C-77)

*Response:* Subchapter 3 subsection 9.B(3) contains requirements to demonstrate evidence of legal authority to conduct business; Subchapter 3 subsection 9.B(4) contains requirements to provide a list of other permits associated with the proposed mine activity. The Department does not find that subsection 9.B(3) is redundant with subsection 9.B(4). No changes were made as a result of this comment.

(237) *Comment:* This provision requires “at least two years” of documentation of groundwater and surface water quality. This is excessive and not required by the Mining Act, nor even the existing mining rules, which require 12 months of data. See also the Solid Waste Rules Chapter 405.2.C, which require only one year of baseline data. One year of baseline data should be sufficient. (C-41, C-42, C-77)

*Response:* Due to the definition of contamination in the framework law, it is important to have enough data collected to determine if there is a statistical change in measured parameters for ground water and surface water. In addition, other states, such as Michigan, have a similar requirement for two years of baseline monitoring for ground water. No changes were made as a result of this comment.

(238) *Comment:* There is no defined duration for this baseline data. We recommend providing one year of site-specific meteorological data, with the option of supplementing site data with the closest NOAA weather station data concerning atmospheric gas composition and atmospheric dust. (C-41, C-42, C-77)

*Response:* The duration and frequency of the baseline data collection is typically defined in the applicant’s proposed work plan which is approved by the Department. In the past, the duration for air quality baseline has been one year. No changes were made as a result of this comment.

(239) *Comment:* As noted above, the proposed language in § 8.B requires an Advanced Exploration project to comply with Section 9 application requirements, but such a project will likely not have a full-scale mining plan available until after the bulk sampling program is finished, metallurgical testing is done, economic analysis and feasibility studies are completed, and a decision is made regarding proceeding with mine design and a mine application. We recommend adopting our recommended modification of § 8.B that will require Advanced Exploration permit applications to only include information stipulated in § 8.C(3) or § 8.D(1).( C-41, C-42, C-77)

*Response:* See response to Comment #203.

(240) Section 9.G(2) and the ensuing list loosely mix “description and documentation” with “assessment”. We recommend shifting assessment-related language to 9.G(3) below. (C-41, C-42, C-77)

*Response:* The Department acknowledges the comment. No changes were made as a result of this comment.

(241) *Comment:* Section 9.G(2)(f)(i) mixes “administrative features” (designated wild and scenic rivers) with natural resources (floodplains, wetlands). We recommend separating the two into different subsections. (C-41, C-42, C-77)

*Response:* The Department acknowledges the comment. No changes were made as a result of this comment.

[NOTE: The numbering of the comments in this location skips comment #'s 242 and 243. These numbers are intentionally left out of this document.]

(244) *Comment:* 38 M.R.S. 490-LL 4.B(1) states: “In making a determination under this paragraph regarding a mining operation’s effects on natural resources regulated by the Natural Resources Protection Act, the department shall apply the same standards applied under the Natural Resources Protection Act.” To ensure compliance with the statute, we recommend including a similar sentence in Section 9.G(3). (C-41, C-42, C-77)

*Response:* This language is contained in statute. The need to reference it in this section of rule is not needed. No change was made to the rule.

(245) *Comment:* The Section 9.G(5) requirement to provide all data to the Department seems overboard and goes beyond NRPA requirements. Does the Department really want all GPS files, all bench sheets for analytical tests, all data forms for wetland soil profiles, etc.? (C-41, C-42, C-77)

*Response:* In order to confirm the validity of the information presented, it is important to evaluate all data so that the Department can make the appropriate findings on an application for a permit to mine. No change was made to the rule.

(246) *Comment:* Section 9.I(5)(ii) intermixes proposed reclamation and closure plan aspects with a worst-case scenario of abandonment of a contaminated site by an Applicant. In addition, the cost scenarios should provide a bracketed estimate that will help inform a reasonable and rational financial assurance requirement, while addressing Department concerns about potential risks. We recommend modifying this section to require separate detailed cost estimates, showing both the costs of successful implementation of a proposed reclamation and closure plan, and the costs of the Department implementing and overseeing investigation, treatment, remediation, reclamation, and closure in the event of a release of contaminants accompanied by abandonment of the project by the Applicant. We also would recommend setting a limit on the treatment activity cost period to 30 years, mirroring the requirements in the Chapter regarding perpetual treatment. (C-41, C-42, C-77)

*Response:* The commenter suggests that the detailed cost estimates be separated into two categories, one where the applicant implements a reclamation and closure plan and one where the Department implements and oversees investigation, treatment, remediation, reclamation, and closure. The commenter suggests that by having these two estimates that somehow it would ensure a more reasonable and rational financial assurance amount. However the purpose of financial assurance, and the detailed cost estimates that back up the amount of financial assurance, is to ensure that the Department has sufficient funds readily available to be able to address issues at a mine site. One of the major issues that are likely to occur at a site is the need to conduct corrective actions. It is very important that the necessary resources are available to take remedial actions and to conduct waste water treatment should it be necessary. By developing two financial estimates, it appears that the commenter intends for these to be used in some manner to reduce the amount of financial assurance. Given the purpose of financial assurance, this approach is inappropriate. Utilizing the lower cost estimate in any manner would ensure that the Department would not have sufficient funds to cover the expenses at the site should the mining company fail to meet its obligations and contamination has resulted. No changes were made to the rule.

Mine site treatment may be necessary for a very long time despite best efforts to design a mine that will not need treatment beyond 30 years. The intent of the financial assurance is to ensure that the State does not need to pay for additional treatment that is needed in excess of 30 years. There are numerous examples of mines nationwide that are expected to require treatment for a very long time, well in excess of 30 years.

(247) *Comment:* Additionally, it is not reasonable to add an additional 30% for oversight costs for the Department for the cost of hiring a third party to complete all tasks. Estimated closure, post-closure and corrective action costs are required from landfill and incinerator owners and operators under Chapter 400.12 of DEP's Solid Waste Management Rules, but there is no requirement to estimate costs for 100 years of treatment or an additional 30% for DEP oversight costs. In this area, the Department should model its requirements after Chapter 400.12 and not impose such burdensome and costly assumptions. (C-41, C-42, C-77)

*Response:* The Department anticipates that should it need to address the issues at a mine site, a contract will be issued to do many of the activities at a site. However staff time to oversee contractors and to monitor the site will still be required. The 30% will cover staff time and

the mandatory state overhead costs, currently at 16.79%. Another state that needed to assume closure and long-term maintenance of a mine site reported indirect costs for third party closure and maintenance well in excess of the proposed 30%, exclusive of the Department's internal overhead.

Mine site treatment may be necessary for a very long time despite best efforts to design a mine that will not need treatment beyond 30 years. The intent of the financial assurance is to ensure that the State does not need to pay for treatment that is excess of 30 years. No changes were made.

(248) *Comment:* Section 9.M is redundant, as it already included in 9.B (4) above. We recommend deleting this section. (C-41, C-42, C-77)

*Response:* The Department agrees with the commenters and has deleted subsection 9(M) from the rule.

## **J. Monitoring Plan**

(249) *Comment:* Change last portion of 9(C) to read “Pre-existing data shall be clearly marked “pre-existing data” within the baseline plan. The Applicant shall discuss the manner and time in which the data were acquired, the analytical or investigative methods used and any other factors relevant to the quality and applicability of the data. The Department shall accept or reject the use of pre-existing data prior to the acceptance of the baseline plan. Pre-existing data must be supplemented with new data collected within the mining area and affected area. The proposed baseline site characterization report must include, if required by the Department, each of the following:” (C-1)

*Response:* The Department acknowledges the comment concerning pre-existing data. No change was made to the rule.

(250) *Comment:* If the baseline report is part of the application, when does the data gathering phase occur and how does Department approve/participate in that plan? Section 8.D. mentions both the baseline characterization work plan and environmental impact assessment. However, it seems that at the time of the Tier Two permit approval, insufficient data would exist to define the breadth of the baseline characterization or impact assessment. (C-1)

*Response:* See Response # 251.

(251) *Comment:* Pre-existing data should be defined. It seems reasonable that previously collected data, that was collected using current and acceptable methods and analyses, not be prejudiced as being “pre-existing” other than to recognize those data were collected before the baseline was executed. (C-1)

*Response:* Baseline data required as at the time of application for a mining permit must include, among other data, documentation of groundwater and surface water quality that includes at least two years baseline data. The Department has added language that requires

an Applicant to submit a baseline work plan to the Department prior to the collection of any baseline data. An Applicant must meet with the Department prior to filing an application to help the Applicant understand the application process, to exchange information, to discuss the application fee, and to review the proposed metallic mineral mining and reclamation operation, and for the Department to provide direction on the process for preparing an application for a permit to mine. This front loaded process ensures the data necessary to decide an application are available at the time an application is filed with the Department.

(252) *Comment:* Two years of data collection will be costly to the project and its schedule. This is good reason for the Department and Applicant to have a meeting of the minds at conclusion of the exploration phase and in advance of economic decision-making. Existing data, if it exists, should be taken advantage of. (C-1)

*Response:* Subchapter 3 section 9(C) provides for the use of pre-existing data, subject to prior review and approval by the Department. No changes were made based on this comment.

(253) *Comment:* The 500-year storm event has been referenced for use in much of the design requirements. This needs to be carefully thought through relative to possible over-sizing of some erosion and sediment control features. The storm frequency design criteria should consistent throughout the regulations and include the 2-, 10-, 25-, 100- and 500-year storm events. (C-1)

*Response:* The Department has included stringent design standards for water management systems throughout the proposed rule. By way of example, the design storm event for run-on/runoff control systems is the 24-hour; 500-year storm event as compared to the more frequently used 24-hour, 100-year storm event. This same larger storm event is required for designing the capacity for the leachate pond. The leachate pond storage capacity also requires the design to be based off of the most recent 15-year historical precipitation database. Both of these design standards are in recognition of the increased frequency of larger precipitation events that have been observed recently.

(254) *Comment:* Allowance should be made for Mining Plan (and Engineering Report) being submitted at a conceptual or preliminary level for permit approval. Applicants should be able to measure Department's and public's position on project prior to committing to full completion for those items. (C-1)

*Response:* Generally pre application meetings with the Department and pre submission meetings with the public help a potential applicant determine general regulatory or public impressions of their project. These help the applicant make further changes before filing an actual application. It is however important that the Department have actual concrete plans to base any regulatory review and decisions upon. Therefore the Department declined to make this change.

## **9A, B, C and D**

(255) *Comment:* The commenter points out that mining plans and records are highly confidential and affect the value of mining companies, many of which are regulated by the federal government such as through the Securities and Exchange Commission. These records could affect stock prices and could be susceptible to things like insider trading. How will DEP keep these records confidential and protect them from disclosure? (C-268)

*Response:* While the Department understands the desire to keep mining information confidential, Maine's Freedom of Access Act, 1 MRSA §400 et seq., provides for the public inspection of records, with only few exceptions. 1 MRSA §408-A states (in relevant part):

Except as otherwise provided by statute, a person has the right to inspect and copy any public record in accordance with this section within a reasonable time of making the request to inspect or copy the public record.

Although there are public records exceptions, these exceptions must be established by the Maine Legislature; the Department cannot promulgate rules that make this (or any other) class of information confidential.

**9 B (1) (g)**

(256) *Comment:* The commenter questions how would the DEP apply this type of information? Would a letter of non

*Response:* The rule requires both up-gradient and down gradient monitoring.

(258) *Comment:* With respect to Subchapter 3 Section 9.C(3), the HBMI commented that the baseline characterization report should “include a detailed MDEP approved Quality Assurance Plan which ensures data is both accurate and representative and standard monitoring methodologies that are transparent. We also make this recommendation with regard to pS2 E. Reactive Mine Material Characterization, p60 B (1) Groundwater, p62 (2) Surface Water and Sediments, p69 B. Post-Closure Maintenance Criteria.” (C-112)

*Response:* The baseline work plan requires a QA/QC plan.

(259) *Comment:* With respect to Subchapter 3 Section 9.C(4)(a) and requirement to determine the upper and lower predictive limits for baseline hydrologic conditions, the HBMI commented that the baseline characterization report should “*require modeling of how these parameters will change as climate changes. This is particularly important given (1) the most serious potential impact from metallic mining, acid mine drainage, is greatly increased with increasing frequency, duration and intensity of storm events and (2) the draft rules allow mining activities in the floodplain.... Here also, the models should be identified and scientifically accepted and the data publically available.*” The HBMI stated that this suggestion is relevant to Subchapter 2 Section B.(9) “*where drill pump stations are only required to have a setback of 25’ from surface water*”; to Subchapter 5 Section 20.C, Erosion and Stormwater Management, which requires excavated and reclaimed areas be designed to “*withstand natural geologic processes and climatic conditions...*”; and to Subchapter 5 Section 20.J(7), which requires that run-on/runoff control systems “*to control peak discharge from at least a 24-hour, 500-year storm.*” (C-112)

*Response:* The Department has utilized the 500-year event for analysis of run-on/runoff control systems and floodplain or flood hazard areas. Data compiled by the Northeast Regional Climate Center for more recent storm events in New York and New England has shown a dramatic increase in stronger precipitation events as compared to data compiled by the National Oceanic and Atmospheric Administration (NOAA). We also note that the design standards for containment structures in section 20.H require designs to address the ‘Probable Maximum Flood’ as this term is defined in Subchapter 1, NNN. Given the size and setting for the types of structures associated with mining activities, coupled with the consequences of failure, the Department believes the 500-year standard is appropriate and addresses the commenters concern. No change was made.

#### **9 C (4) (e)**

(260) *Comment:* The commenter points out that a GW flow numeric model may be appropriate in some circumstances, but in others the conditions may not be appropriate for this type of model. I suggest wording subsection ( e ) to say “As appropriate, provide a groundwater flow model...” 9 D (6) 21 Providing details on how chemical and explosives are stored likely puts

DEP in conflict with the Dept of Homeland Security unless safeguards are in place to protect this information from disclosure. (C-268)

*Response:* Section 9(C)(4)(e) refers to a model or models necessary to assess the overall impact of the mining operation on existing groundwater and surface water hydrology. The experience of the Department and of other jurisdictions is that numerical models provide the level of detail and flexibility necessary to assess these impacts, analyze a range of scenarios, and consider the possible changes over time during development of the site. Certain analytical models or other methods may be appropriate to assess specific areas of the site; the potential for use of these models can be described by the applicant during the pre-application process and, as necessary, during the operation, closure, and post-closure phases of the operation, and the specific applications can be approved or denied by the Department. No change to the proposed text is necessary.

The commenter does not cite specific requirements of the Department of Homeland Security or identify areas where the proposed rule or the requirements of the Office of the State Fire Marshal are in conflict with Department of Homeland Security regulations, and the Department has not identified such requirements. The Department’s intent is to assure that storage and disposal of explosives and explosive waste do not result in adverse impacts on groundwater or surface water, as have been observed in other jurisdictions. No change to the proposed text is necessary.

**9 C (6)**

(261) *Comment:* The commenter asks what if the applicant does not have access to the “affected area”? Does the affected area include impacts from the naturally occurring conditions that have already caused impacts to aquifers, surface waters and the like that pre

treatment systems (i.e., manufactured wetlands will need periodic rejuvenation), and is prohibiting reliance on treatment systems (active or passive) in excess of the 30-year post-closure period. No change was made.

(264) *Comment:* Sec. 9.E- Application submission: The rule provides for all engineering reports and plans, etc., to be signed by a registered engineer. Maine does not have registered engineers. In Maine engineers with their PE status can be licensed- not registered. Further, Maine has very few licensed mining engineers, my PE status as a mining engineer (a separate category in Pennsylvania) transferred to Maine as a civil engineer. This section needs a lot of re-writing to incorporate out-of-state engineers and licensed professional geologists, but it is important to make sure out of state professionals are accountable to Maine licensing. I would suggest wording such as: they should be “licensed professionals who have placed themselves subject to the licensing jurisdiction of the State of Maine.” C-81

*Response:* The Department has revised the proposal to require all such submissions signed by a “qualified professional”, meaning a scientist, engineer, or professional in a technical discipline with sufficient training and experience to enable the individual to make sound professional judgments regarding conducting technical analyses or regarding the design, construction, and operation of regulated units and ancillary structures who, if accreditation is the norm in the profession, is accredited in the State of Maine, or subject to review and approval by the Department, is accredited in another jurisdiction.

(265) *Comment:* These rules only require the application be signed by a “responsible person” (Para. 12.A.12) or to that effect. This is in fact a rather empty premise. The rules should go further and require the basic application itself, i.e., the entire original application, be signed and sealed by a licensed individual- in this case an engineer or geologist, to assure to the degree possible, the entire package makes sense. To the extent a portion of the application is not addressed by a licensed professional, that professional should say so. This is something the Board should seriously consider pushing in many of its rules, but particularly here. C-81

*Response:* Maine’s Board of Licensure of Professional Engineers establishes the rules that Professional Engineers doing business in the State of Maine must adhere to. This Board also establishes rules for non-resident engineers doing business in the State of Maine. Similarly, Maine’s Board of Licensure for Geologists and Soil Scientists establishes rules for those professions doing business in Maine. Adherence to the rules established by these Boards will be sufficient to ensure that application materials prepared by “Qualified Professionals” are appropriately identified and signed within an application submittal. Each of these professional Boards has provisions for ensuring compliance with their requirements. No change was made except for incorrect references to “Registered Professional Engineer” which were modified to “Licensed Professional Engineer”

(266) *Comment:* Revise last two sentences of (E) to read “Calculations and assumptions used in the evaluation and design of the proposed facility must be submitted. Engineering designs, reports, plans and other technical engineering documents must be signed by a qualified professional.” The existing language is written too broadly. Only engineering analyses relative to environmental controls should be necessary for Department use. There will likely

be many engineered structures that present negligible potential for environmental impact. (C-1)

*Response:* The pre-application meeting (Section 9(A) of the rule) is the appropriate venue to discuss application submittal requirements. Potential applicants can identify and discuss items subject to the submittal requirements of this section of the rule that the applicant believes are incidental to the permit process and not necessary for submittal. The Department may concur or not concur with the applicant's position. No change was made.

## **9 F**

(267) *Comment:* The commenter recommends that for the protection of the State the QAP be developed by a third party not related to the mine operations or applicant. (C-268)

*Response:* Development of the QAP by a third party not related to the mine operations or applicant is not necessary to protect the State. Similar to other application materials, the QAP may be developed by a qualified person, whether this is the applicant or a consultant hired by the applicant. For the purposes of approval, the QAP submitted must satisfactorily address all elements of the plan as required by the rules. Implementation of the QAP during construction is required to be performed by qualified professionals that are "separate from the Permittee" (ref. Subchapter 6, section 25, "Inspection and Maintenance." No change was made.

(268) *Comment:* For (F), the Quality Assurance Plan is more focused on actual construction activities than potential environmental impact of the project. Therefore, submittal of this plan should be required for submittal after the project has been approved and before construction begins. (C-1)

*Response:* The QAP is an integral part of the overall design submittal to assure that design specifications and performance requirements will be met. Requiring this to be a future submittal needing review and approval would place an undue burden on Department staff to re-review application submittals at a future date to ensure all critical elements are incorporated into the QAP. No change was made.

## **9 H**

(269) *Comment:* The commenter recommends that the Department also consider the impacts to the environment if the mine were not allowed to proceed. In many areas, if there were millions of pounds of lead, arsenic, copper and the like underground in contact with groundwater and impacting surface waters, the regulators would require full or partial removal as a source control measure be considered. This alternatives analysis should be no different. The EPA guidance on conducting feasibility studies is a good reference document for the factors to be considered, including cost which is not listed in the rule, but should be. (C-268)

*Response:* The alternatives analysis required in section 9(H) of the rule is taken from the framework law. As written, the proposed language allows the Department to evaluate siting alternatives, modified scale of the project and alternative technologies. This information is used to determine potential adverse impacts. In addition, the framework law allows the Department the ability to approve, reject or modify the assessment. No change.

(270) *Comment:* Sec. 9.H requires an alternatives analysis, but fails to indicate what the Department is to do with these alternatives. The Department's review and use of these alternatives should be much more rigorous. Other states have enacted statutes and promulgated rules which deal with the same sorts of geology and ore bodies as are found here. This alternatives analysis is a means by which the Dep't could require the applicant to look afield and bring into the current application the best techniques found elsewhere. The Department could then review the alternatives to see what is appropriate for application here, or how much lenience is appropriate in any given situation. But in all, the Department MUST indicate what it will do with the alternatives analysis See G below regarding reactive materials. C-81

*Response:* The alternative analysis required in section 9(H) of the rule is taken from the framework law. As written, the proposed language allows the Department to evaluate siting alternatives, modified scale of the project and alternative technologies. This information is used to determine potential adverse impacts. In addition, the framework law allows the Department the ability to approve, reject or modify the assessment. No change was made.

(271) *Comment:* For (H), an alternatives assessment will likely be very subjective. Such an analysis could also allow potential unchecked opposition to an otherwise environmentally and economically viable approach to mine development. It would seem reasonable that if the environmental requirements are satisfied, the Department should also be satisfied. SME recommends Section H. Alternatives Analysis be deleted from the Rules. (C-1)

*Response:* The framework law, 38 M.R.S. § 490-00(2)(B), specifically mandates the submittal of an environmental impact assessment and requires the assessment of practicable alternatives to address potential impacts in the mining and affected area.

(272) *Comment:* Under (H)(2) and (4), the terms "Mitigation" and "minimization" are unclear and subject to inconsistency among interested parties. (C-1)

*Response:* The proposed rule in Section 9(H)(6) specifically spells out the types of mitigation measures that can be used to eliminate potential adverse impacts. This list of measures is consistent with other DEP regulatory requirements found in the Natural Resources Protection Act.

(273) *Comment:* Revise (H)(6) to read "Mitigation. Measures that could reasonably eliminate or minimize adverse environmental or economic effect of the proposed project shall be identified, including:" Use of the word "any" in this requirement does not provide manageable limits to scope of analysis. Sociologic mitigation should not be considered with respect to use/non-use of physical controls to meet environmental standards. (C-1)

*Response:* The Department agrees with the Commenter and has removed the language in section 9(H)(6) that references ‘sociological effect’.

## **9 I (5) (ii) 26**

(274) *Comment:* The commenter points out that while the 100 year window may be appropriate for monitoring, etc., the “treatment activities” may be less. The federal Superfund program has no such 100 year treatment activity requirement for a cost estimate, and a number of Superfund sites are older mines with no environmental controls. In the case of a new mine in Maine with substantial environmental and engineering controls this seems excessive as a policy. The rule should have a 100 year minimum unless the applicant can demonstrate that the treatment activity will be completed substantially earlier, and then the window should be the demonstrated life of the treatment activity plus 100%, or a minimum of 30 years. (C-268)

*Response:* Mine site treatment may be necessary for a very long time despite best efforts to design a mine that will not need treatment beyond 30 years. The intent of financial assurance is to ensure that the State does not need to pay for treatment that is in excess of 30 years. There are numerous examples of mines nationwide that are expected to require treatment for a very long time. The federal Superfund program addresses sites where the original owner/operator is not able to address the issues with a site. There is no upfront financial assurance for these bankrupt and abandoned sites. This rule is attempting to prevent Superfund sites. The rule is establishing financial assurance to address problems as opposed to the Superfund program which needs to react to problems after they have been created. No change was made.

(275) *Comment:* With respect to Subchapter 3 Section 9.I(1), the HBMI commented that “this statement should specifically include the potential degradation to surface water quality given the rules allow ground water contamination which has a high likelihood of impacting surface water.” (C-112)

*Response:* The rule already includes a requirement to describe the “potential adverse impacts to natural resources, the environment,...”. The rule was modified however to include in Section 9(I) (5) (ii) and 10(C) (2) (c) the requirement for analysis in the EIA of interconnection of pathways from the proposed mining areas to adjacent groundwater and surface water resources. The financial assurance section of the rule requires the applicant to provide a cost estimate and financial assurance for conducting corrective actions for impacts from any of the pathways identified in the EIA.

(276) *Comment:* With respect to Subchapter 3 Section 9(I)(5)(i), the HBMI commented that, rather than limiting the cost estimate to the first five years of operation, “The plan should be comprehensive, including costs for the estimated life of the mine.” (C-112)

*Response:* The rule was modified to require the full funding of the financial assurance mechanism before any overburden, waste rock, or ore is removed, exposed or processed.

Full funding would include the costs for reclamation, closure, post closure and corrective actions.

(277) *Comment:* With respect to Subchapter 3 Section 9.I(5)(ii), Tom Whittle stated that the requirement to conduct treatment activities for a minimum of 100 years of all expected fluids generate on “does not seem to adequately address the unpredictability of future problems nor the potential need for groundwater treatment in perpetuity when closure plans fail to restore groundwater” and “does not appear to be adequately addressed in [Subchapter 4] Section 17 or [Subchapter 5] Section 24.” (C-53)

*Response:* The Department agrees that it is difficult to predict what might happen at any given mine site. The financial planning for 100 years of treatment is designed to provide some level of assurance that if treatment is needed beyond 30 years that there will be the financial means to continue such treatment. The rule was also modified to provide a cross reference in Section 17 to the 100 years of treatment costs that are contained in section 9(I)(5)(ii). The costs for closure are already included in both Sections 9 (I) and 17.

(278) *Comment:* For (I)(5)(ii), is projecting treatment activity costs for 100 years consistent with mining regulations from other states? According to this Draft, perpetual treatment is prohibited; the above 100-year requirement could be interpreted as being perpetual. (C-1)

*Response:* Section 9 (I) (5) (ii) of the rule is not intended to allow a mine to be designed for perpetual treatment but rather to ensure that there is sufficient funds available for longer term treatment should it be necessary. Other mining states are planning for long term treatment irrespective of what their rules require for upfront financial assurance. The Maine rules are intended to try to reduce the financial liability that might fall to the State should things at a mine not go according to plans (i.e. treatment being completed within the 30 year timeframe).

## **9 K**

(279) *Comment:* The commenter points out that the requirement seems to be that the Contingency plan is to assess accidental releases and events. I recommend that the Contingency Plan also consider intentional acts as well. These should include insider as well as outsider sabotage and intentional releases. (C-268)

*Response:* The rule requires the contingency plan to address potential accidents or failures. The plan must address unintended releases and other risks to the environment and human health regardless of how the release or risk occurred. No changes were made to the rule based on this comment.

(280) *Comment:* With respect to Subchapter 3 Section 9.K(3)(e), the HBMI requested the addition of federally recognized Indian tribes to the list of emergency telephone numbers. (C-112)

*Response:* The HBMI is not an emergency responder and does not have authority to respond to emergencies at a permitted mining operation. No changes were made to the rule based on this comment.

(281) *Comment:* Revise (K) to read “A contingency plan must be included as part of the application. The contingency plan shall include the following” and revise numbering as shown. (C-1)

*Response:* The change was incorporated into section 9(K) of the rule.

## 10. Public and Local Participation

(282) *Comment:* Section 10.A taps many sources of public participation requirements, some of which may conflict. The process for negotiating a work plan with the DEP at the pre-application meeting stage should not be confused with the public informational meeting regarding impact assessment. There is no clearly-defined process for work plan submission and approval. Need to clarify the trigger point for public involvement – i.e., why is the public involved at the work plan stage? DEP Chapter 2 says the public informational meeting is held prior to filing the application, which should be after most of the impact assessment work is done. (C-41, C-42, C-77)

*Response:* Due to the complex nature of metallic mining, it is very important that we front load the process to encourage early public input. By allowing early public comment, the applicant, interested parties and the Department can reach agreement early on and avoid future delays in the processing of an application. In addition, as written, the EIA is drafted by the applicant and it is important to include a public component to reflect potential issue that should be addressed in the EIA.

(283) *Comment:* Section 10.B seems to confuse the baseline work plan with the baseline report. The title of the section refers to the baseline report, but the language focuses on the baseline work plan. (C-41, C-42, C-77)

*Response:* The Department has clarified this section by referencing the baseline work plan.

(284) *Comment:* In the baseline study workplan we believe the public should be invited to identify topics of concern rather than scientific methods, and the Applicant and Department should negotiate an appropriate work plan to address the concerns. The Department has the technical expertise to judge appropriateness of specific study elements to address those concerns. That is the approach used for NRPA, the Site Law, and the Solid Waste Act, and is successful in properly addressing concerns. (C-41, C-42, C-77)

*Response:* It is the Department’s position not to limit the areas for public comment concerning the baseline work plan. The approval of the work plan is at the sole discretion of the Department. No change was made to the rule.

(285) *Comment:* There also is no discussion about when in the course of the process a baseline work plan is to be prepared and submitted to the Department. See our comment regarding section 9.C. (C-41, C-42, C-77)

*Response:* The Department has added language in section 10(B) of the rule that requires the submittal of a baseline work plan prior to the collection of any data and that this process occurs in the pre-application phase.

(285A) *Comment:* Section 10.B(1) has no timetable for the Department review and approval process for the baseline work plan, nor any explanation regarding when or who would make a determination that other information is required. Given seasonal study constraints, the applicant should have a clear timetable and process for work plan approval. (C-1, C-41, C-42, C-77)

*Response:* The only timeframe provided in the rule concerning the baseline work plan is a 30-day public comment period. Based on past experiences, the Department estimates that the approval process for the baseline work plan may take up to 60 days. In regard to who makes the determination concerning the adequacy of the work plan, this is specifically described in Section 10(B) (1) and Section 10(B)(2) of the rule.

(286) *Comment:* We believe Sections 10.B(1) and 10.B(2) are not relevant to Public and Local Participation, and should be relocated to Section 9.C. (Baseline Site Characterization Report). (C-41, C-42, C-77)

*Response:* The requirements in Section 10(B)(1) and 10(B)(2) only apply to the submittal and acceptance of the baseline work plan. The baseline work plan only describes how the data will be collected and describes the proposed sampling locations, sampling frequency and sampling methodology. The Baseline Site Characterization Report required in Section 9(C) is a report that summarizes all the findings of the baseline conditions and is included as part of the application requirement.

(287) *Comment:* Most of Section 10.C(1) and all of Section 10.C(2) should move to Section 9.G - it is the substance of the EIA, not related to public notice and participation. This section has intermixed EIA content requirements with public process. (C-41, C-42, C-77)

*Response:* The requirements in Section 10(C)(1) and 10(C)(2) only apply to the submittal and acceptance of the EIA scoping document. This document is prepared prior to the submittal of an application and is use as a road map to develop the EIA.

(288) *Comment:* All other DEP applications require filing of public notice of intent to file “within 30 days prior to filing.” See DEP Chapter 2(14) (notice required “within 30 days prior to filing”). This subsection requires such notice “at least 30 days prior to filing.” This is a trap for the unwary, and unnecessary, especially in light of all the other public notices announcing an intent to file an application. We recommend the notice of intent to file be carried out in a fashion like all other DEP application public notices: in a manner consistent with DEP Chapter 2(14). (C-41, C-42, C-77)

*Response:* The Department agrees with the Commenter and has changed the language in section 10(E) to reflect the notification requirements according to the Chapter 2 requirements.

(289) *Comment:* There is an inconsistency in one aspect of this section and Section 10.G. Section 10.F provides that “[t]he Department will hold an adjudicatory hearing within a municipality in which an advanced exploration or mining operation may be located or, in the unorganized territory, in a location convenient to the vicinity of the mining operation . . .” (Emphasis added.) Section 10.G(1), however, provides that “[a]n application for intervenor status may not be filed in an application proceeding for a Tier I permit unless the Department decides to hold a public hearing.” Because the Section 10(F) language quoted above states that the Department will hold an adjudicatory hearing within any area in which advanced exploration will occur, it would appear there’s an inconsistency in Section 10(G), which suggests DEP discretion as to whether or not to hold a public hearing on a Tier I advance exploration permit. ). (C-41, C-42, C-77)

*Response:* The Department agrees with the commenter and has deleted the language in section 10(G) to eliminate the inconsistency between these sections of the rule.

(289A) *Comment:* In regards to Intervenor Status and Grants, we recommend requiring “name, address, and qualifications” of the person performing the work, and requiring that testimony must be provided by a qualified professional as defined earlier. Is there any opportunity for the Department to reject a reimbursement based on lack of qualifications? (C-41, C-42, C-77)

*Response:* In Section 10(G)(3) of the rule requires the Department to draft a grant agreement with the municipality or county commissioners after they have requested intervenor status. It is the Department’s position that this agreement process is the appropriate mechanism to formalize the terms and conditions of the grant.

(290) *Comment:* We request inserting a new Section 10.G(8)(f): “Any and all persons requesting or obtaining permission to access the site, at any time, including intervenors and Department personnel, must meet and adhere to the Applicant’s health and safety plan requirements for the site, including demonstration of applicable current MSHA certifications where appropriate. The Applicant may restrict access to specific time periods or site locations from time to time to ensure the health and safety of visitors and minimize potential disruptions to mining or exploration activities.” (C-41, C-42, C-77, C-268)

*Response:* Existing law, 38 MRSA §347-C, allows employees and agents of the Department of Environmental Protection to enter any property at reasonable hours and enter any building with the consent of the property owner, occupant or agent, or pursuant to an administrative search warrant, in order to inspect the property or structure, including the premises of an industrial user of a publicly owned treatment works, and to take samples, inspect records relevant to any regulated activity or conduct tests as appropriate to determine compliance

with any laws administered by the Department or the terms and conditions of any order, regulation, license, permit, approval or decision of the Commissioner or of the Board.

The Federal Mine Safety and Health Act of 1977 requires companies to provide basic awareness of mining hazards and safety procedure to visitors, outside service and other persons who are not employees of the company. No change.

(291) *Comment:* It is more sensible that the public be notified of the Work Plan (not Report) relative to participation. Change “B. Publication and Notice Baseline Site Characterization Report” to “B. Publication and Notice of Baseline Site Characterization Work Plan.” (C-1)

*Response:* The rule has been clarified that the public notice in Section 10(B) is for the baseline work plan.

(292) *Comment:* Change “D. Advanced Notice of Intent to File” to “D. Advanced Notice of Intent to File Mining Permit Application.” (C-1)

*Response:* The Department has added language to clarify that the advance notice in Section 10(D) is part of the application phase of the review process

(293) *Comment:* Change E. Notice of Intent to File to E. Notice of Intent to File Mining Permit Applications. (C-1)

*Response:* See response to previous comment.

(294) *Comment:* Under (B), revise to read “Review and Acceptance of Baseline Characterization Plan. Upon review of the proposed baseline characterization plan and consideration of comments received, the Department shall either accept the baseline characterization plan or require revisions to the plan prior to acceptance,” and “After the baseline characterization plan has been accepted by the Department, the Applicant shall submit to the Department a proposed amendment if:” (C-1)

*Response:* The Department acknowledges the comment, but does not believe the language changes are necessary.

(295) *Comment:* Under (G)(1)(a): It seems unreasonable that an intervener would be allowed to participate in an exploration plan, either Tier One or Tier Two. It is a property owner’s right to understand his/her property and its potential value. The contents of the same property could be of State interest in terms of predicting/managing State economic conditions. SME recommends this part of the Rules be deleted or at a minimum interested parties be notified and copied of any submittals filed for Tier Two permits, but not be granted full intervenor status for exploratory activities. (C-1)

*Response:* The framework law specifically states that advanced exploration is considered mining and specifically states the requirements for intervenor status. See 38 M.R.S. § 490-MM(11). No change.

(296) *Comment:* With respect to public notice, Brenda Commander the stated, “*The rules should require consultation before the initiation of these activities and opportunity for tribal oversight similar to that found in the federal National Historic Preservation Act. I ask that DEP discuss this recommendation in detail with Wabanaki Tribes and their Historic Presentation Offices to ensure the rules are workable and comprehensive.*” (C-7)

*Response:* The Department believes the public notice requirements in the proposed rule are adequate to inform any and all interested parties, including tribes, about an application, and allow those parties a meaningful opportunity to participate in the process. No change.

(297) *Comment:* 7The commenter recommends that the rules include a provision to maintain a schedule of public hearings that allow public input before any mining permits are granted, even for exploration, to ensure that the public is fully informed and involved in any permitting. (C-59)

*Response:* All hearings are subject to the Maine Administrative Procedure Act, and the Department’s Chapter 3 “Rules for Governing the Conduct of Licensing Hearings.” These rules specifically mandate the public notice requirements. The Department disagrees with the need to require a public hearing for exploration. The regulatory framework for exploration and advanced exploration proposed by the Department is based on a graduated scale of lower impact activities such as drilling versus a moderate or higher level of impact (e.g., shafts, tunnels or excavations) with greater land disturbances. Exploration activities are low impact and lower risk activities. No change.

(298) *Comment:* How to provide for the continuity of accountability to the public interests as expressed in rules through the numerous changes in ownership of mineral rights, work plans for major stages, and work teams that naturally occur. (C-24)

*Response:* Permits or approvals that are issued to Applicants are issued to specific entities for specific activities. Any changes in ownership or work plans would need to be handled in accordance with the application processing rules. For example, a transfer application would need to be filed with the Department for any transfer in ownership of the entity that holds the mining permit. No change.

(299) *Comment:* How long each stage of mine development is and how the remote settings of most mines preclude casual presence by state officials such that within each stage of mine development there must be very clearly outlined “pubic interest triggers” that insure that State officials are brought back in when needed in time to effect a review and course change if necessary. (C-24)

*Response:* Subchapter 6, section 25 contains the inspection and maintenance conditions for permitted mines. This section specifically states, “[n]othing in this section limits the ability of the Department to conduct inspections in any area of the property or to require corrective actions to address deficiencies identified in the monitoring data or as a result

of such inspections.” So-called “triggers” are unnecessary given this authority. No changes were made based on this comment.

(300) *Comment:* It would seem to me. Having read many advanced explorations and mining applications for VMS deposits in climates similar to ours that the pre application meeting between DEP and the applicant should also include a pre-application presentation to the community of interest. It would seem to me that this would make the EIR more responsive to community concerns but also could lead to information and considerations left out of the process to that point of pre-application. (C-24)

*Response:* The Department has provided an early opportunity for the public to participate in the process by requiring the submittal of an EIA scoping document, which includes a 45 day public comment period. This scoping document is required prior to the submittal of a mining application to the Department. In addition, the process also allows the Department to hold a public scoping meeting if it is determined to be necessary by the Department.

(301) *Comment:* It is exceedingly hard to see how the public can participate when access to the exceedingly extensive documentation is so difficult. At most, an applicant is only required to leave a copy with the Department and perhaps with a local town office. Right up front, starting with the first notice, an applicant should be required to pay a third party to develop and host a project website, identified as such, where every document is posted in a logical easily-searched format and where those documents find a permanent residence or archive. The documents to be posted should include every notice, every communication, every letter, every email running back and forth between the applicant and the Department, including all baseline and monitoring data. It should reach to all levels and types of information which could be reached with a FOAA request. Given that essentially all documentation generated today starts off in a digital format, it’s hard to justify not doing this based on cost, particularly since storage is exceedingly cheap and the development of mining ventures such as those envisioned by this Rule can run into many millions of dollars. If warranted, the Department could establish a threshold to the requirement if thought necessary- a threshold of one million dollars of development cost might be appropriate. C-81.

*Response:* Although the Department is not mandated by any law or rule, it has been a matter of practice that for large scale projects, the application package and subsequent submittals are posted on the DEP website or an ftp site. In regards to monitoring data, the Maine Environmental and Geographic Analysis Database (EGAD) (formerly known as the Environmental and Groundwater Analysis Database) was originally designed to store site and water quality information and currently includes spatially located data for 39 different types of potential and actual sources of contamination to groundwater in Maine. Access to comprehensive up-to-date analytical data allows DEP to assess trends in regional ground water quality and quantity. See <http://www.maine.gov/dep/maps-data/egad/index.html>

(302) *Comment:* With respect to Subchapter 3, Section 10, Public and Local Participation, Maine Rivers expressed concern “*that the public and local participation process outlined in these rules is too weak. Mining is a topic that has the potential to polarize communities.*”

*Leaving the public out of this process is no way to move forward.” “We find no requirements for the creation or maintenance of a website to keep interested community members and others up to date on application process or mining operations. We find the vague recommendation for an optional Public Scoping Meeting (p. 30) insufficient.” (C-21)*

*Response:* The proposed rule as written provides many opportunities for public participation and public comment throughout the pre-application phase and the application phase. In fact, the proposed rule has more opportunities for public involvement than any other DEP regulatory program.

## **10 C**

(303) *Comment:* The commenter recommends that the EIA consider how removal of subaqueous metallic ore may (over time) improve groundwater and surface water quality compared to being left in place indefinitely. (C-268)

*Response:* The alternatives analysis, which is a component of the EIA, is written broadly such that it could include scenarios as described above. Specifically, the alternative analysis requires the assessment of practicable mitigation measures for the mining operations.

## **10D**

(304) *Comment:* With respect to Subchapter 3 Sections 10.D, Advance Notice of Intent to File, and 10.E, Notice of Intent to File Applications, the HBMI requested the addition of federally recognized Indian tribes to “*the list of entities notified by certified mail of the Intent to File for a mining permit for the purpose of identifying early any potential impacts to natural, historic and cultural resources of importance to Tribes.*” (C-112)

*Response:* To the extent an application contemplates mining on tribal land, then of course the affected tribe will be well aware of it, and separate notice from the Department to the Tribe would not be necessary. To the extent an application contemplates mining in a location that could have a unique effect on tribal interests, the Department believes the notice requirements in the proposed rule are adequate to inform all interested parties, including tribes, about the application, and allow those parties a meaningful opportunity to participate in the process.

## **10E**

(305) *Comment:* The commenter recommends that the reference be to unorganized territories, since the municipal officers should be notified instead of the county in a municipality served by the LUPC. (C-270)

*Response:* This language is taken directly from the Department’s administrative rules. See Chapter 2 Rule

[NOTE: The numbering of the comments in this location skips comment #'s 306, 307, 308, and 309. These numbers are intentionally left out of this document.]

## **10F**

(310) *Comment:* The commenter points out that this section indicates that hearings should be held in the municipality in which the mine will be located. Many of the municipalities that the LUPC serves do not have any significant public meeting space. The Department may want to consider retaining some flexibility in this regard. (C-270)

*Response:* The Department acknowledges the comment, but the language in the rule is taken directly from the framework law. See 38 M.R.S. § 490-OO(6)(C). The rule as written currently provides the Department this flexibility.

## **10G**

(311) *Comment:* With respect to Subchapter 3 Section 10.G, Intervenor Status and Grants, the HBMI requested the addition of federally recognized Indian tribes to “the list of entities eligible to apply for Intervenor Status to ensure to natural, historic and cultural resources of importance to Tribes are identified and any potential negative impacts prevented.” (C-112)

*Response:* The proposed rule allows tribes to apply for intervenor status in the same manner as other interested parties. The provisions governing intervenor status are designed to allow parties with unique interests to participate in the review process and ensure their concerns are taken into account as the law permits.

## **10 G (2)**

(312) *Comment:* The commenter recommends that the number of \$50,000 grants for intervenor’s be limited to a maximum of 5. (C-268)

*Response:* The rule as written only allows the municipality or county commissioners to request intervenor assistance grants.

## **10 G (4)**

(313) *Comment:* The commenter recommends that there be a rate cap for hourly labor to avoid excessive fees, of less than \$200 per hour, indexed to inflation. (C-268)

*Response:* Grants are limited to \$50,000 and are only for municipalities and county commissioners. The grant money may be used at the intervenor’s discretion for the purposes of direct expenses of intervention. It will however be in the intervenor’s interest to utilize the funds judiciously since the funds are not unlimited. In addition Section 10(G) (3) of the rule requires the Department to draft a grant agreement with the municipality or county commissioners after they have requested intervenor status. This agreement process may be an appropriate mechanism to discuss these types of issues.

## **10 G (8)**

(314) *Comment:* The commenter recommends that the intervenor be required to follow all safety protocols and requirements as determined by applicant. This will minimize risks to people unfamiliar with the site from getting into unsafe conditions. (C-268)

*Response:* The Federal Mine Safety and Health Act of 1977 requires companies to provide basic awareness of mining hazards and safety procedure to visitors, outside service and other persons who are not employees of the company. No change was made to the rule.

## 11. Permit Criteria for Approval

(315) *Comment:* Under permit approval, the intent of this prefatory language is not clear with regard to “other permit determinations.” (C-41, C-42, C-77)

*Response:* The Department agrees with the commenters that this language is not clear and has determined it is unnecessary. This clause has been struck from subchapter 3 subsection 11.A.

(316) *Comment:* With respect to the first sentence of subsection 2 (g), the Mining Act, in Section 490-OO.4(H), states as follows: “The mining operation will not unreasonably cause or increase flooding of the area that is altered by the mining operation or adjacent properties or create an unreasonable flood hazard to any structure.” The word “unreasonably” should be inserted in the rule standard as well to be consistent with the statute. (C-41, C-42, C-77)

*Response:* The Department has made the suggested change.

(317) *Comment:* To clarify the status of a current violation review, we recommend rewording Section 11.C to be “...is in violation of any state or federal law, rule, permit, or order that the Department determines in the permit decision may materially affect the ability of the Applicant to satisfy the terms and conditions of a mining permit, unless...” (C-41, C-42, C-77)

*Response:* The language in this section is similar to the language contained in the framework law. See 38 M.R.S. § 490-00(3). No changes were made as a result of this comment.

(318) *Comment:* “History of violation” is not defined and is subjective. Is a “history” two violations? Fifty? Minor violations that have been corrected? (C-41, C-42, C-77)

*Response:* The Department agrees with the commenters and has made the following change to subsection 11(C):

The Department may not issue a mining permit if the Applicant or any person in a position to control the operations of the Applicant has ~~a history of~~ documented violation(s) of state or federal land use or environmental laws demonstrating that the Applicant would not be capable of complying with the terms and conditions of a mining permit.

(319) *Comment:* A “financial test” is not defined. (C-41, C-42, C-77)

*Response:* A financial test refers to a mechanism where an owner or operator demonstrate that they pass a financial ability test through the use of specific regulatory tests designed to

determine if the owner or operator has the financial ability to satisfy their financial obligations. This financial ability test include such things as tests that specify certain total liability to net worth ratios, net working capital and tangible net worth as compared to the costs to be financially assured, and other such regulatory test methods that judge financial assurance ability. For the purposes of this regulation, defaulting on a financial test would be where an Applicant or any person in a position to control the operations of the Applicant has utilized a financial test to assure for their financial obligations and then later failed to continue to meet the financial test requirements without first replacing the financial test with another acceptable financial assurance mechanism to the satisfaction of the applicable regulatory agency.

(320) *Comment:* Mining should be prohibited in floodplains and flood-prone areas because it will not be possible to prevent dissemination of inevitable surface and groundwater contamination in such locations. (C-17) (C-17)

*Response:* The framework law at 38 M.R.S. § 490-OO(4)(H) provides that “[m]ining operations may be placed in flood plains or flood hazard areas as long as they are designed, constructed, operated and reclaimed in a manner that complies with the approval criteria in this subsection and the Natural Resources Protection Act.” The rule is consistent with the statute and no changes have been made to the rule as a result of this comment.

(321) *Comment:* A permit should require identification of best industry practices. Each applicant should be required to include in its permit application an analysis and description of three mines that have applied “best practices” for preventing water pollution, and how those best practices will be applied here in Maine. The draft rules include no such provision. (C-22)

*Response:* See comment #174.

(322) *Comment:* It must have very clear non-negotiable experience and history-based requirements for applicants and permittees, and apply the same to transferees. They must demonstrate successful experience in developing a similar deposit in similar climate to Maine with no default, permit violations, or abandonment. (C-24)

*Response:* Section 9(B)(1) contains the criteria for applicant information that the Department has determined is necessary to make the necessary findings for permit issuance. This includes evidence of the applicant’s ability to undertake the proposed activity, experience, training and compliance history. No changes were made to the rule as a result of this comment.

(323) *Comment:* It must be very clear that permits can only be granted for technologies/methods with proven success in same level of ARD risk as the deposit at issue and in similar climates to the Maine deposit under consideration. It must prohibit on site storage and processing where there is no proven technology method for safe on site storage, ore preparation and beneficiation. (C-24)

*Response:* The framework law at 38 M.R.S. § 490-OO(4) provides the criteria for permit approval, which is incorporated into the rule at subchapter 3 subsection 11.A. The applicant must demonstrate to the Department's satisfaction that it has the technical capacity to develop the proposed mine in a manner consistent with applicable state environmental standards. This includes control of acid rock drainage and containment of contamination associated with onsite storage and processing. This evaluation will be made on a case-by-case basis in consideration of the size, location and type of mining activity proposed. No changes were made to the rule as a result of this comment.

(324) *Comment:* Criteria for Mining Permit Approval. (p. 33-34). Why is only one prohibition repeated here (heap or percolation leaching) rather than all the prohibitions? C-63

*Response:* Section 1(B) of the proposal prohibits two categories of mining activities: 1) activities that are already prohibited by statute; and 2) activities that pose an unreasonable risk to protected natural resources. No changes were made in response to this comment.

(325) *Comment:* Gary Boone stated, "Provisions for storage piles and water management must be clearly specified prior to approval of activity. Methods of containment of introduced chemical materials must be in effect at the commencement of mining."(C-105)

*Response:* The items requested by the commenter are all requirements of the rule. No change was made.

(326) *Comment:* Trout Unlimited commented that the criteria for approval should be rewritten to clarify that surface water quality standards apply within the mining area. Trout Unlimited stated that in each sentence at Subchapter 3, 11(A)(2)(c) and (d), it is not clear whether the modifying phrase "outside the mining area" refers only to "groundwater standards", or to both "groundwater standards" and "surface water quality standards. Trout Unlimited provided the following suggested revisions:

*"(c) There is reasonable assurance that the mining operation will not violate applicable surface water quality standards within each mining activity unit or groundwater standards outside the mining activity areas.*

*(d) The mining operation will not result in direct or indirect discharge that, either by itself or in combination with other discharges, cause or contribute to nonattainment of applicable surface water quality standards within each mining activity unit or groundwater standards outside the mining activity areas."* (C-263)

*Response:* If 11(A)(2)(c) and (d) are considered in combination with 11(A)(2)(e), the Department does not find that the language of this subsection is ambiguous. The proposed term "mining activity areas" is not defined and would introduce confusion between the defined terms "mining activity" and "mining area". No change was made.

## **11 A**

(327) *Comment:* The commenter recommends that the Department consider background conditions when evaluating if groundwater and surface water quality criteria will be met. If

Background conditions do not meet these criteria in a pre

*Response:* The Department has added Section 33 to the rule to address due process related to enforcement orders issued pursuant to this rule and the mining permit.

- (332) *Comment:* Most of the elements in Section 12.A(10) would be addressed in the approved Contingency Plan. We recommend modifying the first sentence to end "...and any fire or explosion at the site, in accordance with the approved Contingency Plan." (C-41, C-42, C-77)

*Response:* The Department has clarified that the reporting requirement includes accidents and failures as specified in the approved Contingency Plan and that reporting of those noncompliance and occurrences must be completed in accordance with the approved Contingency Plan. Noncompliance and occurrence reporting not addressed in the Contingency Plan must comply with the requirements of Section 12(A)(10).

- (333) *Comment:* This subsection requires the permittee to report to DEP any non-compliance, unlawful release of discharge of pollutants within 2 hours of the time the permittee becomes aware of the circumstances. The prior draft allowed such oral reporting within 24 hours, which is more reasonable and certainly timely. We request that the 24-hour requirement be reinstated. (C-41, C-42, C-77)

*Response:* As stated above, the Department has clarified that the reporting requirement includes accidents and failures as specified in the approved Contingency Plan and that reporting of those noncompliance and occurrences must be completed in accordance with the approved Contingency Plan. Noncompliance and occurrence reporting not addressed in the Contingency Plan must comply with the requirements of subsection 12(A)(10). The Department has not revised the rule to provide 24-hour reporting as requested.

- (333) *Comment:* With regard to a discharge of pollutants, if it rains hard during construction and there is runoff, is there still a notice and reporting as noted? Should there be classes of ascending noncompliance/notification/reporting? (C-41, C-42, C-77)

*Response:* The purpose of this section is to report all noncompliance and occurrences that result in unlawful release or discharge of pollutants, not just certain release or discharge events. Erosion and sedimentation associated storm events, if it rises to the level of a permit exceedance or discharge to surface water, is a reportable event. No changes were made to the rule based on this comment.

- (334) *Comment:* In Section 12.A(13), it is important to recognize that "construction and mining activities" would include initial clearing and overburden removal and infrastructure construction, as well as the excavation of ore, processing/beneficiation, and waste rock or tailings pile additions. In addition, the definition of operations encompasses ore processing, reclamation, and maintenance, that may or may not always have contemporaneous ore extraction occurring. This is an important point relative to the later Chapter sections regarding suspension, continuous reclamation, and closure. For example, stockpiling of ore for later beneficiation is a typical step in mining operations, but could involve temporary suspension of the extraction of ore from the ground from time to time while other activities continue. (C-41, C-42, C-77)

*Response:* Section 12(A)(13) applies only to the first four years following issuance of a mining permit and addresses commencement of construction and operation within that timeframe. The commenters suggest that this section applies to activities beyond this four-year window, which it does not. No changes were made as a result of this comment.

- (335) *Comment:* Finally, the first sentence of this subsection is at odds with Section 490-PP(2) of the Mining Act, which requires public notice prior to the Department terminating or requesting surrender of a mining permit as a result of the permittee not commencing construction of mining facilities within four years after the effective date of the mining permit. (C-41, C-42, C-77)

*Response:* The Department agrees with the commenters and has inserted new language in the rule to ensure this section is consistent with the framework law at 38 M.R.S. § 490-PP(2).

### 13. Duration of Permit

- (336) *Comment:* With respect to Subchapter 3 Section 13.D, the HBMI requested that, “*Given the potential for large and irreversible environmental impacts from mining activity in Maine especially regarding acid mine drainage*” the minimum frequency for DEP compliance inspections be increased from annual to quarterly. (C-112)

*Response:* The framework law requires the Department to conduct annual reviews of the mining operation and assess compliance with the terms of the permit. Section 25(B)(4)(a) of the rule requires quarterly inspections of the mining areas and affected areas. In addition this section of rule also mandates that each phase of mine construction must be inspected by qualified professionals. No change.

- (337) *Comment:* Five-year permit renewal. A mining operation will have to renew its solid waste and water discharge licenses/permits on a five-year cycle and each license will be subject to some level of public comment. It may be advantageous to consider holding a joint and coordinated public hearing/comment period for these permits. This will help ensure that the environmental community, the Department and the mining proponent do not spend inordinate time and resources for multiple public hearings/comments involving the same mining project. (C-15)

*Response:* The framework law requires the Department to process all required permits in a coordinated fashion and issue a joint decision (see 38 M.R.S.A §490-OO(5)). No change made.

- (338) *Comment:* We are not sure what the intent of this provision is. What if a permit is issued, mining operations begin within 4 years, but not all phases of the mining operation are undertaken or constructed within 4 years? Why would a permit amendment application need to be filed under such circumstances? Also, this draft language requires completion of construction, rather than commencement, within 4 years. It could take more than 4 years to complete preparation and construction activities before mining of ore begins, especially for

an underground mine. Section 12.A(13) adequately addresses performance of construction. We recommend deleting Section 13.B and referring to 12(A)(13) above. (C-41, C-42, C-77)

*Response:* The intent of this section is to provide the Department the ability to require new technology for mine waste units approved, but not yet constructed. A mining operation may have several mine waste units proposed for different phases of the operation and the construction of these facilities maybe delayed until needed. This provision allows the Department to apply developing technologies that may afford a higher level of environmental protection and in some cases at reduced construction cost. No change.

(339) *Comment:* Among other things, this section provides that if the permittee is in non-compliance and the violation is causing an imminent endangerment, the DEP may require the permittee to cease mining and cease the removal of metals from the site until compliance issues are corrected to the Department's satisfaction. There is no recognition; however, that due process has to be accorded the licensee. Please add provisions indicating that notice and opportunity for hearing must be given prior to such stop work orders. (C-41, C-42, C-77)

*Response:* The Department agrees with the Commenter and has added a new Section 33 to the rule that details the procedural requirements for any enforcement and compliance orders issued under this chapter.

(340) *Comment:* Also, there should be an option to suspend mining rather than cease it, and an option to amend a permit rather than terminate it. We recommend replacing "cease" with "suspend", and modifying the last sentence to be "...including the amendment, termination, or revocation of the permit." (C-41, C-42, C-77)

*Response:* The framework law in 38 M.R.S. § 490-TT specifies the requirements that the Department may take if a violation is causing an imminent endangerment. Section 31 of the rule list the actions available. No changes were made in response to this comment.

#### 14. Termination of Permit

No comments were received

#### 15. Transfer of Permit

(341) *Comment:* Transfers of the mineral rights may occur, especially just at the beginning of Advanced exploration when the deposit has been assayed or at the end of advanced explorations when the mine plan has not proved out or prices have dropped changing the economics of the mine and that the transfer process has to be phases and risk specific holding the existing owner/permittee and their underwriters to all reclamation closure requirements and carefully vetting the transferee against the same standards as would apply to a de novo applicant. (C-24)

*Response:* As with any transfer request, the transferee must demonstrate to the Department's satisfaction that they have the technical ability and financial capacity to comply with all terms and conditions of the mining permit. No change.

(342) *Comment:* It is important that the rule recognize and specifically address this kind of discontinuity, both in the qualifications of a transferee and in the mine and closure plan that guided prior work. An application should not be accepted at all until the applicant has gone through the appropriate advanced explorations and “pre-feasibility phase” appropriate to the mine and closure plan. (C-24)

*Response:* The context of this comment relates to the license transfer associated with the Bald Mountain project back in the 1990’s. As such, it is not appropriate to respond to specific project issues in the basis statement. However, the Department will address general provisions associated with license transfers. The transfer provisions of the rule require, among other items, submittal of changes to the mining operation plan or the mine plan. If a significant change in mining approach was proposed that requires the need for additional data collection and evaluation, this would be identified and addressed during the transfer request. This addresses the commenters concern. No change was made.

(343) *Comment:* To clarify the administrative process we recommend adding at the end of the last sentence “...in accordance with 06-096 CMR 2(21)C(2).” In addition, to clarify the review and approval timetable we recommend adding language regarding the permit transfer process to mirror Sections 16 B and C for amended permits, as follows: “Within 15 working days after receiving a request to transfer a mining permit, the Department shall determine whether the submitted request documentation is administratively complete. The Department shall consider the request for transfer automatically approved within 60 working days of an administratively complete submittal, unless the Department requests additional information or the application is denied.” (C-41, C-42, C-77)

*Response:* The Department is only required to develop processing timeframes for new applications according to 38 M.R.S. § 344-B. No change.

(344) *Comment:* In Sections 15.B(4)(a) and (b), 10 years seems an excessive look-back period. We recommend using 5 years instead as is applied in the Maine Solid Waste Management Rules 06- 096 Chapter 400 12.A. (C-41, C-42, C-77)

*Response:* The Department believes that the 10 year period is appropriate. The commenter did not provide any specific rationale as to why the 5 year period is more appropriate. No change was made.

(345) *Comment:* See also our comments on Section 9.B(1)(9) about the need to delete references to “related corporations.” (C-41, C-42, C-77)

*Response:* The application requirements require submission of information regarding the general organizational structure of the Applicant, any parent companies, owners, principal stockholders, partners, and joint ventures. This application requirement seeks information from the Applicant, any parent companies and related enterprises to assist in making the findings of fact for permit approval. No changes were made as a result of this comment.

(346) *Comment:* Section 15.C’s requirement for a public meeting for all permit transfers seems excessive. A transfer to an affiliated corporation, for example, would be minor. Moreover, in our combined experience, we don’t recall DEP requiring a public meeting on any permit transfer. At a minimum, this should be at the DEP’s discretion, not mandatory in every case. (C-41, C-42, C-77)

*Response:* The Department believes it is appropriate to require a public meeting for a mining permit transfer. No change was made to the rule.

(347) *Comment:* Section 15.C’s requirement of an “inspection” seems redundant, considering the Chapter’s other inspection, monitoring, and reporting requirements through which the Department is already evaluating compliance. We recommend replacing “an inspection” with “a review”. (C-41, C-42, C-77)

*Response:* In order to meet the applicable transfer requirements contained in the framework law, an inspection is needed to determine if any violations exist at the time of the transfer. The law specifically does not allow a transfer unless the Permittee has completed all corrective actions or the person acquiring the mining permit has entered into a written consent agreement to correct all violations.

## 16. Amendment of Permit

(348) *Comment:* In Section 16.A(2), we have not previously seen a provision where the Department can require submission of an amendment request. The Department can modify the permit of its own accord provided it conforms with statutory modification provisions. (C-41, C-42, C-77)

*Response:* The framework law at 38 M.R.S. § 490-PP(5)(B) provides that “The department may require a mining permit to be amended if the department determines that the terms and conditions of the mining permit are not providing reasonable protection of the environment, natural resources or public health and safety.” No changes were made to the rule as a result of this comment.

(349) *Comment:* If an additional information request is made by the Department, how does that affect the 60-day timetable? Is it reset? (C-41, C-42, C-77)

*Response:* If a request for additional information is made by the Department, the 60-day timetable is no longer valid and a timely decision will be rendered after the requested information has been submitted to the Department. No changes were made to the rule as a result of this comment.

(350) *Comment:* This section appears to provide that any amendment application that is not a minor revision requires an adjudicatory public hearing, including all the same public participation and intervenor requirements as the original application. This is excessive. There are certainly modification applications between a minor revision and a major amendment

which should not warrant the need for yet another adjudicatory hearing and intervenor grants in order to review the modification application. (C-41, C-42, C-77)

*Response:* The Department agrees with the commenters that not every amendment rising above a minor revision necessarily requires an adjudicatory public hearing and all of the same public participation and intervenor requirements as the original application. The Department has revised this subsection to specify that an application for permit amendment will be processed in accordance with Rules Concerning the Processing of Applications, 06-096 CMR 2, but that in addition, the Department may require any additional application requirements specified in subchapter 3 subsection 9 of this rule.

#### **SUBCHAPTER 4: FINANCIAL ASSURANCE AND INSURANCE**

(351) *Comment:* The commenter recommends that full funding for reclamation and closure be set aside at the onset to cover a period for at least 30 years because most of these toxins are very persistent in the environment and also in their detrimental health effects. The commenter notes that some Roman era mines are still contaminated and as the US Fish and Wildlife Service noted there are modern mines that will require active treatment in perpetuity. The potentially huge cost of a clean-up must not be shifted to the citizens of Maine. (C-73).

*Response:* Section 17(D)(1)(a) of the rule was modified to require full funding before the Permittee may conduct activities that would remove, expose or process any overburden, waste rock, or ore. In addition the full cost for the next year's activities, including reclamation, closure, post closure and corrective action must be assured on an annual basis prior to reaching this phase of mining.

(352) *Comment:* The Board should require mining applicants to pay 100 percent of financial assurance up front, not fifty percent as the draft rules allow. In addition, the Department should select a qualified third party to verify the amount of financial assurance and ensure that it is sufficient to pay the full costs of mine closure and reclamation. C-19, C-49, C-82, C-84, C-262, C-272

*Response:* The rule was modified to fully fund the financial assurance prior to any overburden, waste rock, or ore being removed, exposed or processed. The Department also clarified the existing provisions for the Department to select a qualified third party to assess the amount of financial assurance or any other aspect of the mining activities. In addition the rule already requires that a qualified individual review the details of the financial assurance and cost estimates. See Section 17(A)(7).

(353) *Comment:* The commenters recommend that the rules require mining companies to put the full cost of reclamation and closure, not just half, into a fund before mine construction starts to ensure that taxpayers will not have to pay cleanup costs. (Commenters #: C-56, C-57, C-58, C-61, C-67, C-69, C-74, C-75, C-78, C-79, C-80, C-82, C-84, C-88, C-89, C-91, C-93, C-94, C-95, C-96, C-97, C-98, C-99, C-100, C-101, C-102, C-103, C-104, C-106, C-107, C-108, C-113, C-114, C-115, C-117, C-118, C-119, C-120, C-122, C-123, C-124, C-125, C-126, C-129, C-130, C-131, C-132, C-133, C-134, C-135, C-137, C-138, C-139, C-140, C-

141, C-142, C-143, C-144, C-145, C-146, C-147, C-148, C-149, C-150, C-151, C-152, C-153, C-154, C-155, C-156, C-158, C-159, C-160, C-161, C-162, C-163, C-164, C-165, C-166, C-167, C-168, C-170, C-171, C-172, C-173, C-174, C-175, C-176, C-178, C-179, C-180, C-181, C-182, C-183, C-184, C-185, C-186, C-187, C-188, C-189, C-190, C-191, C-192, C-193, C-194, C-195, C-196, C-197, C-198, C-200, C-201, C-202, C-203, C-204, C-205, C-206, C-207, C-208, C-210, C-211, C-212, C-213, C-214, C-215, C-216, C-232, C-237, C-257, C-261, C-269).

*Response:* Section 17(D)(1)(a) of the proposal was modified to require full funding before the Permittee may conduct activities that would remove, expose or process any overburden, waste rock, or ore. In addition the full cost for the next year's activities, including reclamation, closure, post closure and corrective action, must be assured on an annual basis prior to reaching this extractive phase of mining.

(354) *Comment:* Sulfide mining poses and acid rock drainage pose significant threats to the environment, especially water quality, fish and other forms of aquatic life. If the mining industry wants the opportunity to mine, they should be required to fully embrace the responsibility to cover the social, environmental and clean-up costs their mining operations create. Mining interests should not get a free lunch on the backs of Maine's environment or taxpayers. In fact, the very fact that the mining industry advocates for anything less than stringent controls, strongly suggests their intent to be less than responsible in protecting the environment and Maine's citizens. C-49

*Response:* The rule was modified in section 17(D)(1)(a) to require full funding of mining costs prior to any removal, exposure, or processing of any overburden, waste rock or ore.

(355) *Comment:* The commenter recommends that the rules assure that Maine taxpayers will not be left to cope with the pollution and other damages done to natural resources: require that mining companies put the full cost of reclamation and closure into a fund before the mine construction starts. (Mining companies' recommendations for change in these rules still leave Maine citizens vulnerable.) (C-59)

*Response:* The rule was modified in section 17(D)(1)(a) to address this comment. Full funding is required before the Permittee may conduct activities that would remove, expose or process any overburden, waste rock or ore. In addition the full cost for the next year's activities, including reclamation, closure, post closure and corrective action must be assured on an annual basis prior to reaching this extractive phase of mining.

[NOTE: The numbering of the comments in this location skips comment #'s 356 through 365. These numbers are intentionally left out of this document.]

(366) *Comment:* The commenter recommends that the rules require from the operator/owner establishment of an escrow account to address any environmental issues left unresolved. (C-109)

*Response:* The rule requires that financial assurance cover among other things reclamation, closure, post closure and corrective actions. In addition the rule was modified in Section 17 to ensure that financial assurance is required for as long as the Department determines that the mining operation and any associated waste material could create an unreasonable threat to public health and safety or the environment.

(367) *Comment:* The commenter suggests that it is not reasonable to ask Maine taxpayers to assume any of the potential burden that might remain after a mining operation closes. The commenter recommends that the rules assure that all risk is borne by the mining company. (C-272)

*Response:* The rule requires the full financial assurance before the Permittee may conduct activities that would remove, expose or process any overburden, waste rock or ore. In addition the rule also requires that any approval of certification of the completion of post closure maintenance of a waste unit by the Department does not release the Permittee from any subsequent correction action requirements or other legal responsibility. Finally, the Department can utilize its legal authorities to require actions from the Permittee to address issues at the mine. The intent of these items collectively is to prevent the Maine taxpayers from assuming the liability for mining activities.

(368) *Comment:* The commenter suggests that the proposed up-front 50% clean-up bond appears to be very lax and exposes the Maine taxpayers to higher than necessary long-term financial risk should a mining operation go bankrupt. Because of this risk, the commenter recommends that the rules include 100% of clean-up security, up-front in escrow verified by an independent 3rd party. (C-271)

*Response:* Section 17(D)(1)(a) of the rule was modified to fully fund the financial assurance prior to any overburden, waste rock or ore being removed, exposed or processed. The rule already contains provisions for the Department to select a qualified third party to assess the amount of financial assurance or any other aspect of the mining activities

(369) *Comment:* The commenter contends only way to assure that these laudable goals are upheld is to require that cash money be set aside in escrow as insurance. Promises made are worthless without real money to back them up. Do I think that mining Bald Mt. in northern Maine is a good idea? What I've seen elsewhere both during and after mining operations leads me to think not. I would be extremely wary of believing anyone's promises of jobs for Mainers. It could end up being just another example of Maine's Natural Resources being stripped out for the benefit of others beyond our borders, and the harvesting of timber up north by Canadian workers is what comes to mind. (C-64)

*Response:* Section 17 of the rule was modified to allow a broader range of securities to fund the trust fund. The rule now allows for sites with Group A and B wastes to use an irrevocable letter of credit with a standby trust fund. Section 17(D)(1)(a) of the rule was also modified to fully fund the financial assurance prior to any overburden, wastes rock or ore being removed, exposed or processed. These modifications are intended to provide assurance that the necessary funds will be available if needed.

(370) *Comment:* Commenter wanted to express that the State may have to pay their share of future remediation, such as the 10% State contribution to the cleanup of the Callahan Mine in Brooksville, ME. The State of Maine has several roles at the Callahan Mine. The State of Maine is a “responsible party”. The State of Maine Department of Transportation is the entity that is acting on behalf of the State of Maine as the responsible party. Approximately 10 % of the clean-up cost is paid for by the State of Maine. It just goes to show that making uninformed decisions and/or using weak regulations NOW could cost Maine a LOT in the future. And it can be a LONG future. Remember how long ago the Callahan mine actually operated, and for how SHORT a period it operated. We are STILL paying for the experience. (C-51) (C-225)

*Response:* The Department acknowledges the risk of future contributions that may be needed should a mine site become a Superfund site or a State Uncontrolled Site. The full funding of the trust fund prior to any overburden, wastes rock or ore being removed, exposed or processed is intended to reduce this risk to the State. The financial health of the institutions acting as a trustee or issuing financial instruments will also be extremely important to safeguard against such financial risks to the State.

(371) *Comment:* Financial Assurance and Insurance. (p. 43) There should be independent third party review of the costs of reclamation to ensure that sufficient funds are available through the various financial assurance mechanisms. C-63

*Response:* The rule already contains provisions for the Department to select a qualified third party to assess the amount of financial assurance or any other aspect of the mining activities. No change.

## 17. Financial Assurance and Insurance Requirements

(372) *Comment:* Full payment and third-party verification of financial assurance should be required. The rules should require the mine operator to deposit the full amount of reclamation and closure costs as financial assurance in a trust prior to mine construction. DEP should also require independent third-party verification of reclamation and closure costs. The draft rules would allow companies to put only half the cost of reclamation and closure into a fund at the start of mine construction and the rest after five years – this is a problem because mining companies can go bankrupt at any time, sticking the taxpayer with the cleanup bill. (C-22)

*Response:* Section 17(D)(1)(a) of the rule was modified to fully fund the financial assurance prior to any overburden, wastes rock or ore being removed, exposed or processed. The rule already contains provisions for the Department to select a qualified third party to assess the amount of financial assurance or any other aspect of the mining activities.

(373) *Comment:* Under (B)(4)(a): SME recommends the cost estimate be prepared by a qualified engineer knowledgeable of closure, reclamation, and post-closure costs and a contingency percentage be added to the estimate for the closure and reclamation design as

proposed. There is no reason to consider options beyond what's proposed in the mine application and plans. (C-1)

*Response:* The Applicant/Permittee must first develop the cost estimates for the various categories. The Department will then use a qualified individual to review these estimates. While engineers often develop cost estimates, other individuals may also be qualified to do so or to review such cost estimates. The rule continues to allow this type of flexibility.

The rule was modified in section 17 to include a 15% contingency factor to account for unexpected expenses.

The rule continues to require that the applicant evaluate alternatives. To ensure that there are sufficient resources to implement any of the alternatives, the highest cost alternative must be included in the financial assurance calculation.

(374) *Comment:* It must have insurance & bonding requirements that are aligned with actual best practices and with products provided through the highest caliber underwriters in the market place. Creative approaches by public agencies and legislatures lead only to fraud, confusion and in the end no financial security to indemnify "we the people" for damages. (C-24)

*Response:* The rule was modified to include a requirement for a high rating for the insurance underwriter, A.M. Best rating of A+ or higher, or an equivalent rating from a nationally recognized insurance rating service. The requirement for a high bond rating was already included in the rule, Standard and Poor's rating of AAA or AA, or an equivalent rating from a national securities rating service. There is currently no specific provision for financial health of the trustee or letter of credit institution. However the letter of credit language was modified to include a provision for the Department to determine that there would be certainty of the resources being available if needed. The Department intends for this provision to be used to assess the financial health of the letter of credit financial institution.

(375) *Comment:* The initial requirements for the financial assurance on reclamation plan should be independently determined by an outside expert representing the state. The surety and the language of the bond should be approved by risk management experts in mining as to form and the entire obligation reviewed as closure approaches to recalibrate the amount of the bond. Reclamation bonds are most like specialized performance bonds. Cash or irrevocable letters of credit are no substitute because only operators who pass the strict underwriting criteria of a quality mining surety also have the capacity to deliver on performance in the event of permittee failure or abandonment. They do all the homework, all the site inspections, all the ongoing review to make sure they will not be in a situation resulting in a demand on the bond. It is much more than a financial instrument. To settle for anything other than this level of surety and to stray from what the industry actually has in place to prevent a demand of the bond is very unwise. Our entire approach to financial assurance needs to be redone from scratch with guidance from qualified outside experts in Mining Risk Management (the insurance and bonding end of mining). Investors will not accept any less than this either. Investors will not be at all happy about their liability exposure under the oddly idiosyncratic

structure we have in our statute and in our rules. Further, insistence on an unambiguous and non-negotiable policy of only allowing a self-sustaining reclamation plan and a process as advocated above where the regulatory authority drives to that from the inception of mine development will serve us well with reclamation bond surety. If we adopt and implement policy and rules as advocated above we will have virtually no post closure risk and we will have the highest caliber surety behind our reclamation goals. (C-24)

*Response:* The rule already allows the Department to hire whatever outside experts it deems necessary in the review of a mining application. This would include the review of the financial assurance or financial estimates. Mining companies with bonds have failed in the past. Requiring a bond is no assurance that the mine will not fail or leave the State with the liability of cleaning up the site. The financial assurance mechanisms allowed in the rules have the highest likelihood of being available to the State should it become necessary for the Department to address issues at a mining site. Investors can always require a reclamation bond if they believe this will provide them with more assurance that a third party is looking at the mining operations. However the Department does not want to be in a position of not being able to obtain the financial resources immediately should it be necessary. Bonds generally do not provide this type of easy access. In addition the rule already requires ongoing inspection of the mining operations to ensure that it is being operated appropriately.

#### **17A. Requirements**

(376) *Comment:* The rules should clarify that the DEP shall hire an independent 3<sup>rd</sup> party entity to validate mine closure costs, and that the mine operator shall establish a stand-by trust to receive the validated financial assurance funds, in full, when they are needed by the state (C-35)

*Response:* The rule already contains provisions for the Department to select a qualified third party to assess the amount of financial assurance or any other aspect of the mining activities. The rule also requires a trust or letter of credit with a standby trust for mining operations that will produce Group A and B waste, those that represent a higher risk. The rule was change to ensure that the language of any trust fund is sufficient to ensure that the money will be available when and if needed by the state. Mining operations that will only produce Group C waste, those wastes that are lower risk, have a wider range of financial assurance options in addition to trust funds. The rule was structured to take the risk of the mining operations into account when deciding which financial assurance mechanisms would be allowable. This balancing of mining operation risk versus the security of the financial mechanism is per the mining statute which states “when determining the appropriate [financial] security to require, the department shall take into consideration the type and location of the mining operation and the type of security that is adequate to protect the State’s financial interest.”

#### **17 B. Coverage of Financial Assurance**

(377) *Comment:* This subsection provides that cost estimates must reflect reclamation, closure and post-closure monitoring costs for each activity utilizing the “highest cost option for all estimates.” This is unreasonable. In what context or process, does the government or a

private entity take the highest bid? The rules should require reasonable cost estimates, not the most extreme. (C-41, C-42, C-77)

*Response:* The intent of financial assurance is to ensure that there is enough money to cover all the mining activities and any liabilities incurred. Costing for the highest alternative is designed to ensure that there will be adequate financial resources available to conduct the necessary actions irrespective of what alternative is chosen or is ultimately necessary in a given situation. No change was made to the rule.

(378) *Comment:* The commenter suggests that the requirement that the highest costs must be used and assume all activities are completed concurrently seems like a high burden that is unrealistic. Not even the Superfund program has such a high burden. (C-268)

*Response:* Costing for the highest alternative is designed to ensure that there will be adequate financial resources available to conduct the necessary actions irrespective of what alternative is chosen or is ultimately necessary in a given situation. Assuming that all activities are completed concurrently also ensures that there is adequate money to complete actions should the mine ceases to operate. If the mine becomes financially troubled or goes through bankruptcy, whatever liabilities have accrued will need to be addressed all at once. There needs to be sufficient financial assets set aside to complete these actions. No change was made to the rule.

(379) *Comment:* The commenter points out that nothing in this section requires the Department to use the financial assurance for the purpose intended. My concern is that in future years, the legislature or others may use it as a means to balance the budget or fund non

(381) *Comment:* We believe the financial assurance mechanisms are well defined in the Act, but the rules are constructed on new criteria of type of waste generated. This standard, to my knowledge, does not occur in solid waste regulation, where a variety of materials are encountered. For Class A and B wastes, acceptable financial instruments are listed as: cash, negotiable bonds, or negotiable certificates of credit. These instruments are essentially cash or cash equivalents and place an undue financial burden on applicants. We think the other standard financial assurance mechanism in the Act will “protect the state’s financial interest” and not create an economic disincentive for economic development of mines in Maine. (C-86)

*Response:* The rule was modified to expand the acceptable financial mechanisms to allow irrevocable letter of credits with a standby trust fund for sites generating Group A and B wastes. The Maine Metallic Mineral Mining Act lists a number of financial assurance mechanisms that the Department may consider. The Act goes on to further state that “when determining the appropriate [financial] security to require, the department shall take into consideration the type and location of the mining operation and the type of security that is adequate to protect the State’s financial interest.” The balancing of mining operation risk versus the security of the financial mechanism is contemplated in the Act. The rule was structured to take the risk of the mining operations into account when deciding which financial assurance mechanisms would be allowable. The rule does this by requiring a trust fund secured with lower risk negotiable property for mining operations that will produce Group A and B waste. These are the mining locations that represent a higher risk to the State’s financial interests. Mining operations that will only produce Group C waste have a wider range of financial assurance forms available to them. These locations are those mining operations that represent a lower risk to the State’s financial interests.

### **17 C. Financial Assurance Mechanisms**

(382) *Comment:* For mining operations producing Group A or B waste, this provision only allows cash or the equivalent of cash (certificates of deposit, negotiable bonds with a rating of AAA or AA) inside of a trust fund. While the use of a trust fund to hold such financial instruments is not objectionable, the limited funding mechanisms for operations generating such wastes are unreasonable and are not consistent with the Mining Act. Section 490-RR (3) of the Act provides that “financial assurance may consist of a surety bond, escrow, cash, certificate of deposit, trust, irrevocable letter of credit issued by a financial institution acceptable to the department, or combination thereof, as long as the department approves the financial assurance as proposed by the applicant.” (C-41, C-42, C-77)

*Response:* The Department agrees with the commenter that a trust fund is an appropriate method to hold the financial assurance instruments. In addition Section 17 of the rule was modified to expand the acceptable financial mechanisms to allow irrevocable letter of credits with a standby trust fund for sites generating Group A and B wastes. The Department believes that the rule is consistent with the Maine Metallic Mining Act. The Act lists a number of financial assurance mechanisms that the Department may consider. The Act goes on to further state that “when determining the appropriate [financial] security to require, the

department shall take into consideration the type and location of the mining operation and the type of security that is adequate to protect the State's financial interest." The balancing of mining operation risk versus the security of the financial mechanism is contemplated in the mining statute. The rule was structured to take the risk of the mining operations into account when deciding which financial assurance mechanisms would be allowable. The rule does this by requiring a trust fund secured with lower risk negotiable property for mining operations that will produce Group A and B waste. These are the mining locations that represent a higher risk to the State's financial interests. Mining operations that will only produce Group C waste have a wider range of financial assurance forms available to them. These locations are those mining operations that represent a lower risk to the State's financial interests.

(383) *Comment:* The rules must require a bond or other financial guarantee large enough upfront to guarantee all remedial work is completed and monitored long term. (C-217)

*Response:* The rule requires that financial assurance cover among other things reclamation, closure, post closure and corrective actions. This includes long term monitoring. In addition Section 17 of the rule was modified to ensure that financial assurance is required for as long as the Department determines that the mining operation and any associated waste material could create an unreasonable threat to public health and safety or the environment. Section 17 of the rule was also modified to require that the trust fund is fully funded before any overburden, wastes rock or ore being removed, exposed or processed.

Prior to any overburden, wastes rock or ore being removed, exposed or processed, the financial assurance must be sufficient to cover the expected costs for the upcoming year, including the costs for reclamation, closure, post closure, and corrective action.

(383A) *Comment:* The rule must provide for adequate funds to be set aside for any clean up problems. (C-80)

*Response:* The rule requires that financial assurance cover among other things reclamation and corrective actions. This includes the funds to clean up problems. In addition Section 17 of the rule was modified to ensure that financial assurance is required for as long as the Department determines that the mining operation and any associated waste material could create an unreasonable threat to public health and safety or the environment.

(384) *Comment:* The rules also should require mining companies to put the full cost of reclamation and closure, not just half, into a fund before mine construction starts. This will help assure that taxpayers will not have to pay cleanup costs. (C-78) (C-160)

*Response:* The rule was modified to address this comment. Full funding is required before the Permittee may conduct activities that remove, expose or process any overburden, wastes rock or ore. In addition the full cost for the next year's activities, including reclamation, closure, post closure and corrective action must be assured on an annual basis prior to reaching the overburden, waste rock or ore extractive phase of mining.

(385) *Comment:* The commenter recommends that the rules allow that any US government issued bond would be acceptable, regardless of the bond rating. (C-268)

*Response:* The rule requires that any governmental bond rating be either AAA or AA as defined by Standard and Poor's or equivalent rating service. Bonds with these ratings are considered prime or high grade bonds and are viewed by the rating service as having an extremely strong to very strong capacity to meet their financial commitment. Bond ratings lower than this level has increasing levels of susceptibility to adverse changes in circumstances and economic conditions. The higher rated bonds are appropriate for assuring the State's interests. No change was made.

#### **17 D. Financial Assurance Administration**

(386) *Comment:* Trout Unlimited commented that "Full financial assurance must be in place before any excavation or disturbance of overburden, [waste] rock or ore." Trout Unlimited suggested the following sentence be added to the end of Subchapter 4, Section 17.D(1)(a): "The trust fund must be fully funded before any overburden, waste rock, or ore is removed, exposed, or processed." (C-263) (C-14)

*Response:* The rule was modified to incorporate this comment.

(387) *Comment:* Bruce Taylor stated that "Full funding for reclamation and closure must be set aside at the onset to cover a period for at least 30 years." (C-73)

*Response:* The rule was modified in Section 17 to fully fund the financial assurance prior to any overburden, waste rock, or ore being removed, exposed or processed.

(388) *Comment:* Maine Conservation Voters say that the rules should require 100% of closure and remediation costs up front and require a third party assessment of those costs (C-218) (C-35) (C-232)

*Response:* The rule was modified in Section 17 to fully fund the financial assurance prior to the removal, exposure or processing of any overburden, waste rock or ore. The rule already allows the Department to hire whatever outside experts it deems necessary in the review of a mining application including any cost estimates associated with the mining activities.

#### **17 D (1) (a)**

(389) *Comment:* The commenter recommends that the Board require mining applicants to pay 100 percent of financial assurance up front, not fifty percent as these draft rules allow. In addition, DEP should select a qualified third party to verify the amount of financial assurance and ensure that it is sufficient to pay the full costs of mine closure and reclamation. (For example, a mine could close after the second year, leaving a high level of contamination with insufficient clean-up funds if the assurance is paid over 5 years - as is now written). The financial stability of the trust fund is also of concern; who will manage the trust fund, and how can we be sure that payments are made? (C-36, C-79, C-272)

*Response:* The rule was modified in Section 17(D)(1)(a) to fully fund the financial assurance prior to the removal, exposure or processing of any overburden, waste rock or ore. The rule already allows the Department to hire whatever outside experts it deems necessary in the review of a mining application including any cost estimates associated with the mining activities. Additionally, the rule already requires for mine sites that will generate Group A and B wastes that a trustee from a financial institution will manage the trust fund. The rule requires the trustee to notify the Department immediately if any payment from the Permittee is not made by the due date.

## **E. Release of Financial Assurance**

17. Insurance Requirement

18. Failure to Maintain Financial Assurance

## **SUBCHAPTER 5: MINING STANDARDS**

(390) *Comment:* Mining Standards. (p. 48) This section should come before the discussions of permit approval, duration, term, etc. C-63

*Response:* The commenter's request to place Subchapter 5 requirements ahead of Subchapter 3 requirements will not add any clarity to the rule. Subchapter 3 lists the requirements for application submittals along with the criteria for approval. Included in the approval criteria is a reference to meeting the standards of Subchapter 5. Subchapter 5 includes the performance and design criteria; placing this detailed information ahead of the general application/permit criteria is not appropriate. No change was made.

## **Groundwater Contamination and Monitoring**

(391) *Comment:* The commenters recommend that the board to adopt stronger standards to ensure groundwater contamination is contained as close to mining activities as possible. The commenters recommend that compliance monitoring wells be situated as close as possible to sources of contamination, and no more than 100 feet away, unless there is proof that placing them farther away will be more protective of the environment. (Commenters #: C-56, C-57, C-58, C-61, C-67, C-69, C-73, C-74, C-75, C-78, C-79, C-82, C-84, C-88, C-89, C-91, C-93, C-94, C-95, C-96, C-97, C-98, C-99, C-100, C-101, C-102, C-103, C-104, C-106, C-107, C-108, C-113, C-114, C-115, C-117, C-118, C-119, C-120, C-122, C-123, C-124, C-125, C-126, C-129, C-130, C-131, C-132, C-133, C-134, C-135, C-137, C-138, C-139, C-140, C-141, C-142, C-143, C-144, C-145, C-146, C-147, C-148, C-149, C-150, C-151, C-152, C-153, C-154, C-155, C-156, C-158, C-159, C-160, C-161, C-162, C-163, C-164, C-165, C-166, C-167, C-168, C-170, C-171, C-172, C-173, C-174, C-175, C-176, C-178, C-179, C-180, C-181, C-182, C-183, C-184, C-185, C-186, C-187, C-188, C-189, C-190, C-191, C-

192, C-193, C-194, C-195, C-196, C-197, C-198, C-200, C-201, C-202, C-203, C-204 , C-205, C-206, C-207, C-208, C-210, C-211, C-212, C-213, C-214, C-215, C-216, C-232, C-237, C-259, C-261 C-269, C-40).

*Response:* The Department has proposed language in Section 22(B)(1)(a) to address this concern.

(392) *Comment:* Even with extreme vigilance, metallic mineral mining *will* contaminate ground and surface waters of Maine. This is because of the three-dimensional nature of the connections between ground and surface waters, and the allowance in these rules for groundwater contamination “in the mining area”. Clearly this type of metal extraction cannot occur without contaminating groundwater, but it is illusory to contend that some magic barrier will prevent that toxic leachate from leaving “the mining area” to contaminate surface water. (C-17)

*Response:* Unregulated discharges to groundwater that, within a mining area, result in failure to meet water quality criteria otherwise required by state law are specifically allowed by the statute for metallic mineral mines (38 MRS 490-OO(4)(D)). The commenter is correct that such groundwater will almost inevitably leave the area where the discharge occurs. The existing rule provides for monitoring at the boundary of the mining areas and also within each mining area as the Department determines is necessary to assess the nature and source of discharges to groundwater within each mining area. Language has been added to Section 22 of the rule clarifying that the Department has authority to require remedial action to control discharges within any mining area if it determines that those discharges are in violation of the permit, the rule, or present a risk of contamination as defined at 38 MRS 490-MM(5).

(393) *Comment:* The commenter recommends that the rule contain clearer requirements for compliance for water quality affected by mines. There aren’t such in the proposed draft. (C-257).

*Response:* The commenter is not specific regarding the lack of clarity in the proposed rule; water-quality compliance requirements in the proposed rule are consistent with those in 38 MRS Article 9. No change is necessary.

(394) *Comment:* The commenter recommends that the rule include provisions that the measurable contaminants of any allowable ground water contamination be contained within the actual mining footprint and that a workable ground and surface water monitoring system be maintained both within the mining footprint and throughout the entire existing surface watershed to record changes in water quality, as well as very clear water quality compliance rules covering the entire existing watershed linked directly to the ground and surface water quality monitoring system on a real-time basis and an immediate and comprehensive water quality treatment system following directly after closure of the mine, (C-157),

*Response:* The proposed rule includes provisions for sampling within any mining area, as determined to be necessary by the Department, as well at other locations within and outside of the affected area. Language has been added to Section 22 of the rule clarifying that the Department may require continuous monitoring of such parameters as it determines to be necessary and at locations where such it determines that such monitoring is appropriate, given the velocity of water flow, potential risk, and other relevant factors.

(395) *Comment:* The commenter recommends that the rules ensure that groundwater, lakes, and streams are fully protected from contamination (several recommendations were offered) both during the mining and after mining is discontinued. (C-59)

*Response:* The Department has revised Section 22 of the rule to clarify requirements for monitoring during development, operation, and the post-closure phases that will allow detection of discharges to groundwater and surface water that will minimize the risk of contamination, and also for the corrective actions necessary to address failure to meet the performance criteria required by the Department while remaining consistent with the requirements of 38 MRS Article 9.

(396) *Comment:* The commenter recommends that the rules establish 100 feet as the distance for compliance wells unless another distance is proven safer. (C-109)

*Response:* The Department has proposed language in Section 22(B)(1)(a) to address this concern.

(397) *Comment:* The commenter points out that experience with metallic mineral mines in other areas of the country shows that only 10-20% of them operate in a way that meets water quality standards, thus careful rules are extremely important. (C-272)

*Response:* The Department has revised Section 22 of the rule to clarify requirements for monitoring during development, operation, and the post-closure phases that will allow detection of discharges to groundwater and surface water that will minimize the risk of contamination, and also for the corrective actions necessary to address failure to meet the performance criteria required by the Department while remaining consistent with the requirements of 38 MRS Article 9.

(398) *Comment:* The commenter questions the requirements for groundwater testing in the vicinity of the mining operation. The commenter recommends that monitoring wells be close enough to the actual mine to reflect contamination. Wherever possible 100 feet seems like a reasonable standard. This is the same language used for landfills. (C-272)

*Response:* The Department has proposed language in Section 22(B)(1)(a) to address this concern.

(399) *Comment:* The commenter takes issue with the rules allowing groundwater contamination throughout the “mining area”, which in the case of Bald Mountain, may be as large as 600

acres. The draft rules allow unlimited groundwater contamination over a wide area. The commenter recommends that the final rules limit groundwater contamination to very small areas very close to mining activities. (C-61)

*Response:* The Department has proposed language in Section 22(B)(1)(a) to address this concern by limiting the default distance for compliance with existing groundwater-quality standards to 100 feet from a potential source, unless the Department determines that a lesser or greater distance is more appropriate.

(400) *Comment:* The commenter recommends that there should be no contamination of groundwater on site, period. Once groundwater is contaminated, it is impossible to contain and capture; thus the mining company should never have cause for having to treat groundwater and then discharge it off site. (C-52)

*Response:* 38 MRS Article 9 specifically provides that, within a mining area, unregulated discharges to groundwater that result in failure to meet water quality criteria otherwise required by state law are specifically allowed by statute for metallic mineral mines (38 MRS 490-OO(4)(D)). The proposed rule may not propose standards inconsistent with the statute, so no change can be made to address this comment.

(401) *Comment:* The commenter points out that groundwater flows naturally into surface water, so contamination of rivers, lakes, and streams is inevitable when polluted groundwater spreads away from the mining site. Acid mine drainage likewise cannot be stopped once it starts, and exploratory drilling always begins the oxidation process. The commenter suggests that monitoring of water quality serves no purpose given the lack of clear water-quality requirements in the draft rules, which allow contamination to continue for months without any corrective action. (C-52)

*Response:* The commenter is not specific regarding the lack of clarity in the proposed rule; water-quality compliance requirements in the proposed rule are consistent with those in 38 MRS Article 9. The Department has revised Section 22 of the proposed rule to clarify that it may require different monitoring frequencies and that it may require applicants to take corrective actions, if it determines that data or site conditions indicate that such actions are necessary in order to prevent or address contamination as defined at 38 MRS 490-MM(5). No additional changes are necessary.

(402) *Comment:* Groundwater contamination should be limited to areas very close to mining activities in a manner that avoids widespread groundwater and surface water contamination. The Board should strengthen the rules' requirements to keep groundwater contamination to a minimum by adopting the following language from Section 11 (3-A) of the majority report on LD 1302 from the last legislative session:

**Minimizing groundwater contamination.** A permittee shall minimize the contamination of groundwater to the greatest extent practicable. The department shall require that compliance monitoring be located as close as physically practicable to, but not more than 100 feet from, the activity unit being monitored for groundwater contamination. The department may approve an alternative water monitoring location

only if the operator demonstrates the location is protective of the environment and public health and safety and a closer location is not feasible or effective.

The 100 foot requirement is consistent with the Department's Chapter 405 (title) rules, and provides a default requirement that places the burden upon the applicant to prove that a greater distance is appropriate. Unlike the Department's Chapter 405, the draft proposal allows the applicant to propose the location of monitoring wells and places the burden of proof upon the Department if it wants to require that the wells be located closer to the mining area.( C-49, C-82, C-84, C-262,C-19)

*Response:* The Department has proposed language in Section 22(B)(1)(a) to address this concern by limiting the default distance for compliance with existing groundwater-quality standards to 100 feet from a potential source, unless the Department determines that a lesser or greater distance is more appropriate. The Department has revised Section 22 of the rule to clarify the requirements for monitoring during development, operation, and the post-closure phases that will allow detection of discharges to groundwater and surface water that will minimize the risk of contamination, and also for the corrective actions necessary to address failure to meet the performance criteria. These changes clarify the ability of the Department to require the applicant or operator to establish such monitoring locations and procedures as the Department finds necessary to establish baseline conditions, require corrective actions, or identify and address contamination as defined at 38 MRS 490-MM(5) or failure to meet other relevant performance criteria.

(403) *Comment:* The baseline monitoring requirements are insufficient in that they do not specify either the frequency of sampling required or the required sampling parameters. Maine's existing Chapter 200 establishes an appropriate and detailed list of sampling parameters as follows: Technical Standards for Baseline Monitoring Plan: Testing is required for (1) metallic elements for which maximum contaminant levels (MCLs) have been established by the U.S. Environmental Protection Agency (EPA) under the Safe Drinking Water Act, or for which applicable New Source Performance Standards for Ore Mining and Dressing Point Source Categories have been established pursuant to 40 CFR 440; and (2) for any toxics for which criteria have been developed by EPA under Section 304(a) of the Clean Water Act or by the Department under 38 M.R.S.A. §420, and other indicators that could adversely impact water quality. In addition, the Department and/or Commission may require testing which includes, but is not limited to, the following:

alkalinity

aluminum

ammonia

antimony

arsenic

barium

beryllium

biochemical oxygen demand

boron

bicarbonates

cadmium

mercury

molybdenum

nickel

nitrate-nitrite

pH

phenols

potassium

radium 226 and 228

selenium

silver

calcium  
carbonates  
cation-anion balance  
chemical oxygen demand  
chloride  
chromium  
conductivity  
copper  
cyanide  
dissolved oxygen  
fluoride  
hardness  
iron  
lead  
manganese  
(C-262)

silica  
sodium  
sulfate  
sulfide  
temperature  
thallium  
total dissolved solids  
total Kjeldahl nitrogen  
total organic carbon  
total petroleum hydrocarbons  
total phosphorus  
total suspended solids  
vanadium  
volatile organic compounds  
zinc

*Response:* Under the rule as proposed, the Department may require any or all of these parameters, or others, if it determines that it is necessary to include them in the baseline assessment, operational monitoring, or any other monitoring required by the Department; see, for example, Sections 9(C)(1), 22(A)(2), and 22(B)(7). The initial list of parameters will be determined by the Department in the process of defining the baseline work plan and will be refined based on the results of the baseline monitoring and the nature of risk to the resources for which the Department determines monitoring is necessary. The Department has revised Section 22 of the rule to clarify that it has the authority to require changes to the monitoring program, including changes to frequency of sampling and the list of parameters, if it determines that such changes are necessary to meet the requirements of 38 MRS Article 9 and other applicable requirements.

(404) *Comment:* The new draft rules should include at least these same requirements to ensure compliance with water quality standards, drinking water standards and federal performance standards for mining. The omission of specific testing requirements is particularly alarming with respect to radioactive elements. For example, if uranium or thorium are present in an ore body, removing such an ore would likely constitute a violation of the Maine statutory ban on mining for these metals. In addition, failure to test for radioactive elements could result in serious environmental problems, such as the spreading of radioactive dust and the contamination of ground and surface waters with radioactive material. The rules should also specify the frequency of required baseline sampling. The current draft says nothing about sampling frequency. NRCM believes sampling should be conducted weekly for surface and groundwater, and take place during all seasons. Macroinvertebrate sampling could be conducted during summer months using DEP's existing methodology. Also, baseline sampling should be conducted for three years. (C-262)

*Response:* See comment above. No change was made to the rule.

(405) *Comment:* Groundwater and surface water compliance monitoring frequencies are insufficient, and the requirement that two exceedence standards occur prior to the initiation of corrective action is unacceptable. The draft rules require only quarterly monitoring. In combination with the requirements that corrective action be taken only after two exceedences, means that a mine could contaminate groundwater for six months before any corrective action is taken. Once monitoring wells are established, sampling groundwater is actually easy. A company could utilize a pH probe, or even continuous pH monitors to sample acidity at multiple wells on a daily basis. Analysis of weekly samples for metals of concern would cost several hundred dollars per metal, so weekly sampling and analysis should also be required. For surface water, the draft proposal calls for monitoring on a monthly basis. Again, combined with the requirement that an operator only take corrective action after two exceedences, a mine could violate surface water standards for two months before any corrective action is taken. As with groundwater, an operator could easily monitor pH on a daily or continuous basis. Sampling and analysis for metals should be required on a weekly basis, as for groundwater. In addition, the Department should require three years baseline characterization. (C-262)

*Response:* The Department believes that existing language in the rule, together with changes it has proposed to Section 22 of the rule, allow it to require the applicant or operator to establish such monitoring locations and procedures, including sampling frequencies appropriate to the medium and locations, as the Department finds necessary to establish baseline conditions, require corrective actions, or identify contamination (as defined at 38 M.R.S. §490-MM(5)). These changes also clarify that the Department may use criteria other than two consecutive noncompliance results to require an operator to undertake corrective actions. No additional changes made to the rule.

(406) *Comment:* Sulfide rock deposits are of particular interest for mining in Maine, and these deposits have the highest potential to produce acid mine drainage, some of which can last for hundreds, if not thousand so f years. A robust approach to managing this potential risk would presumably provide a stable containment without the need for human management for at least several hundred years, if not longer. However, the draft rules do not include aggressive requirements for long term control and management of surface and groundwater; it may well be that such long term control is simply not feasible on a very large open pit sulfide mine. The draft rules contain requirements that containment structures for reactive wastes be lined with a thick synthetic liner and several feet of clay-like material. It is unlikely that either a thick synthetic liner or a 2 foot thickness of clay-like material would necessarily survive, functionally intact for 200 years (much less much longer periods) in the rigorous physical and chemical conditions under a reactive mine waste pile. (C-43)

*Response:* The Department has included stringent design standards for water management systems throughout the proposed rule. By way of example, the design storm event for run-on/runoff control systems is the 24-hour; 500-year storm event as compared to the more frequently used 24-hour, 100-year storm event. This same larger storm event is required for designing the capacity for the leachate pond. The leachate pond storage capacity also requires the design to be based off of the most recent 15-year historical precipitation database. Both of these design standards are in recognition of the increased frequency of

larger precipitation events that have been observed recently. In addition, containment structures are also required to "...be designed, constructed, and maintained to prevent embankment overtopping, with adequate freeboard, during the Probable Maximum Flood (PMF) precipitation and snowmelt event considering maximum wind and fetch." The PMF is defined in Subchapter 1, section 2, NNN, "...to be the most severe that are reasonably possible at a particular location..." These two design examples are indicative of the robust approach that the commenter desires.

For this rule, the Department has selected the most chemically-resistant geomembrane (High Density Polyethylene – HDPE) for inclusion in the liner system. HDPE is commonly used to line landfills, whether for hazardous or solid waste. The Geosynthetic Institute (GSI) performs testing on all types of geosynthetic materials, frequently publishing test information, guidance documents, material specifications, and quality assurance information. GSI White Paper #6 addresses the lifetime prediction for HDPE geomembranes under various conditions. Certainly, as the commenter points out, the environmental conditions are important factors. As demonstrated by GSI's results, temperature is one of the most important factors in determining the 'half-life' of the geomembrane. Half-life is defined as the time it takes for a material to reach a 50% reduction in a specific design property. At the lower temperatures expected in a mine waste unit application the expected half-life for the HDPE component of the liner system is expected to be in excess of 400 years. At this time, the HDPE will continue to function; it simply has reached an arbitrarily defined service life, namely its half-life. Also important to remember is that the HDPE material is a component of the liner system. There is a compacted, 2' thick, low permeability soil layer directly beneath the HDPE material. Should there be a long-term issue with the HDPE component of the liner system the soil layer will still be effective in limiting leakage through the liner.

(407) *Comment:* A robust approach to managing surface and groundwater at a mining site would plan for significant future changes in rainfall. It is now predicted (and actually occurring) that there will be more intense rain events as a result of climate change. "100 year and 500 year" events occur much more frequently. Colorado had a "1000 year" event this fall. In many cases these events are related to moister atmosphere and blocking weather patterns of the type that are predicted to increase as a result of climate change. Extreme rain events can relate directly to the generation of acid mine drainage and to the failure of mine waste containment structures. The draft rules do not seem to take into account the predicted (and un-predicted ()) changes in precipitation events due to climate change over the next century. C-43

*Response:* The commenter addresses two main themes within this comment, namely 1) aggressive requirements for long term control and management of surface and groundwater, and 2) long term survivability of the geosynthetic components within the containment structure design.

1) The Department has included stringent design standards for water management systems throughout the proposed rule. By way of example, the design storm event for run-on/runoff control systems is the 24-hour; 500-year storm event as compared to the more

frequently used 24-hour, 100-year storm event. This same larger storm event is required for designing the capacity for the leachate pond. The leachate pond storage capacity also requires the design to be based off of the most recent 15-year historical precipitation database. Both of these design standards are in recognition of the increased frequency of larger precipitation events that have been observed recently. In addition, containment structures are also required to "...be designed, constructed, and maintained to prevent embankment overtopping, with adequate freeboard, during the Probable Maximum Flood (PMF) precipitation and snowmelt event considering maximum wind and fetch." The PMF is defined in Subchapter 1, section 2, NNN, "...to be the most severe that are reasonably possible at a particular location..." These two design examples are indicative of the robust approach that the commenter desires.

- 2) For this rule, the Department has selected the most chemically-resistant geomembrane (High Density Polyethylene – HDPE) for inclusion in the liner system. HDPE is commonly used to line landfills, whether for hazardous or solid waste. The Geosynthetic Institute (GSI) performs testing on all types of geosynthetic materials, frequently publishing test information, guidance documents, material specifications, and quality assurance information. GSI White Paper #6 addresses the lifetime prediction for HDPE geomembranes under various conditions. Certainly, as the commenter points out, the environmental conditions are important factors. As demonstrated by GSI's results, temperature is one of the most important factors in determining the 'half-life' of the geomembrane. Half-life is defined as the time it takes for a material to reach a 50% reduction in a specific design property. At the lower temperatures expected in a mine waste unit application the expected half-life for the HDPE component of the liner system is expected to be in excess of 400 years. At this time, the HDPE will continue to function; it simply has reached an arbitrarily defined service life, namely its half-life. Also important to remember is that the HDPE material is a component of the liner system. There is a compacted, 2' thick, low permeability soil layer directly beneath the HDPE material. Should there be a long-term issue with the HDPE component of the liner system the soil layer will still be effective in limiting leakage through the liner.

No change was made.

## **Wastewater Treatment**

- (408) *Comment:* The commenters suggest that the rules not permit any mines that are not designed to limit wastewater treatment to 10 years after mine closure. (Commenters #: C-22, C-24, C-35, C-36, C-52, C-56, C-57, C-58, C-59, C-61, C-67, C-69, C-74, C-75, C-78, C-79, C-82, C-84, C-88, C-89, C-91, C-93, C-94, C-95, C-96, C-97, C-98, C-99, C-100, C-101, C-102, C-103, C-104, C-106, C-107, C-108, C-109, C-113, C-114, C-115, C-117, C-118, C-119, C-120, C-122, C-123, C-124, C-125, C-126, C-129, C-130, C-131, C-132, C-133, C-134, C-135, C-137, C-138, C-139, C-140, C-141, C-142, C-143, C-144, C-145, C-146, C-147, C-148, C-149, C-150, C-151, C-152, C-153, C-154, C-155, C-156, C-158, C-159, C-160, C-161, C-162, C-163, C-164, C-165, C-166, C-167, C-168, C-170, C-171, C-172, C-173, C-174, C-175, C-176, C-178, C-179, C-180, C-181, C-182, C-183, C-184, C-185, C-186, C-187, C-188, C-189, C-190, C-191, C-192, C-193, C-194, C-195, C-196, C-197, C-

198, C-200, C-201, C-202, C-203, C-204 , C-205, C-206, C-207, C-208, C-210, C-211, C-212, C-213, C-214, C-215, C-216, C-218, C-220, C-232, C-237, C-257, C-261, C-269, C-271, C-272, C-40).

*Response:* The request to modify the time limit for wastewater treatment to 10 years is not based on science, and appears to be an arbitrarily selected time frame. The Department agrees with the commenters that the time frame for ensuring all of the performance standards are met should be as quick as possible, and has established provisions within the rule to accomplish this, such as development of a mine plan with contemporaneous reclamation requirements. However, the Department is not aware of any mine sites that have successfully demonstrated completion of post-closure water treatment within a 10-year period. In addition, adoption of the 10-year provision would eliminate a proven methodology of preventing acid mine drainage, namely a ‘wet cover’. Elimination of this option by selection of an arbitrary time period will not enhance protection of the environment. Clarification of how wet covers interact with the length of post-closure has been included in Section 24 of the rule.

(409) *Comment:* The commenter recommends that the rule require immediate identification and cleanup of contaminated water. (C-88)

*Response:* The Department has revised Section 22 of the rule to clarify the compliance requirements and the connection between these requirements and corrective action plans described in Section 30. The rule already required the Permittee to take immediate action to correct a violation including to any water quality issues. By adding site deterioration, the Permittee would be required to address water quality issues as soon as it became apparent that a problem was developing. The intent of this provision is to prevent water quality issues from reaching the point of a violation.

(410) *Comment:* The commenter suggests that the new draft rules allowing for more water contamination over a wider area is unacceptable. Bodies of water are far more susceptible to contamination under the draft rules. The commenter question why the draft rules allow for 30 years to treat water, when during such a long period the mining companies could go bankrupt shifting the cost of clean-up to the taxpayer. (C-111)

*Response:* The Department has revised Section 22 of the rule to clarify the compliance requirements and the connection between these requirements and corrective action plans described in Section 30. The rule already required the Permittee to take immediate action to correct a violation including to any water quality issues. By adding site deterioration, the Permittee would be required to address water quality issues as soon as it became apparent that a problem was developing. The intent of this provision is to prevent water quality issues from reaching the point of a violation. Note that the Department may extend post-closure monitoring and may alter post-closure as it determines to be necessary (Section 24(B)(3)(b)) in order to maintain compliance with performance standards and permit conditions.

(411) *Comment:* The commenter suggests that if the water will be totally contained or drinkable from the discharge pipe as J D Irving said, then there should be no reason at all for

loosening any regulations prior to application and at least the nature of the mine and details of the operation and treatment process should be revealed now to the public as they surely have some idea what they plan to do. This lack of transparency as well as recent disclosure of documents from DEP files showing pollution concerns from earlier studies give any reasonable person strong reason to suspect something underhanded. I know that at least some DEP employees have been told to “stay out of this” and not voice their concerns. They feel their careers at risk. (C-90)

*Response:* The Department acknowledges the comment. No change was made.

## **19. General Provisions**

(412) *Comment:* We recommend changing the last sentence of Section 19.B to read “...measures, and the temporary suspension of all mining activity until the performance standard is achieved.” (C-41, C-42, C-77)

*Response:* The Department has clarified this section to include the provisions outlined in Subchapter 8 of this rule.

(413) *Comment:* In Section 19F, we recommend replacing “licensed professionals” with “qualified professionals” as is already provided in Section 19G. ( C-41, C-42, C-77)

*Response:* The Department has replaced the term “licensed professional” with “qualified professional”, which is a defined term in the proposed rule.

(414) *Comment:* This subsection allows the Department to retain an independent reviewer to assist in review of application documents and other submissions and provides that the cost of hiring an independent reviewer must be paid by the applicant pursuant to 38 M.R.S. § 490-OO(2)(A). That section of the Mining Act, however, provides that all costs incurred by the Department in processing an application must be paid for by the applicant. It does not state, however, that the Department may retain an independent reviewer as part of its review of the application and have the applicant incur those costs. Any independent reviewer should be hired only with the consent of the applicant pursuant to the provisions and explicit standards set forth in 38 M.R.S. § 344-A. This is the statutory section that should be cited here. (C-41, C-42, C-77)

*Response:* The Department’s \$500,000 initial processing fee, established in statute at 38 M.R.S. § 352(4-A), along with annual fees from \$20,000 to \$50,000 are intended to provide sufficient resources for all aspects of permitting and monitoring activities, including contracts with third party experts. If the Department determines that it requires expertise in a particular area, it will hire such assistance. The Department does not need the concurrence of the Applicant to utilize the processing or annual fee to hire a third party reviewer. The rule was changed to track the statutory language of 38 M.R.S.A. § 490-OO (2).

(415) *Comment:* LD1853 directed the DEP to write the new mining rules as “performance-based to the extent feasible”, while allowing “a permittee to propose an alternate means of compliance that achieves equivalent environmental performance”. The new rules reflect this directive, but do not adequately explain what a “performance-based standard” actually is. The rules also allow a developer to propose “an alternate means of compliance that achieves the equivalent performance”, seemingly without DEP approval (Subchapter 5, Section 19.B). This provision is vague, and does not clearly identify which standards must be met or how the developer is expected to meet them. (C-220)

*Response:* The alternatives reference within this section is to Subchapter 5, Section 21(B), ‘Alternative Design Process’. This section is very specific to lay out a process for evaluating alternatives to the minimum design standards of this section. By way of example, a common use of this approach within the State’s solid waste program is to demonstrate the effectiveness and equivalency of replacing one component of a liner or cover system with an alternative technology that will perform equally to the component it replaces and performs equally within the overall liner or cover system. It is not meant to be a review of alternatives to placing a mine site or mine process at a particular location, nor is it intended to be a review of alternative mining approach technologies. The alternative analysis that the commenter is requesting is that which is covered in Subchapter 3, Section 9.H, which allows the Department to evaluate unreasonable adverse effects from the project.

(416) *Comment:* We think this provision is important, but we believe selection of the reviewer should have consent of the applicant, who should also have input to insure that the third party is considered qualified to act as review agent. (C-86)

*Response:* See response to Comment #414. No change was made to the rule.

(417) *Comment:* Is allowing the hiring of outside consultant as we do in our rules the same as a mandate to affirmatively find and retain (perhaps by requirements contracts with pre-qualified bidders) the correct expertise for the problem at hand? Michigan requires that every mining plan be reviewed by an outside expert and they rely on and learn from that. The quality of that is apparent in the response to an applicant’s mining application. (C-24)

*Response:* The Department’s \$500,000 initial processing fee, established in statute at 38 M.R.S. § 352(4-A), along with annual fees from \$20,000 to \$50,000 are intended to provide sufficient resources for all aspects of permitting and monitoring activities, including contracts with third party experts. If the Department determines that it requires expertise in a particular area, it will hire such assistance. When an application is filed with the Department, at this time the Department will determine what expertise it requires supplementing the existing Department expertise. The rule was changed to track the statutory language of 38 M.R.S.A. § 490-OO (2).

## **19 G**

(418) *Comment:* The commenter contends that this does not really define a “qualified professional”. (C-268)

*Response:* Qualified professional is defined in Subchapter 1 as “Qualified professional” or “qualified person” means a scientist, engineer, or professional in a technical discipline with sufficient training and experience to enable the individual to make sound professional judgments regarding conducting technical analyses or regarding the design, construction, and operation of regulated units and ancillary structures who, if accreditation is the norm in the profession, is accredited in the State of Maine, or subject to review and approval by the Department, is accredited in another jurisdiction.

[NOTE: The numbering of the comments in this location skips comment # 419. This number is intentionally left out of this document.]

## **19 H**

(420) *Comment:* The commenter questions why wouldn't the cost for an Independent Reviewer come out of the \$500,000 permit application fee? (C-268)

*Response:* The Department's \$500,000 initial processing fee, established in statute at 38 M.R.S. § 352(4-A), along with annual fees from \$20,000 to \$50,000 are intended to provide sufficient resources for all aspects of permitting and monitoring activities, including contracts with third party experts. If the Department determines that it requires expertise in a particular area, it will hire such assistance. The rule was changed to track the statutory language of 38 M.R.S.A. § 490-OO (2).

(421) *Comment:* Independent Reviewer. (p. 49) Does this include a review of reclamation costs? (C-63)

*Response:* In Section 17 (A) (7) the financial assurance provisions, including the cost of reclamation, must be reviewed by the Department and analyzed by individuals with specific types of expertise. If the Department chooses to hire an individual to assist in this review, the rule states that it may hire such third parties.

## **20. Performance Standards**

(422) *Comment:* The rules also need to incorporate stronger air monitoring to ensure that toxic dust from a mining site does not spread and make people sick. (C-39)(C-78) (C-160)

*Response:* See response to comment #12, above.

(423) *Comment:* Overall, we believe that Section 20.B Siting would be improved if it started off with prohibitions and restrictions, then moved to buffers and allowed areas, then got into the technical specifications. We recommend consideration of Minnesota's mining law Chapters 6132.2000 and 6132.2100 for examples of such organization of siting requirements, including exclusion and setback areas. (C-41, C-42, C-77)

*Response:* The Department acknowledges the comment, but has decided that the proposed organizational changes to this section will not significantly improve the format of the rule. No changes were made to the rule based on this comment.

(424) *Comment:* Consistent with the Mining Act, the first sentence of this subsection states that mining operations may be placed in floodplains or flood hazard areas, provided that the approval criteria of the Mining Act and the NRPA are met. It then adds that the applicant “must demonstrate that all development in these areas is secure from flooding and erosion under flood height and velocity conditions equal to or greater than the 500-year flood.” This is unreasonable. We are not aware of any other development project in Maine required to design to such a flood standard. In DEP Chapter 500 (storm water), the 25-year, 24-hour storm is the typical design standard. Under the Solid Waste Rules (Chapter 400.4.M), a solid waste facility must not restrict the flow of a 100 year flood. The Department should adopt either of these standards. Additionally, this subsection provides that nothing in this paragraph limits the authority of, among other entities, Maine Emergency Management Agency and the Land Use Planning Commission, “from limiting or prohibiting development in these areas.” This provision is not consistent with the Mining Act which allows such operations to occur in flooding or flood hazard areas provided the NRPA standards and the Mining Act standards are met. In other words, MEMA and LUPC should not be able to trump the Mining Act, and nothing in the Act suggests they can. Please delete these references. (C-41, C-42, C-77)

*Response:* The Department has retained the 500-year event for analysis of run-on/runoff control systems and floodplain or flood hazard areas. Data compiled by the Northeast Regional Climate Center for more recent storm events in New York and New England has shown a dramatic increase in stronger precipitation events as compared to data compiled by the National Oceanic and Atmospheric Administration (NOAA). We also note that the design standards for containment structures in Section 20(H) require designs to address the ‘Probable Maximum Flood’ as this term is defined in Subchapter 1, NNN. Given the size and setting for the types of structures associated with mining activities, coupled with the consequences of failure, the Department believes the 500-year standard is appropriate. No change was made to this requirement.

Regarding the references to other authorities such as Maine Emergency Management Agency, the U.S. Army Corps of Engineers, the Federal Emergency Management Agency, etc., the Department agrees that it is not necessary to include this reference list here. Any requirements from agencies such as these are already addressed Subchapter 1, Section 4, ‘Relation to Other Rules’. The Department has removed the language in the requested section.

(425) *Comment:* “Compatible” is an undefined and fuzzy term – this sentence is identical to MN Chapter 6132.2100, but is not helpful as a prefatory statement. The specific buffer specifications are more helpful to an Applicant. (C-41, C-42, C-77)

*Response:* Terms not defined in the rule assume the normal and ordinary meaning. The Department anticipates that there will be many different appropriate design buffers for the varying areas in which they are necessary. Therefore, specifying exact conditions for buffer design is not recommended. No changes were made to the rule based on this comment.

(426) *Comment:* By referring only to “a property boundary”, Section 20.B(2)(c) does not take into consideration separate land parcels that are under the control of the Permittee. We recommend modifying the first sentence to say “...1,000 feet from a property boundary of lands not owned or controlled by the Permittee or a public or private drinking water supply.” (C-41, C-42, C-77)

*Response:* The Department agrees with the commenters that revising the setback from property boundaries of lands owned or controlled by the Permittee is appropriate and has made the necessary change in Section 20 of the rule.

(427) *Comment:* If a paste-backfilled underground working is considered to be a “mine waste unit”, there should be a provision to allow a reduced buffer for such workings. We recommend adding the sentence “Upon receipt of written permission from the abutting property owners and all owners of property whose wells are located within 300 feet of the limit of a mine waste unit or beneficiation facility, the 1000 foot setback may be reduced to 300 feet.” For the same reason, in Section 20.B(2)(d) we recommend modifying the first sentence to say “...300 feet from private water system and a property boundary of lands not owned or controlled by the Permittee.” (C-41, C-42, C-77)

*Response:* The Department agrees with the commenters that revising the setback from property boundaries of lands owned or controlled by the Permittee is appropriate and has made the necessary change in the rule.

(428) *Comment:* We recommend modifying subsection (3)(e) to read: “...historic sites listed on the National Historic Register,” or addressing this in the definition section as we recommended earlier. (C-41, C-42, C-77)

*Response:* See response to comment # 91, above.

(429) *Comment:* In section 20.b(4), there are prohibitions on surface disturbance within one mile of a broad range of land categories. It’s unclear what the DEP’s justification is for setting a predetermined one-mile setback. Based on a preliminary GIS analysis, the proposed one-mile exclusion from all of the listed features would result in the elimination of at least 20% of the potential exploration areas within the volcanic belt that likely contains most of the valuable mineral deposits in Maine. The commenters recommend requiring a minimum 1,000-foot buffer from the listed resources and lands, but still subject to department increases in buffers as provided in section 20.b(2)(f). (C-41, C-42, C-77) (C-116)

*Response:* The Department has taken this and similar comments regarding setbacks from certain areas into consideration and has made changes to the rule, including revisions in Section 20(B) of the rule to the types of areas for which setbacks apply as well as the setback distance.

(430) *Comment:* This section has a number of inconsistencies and confusing sections, particularly with regard to intermixing process, methods, compliance, and reporting requirements. For example the section is labeled “Reactive Mine Material Characterization”,

but it then discusses mine waste, which by definition does not include overburden or ore. Portions of mine waste may be reactive and others nonreactive, but all wastes need to be characterized under the rules of this Chapter. Section 20.E(1) is labeled “Testing frequency”, but the language discusses everything except frequency. “Mine materials” are not defined, but the context would be clearer if the first sentence were modified with the following: “The characterization and analysis of mine wastes is required and must include all mine materials including ore, lean ore, and mine waste, and designated chemical materials...” (C-41, C-42, C-77)

*Response:* The Department has clarified the language in this section to use the term “mine waste” instead of “mine materials” and modified the definition of “mine waste” in Subchapter 1.

(431) *Comment:* We recommend that the Applicant propose a testing schedule in the mining plan (or monitoring plan) for Department approval. Information on testing frequency (from Section 20.E(1)) should be combined here for a methods and frequency section (C-41, C-42, C-77)

*Response:* The Department has added language in this section to require the submittal of a mine waste characterization work plan that includes a testing schedule and frequency.

(432) *Comment:* To provide clarity to the Applicant in determining evaluation methods and data requirements for their application, we recommend deleting the phrase “but are not limited to” in Section 20.E(2). The subsections encompass a broad definition of requirements. (C-41, C-42, C-77)

*Response:* The Department acknowledges the comment, but does not believe a change to the existing language is necessary.

(433) *Comment:* Remnant and extant mine walls, both in pits and underground workings, are not considered mine waste by definition, but may be Reactive Mine Material as defined in Section 1 (i.e., natural geological formations). To ensure rule consistency, while recognizing the importance of characterizing leaching and ARD potential from mine walls, we recommend modifying this sentence to read “...for mine waste (waste rock, tailings) and mine walls.”(C-41, C-42, C-77)

*Response:* See response to comment #430 above concerning change to use the term “mine waste”.

(434) *Comment:* To retain consistency with compliance requirements, we recommend modifying 20.G.1 to read “...nonattainment of water quality standards outside the mining area...”. (C-41, C-42, C-77)

*Response:* The intent of this section is to require containment for reactive mine and designated chemical materials to avoid impacts to waters of the State. The Commenters’ proposed language change would effectively allow reactive mine materials and chemical to

be managed in such a way that may have a high likelihood of contaminating ground or surface water. No changes were made based on this comment.

(435) *Comment:* “Treatment” is not defined in the Chapter, nor is “Active Treatment”, but we presume Section 20(G)(2) is focusing on water treatment systems that would be considered active treatment. Passive Treatment is defined in Section 2.M as employing natural processes. We assume the termination of any “active treatment” within 30 years would coincide with achieving performance standards for surface and groundwater quality, but there are many passive processes including dilution, microbiological activity, wetland functions, and other natural features or processes that might continue at the site beyond the 30-year mark without any need for maintenance or intervention. We recommend defining “Active Treatment” in Section 2, and modifying the Section 2.L definition to read “Perpetual treatment means active treatment for more than 30 years post-closure.” (C-41, C-42, C-77)

*Response:* The Department has added the following definition to the rule: “Active treatment system” or “active treatment” means a system that treats water or wastewater with the active addition of chemical reagents or the application of external energy.” The Department does not agree with the proposed change to the definition of perpetual treatment and did not make changes based on this comment.

(436) *Comment:* The rules need to limit groundwater contamination to areas very close to mining activities that cause the contamination. Otherwise, groundwater contamination will spread and will be almost impossible to collect and clean up. (C-160)

*Response:* The framework law at 38 M.R.S.A. § 490-QQ(3) states the “[t]hrough rulemaking the department shall establish standards for monitoring groundwater as close as practicable to any mining area that may pose a threat to groundwater. The Department has revised subchapter 5 Section 22(B) to provide that “[d]owngradient monitoring wells must be placed as close to all mining operations as practicable, but in no case greater than 100 feet away, unless placing some of the wells at a greater distance enhances the ability to detect a release from the site. In such a case, the Department may require the placement of monitoring wells more than 100 feet from the mining operations based on the site hydrogeology, access to the monitoring location, and other factors determined to be relevant by the Department.”

(437) *Comment:* This subsection provides that the permittee shall design, construct, operate and maintain water management systems “so as to minimize disturbances to the prevailing hydrologic balance of the affected area.” Although the term “prevailing hydrologic balance” is not defined, virtually any disturbance of earth can change the prevailing hydrologic balance of an area. Additionally, for most mining operations, including open pit mines, there likely will be a change in the hydrologic balance caused by the existence of the mine either through the diversion of surface waters to accommodate pits, waste rock storage facilities and other mine facilities or from open pits which may divert surface water or intercept groundwater. We request that the following language be added to the end of this sentence: “to the extent practicable and feasible.” (C-41, C-42, C-77)

*Response:* Section 20(J)(1) should be understood together with the requirement of Section 20(C)(2); compliance with rules adopted pursuant to 38 MRS 420-D will address many

issues with maintenance of pre-development hydrologic balance. The proposed rule also requires that disturbances should be minimized, not avoided, so that changes to the pre-development conditions may be allowed if specifically approved by the Department

The Department agrees and has made the recommended change to section 20 of the rule.

(438) *Comment:* The draft language is unclear with regard to the requirement for baseline, pre-construction survey information versus ongoing periodic surveys. The section needs to clarify that surveys are not required before each blast cycle (i.e., daily) but only to establish a baseline prior to the start of mining operations. The language should also differentiate between open pit and underground operations – i.e., airblasts are not associated with underground operations. (C-41, C-42, C-77)

*Response:* Pre-blast surveys are required by Section 20(K)(4) "prior to the initiation of blasting at the operation". This is clear that it does not refer to multiple episodes of blasting, although surveys may be required for new construction or at regular intervals. The Department may determine that crack monitoring or other methods are appropriate for measuring any ongoing changes related to operation of the facility. The Department anticipates that properly conducted underground blasting will easily meet the air overpressure requirements of the rule. No changes are necessary.

(439) *Comment:* We recommend replacing Section 20.K(4) with the following: "A preblast survey must be conducted prior to the initiation of construction and blasting at the mining operation. The preblast survey must document any preexisting damage to structures and buildings and any other physical features within a ½ mile radius of the blast site that could reasonably be affected by future blasting. Assessment of features such as pipes, cables, transmission lines and wells and other water supply systems must be limited to surface conditions and other readily available data, such as well yield and water quality. Subsequent surveys shall be conducted on a schedule defined in the approved mining plan, but should occur at least annually." (C-41, C-42, C-77)

*Response:* The Department has added language clarifying that regular surveys or other methods of assessing impact due to blasting may be required, if it determines these to be necessary in order to assess the impacts of activities at the site.

(440) *Comment:* We believe the last sentence of Section 20.K(5) should be moved to the start of Section K to exempt underground mining from these surface-impact restrictions. A baseline pre-blast survey makes sense for an underground mine prior to the onset of construction, but should not be required prior to each blast cycle. (C-41, C-42, C-77)

*Response:* The language in Section 20(K)(5) exempts underground production blasting from the limitations on the number of blasts per day and times at which blasting may occur. Properly conducted underground blasting should be able to comply with other requirements of the proposed rule; no changes are necessary.

(441) *Comment:* To clarify requirements for seismic monitoring in Section 20.K(7), we recommend the Department consider inserting a seismic monitoring section (since it's referred to in subsection 20.K(8), as follows: "The Permittee shall monitor production blasts for peak particle velocity using a seismograph capable of measuring three mutually perpendicular peak particle velocities, with the peak particle velocity being the largest of these measurements. Seismic measurements shall be conducted adjacent to the nearest structure located on lands not owned or controlled by the permittee, or in another location approved by the Department." (This is similar language to MN 6132.2900.) (C-41, C-42, C-77)

*Response:* The Department has added language clarifying the seismic monitoring requirements to be consistent with 38 MRS 490-Z(14).

(442) *Comment:* With regard to the last sentence in Section 20(K)(7), we believe it would be difficult for blasting to remain in compliance if a house were built in a buffer zone. A vibration easement or consent should be allowed, such as : "The Department may waive this requirement if the Permittee owns the inhabitable structure or secures the permission of affected property owners to increase allowable ground vibration levels on their property and the Department determines that no protected natural resource will be adversely affected by the increased vibration levels." A similar statement is already included in airblast Section 20.K(3). (C-41, C-42, C-77)

*Response:* Ground vibration limits are already indicated in the rule as applying only to structures not owned or controlled by the Permittee. The Department does not find that waivers to allow ground vibration levels presenting the possibility of structural damage are appropriate in many cases, but has added language allowing engineering analysis of certain structures to determine acceptable vibration limits, consistent with 38 MRS 490(Z)(14). The applicant or operator must propose higher vibration levels in the initial application or make a specific application to modify the permit to allow higher levels of vibration.

(443) *Comment:* Safety is paramount in mining operations, and blasting is taken very seriously with regard to protecting staff, visitors, inspectors, and the public. But there is a difference between informing persons about a blasting program and blast schedule, and providing warnings of an imminent blast. Mining operations may communicate a blasting program or overall schedule to affected parties via multiple methods as listed in Section 20.K(10), but notification of individual blasts are usually done through an audible signal (siren) and visual cues (strobe). These signal warnings often occur at multiple time points, such as one hour before a blast, five minutes, and one minute. This pre-blast warning process is usually referenced in a mine's operational plan as well as the site's health and safety plan. ( C-41, C-42, C-77)

*Response:* The Department agrees that safety is a necessary element in the conduct of blasting operations. Nothing in the proposed rule is intended to limit the responsibility of an Applicant or Permittee to comply with regulations and requirements of the Office of the State Fire Marshal, Mine Safety and Health Administration, or other authorities. Appropriate

safety warnings are anticipated to be included in the mine plan; the proposed language has been modified to clarify that other pre-blast warnings may be required.

(444) *Comment:* Passive Treatment. [page 54 (G)(2)] Passive treatment is not allowed beyond 30 years after mine closure. Does passive treatment include capping the mine tailings to limit sulphide mineral oxidation, using lime stabilization and lime reactive barriers to control water acidity, or using wetlands to treat potential acid seeps around the mine? These and similar passive tools may be key for controlling mining environmental impacts in the short-term and long-term at some mines; these tools should be available beyond the 30-year post-closure period if they are implemented prior to the end of that post-closure period. (C-15)

*Response:* Reliance on treatment beyond the 30-year post-closure period, with the exception established for wet mine waste units, is prohibited. The commenter suggests that passive treatment systems be allowed perpetually, and further suggests that manufactured wetlands be allowed. The Department disagrees with this approach due to the uncertain longevity of treatment systems (i.e., manufactured wetlands will need periodic rejuvenation), and is prohibiting reliance on treatment systems (active or passive) in excess of the 30-year post-closure period. Regarding capping of mine tailings, assuming this is done in accordance with the rule requirements, this would not be considered passive treatment. Reactive barriers that require reliance beyond the 30-year post-closure period would be considered treatment and therefore prohibited. No change was made.

(445) *Comment:* Setbacks from parks, public lands and lakes. [pages 50-51, B(3)] The draft regulations prohibit surface mining within 1 mile of parks, public lands and significant “scenic” great ponds on the LUPC (280 lakes) and DEP (66 lakes) lists. While I see the rationale for visual buffering of some of these resources from surface mining, 400,000 acres of Maine’s approximately 600,000 acres of public lots have timber harvesting as the dominant management activity, with wildlife and recreation subordinate. I don’t believe that surface mining within this arbitrary 1-mile setback would impair these activities significantly. Further, I believe that a more flexible *viewshed* buffering approach is warranted with regard to surface mining and parks and lakes, rather than setting an arbitrary 1-mile setback. (C-15)

*Response:* The Department has taken this and similar comments regarding setbacks from certain areas into consideration and have made changes to the rule, including revisions to the types of areas for which setbacks apply as well as the setback distance.

(446) *Comment:* Perpetual Treatment. [page 22] Perpetual waste treatment is not allowed. [page 54 (G)(2)] Active or passive treatment beyond 30 years is not allowed. [page 26, I(5)(ii)] But, this appears to conflict with the requirement for a detailed cost estimate to “conduct treatment activities for a minimum of one hundred years....” (C-1, C-15, C-41, C-42, C-53, C-77, C-268)

*Response:* The requirement to provide a detailed cost estimate for conducting treatment activities for a referenced time period is intended to ensure that adequate financial assurance exists. This financial assurance is necessary should the need arise for long term treatment in

the event of impacts to the environment or failure to reach the performance requirements as planned within the required time frame. Subchapter 5, Section 22(B)(6)(e) contains provisions for extending the post-closure monitoring period in increments of up to 20 years. The current language in the rule will ensure adequate financial assurance exists if needed. No change was made.

- (447) *Comment:* Maine Rivers stated that “there do not appear to be clear performance standards set forth in the draft rules or tied to any local, state or federal laws” and that the “rules lack water quality compliance requirements.”(C-21)

*Response:* The rule references statutory water quality criteria in several places, notably in Section 11(A)(2), “Criteria for Approval”. These references are carried throughout the rule in all applicable sections. Where specific water quality criteria do not exist, the applicant is required to evaluate background water quality conditions, with corresponding water quality benchmarks being established. Monitoring results are then compared against these benchmarks. In addition, Section 22.B.12 (Monitoring) includes specific compliance criteria. No change was made.

- (448) *Comment:* With respect to siting criteria, Gary Boone stated that “Surface disturbance shall be prohibited in areas of fishing, hunting and tourism.” (C-105)

*Response:* The Department has taken this and other similar comments regarding setbacks from certain areas into consideration and has made changes to the rule, including revisions to the types of areas for which setbacks apply as well as the setback distance.

- (449) *Comment:* With respect to siting criteria, Brenda Commander stated “*All Tribal lands in Maine should be added to the list that precludes surface disturbance within 1 mile of the jurisdictional limits of these resources. Specifically, this buffer should apply unless given express permission by the Tribe or Tribes in question to reduce this buffer. We also ask that the 1 mile buffer distance be reexamined with an eye to ensuring it is sufficient to eliminate all air quality, noise and other disturbance to tribal lands and resources from mining activity.*”(C-7)

*Response:* The Department does not believe that a categorical setback for all tribal lands is appropriate just as a similar setback would not be appropriate for a town. No change was made.

- (450) *Comment:* Gary Boone stated, “*Provisions for storage piles and water management must be clearly specified prior to approval of activity. Methods of containment of introduced chemical materials must be in effect at the commencement of mining.*” (C-105)

*Response:* The Department agrees with this commenter. These provisions are included in the rule. Specific proposals must be reviewed and approved by the Department. No change was made.

- (451) *Comment:* The risk of a metallic mineral deposit is inherent in the geology and geochemistry of the deposit itself which is unique to each deposit and may vary throughout

the deposit. The issue is whether that geochemistry is likely to generate acid and leak toxic metals and whether any off site damages can be avoided prevented or controlled. In mining, more so than most other dangerous endeavors, there is a profound inherent conflict between the public interests of protecting natural resources and the economics of a mining operation which will drive to lowest cost and highest yield, and is always racing against the clock of varying metals prices. The measures available to avoid prevent or control mining risks are very costly. For example one common measure at mines like we have is off site processing of ore and very costly subaqueous control of all acid generating/toxic metals wastes and tailings. There is only the quality and caliber and skill of overseers on the state side to keep that conflict in balance throughout every stage of planning, development, operation and closure of a mine and insure that it comes down on the side of natural resources protection. It is in mine planning where the key decisions on risk management are made. Our statute and our regulations have to rise to a much higher standard of performance than any other state in the U.S. because our deposits are all of a type that is 2<sup>nd</sup> highest risk to begin with ( VMS, Volcanogenic Massive Sulfides) and among this very high risk class, ours are most likely off the charts as indicated by the geology and geochemistry of Bald Mountain and two other deposits in the same geological structure which are also extremely high risk compared to other known VMS deposits.

Experts agree that the proven method for resolving the inherent conflict between the risk of acid drainage and toxic metals leaching and environmental protection is (a) deposit specific,(b) lets the identification of ARD and toxic metals leaching risks in the deposit itself inform each stage from exploration through closure. That ongoing risk assessment is what drives whether a given deposit can be mined at all without offsite degradation, the selection of appropriate technology to avoid or control these risks, the measure of whether the development of a mine is hitting its performance standard.

Sulfide metal mining, as compared to other high risk endeavors governed by law and regulations involves:

- More uncertainty

- More severe consequences from errors and unexpected failures

- The least opportunity for recovery from failure

- The lowest level of “risk transfer” for losses that may arise through insurance and bonds from reputable U.S. admitted carriers on uniform terms and conditions across the very small pool of underwriters (mining risks, pollution and subsidence are standard exclusions of a normal general liability policy).

In plain English, the degree of risk and the severity of consequences leave no margin for errors in judgment or gaps in our statutory policy or in our regulations. State law and regulations need to be as the British say “spot on”.

By consensus as evidenced in practice and by specifically recognized experts there are five pillars of sound statutory and regulatory policy on metallic mining which all essentially boil down to a policy of well-informed risk avoidance and loss prevention, of developing the right information up front to avoid costly and perhaps non-remediable mistakes later on. What investors want, what underwriters want, what we need to really achieve that

essential balance between environmental protection and economic opportunity has five essential foundations:

- Neutral Drainage (where drainage doesn't mean only intentional releases and discharges but all drainage as a consequence of mining and exploration activity. Everything should drive towards preventing the onset of ARD generation and the associated leaching of toxic metals.
- Self-sustaining eco system post mining of same function and caliber as pre-mining. This is what is aimed for in not allowing perpetual care as an element of an approved post closure/reclamation plan. It's not whether 30 years or 10 years of reliance on water treatment is appropriate it is on designing the mine and its closure plan from the beginning so that it can achieve and aims specifically at a full restoration of the pre-mining ecosystem and a self-sustaining system.
- ARD Management Plan informing decisions and next steps at each phase: exploration/advanced exploration, mine planning, mine operations, closure planning, closure.
- Allowing only those applicants who have experience in successfully prosecuting all mine phases of a similar deposit in a similar climate with no abandonment, non-remediable off site damages or violations of permit or clean water act, or default .and with company policy of an ARD Management plan and team universally applied to all new projects (Quality Investors & Underwriters require this as well).
- Committing to the highest caliber equally experienced regulatory oversight team (either directly or by requirements contracts with carefully pre-qualified consultants). (C-24)

*Response:* In developing the rule, the Department recognizes and shares many of the same concerns as the commenter. It is the Department's belief that the rule addresses these concerns. By way of example, the rule (in Sections 20(E), (F), and (G)) addresses reactive mine material characterization, waste classification, and management of the mine wastes. The rule establishes criteria for classifying the waste and then presents minimum design standards dependent upon the waste classification. Variability of the materials encountered is evaluated in establishing the program. This information is part of the mine plan for the site. The 'mining and reclamation report' in Section 26 of the rule, which is an annual submittal, requires the Permittee to update the mine waste characterization in consideration of any new materials encountered or changes in the beneficiation process. This allows consideration of changing conditions formally on a frequent basis. The Department agrees with the commenter that the risks encountered are site specific. The rule requires that the Applicant demonstrate that they have the technical ability to construct, operate, and close the facility in accordance with the standards of the rule. The rule also has performance standards to minimize acid generation, to minimize the need for post closure maintenance, and requires contemporaneous reclamation to restore the site to pre-mining conditions to the extent practicable and feasible, among other provisions aimed at the result desired by the commenter. The Department believes that the rule establishes the standards necessary to meet and allows the flexibility needed to ensure that site specific criteria are addressed. Since the commenter did not present specific, requested changes through these particular

comments, the Department could not evaluate actual language changes to address them. No change was made.

(452) *Comment:* On the subject of surface waters, it is a truism that all groundwater eventually drains to surface water. So I don't understand the premise of the regulations that some groundwater will inevitably be contaminated by mining, but that surface water will not. Furthermore, there is a very large difference between water quality standards for groundwater (generally known as Drinking Water Standards) and ambient water quality criteria for the protection of aquatic life in surface waters (see table below).

Contaminant	Ambient Water Quality Criteria for Freshwater Aquatic Life Protection		Drinking Water Standards for Human Consumption	
	Acute	Chronic	Max Exposure Guideline (Maine)	Max Contaminant Level (Federal)
Arsenic	340	150	10	10
Cadmium	0.42	0.08	1	5
Copper	3.07	2.36	500	1300
Cyanide	22	5.2	4	200
Mercury	1.7	0.9	2	2
Nickel	120	13.4	20	
Zinc	30.6	30.6	2000	

All concentrations given in parts per billion (=micrograms per liter)

You will note that that for almost all contaminants in this list (arsenic is the large exception) the Water Quality Criteria for the protection of aquatic life are orders of magnitude lower than the Drinking Water Standards which I believe will be used for assessing groundwater quality. This reality must be incorporated in the regulations. It suggests that even if groundwater quality standards can be met, surface water quality criteria will likely not.

During my service with DEP as Senior Geologist for the Hazardous Waste program I helped to draft the Hazardous Waste Regulations. I learned that there are two ways of doing so. One is to dictate particular systems for preventing contamination of groundwater or surface water. The other is to state performance standards. The latter is preferable in that it allows an applicant's engineers to research, invent, document and use the best available technology (BAT) to meet the standards. However, performance standards impose a particular burden on DEP staff in that they must be assured that the BAT being proposed is actually capable of doing the job as claimed. As noted above, the removal of the effects of acid mine drainage from ground and surface waters on a large scale is an extreme technological challenge. I am loath to have Maine used as a guinea pig in such a venture. So I would argue for a statement in the section of the rules that covers aspects of treatment of mined materials

(Subchapter 5 Mining Standards, Sections G, H, I and J) such as “Applicant must provide (an) example(s) of how the particular technology proposed has been used successfully elsewhere. Such example(s) shall provide details of rock type, precipitation patterns, groundwater conditions and any other particular features required by DEP staff for their evaluation and extrapolation of the example data to situations in Maine. Such demonstration of the efficacy of a method must demonstrate how both groundwater and downstream surface water quality can be met.” (C-68)

*Response:* The proposed rule distinguishes groundwater and surface water performance requirements, and states that groundwater must meet aquatic life criteria at points of discharge to surface waters and that Department may require monitoring to determine that this is the case. The Department has revised Section 22(B)(1)(iii) to clarify that groundwater discharges to surface waters that cause or contribute to violations of surface-water criteria, are considered contamination

(453) *Comment:* In short the rules need to get serious about best practices. The rules should require each applicant to include how best practices employed by mines of similar ores elsewhere which have fully lived up to their environmental impact statements will be applied here in Maine. Let’s require those best practices to cover air quality and water quality monitoring, containment, treatment, and closure and reclamation. (C-36)

*Response:* See response to comment #174.

(454) *Comment:* We appreciate and support the use of performance-based standards, rather than prescriptive standards. We often see prescriptive standards as incompatible with all situations; performance based standards allow for flexibility and potentially provide options for achieving the end result. For years, contactors have worked with erosion and sedimentation Control best management practices (BMPs) in their construction activities. A similar approach is logical for reclaiming disturbed mining lands. Unfortunately, the proposed rules provide very little guidance as to the acceptable reclamation of mined lands. Although the performance standards may be clear, the best means of achieving those standards are not self-evident. The best way to ensure compliance and environmental protection is to provide best management practice options for properly closing and reclaiming mining lands. Guidance for mined land reclamation exists in other jurisdictions, and could serve as the basis for developing Maine’s own best management practices for reclaiming and properly closing disturbed lands. Examples of mined land reclamation BMPs include the practical guide to reclamation from Utah oil, Gas and Mining; Best Practices in abandoned Mine land reclamation from the Colorado Division of Minerals and geology; Coal Remining BMP guidance Manual from EPA; and Land reclamation, currently mined land, Code 544 from USDA NRCS. Many other BMP guides are available, especially in states with significant mining histories. While not all of these BMPs may be directly transferable to Maine, they provide an excellent framework to guide the development of reclamation BMPs for Maine. We would be happy to participate in any stakeholder activity that might be scheduled to address reclamation BMPs. C-264

*Response:* See response to Comment #174.

(455) *Comment:* About 60% of Maine river and stream miles are classified Class AA. Class AA waters represent U.S. clean Water Act Tier 3 antidegradation waters (Outstanding National Resource waters) in which no new or increased discharges or impacts are allowed. A similar, though less extreme concern exists for the 46% of Maine river and stream miles that are classified Class A. It is unlikely that mining activities can be conducted in such a way that the very high quality of these waters can be maintained, thus a federally required Use Attainability Analysis will undoubtedly be necessary. How will this fact be handled by the Department and the U.S. Environmental Protection Agency? (C-17)

*Response:* Neither the Act nor this Chapter allow discharges of pollutants to waters of the State. Any proposed discharge to waters of the State requires a separate license pursuant to 38 M.R.S.A. § 413(1). The Commenter is correct that with very limited exception, Maine's water quality standards do not allow a new discharge to Class AA waters. Discharges to Class A waters must, among other conditions, be equal to or better in quality than the existing water quality of the receiving waters. Proposed discharges to waters of the State will be evaluated for compliance with all applicable water quality standards. Nothing in this Chapter allows or suggests that a UAA will be granted for discharges resulting from mining activities. No changes were made based on this comment.

[NOTE: The numbering of the comments in this location skips comment #'s 456, 457, 458, 459, 460, 461, 462, 463, 464, and 465. These numbers are intentionally left out of this document.]

(466) *Comment:* How will the Department ensure that aquatic life uses specified in water quality standards will be maintained and protected in the face of the large flaw of "drinking water standards vs. aquatic life protection needs in the mining rule, and given the fact of the connectivity between groundwater and surface waters? (C-17)

*Response:* The proposed rule distinguishes groundwater and surface water performance requirements, and states that groundwater must meet aquatic life criteria at points of discharge to surface waters and that Department may require monitoring to determine that this is the case. The Department has revised section 22(B)(1)(iii) to clarify that groundwater discharges to surface waters that cause or contribute to violations of surface-water criteria, are considered contamination.

(467) *Comment:* Does the Department expect that the U.S. Environmental Protection Agency will approve this rule? (C-17)

*Response:* The Department does not plan to submit the mining rule to the U.S. EPA for approval as part of the Water Quality Standards docket. Both the mining framework law and the proposed rule clearly allow for separate permits and regulations with respect to EPA-delegated programs.

(468) *Comment:* The approval criteria for mining project applications have been weakened in the new rules. The previous regulatory framework required the applicant to meet a set of

stringent regulations, in addition to “affirmatively demonstrating” that the development would not violate the conditions of the permit. The new set of approval criteria for mining permits excludes some of these regulations and includes language changes that weaken the application of important criteria....Here are two examples of these significant language changes: From: “The proposed development will not pose an unreasonable risk that a discharge to a significant groundwater aquifer will occur” (38 M.R.S § 484); To: “there is a reasonable assurance the mining operation will not violate applicable surface water quality standards or groundwater standards outside the mining area;”; From: “...the development will not adversely affect existing uses, scenic character, air quality, water quality, or other natural resources in the municipality, or in neighboring municipalities” (38 M.R.S. §484); To: “...the development will not adversely affect existing uses, scenic character, air quality, water quality, or other natural resources.” The new language deliberately weakens the approval criteria. DEP should adjust these language changes to ensure strict rules and minimize opportunities for developers to take advantage of these vague directives. (C-220)

*Response:* 38 M.R.S. Article 9 specifically provides that, within a mining area, unregulated discharges to groundwater that result in failure to meet water quality criteria otherwise required by state law are specifically allowed by statute for metallic mineral mines (38 M.R.S. § 490-OO(4)(D)). The proposed rule may not propose standards inconsistent with the statute, so no change can be made to address this comment.

(467) *Comment:* Most of the provisions in this section create a prohibition for open pit mines based on what we presume is detrimental to visual quality. However, we do not believe this provision is included in the Mining Act and question this outright prohibition. Although we believe most currently identified mineral deposits will require shaft mining, this standard would be very restrictive on mineral deposits in Maine that could potentially be mined at the surface. We do not understand the reason for introducing this standard which seems arbitrary and not based on scientific information. (C-86)

*Response:* The framework law at 38 M.R.S. § 490-OO(4)(B) requires the applicant to make adequate provisions for “fitting the mining operation harmoniously into the existing natural environment and the development will not unreasonably adversely affect existing uses, scenic character, air quality, water quality or other natural resources.” The Department has taken this and similar comments regarding setbacks from certain areas into consideration and has made changes to the rule, including revisions to the types of areas for which setbacks apply as well as the setback distance.

(468) *Comment:* Creating a prohibition on surface mining within one mile of any river designated pursuant to the federal Endangered Species Act as critical habitat for Atlantic Salmon is very concerning for landowners and inappropriate. Within current Critical Habitat designations in Maine for both Salmon and Canada lynx there are currently no prohibitions for activity on private land, only project consultations with Army Corps of Engineers occur if a federal permit is triggered. Within Maine Site Law no activities are prohibited due to proximity of critical habitat, instead provisions are made to ensure no adverse effects. We recommend eliminating any prohibition of activity based on proximity to federally

designated critical habitats and instead consider a no adverse effect standard based on scientific information. (C-86)

*Response:* The Department has taken this and similar comments regarding setbacks from certain areas into consideration and has made changes to the rule, including revisions to the types of areas for which setbacks apply as well as the setback distance.

## **20 B**

(468) *Comment:* All of the subchapter 5 section 20 B, Siting Standards should be moved to the front and included under prohibitions, which they are. These also all need work and further development but it is a step in the right direction of establishing risk based “GO No/Go Thresholds” policy. (C-24)

*Response:* The siting criteria, which are performance standards for siting a mining operation, are appropriately placed under subsection 20, Performance Standards. The criteria for permit approval are specified in the framework law and incorporated into the rule at subchapter 3 subsection 11. No change was made based on this comment.

(469) *Comment:* The commenter agrees that mining should be prohibited from certain areas, particularly parks, scenic areas, etc. However, between the excluded areas and 1 mile buffers around public lands, great ponds, etc. the excluded areas this seems overly restrictive. For example if the Great Pond is upstream of the proposed mine site, why would a 1-mile buffer be needed? (C-268)

*Response:* The Department has taken this and other similar comments regarding setbacks from certain areas into consideration and has made changes to the rule, including revisions to the types of areas for which setbacks apply as well as the setback distance.

(470) *Comment:* Mining excluded. (d) Designated lands. (p. 51) Does this conflict with Title 12 § 549-B which allows exploration activities on state lands? It is unclear why mineral exploration would be permitted on state lands if mining is excluded on any state lands. C-63

*Response:* The Department’s proposal does not prohibit exploration activities on state lands. The siting restrictions contained in section 19(B)(3) of the proposal apply only to mining activities, which are defined in the proposal to include advanced exploration and mining. These exclusions are consistent with P.L. 2011, Ch. 653,

mining at Bald Mountain since the deposit is less than a mile from the public lot in T12 R8. (C-63)

*Response:* The Department has taken this and similar comments regarding setbacks from certain areas into consideration and has made changes to the rule, including revisions to the types of areas for which setbacks apply as well as the setback distance.

(472) *Comment:* The very notion that a metallic mining operation could be sited in a flood hazard area is totally beyond understanding. This paragraph should provide simply that such a siting is prohibited unless an applicant can show by clear and convincing evidence they can meet appropriate standards. (C-81)

*Response:* The framework law at 38 M.R.S. § 490-OO(4)(H) provides that “[m]ining operations may be placed in flood plains or flood hazard areas as long as they are designed, constructed, operated and reclaimed in a manner that complies with the approval criteria in this subsection and the Natural Resources Protection Act.” The rule is consistent with the framework law and no changes have been made to the rule as a result of this comment.

(473) *Comment:* With respect to Subchapter 5 Section 20.B(1), Maine Rivers stated that “Mining ore can contain toxic metals in significant amounts. In a period of climate change with increasingly unstable weather patterns, why are we considering siting mining operations in our floodplains?” (C-21)

*Response:* The framework law at 38 M.R.S. § 490-OO(4)(H) provides that “[m]ining operations may be placed in flood plains or flood hazard areas as long as they are designed, constructed, operated and reclaimed in a manner that complies with the approval criteria in this subsection and the Natural Resources Protection Act.” The rule is consistent with the framework law and no changes have been made to the rule as a result of this comment.

(474) *Comment:* With respect to subchapter 5 section 20.B(2)(e), Maine Rivers stated that the 1,000-foot setback from public water system and 300-foot setback from a private water system and property boundaries “*seems inadequate*” and that the setback reduction from 300 feet to 100 feet from the property boundary is “*clearly unacceptable.*” (C-21)

*Response:* The Department has selected these minimum setback distances as performance standards for siting mining operations. Regardless of these minimum setbacks, the Department must find that there is reasonable assurance the mining operation will not violate applicable surface water quality standards within or outside of the mining area, or groundwater standards outside the mining area. If additional setback distance is required to achieve this finding, it will be incorporated into permitting decisions. No change was made based on this comment.

(475) *Comment:* In subchapter 5, section 20.B(5)(h) prohibits surface disturbance and allows for only “underground mining and material hauling” within 1 mile of one of the 280 great ponds in the unincorporated areas that have been identified as having “outstanding” or “significant scenic quality.” “Underground mining” is not defined in the Subchapter 1 definitions. Would

it be expected to include those surface structures necessary to carry out or support underground mining such as a headframe or ventilation shaft? What about stockpiles? Since the concern with surface disturbance near great ponds is based on how such disturbance would impact the scenic quality of the ponds, it would seem appropriate to evaluate each situation on a site-by-site basis and allow discretion to DEP in those cases where, for example, a stockpile or mine building within the buffer would not detract from the scenic characteristics. The authority to use such discretion would be especially important for those situations where installation of certain aboveground structures such as a ventilation airlift or even an emergency rescue shaft would enhance mine safety. (C-83)

*Response:* The Department has taken this and similar comments regarding setbacks from certain areas into consideration and has made changes to the rule, including revisions to the types of areas for which setbacks apply as well as the setback distance.

(476) *Comment:* Revise 20(B)(2) to read “Mining operations shall be designed, constructed, and monitored so that the operation is compatible with surrounding non-mining uses to the extent practical.” (C-1)

*Response:* The Department does not believe that “to the extent practical” is necessary. No change was made based on this comment.

(477) *Comment:* Revise 20(B)(2)(a) to read “Existing terrain and vegetation or vegetated berms must be used to reasonably minimize impacts of mining activities.” (C-1)

*Response:* The Department does not believe that changing “diminish” to “reasonably minimize” is necessary in the rule. No change was made based on this comment.

(478) *Comment:* Under 20(B)(2)(c): The basis for a 1,000-foot setback is unclear. Such a setback distance could run counter to a meaningful alternatives analysis for waste unit siting. (C-1)

*Response:* Due to the potential for ground and surface water impacts associated with mining activities, it is appropriate to require that mine waste units be setback 1000 feet from property boundaries. No change was made based on this comment.

(479) *Comment:* Revise 20(B)(2)(d) to read “The limit of excavation must be set back a minimum of 1,000 feet from a public water source of supply and 300 feet from a private water source of supply and a property boundary. Upon receipt of written permission from the abutting property owners and all owners of property whose wells are located within 300 feet of the limit of excavation, the 300 foot setback may be reduced to 100 feet.” Does public water system mean the water source, either well or surface, or can it mean such appurtenances as a reservoir facility, pumping units, or piping? This should be clarified with respect to interpretation by potential intervenors. (C-1)

*Response:* The Department has selected these minimum setback distances as performance standards for siting mining operations. Regardless of these minimum setbacks, the

Department must find that there is reasonable assurance the mining operation will not violate applicable surface water quality standards within or outside of the mining area, or groundwater standards outside the mining area. If additional setback distance is required to achieve this finding, it will be incorporated into permitting decisions. Public water system is defined in *Rules Relating to Drinking Water*, 10-144 CMR 231. No change was made based on this comment.

(480) *Comment:* Delete “All” from 20(B)(2)(e). (C-1)

*Response:* The Department disagrees with the proposed deletion and concludes that the intent of this siting criterion is as the Department intended. No change was made based on this comment.

(481) *Comment:* Under 20(B)(4): SME believes the one-mile setback to the surface features listed below is arbitrary and overly restrictive. SME also recommends that the setback apply only to existing National and State surface features and specifically any proposed National or State surface features that have only been proposed be excluded. The proposed protected surface features should not provide mining opposition with a means to stop mine permitting. (C-1)

*Response:* The Department has taken this and similar comments regarding setbacks from certain areas into consideration and has made changes to the rule, including revisions to the types of areas for which setbacks apply as well as the setback distance.

(482) *Comment:* Under 20(B)(4)(f): Would this prohibition extent to streams or rivers tributary to those designated as critical to salmon habitat? (C-1)

*Response:* The siting criteria pertaining to critical salmon habitat would not apply to areas, streams or rivers outside the delineated critical habitat area. No change was made based on this comment.

(483) *Comment:* Under 20(B)(4)(g): Department should have a map prepared showing land areas where surface mining is prohibited with respect to the features described below. (C-1)

*Response:* Maps utilizing geographic information system (GIS) and other high quality data will be developed and prepared on an as-needed basis to ensure the effort and resources provided to this task are used efficiently based on proposed mining developments. No change was made based on this comment.

## **20B.5**

(484) *Comment:* In regards to scenic impacts on great ponds, a subcategory (i) is needed which would state: “In the case of criteria g or h, the one mile prohibition shall be extended to include any substantial negative scenic impact to the cited great pond.” (C-81)

*Response:* The Department has taken this and similar other comments regarding setbacks from certain areas into consideration and has made changes to the rule, including revisions to the types of areas for which setbacks apply as well as the setback distance.

## **20E**

(485) *Comment:* Mine Waste Evaluation. (p. 52) The frequency of testing should be specified. In the province of New Brunswick, modern mines are required to test at a minimum each 1,000 tons of waste rock for acid-generating potential in order to ensure proper handling of wastes. (C-63)

*Response:* Most sampling schemes for geochemical characterization currently use a sample size based on the tons of each rock type encountered in the mining process. The Department has added language that requires the submittal of a work plan that includes a requirement to determine the sample size required for testing.

(486) *Comment:* Revise 20(E) to read “The characterization and analysis of mine wastes must include, but not be limited to, all mine materials, waste (overburden, ore, waste rock and tailings) and designated chemical materials potentially encountered, used or generated during metallic mineral mining or advanced exploration. These materials must be analyzed and characterized as follows:” (C)

*Response:* The Department has clarified the language in this section to use the term “mine waste” instead of mine materials and modified the definition of mine waste in subchapter 1.

(487) *Comment:* Under 20(E)(2)(d): The test method(s) for determining acid production should be referenced. (C-1)

*Response:* Due to the number of different test methods that exist, the Department used the generic terms of static and kinetic test method for acid rock drainages. Specific test methods are in constant change as more research is performed and a specific set of test procedures outlined in the rule may be quickly outdated. As written in rule, the applicant must submit a work plan to the Department, which includes the test methods proposed to be used to determine the reactive nature of the mine waste. No change was made based on this comment.

## **20F.**

(488) *Comment:* With respect to Subchapter 5 Section 20.F, Mine Waste Classification, the HBMI stated that “Mine wastes classified as Group C waste which “does not have the potential to violate water quality standards other than sedimentation or turbidity” still present a potentially large problem given mining activities are allowed in the floodplain. Sediment/turbidity can have [s]ignificant negative impacts of fish habitat and water quality.” The HBMI did not suggest specific changes to this section. (C-112)

*Response:* The Department acknowledges the comment that sediment and turbidity can have a significant impact on water quality and fish habitat. For the purpose of this rule, a classification system is used based on the reactive nature of the mine waste. Based on the

classification of the mine waste, the rule specifically requires an appropriate design standard and financial assurance. No change was made based on this comment.

## **20 G. Reactive Mine and Designated Chemical Materials Management Systems**

(489) *Comment:* If these rules go into effect it will be imperative that DEP staff be assured that subchapter 5 Mining Standards, sections G, H, I and J (Reactive Mine and Designated Chemical Materials Management Systems, Containment Structures, Storage Piles and Water Management Systems) can contain the inevitable production of huge quantities of dissolved metals and neutralize the acid drainage resulting from exposure of broken rock to precipitation over the area of the mining operation. Though I am not a mining engineer, I have not found convincing reference to any such systems for water management on the web. (C-68)

*Response:* Chapter 200 includes performance-based standards to comply with the Act, this Chapter and other environmental rules and regulations. Control devices or measures may be reassessed at any time, and if the Department determines that the control device or measure no longer achieves the performance standard, the Department may require remedial actions, including but not limited to, the implementation of additional control devices or measures, a corrective action work plan, temporary suspension of mining activity, and the cessation of all mining activity. No changes were made based on this comment.

(490) *Comment:* G. Reactive Mine Materials: This section points out a principal weakness of these rules. The relevant statute, 38 M.R.S § 490-QQ.3, specifies “. . . the post-closure monitoring period must be at least 30 years following cessation of mining, . . .” The statute therefore provides 30 years as a cap on the goal of assuring perpetually clean discharges, but while it provides that cap, it does not deny the Department the right to disallow use of the entire 30 year window as a clean-up period. The Department can and must explicitly require discharges to be clean- without further treatment- at all times- not only throughout mining, but also on the first day mining ceases. Nevertheless, the proposed rule states simply and only: “The use of active or passive treatment methods shall be limited to no more than 30 years post-closure.” This language, and similar language elsewhere in the proposed rule, fails to recognize that other states are taking steps to force compliance in much shorter periods of time- 5 or 10 years, or in some cases (see the alternatives analysis discussion above), requiring there be assurance of water quality compliance on the day the mine is closed. What is needed here is different language- language which reflects section. 9.H, the Alternatives Analysis, and imposes on the Applicant the obligation to show clearly and convincingly why the period of time they are proposing is necessary in light of other mine design alternatives which might be available. (C-81)

*Response:* As the commenter notes, the allowable 30-year period recognizes the statutory language. Within the rule, there are both provisions for shortening the 30-year period and increasing its length if necessary. The rule also promotes contemporaneous reclamation, the goal of which is to stabilize the mine site as quickly as possible. The closure performance standards require a permittee to minimize maintenance and to control the release of mine waste (among other items), both of which require a well designed and implemented mining

plan. The Department shares the goal of the commenter, namely to minimize long-term risk at the site. However, the Department does not believe that setting an arbitrary goal of immediately, or 5 years, is an appropriate standard. Each mine site will be different, with different challenges and risks. Driving a mine site towards an arbitrary, general criteria may present unintended consequences. The Department does believe that the rule as presented will accomplish the desired outcome. No change was made based on this comment.

(491) *Comment:* Revise 20(H)(2) to read “Waste rock, waste containment, and tailings impoundments must be designed based on the results of the waste classification determined through the Mine Waste Evaluation report required in subsection 20(E) of this Chapter. Liner and leachate collection systems, if required, must meet the minimum design standards contained in section 21 of this Chapter unless alternatives are approved by the Department.” (C-1)

*Response:* Section 21 of the rule already contains provisions (21.B) for alternative designs. The requested change is not necessary since it would be duplicative of current rule language. No change was made based on this change.

## **20 H**

(492) *Comment:* The commenter asserts that the factors of safety for the seismic event are too low and not protective enough. An FOS of 1.0 is right on the edge of failure. Suggest that the 50 year event have a FOS of 1.3 and a 250 year event have an FOS of 1.1. (C-268)

*Response:* The Department has clarified section 20(H) of the rule for clarity and consistency with current geotechnical practice. While the impact of the revision is small, it will clarify that the seismic event return period for the construction and operational period is 475 years (10% probability of exceedance in 50 years) and for the period following closure it is 2475 years (2% probability of exceedance in 50 years). The Department believes this magnitude of seismic event is appropriate for mine site designs.

(493) *Comment:* Revise 20(H)(3) to read “Embankment-type containment structures must be designed, constructed, and maintained to prevent embankment overtopping, with adequate freeboard, during the Probable Maximum Flood (PMF) precipitation and snowmelt event considering maximum wind and fetch.” (C-1)

*Response:* Section 20(H)(3) already includes the reference to embankment overtopping. As such, adding the proposed reference to “Embankment-type” containment structures does not add any clarity. If other forms of proposed containment structures do not have “embankments”, then this provision would not apply. No change was made based on this comment.

## **20 I. Storage Piles.**

(494) *Comment:* The commenter suggests that the language: “(4) With a cover which shall be used to isolate reactive mine materials from precipitation and air as soon as practicable” is too vague. Even with the definition of reactive suggested above, a “cover” may not do the job, a more complete anti-oxidation plan will almost certainly be needed...liners, etc. or not

even allowing on site storage piles of certain materials.( e.g. requiring instant paste backfill or a trench and fill. Certainly a storage duration standard should be specified for a storage pile containing “reactive mine materials”) (C-24)

*Response:* Due to changes associated with the response to comment for section 20(I)(4), this provision has been deleted from this section of rule.

(495) *Comment:* In a manner that provides for segregation of designated chemical and reactive mine materials, metallic mineral product, ore, tailings, lean ore, waste rock, surface overburden, and topsoil, as applicable, unless these materials are placed together for a beneficial purpose as described in the mining or environmental protection, reclamation, and closure plan or mining plan; and the first rule is that only geochemically similar materials should be stored or stacked together so that they are amenable to successful management and use by the same method. Waste rock piles should be differentiated and managed on a geochemical basis with as many piles as necessary to meet the standard of “geochemically similar” geochemically similar meaning same ARD generation potential, same rate of expected ARD, and same leaching potential for toxic metals. “Placed together for a beneficial purpose” is too vague and this would normally refer to the use of layered pies utilizing materials with enough demonstrated neutralizing potential to offset acid generation over the life of the pile. The life of the pile will vary with its intended end use, e.g., a TDRSA or backfill pile may have a life of only up to 10 years before it is returned to the underground mine or open pit. (C-24)

*Response:* Due to changes associated with the response to comment for section 20(I)(4), this provision has been deleted from this section of the rule.

(496) *Comment:* Under 20(I)(4): This is written such that reactive materials can be placed in storage piles. SME recommends that storage piles be defined for the storage of inert materials only. In the definitions “storage piles” are cited as being mine waste units which could clearly cause management and misunderstanding of a stockpile or designated stockpile area depending on the stockpile contents. (C-1)

*Response:* The Department agrees that the definitions section of the rule may cause a misunderstanding in implementing the storage pile provisions under the rule. The Department has made the necessary changes to the definitions section, this section of the rule, as well as section 25(B) to distinguish storage piles from mine waste units. Regarding the reference to limiting storage to inert materials, the rules envision ore waiting for processing to be placed in storage piles, with appropriate design, construction, operational, and monitoring procedures in place. For this reason, storage piles have not been limited to inert materials.

(497) *Comment:* Delete “each” in 20(I)(6). (C-1)

*Response:* The Department has retained the word “each” to retain the focus on storage piles being evaluated individually as well as collectively. The sentence structure has been modified grammatically.

## 20J

(498) *Comment:* Under 20(J)(7)(c): It is recognized that the incremental difference between a 100-year and 500-year precipitation event is likely smaller than the difference between the 10-year and 100-year precipitation events. That notwithstanding, there seems little basis for using the 500-year event over the 100-year other than for conservatism. It is suggested that the life span of individual mine components be evaluated and if certain components will have shorter lives than others, then possibly a smaller design storm is appropriate. (C-1)

*Response:* The Department has retained the 500-year event for analysis of run-on/runoff control systems. Data compiled by the Northeast Regional Climate Center for more recent storm events in New York and New England has shown a dramatic increase in stronger precipitation events as compared to data compiled by the National Oceanic and Atmospheric Administration (NOAA). NOAA data is typically used for storm water run-on/runoff control design analysis. Given the size and setting for the types of structures associated with mining activities, coupled with the consequences of failure, the Department believes the 500-year standard is appropriate. No change was made based on this comment.

## 21. Waste Unit Design Standards

(499) *Comment:* With respect to subchapter 5 section 21. Waste Unit Design Standards, Gary Boone stated that “Glacial till...must **not** be used as a sublayer for waste-water pond; use clay only. HDPE liner must be 1/8 of an inch or greater” and that “Slope protection of the waste-water holding pond must be stated in the proposal, and approved by DEP personnel.” (C-105)

*Response:* Glacial till is commonly used as a component of the liner system in waste and water management units in Maine. The Department agrees with the commenter that glacial till soils generally do contain stones with sharper edges than is typically found in a clay-like soil. However, a piece of the permit application review process involves evaluation of the various design elements being proposed. The ability of the liner system to function as intended throughout the life of the mine would be a critical element for review. An applicant would propose a design, inclusive of a maximum stone size for the soil. By way of example, for solid waste projects involving liners, the maximum stone size allowable adjacent to a geomembrane under typical loading conditions is ½-inch, irrespective of the type of soil used. If the design is acceptable to the Department, this requirement is then put into the construction specifications and Construction Quality Assurance Plan. The Department monitors construction to ensure the requirements are followed.

The rule requires the High Density Polyethylene (HDPE) liner be a minimum 60-mil thick material. This thickness is common in the waste industry. This requirement is a minimum value, and could be increased if needed dependent upon a specific proposal. Similar to the discussion above regarding glacial till, all proposals will be critically evaluated to ensure that the HDPE liner will maintain its integrity for its intended use.

Regarding slope protection for the waste-water holding pond, it is assumed the commenter is concerned with ice damage to the liner, damage from operations (pumps, pipe, hoses, etc. that may be utilized over the liner), or damage from wildlife. These are all elements that are reviewed by the Department for any proposals involving a lined holding pond, so this comment is addressed during application reviews.

No change was made based on this comment.

(500) *Comment:* The truth on technology is the advances have been not on the side of risk management but on the side of the cheaper and some times more dangerous than open pit technologies like block caving, in-situ leaching (not even mentioned in our rule), or electrowinning, SW/EX now promoted by SRK as green technology but with its own complications and limitations on process and waste management. SW/EX allows incredibly high quality copper or zinc to be extracted from lower grade ores but depends on a leach of sulphuric acid leach to get the metals in suspension for electrowinning. (Lots of issues with the way our draft rule represents and deals with Electro winning). (C-24)

*Response:* As part of this rule, the Department did not attempt to list every form of technology available for mining. Under the definitions section, mining is defined in broad terms, rather than in terms of particular technologies. Those technologies that are not allowed, *i.e.*, heap or percolation leaching, are specifically excluded by the rule, and the terms are defined for use in the rule as well. During the pre-application and application process the proposed technology at a particular site would be evaluated within several areas of the process, such as in the Environmental Impact Assessment, the Alternatives Analysis, the Mine Plan, or the Contingency Plan by way of example. In order to issue a permit approval, the evaluation of the particular technology must meet the criteria for approval contained in Subchapter 3, Section 11 of the rule.

For technologies such as in-situ leaching, other permits may also be necessary governing its use. The rule specifically addresses the relationship of this rule to other rules, and states that the permittee is obliged to comply with all other applicable state, federal, or local statutes, regulations, or ordinances (ref. Subchapter 1, Section 4). With this relationship established, the rule is clear that all requirements of this rule must be met as well as requirements of other applicable rules.

Regarding the commenters discussion of how electrowinning is addressed in the rule, it is true that this technology requires a leach solution. The rules exclude heap or percolation leaching, which is defined in rule as a process conducted outdoors in an ore stockpile (ref. subchapter 1, definition VV). If this technology were proposed at a mine site, the Department expects that a vat leaching procedure would be used in order to be allowed under the rule. This is an example of how particular technologies would be evaluated under these rules.

No change was made based on this comment.

(501) *Comment:* It must have separate rules for underground versus open pit (that is what Michigan just realized and added). Our rules are an incomprehensible jumble of open pit and underground mining terminology. (C-24)

*Response:* The Department believes that the rule as presented is appropriate to address all forms of mining. Since the commenter did not provide any specific reasoning for the separation of rules nor were any examples presented of the “incomprehensible jumble of open pit and underground mining terminology”, the Department could not further evaluate this comment. No change was made based on this comment.

(502) *Comment:* Sec. 21 Waste Design Standards suffers from a lack of definition of the word “stabilization”. The word as used here and elsewhere needs a definition. Also, in section 21 B, the alternatives reviewed seem to only include those which the applicant has chosen to bring to the discussion, and not those which others might propose. The Department has to have at all junctures the option of declining to approve a proposal, and part of the refusal process must be the prospect of a design brought to the Department’s attention which does a better job. (C-81)

*Response:* Words not explicitly defined in rule are intended to have their ordinary and common meaning. The Department disagrees that the ‘Waste Design Standards’ section of the rules ‘suffers’ due to this lack of definition. As the commenter points out the term is used elsewhere in the rule, most notably under subchapter 5, section 20.G, ‘Reactive Mine and Designated Chemical Materials Management System’, where stabilization is connected to the desired outcome of “...not causing a direct or indirect discharge of pollutants that could reasonably result in a condition of nonattainment of water quality standards or noncompliance with the performance standards of this Chapter.” The Department does not believe that defining this term will enhance its clarity within the rule.

The alternatives reference within this section is to subchapter 5, section 21.B, ‘Alternative Design Process’. This section is very specific to lay out a process for evaluating alternatives to the minimum design standards of this section. By way of example, a common use of this approach within the State’s solid waste program is to demonstrate the effectiveness and equivalency of replacing one component of a liner or cover system with an alternative technology that will perform equally to the component it replaces and performs equally within the overall liner or cover system. It is not meant to be a review of alternatives to placing a mine site or mine process at a particular location, nor is it intended to be a review of alternative mining approach technologies. The alternative analysis that the commenter is requesting is that which is covered in subchapter 3, section 9.H, which allows the Department to evaluate unreasonable adverse effects from the project.

No change was made based on this comment.

(503) *Comment:* Delete “pollutants” from 21(A); “Contamination” is defined in the General Provisions section, “pollutants” is not. (C-1)

*Response:* Pollutant is a defined term in statute in 38 M.R.S. § 361-A, as follows:

**4-A. Pollutant.** "Pollutant" means dredged spoil, solid waste, junk, incinerator residue, sewage, refuse, effluent, garbage, sewage sludge, munitions, chemicals, biological or radiological materials, oil, petroleum products or by-products, heat, wrecked or discarded equipment, rock, sand, dirt and industrial, municipal, domestic, commercial or agricultural wastes of any kind.

No change was made based on this comment.

(504) *Comment:* Revise 21(A)(3) to read “Leachate ponds must be provided with the composite liner system described in subsection 21(A)(1) of this Chapter except that leachate collection and removal system above the liner is not required. An emergency spillway must be included in the design.” Leachate pond freeboard does not appear to be addressed in this draft Chapter. (C-1)

*Response:* The Department agrees that freeboard will be a necessary element of the leachate pond design and has inserted language to address this issue.

(505) *Comment:* Under 21(A)(4): It would seem that the conclusion of whether or not a Group A or B waste could be stabilized to avoid pollutant release would be determined in advance of waste unit construction. Otherwise, this part would be a subtle way of requiring liners with leak detection layers. If this is so, it is important to recall that metallic wastes are inorganic and, once covered, leachate generation will be *de minimus* compared to organic waste, where post-closure leachate generation can occur. (C-1)

*Response:* The commenter is correct that the determination of whether or not a Group A or B waste could be stabilized to avoid pollutant release must be determined in advance. Once a waste unit is constructed it is not feasible to add a leak detection layer to the unit. However, waste units may be constructed in multiple phases over time. If additional characterization testing demonstrated that conditions have substantively changed since the original characterization testing in a manner that negatively impacts the ability to stabilize the waste, it is conceivable that future waste unit cell construction could include a leak detection layer in accordance with this section. No change was made based on this comment.

(506) *Comment:* Revise 21(A)(5) to read “...and the leachate storage volume must include capacity for the precipitation from a 24-hour, 500-year storm falling on the open portion of the mine waste unit and the leachate storage pond.” (C-1)

*Response:* The Department agrees with the commenter that the majority of leachate generated from a mine waste unit will come from the open portion of the unit. However, cover system designs may still allow some precipitation to migrate through the cover system to create leachate. The computer models used to estimate leachate generation from waste units account for waste unit areas being open or closed, so the concern the commenter has is addressed during the design modeling work and does not require a rule change. No change was made based on this comment.

## 22. Monitoring and Reporting Requirements

(507) *Comment:* To clarify that the monitoring plan is focused on contaminants, as opposed to a generic “threat”, we recommend modifying section 22.A(2) to read “...shall be based on the potential threat from identified or anticipated contaminants from the mine,....” (C-41, C-42, C-77)

*Response:* The monitoring plan is intended to identify adverse impacts on water quality, water quantity, stream flow parameters, habitat, wetland functions and values, and other features of the natural environment and designated or existing uses in the area that could reasonably be adversely impacted by operations at the site. The change proposed by the comment would narrow the scope of the monitoring plan to exclude assessment of impacts on many important features on natural resources, the environment, and public health and safety which are outlined in 38 M.R.S. § 490-OO. No change was made based on this comment.

(508) *Comment:* We recommend replacing the phrase “mining operations” with “mining areas” in section 22.B(1)(a) to maintain consistency with the statute. As noted above in our comments regarding “Mining Area” and “Affected Area”, we believe it is important to remain consistent with definitions in the statute and expectations regarding compliance in each area. Overall, a proposed mine layout is critical to determining mining area versus affected area. The Department’s Chapter 200 presentations on September 12 and October 17 showed a conceptual diagram with bubbles of operational areas (pit, tailings, ore stockpile, etc.) that were separated by narrow ribbons and isolated sections of “affected areas”, which would be subject to groundwater compliance requirements by definition. We believe that the Department’s conceptual diagram is unrealistic given modern mine designs, which try to reduce overall footprints and environmental impacts by closely spacing operational elements and shifting haul routes and stockpiles around within a defined “mine area” envelope to improve efficiency and ensure worker safety. Under such a company design, groundwater compliance may be difficult, if not impossible, to achieve in the narrow intervening ground between an abutting open pit and waste rock pile, for example. (C-41, C-42, C-77)

*Response:* Subchapter 2 section AAA defines “mining,” “mining operation,” or “mining activity” as “activities, facilities or processes necessary for the extraction or removal of metallic minerals or overburden or for the preparation, washing, cleaning or other treatment of metallic minerals and includes the bulk sampling, advanced exploration, extraction or beneficiation of metallic minerals as well as waste storage and other stockpiles and reclamation activities, but does not include exploration.” Subchapter 2 section BBB defines “mining area,” or “metallic mineral mining area” as “an area of land described in a permit application and approved by the Department, including, but not limited to, land from which earth material is removed in connection with mining, the lands on which material from that mining is stored or deposited, the lands on which beneficiating or treatment facilities, including groundwater and surface water management treatment systems, are located, or the lands on which water reservoirs used in a mining operation are located.” The Department’s intent is to require monitoring as close as possible to each discrete mining operation with the

mining area. The Department will consider the juxtaposition of individual mining operations and determine whether it is reasonable to conduct ground water monitoring for operations in close proximity to each other or whether separate ground water monitoring well must be developed to monitoring each discrete mining operation. This site-specific determination will be based, in part, on site hydrogeology, access to the monitoring location, and other factors determined to be relevant by the Department. No changes were made based on this comment.

(509) *Comment:* We believe that in order to meet the multiple objectives of minimizing cumulative environmental impacts, reducing overall footprints, and ensuring an efficient operation, while meeting the intent of the law’s provision of not impacting groundwater quality “outside the mining area”, a significant portion of the overall permitted mine should be considered as a single “mining area” containing an overlap of operational functions. (C-41, C-42, C-77)

*Response:* Mining area is an area of land described in a permit application and approved by the Department. Each mining area will be site-specific and be defined in each mining permit based on the definition in the rule and the conditions of the proposed mining operation. No changes were made based on this comment.

(510) *Comment:* In the first and second sentences, consistent with the Mining Act, the proper term is “mining area,” not mining operations, and should be changed. The language in the second sentence in section 22.B(1)(a)(i) is in conflict with the definition of “mining area,” and does not conform with the section allowing exceedance of groundwater standards within a mining area. The Applicant’s mine design and mine plan as permitted and approved by the Department will include multiple operational elements and an approved build-out, including pits, stockpiles, mine waste units etc. Yet this section is stating that, even if these areas are stripped and graded in preparation for intended use, they are not considered mining areas. The definitions in section 2 and the Mining Act contradict this statement. In addition, because groundwater compliance is not required within a Mining Area, we believe the last sentence of this section should not refer to a “compliance point” within a Mining Area, but instead the sentence should refer to “monitoring locations.” A “Compliance point” is not defined in the Chapter, but in any event must be outside the mining area to be consistent with the Mining Act. (C-41, C-42, C-77)

*Response:* It is clear from 38 M.R.S. § 490-MM(12) that a mining area is an area actually used in the process of mining defined in 38 M.R.S. § 490-MM(11), and not an area that might or might not be used for that purpose at some point in the future. Moreover, there is no rational reason to define a given area as a mining area and thereby exempt it from groundwater quality requirements of 38 M.R.S. § 465-C until material likely to pollute groundwater is located in that area or will be in the near future. If an applicant has a clear need for an area to be defined as a mining area in the immediate future, they may apply to change the designation of that area, which may require the designation of new compliance points as described in section 22(B)(1)(a)(i) of the rule, at the boundary of the proposed new mining area and other locations as determined to be necessary by the Department. Alternately, the Department may have approved designation of parts of the site as mining

areas pending the “mining activity within 100 feet or as otherwise specified” trigger. That is, the boundaries of mining areas at any given time are defined by section 22(B)(1), so that an operator or applicant may install or be required to install monitoring locations and collect data at certain locations, in anticipation of their becoming mining areas, but these do not actually become mining areas until a mining activity occurs within 100 feet (or a greater or lesser distance specified by the Department). The rule does not contradict the exemption from groundwater quality requirements in 38 M.R.S. §490-OO(4)(D). No change was made based on this comment.

- (511) *Comment:* Under this subsection, “Parameters for which the Applicant must monitor include, but are not limited to, those for which groundwater performance requirements are established.” By whom? Where are these groundwater performance requirements established? Statutory or regulatory sections should be cited here. Note that this same issue exists under section 22.B(2)(a) (Surface Water and Sediments) the phrase again “of any parameter for which a performance requirement has been established or indicator parameters as determined to be necessary by the Department.” “Performance requirement has been established” by whom? Where? (C-41, C-42, C-77)

*Response:* Performance standards for groundwater quality and other environmental criteria are established during the baseline assessment (section 9(C)) or as necessary during the monitoring plan or corrective actions. The baseline plan is part of the application and use of any baseline criteria must be specifically approved by the Department in its review of the application. Section 22(B)(10) has been revised to clarify that the Department may require or establish performance criteria other than those proposed by the applicant for review of monitoring data. No additional changes were made based on this comment.

- (512) *Comment:* Monthly monitoring for surface water is costly and unnecessary. A less frequent regimen would be acceptable to detect changes in monitoring parameters. We recommend the Department consider applying the same water monitoring requirements as for landfills under Chapter 405 2.C(2)(c), by replacing the second sentence in section 22.B(2)(c)(ii) with: “Sampling frequency for surface water monitoring at an active mining operation must include, at a minimum, three sampling events per year collected during spring (March/April), summer (July/August) and fall (October/November), unless an alternative frequency is approved or required by the Department, based on site-specific characteristics. Monitoring is required for all monitored parameters in surface water unless a change in parameters is approved by the Department. At a minimum, annual monitoring must be required of sediments.” (C-41, C-42, C-77)

*Response:* Chemical and physical characteristics of surface water change rapidly, and the commenter’s proposed sampling rate is inadequate to provide information suitable for valid comparison or analysis. The Department has revised section 22 to clarify that certain parameters in some surface waters may need continuous monitoring using appropriate technology. These techniques are in use at many other facilities regulated by the Department and at many mining operations in other jurisdictions. No additional changes were made.

(513) *Comment:* The monitoring plan will specify the methods and sampling activities required for biological monitoring. We recommend modifying the first sentence to read "...shall be monitored in accordance with a monitoring Plan approved by the Department where mining activities..." (C-41, C-42, C-77)

*Response:* All monitoring data required by the application must be collected in accordance with the approved monitoring plan, QA/QC protocols, and related documents; the proposed change does not provide any additional clarification. No change was made based on this comment.

(514) *Comment:* It is unclear whether sections 22.B(5) through (9) only apply to surface water and sediments, or are overall performance standards that should be separated as a new section 22.C. (C-41, C-42, C-77)

*Response:* The Department does not find any ambiguity in this subsection. Section 22(B)(2) is labeled as referring to "Surface Water and Sediments", while the following subsections are labeled as "Hydrology", "Biological Resources", and so on, although obviously all monitored elements of the site are related to some extent. The Department has revised section 22 to provide more consistent labeling of subsections and paragraphs. No additional changes were made based on this comment.

(515) *Comment:* In section 22.B(5), "development rock" is not defined in the Chapter. We recommend replacing that phrase with "waste rock". (C-41, C-42, C-77)

*Response:* The term development has been removed from the rule and replaced with the term "mine waste".

(516) *Comment:* We believe that most of sections 22.B(10) through (14) should be shifted to section 26, Reporting and Notifications. This shift would improve clarity and consolidate similar requirements. (C-41, C-42, C-77)

*Response:* The Department has revised section 22 and related sections of the rule to clarify the relationships among those sections, but found no advantage in clarity or function in moving material from section 22 to section 26. No changes were made in response to this comment.

(517) *Comment:* Section 22.B.1(h) specifies 30 days after the end of the quarter for submitting groundwater monitoring results. In addition, submitting data without context or evaluation is not recommended, and 10 days is too short for QA/QC and any retesting to confirm results. To maintain consistency, we recommending replacing the second sentence of section 22.B(10) with language from Chapter 405 3.c (solid waste management rules): "Reports on ground and surface water quality must be submitted within 30 days of the date the laboratory analyses are reported, and before the next sampling event occurs." (C-41, C-42, C-77)

*Response:* The Department will be familiar with the site and with previous data, so that no additional context will be required beyond that normally reported in field data sheets, and

QA/QC protocols, requirements for resampling, and other measures necessary for the implementation of the monitoring program and identification of non-compliance conditions will have been identified in the course of application review. There is no reason to delay submission of data to the Department beyond a period for some internal review by the applicant; the commenter's proposed language is not suitable for those parameters for which continuous monitoring may have been required. No change was made based on this comment.

(518) *Comment:* Under the Mining Act's and the draft rules' definition of "contamination," see Mining Act § 490-MM(5) and draft rules §2.W, the concept of a "statistically significant change" only applies to groundwater, not to surface water. Consequently, this prefatory language should include the words, "as applied to groundwater," after the word "or" in the second line as follows: "or, as applied to groundwater, a statistically significant change has been identified at any monitoring station." (C-41, C-42, C-77)

*Response:* The Department routinely applies standard statistical methods in evaluation of all monitoring data and in evaluating the need for response actions and the magnitude of impact on the resource. No change was made based on this comment.

(519) *Comment:* Modify section 22.B(11)(b) to begin: "For ground water outside the mining area..." Additionally, this subsection appears to establish additional compliance standards for groundwater beyond those set forth in the Mining Act under the definition of contamination in section 490-MM(5) and the definition of contamination in Section 2 of the draft rules. These additional citations are not compliance standards under the Mining Act and should be deleted. (C-41, C-42, C-77)

*Response:* The rule does not contradict the exemption from groundwater quality requirements in 38 M.R.S. § 490-OO(4)(D); relevant standards for groundwater quality as baseflow discharge both within and outside of any mining area are necessary as part of demonstration of compliance with the requirement for surface water specified in 38 M.R.S. § 490-OO(4)(F). No change was made based on this comment.

(520) *Comment:* We believe a non-compliance notification should be made "within 24 hours of identification of failure to meet a compliance standard." The timetable for sampling and analysis is a key element in complying with section 22.B(13) – it could take two weeks to get lab results. Consider instead using Chapter 405 2.C(2)(i) language: "If the results of detection monitoring indicate a possible deterioration in water quality at one or more ground water monitoring wells or surface water monitoring points, the Permittee shall initiate an evaluation of the causes of the deterioration in water quality within 30 days of its receipt of the laboratory results. A report of the evaluation, prepared and sealed by a qualified professional, must be submitted to the Department for review and approval within 90 days of the date the evaluation is initiated." (C-41, C-42, C-77)

*Response:* The non-compliance notification requirement could obviously only follow receipt of the laboratory report, with the exception of field parameters or those parameters for which real-time or near real-time monitoring may be required. Procedures for resampling, if

required, will have been determined as part of the approval process, and will not require additional approval at this stage. The proposed change would allow discharges to continue without investigation of the possible source for at 30 days subsequent to discovery of the discharge, and without notification of the Department of the results of any such investigation for an additional 90 days. Given the potential impacts of discharges and the potential volume of pollutants that could be discharged, particularly to surface waters, the Department finds that there is no reason for delays longer than those specified in section 22. The Department has modified language in section 22 to clarify requirements for response actions, but no additional changes were made based on this comment.

(521) *Comment:* Compliance monitoring wells should be as close as possible to sources of contamination, and not more than 100 feet away, unless there is proof that placing them farther away will be more protective of the environment. Without these strict measures, contaminated groundwater will inevitably spread to Maine's lakes, rivers, and streams. (C-78)

*Response:* The Department has proposed language in section 22(B)(1)(a) to address this concern.

(522) *Comment:* The draft rules lack clear water quality compliance requirements. If a mine violates its license by contaminating water, it should have to fix the problem quickly. These rules potentially allow contamination to continue for months without any corrective action. (C-39) (C-160)

*Response:* The Department has revised section 22 (14 – 16) to clarify the responsibilities of the applicant and Department in the event that one or more performance standards are not met, or if data or observations at the site indicate potential failure to meet requirements of the permit.

(523) *Comment:* The rules should require minimal contamination of groundwater and monitoring not more than 100 feet from a particular mining activity, or establish a default distance of 100 feet for where compliance monitoring wells must be located. (C-218) (C-35) (C-232)

*Response:* The Department has proposed language in section 22(B)(1)(a) to address this concern.

(524) *Comment:* In regards to comparing to baseline water quality conditions, Mr. Pinette recommends that the mining regulations rely on the existing water quality standards, without the additional complexity of "benchmark" water quality standards. (C-15)

*Response:* Operators must meet all requirements of 38 M.R.S. Article 4-A not specifically limited for developments regulated under this rule by 38 M.R.S. Article 9. Establishment of baseline water quality conditions in addition to the water quality criteria of Article 4-A allows the Department to establish limits for specific parameters that would allow better evaluation of potential impacts and assessment of changes due to the development. Where

values of certain parameters exceed applicable criteria under pre-development conditions, performance standards must be established that reflect pre-development conditions and allow the Department to determine when the activity has resulted in a failure to meet conditions as naturally occur. No change was made based on this comment.

(525) *Comment:* Quarterly Groundwater Monitoring. [page 61 B(1)(h)] The draft regulations specify quarterly monitoring (i.e., four rounds of monitoring per year) for groundwater quality monitoring. Some other DEP programs (e.g., Solid Waste) have adopted three monitoring events per year, because the winter monitoring events are fraught with problems due to freezing weather. This approach should also be adopted for mining, to help maintain data quality. (C-15)

*Response:* The Department understands that access to some monitoring locations may be limited by weather conditions, but most critical locations will be in areas near or adjacent to mining activities, so that access should be maintained throughout the year. Particularly given the potential for high levels of pollutants from unregulated discharges within mining areas, it is necessary to maintain a high frequency of sampling appropriate to medium or value being assessed. No change was made based on this comment.

(526) *Comment:* Downgradient in a groundwater sense. Compliance monitoring for the mining operation and related facilities requires groundwater monitoring at the downgradient boundaries of the related mining sites/structures. Given that mine dewatering would likely be involved for most metallic mines in Maine, the pre-mining, syn-mining and post-mining downgradient orientations may be different. The regulations should address this explicitly. (C-15)

*Response:* Potential changes in gradient during the mining operation must be assessed as part of the baseline work plan (section 9(C), particularly 9(C)(4)(e)) and environmental impact assessment (section 9(G)). No change was made based on this comment.

(527) *Comment:* Require ambient air monitoring to determine whether people are breathing unsafe levels of toxic metals. (C-232)

*Response:* The Department's final proposal was amended to include includes ambient air quality monitoring requirements in section 22 (B)(17) of the rule.

(528) *Comment:* Jean English, Bruce Taylor, Gary Boone and Trout Unlimited recommend that groundwater compliance monitoring wells should be located no farther than 100 feet from the mining activity, unless a greater distance is demonstrated to be more protective of the environment. (C-115) (C-73) (C-105) (C-14)

*Response:* The Department has proposed language in Section 22(B)(1)(a) to address this concern.

(529) *Comment:* With respect to post-closure monitoring, Gary Boone stated, “upon commencement of mining, chemical analysis of representative assays of metallic sulfide minerals must be carried out by an independent laboratory half-yearly to monitor toxic elements....” (C-105)

*Response:* The details of the monitoring plan, including the post monitoring plan, will be developed based upon the details of the mine, its waste characteristics and other pertinent factors. No change was made based on this comment.

(530) *Comment:* Gary Boone stated that “Environmental impact of any changes in water and air quality, relative to present 2013 conditions, should be assessed twice yearly over a 5-mile radius of terrain and at least ten (10) miles down hydrologic flow and quarterly, over prevailing wind direction, beginning with commencement of mining.” (C-105)

*Response:* As part of the permit process, the Department will require monitoring of these resources on a case-by-case basis based on the potential impacts of the mine on these resources. No change was made based on this comment.

(531) *Comment:* With regard to monitoring of impacts to wildlife, Gary Boone stated that “Any degradation of pre-mining Wildlife habitat, following initiation of mining, must be evaluated biannually by DEP and [Maine Department of Inland Fisheries and Wildlife] personnel during the life of the mine, and over a minimum period of ten years following cessation of mining. Wildlife habitat degradation must then be evaluated by DEP and IF&W experts over a period of one, or preferably two decades. [sic] down-flow, in the watershed, under the same provisions of time.” (C-105)

*Response:* As part of the permit process, the Department will require monitoring of these resources on a case-by-case basis based on the potential impacts of the mine on these resources. No change was made based on this comment.

(532) *Comment:* Gary Boone stated that “Monitoring of leachate must be [conducted on a] monthly [basis].” ( C-105)

*Response:* Monitoring of leachate will be done in accordance with the frequency specified in the permit, which is less than or greater than monthly as determined on a case-by-case basis. The commenter did not provide any basis for the requested frequency. No change was made based on this comment.

(533) *Comment:* Trout Unlimited commented that “In general, surface water and groundwater monitoring requirements in the draft rules are vague. They do not specify the parameters to be monitored; compliance standards; analytical and statistical procedures; or the distance from each mining activity at which monitoring must occur. We are concerned that the surface water quality monitoring is required only monthly, and groundwater monitoring only quarterly. Key parameters such as pH are inexpensive and easy to monitor, and daily or even continuous monitoring is possible and not prohibitively expensive. Infrequent monitoring increases the chance that water quality problems will remain undetected, especially if the

problems are related to relatively infrequent events such as large rainstorms or droughts.”(C-263) (C-14)

*Response:* The Department has revised section 22 of the rule to clarify that certain key parameters, particularly in surface water, must be monitored more frequently or continuously and in real-time or as near to real-time as practicable. Due to the low velocities of groundwater under most natural conditions, quarterly monitoring is acceptable in most natural media, but the revised rule clarifies that more frequent monitoring may be required by the Department in media with relatively high velocities or in conduits that could discharge to groundwater, such as landfill or lagoon underdrains

(534) *Comment:* Trout Unlimited commented that “Response plans in the event that surface or groundwater monitoring indicates a failure to meet a compliance standard should be immediate. Trout Unlimited commented that the deadline for a response plan pursuant to Subchapter 5 Section 22.B(13) should be changed from “two weeks” to “within 48 hours.” Trout Unlimited also stated that “a response action should be triggered by each exceedance.” (C-263) (C-14)

*Response:* The Department has revised section 22 of the rule to clarify that corrective actions are required for any failure to meet a performance standard or evidence of deterioration of site conditions.

(535) *Comment:* Bruce Taylor stated, “Any violation must be ordered to be corrected immediately.” (C-73)

*Response:* The Department has revised section 22 of the rule to clarify that corrective actions are required for any failure to meet a performance standard or evidence of deterioration of site conditions.

(536) *Comment:* It must establish and maintain an independent data base of pre mining land and water quality against which permit and rule requirements can be measured and which provides for independent continual reference to this data and its use as an early warning of problems (against specific written warning standards and protocols). (C-24)

*Response:* Collection of a complete background data set for chemical, biological, and other environmental criteria is required by section 9(C) and (G), and, as applicable, in other sections of the rule. No change was made based on this comment.

(537) *Comment:* To protect Maine from mining pollution, I urge you to adopt stronger standards to ensure groundwater contamination is contained as close to mining activities as possible. Compliance monitoring wells should be as close as possible to sources of contamination, and no more than 100 feet away, unless there is proof that placing them farther away will be more protective of the environment. Without these strict measures, contaminated groundwater will inevitably spread to Maine’s lakes, rivers, and streams. (C-79) (C-36)

*Response:* The Department has proposed language in section 22(B)(1)(a) to address this concern.

(538) *Comment:* The rules should clarify that no discharge from a mine, either direct or indirect via groundwater, can violate any of Maine’s surface water quality standards. The rules should make clear that meeting a “performance standard” promulgated under these rules does not absolve a mine operator from meeting any surface water quality standards and that these rules do not create a “permit shield.” To this end, subchapter 5, subsection 22(2)(a) should be amended as follows: The Applicant shall establish a surface water monitoring system that is capable of detecting direct or indirect discharges to surface waters from mining operations, including, but not limited to, discharges licensed under 38 M.R.S. § 413, of any parameter for which a performance requirement has been established or indicator parameters as determined to be necessary by the Department. This system must be capable of detecting any exceedance of performance requirements and violations of water quality standards and criteria pursuant to 38 M.R.S. §§ 464-469. (C-262)

*Response:* Equivalent language to that recommended by the comment is found in the rule in Section 22(B)(12). No change was made based on this comment.

(539) *Comment:* The term “performance requirement”...does not appear to require monitoring in-stream concentrations of contaminants or impacts to aquatic life, but rather seems to only require monitoring of permit-holder activities. The terms “performance standards” and “performance requirements” need to be precisely defined to mean water quality criteria in Maine water quality standards or discharge permits. (C-17)

*Response:* Site-specific performance requirements are developed during the baseline site assessment (see section 9(C) and (G)) and as necessary during the operational and post-operational phases. These include in-stream chemical parameters, invertebrate population data, fish tissue data, and other data determined to be necessary by the Department (see section 9(C)(1), (3), and (4)). Application of these performance standards is described further under section 22(B)(12) and elsewhere in the rule. The Department has made some changes to section 22 to clarify the application of these criteria.

(540) *Comment:* Precise definitions for the terms “performance standards” and “performance requirements” are needed, to clarify that “performance means attainment of water quality criteria. (C-17)

*Response:* Site-specific performance requirements are developed during the baseline site assessment (see section 9(C) and (G)) and as necessary during the operational and post-operational phases. These include in-stream chemical parameters, invertebrate population data, fish tissue data, and other data determined to be necessary by the Department (see section 9(C)(1), (3), and (4)). Application of these performance standards is described further under section 22(B)(12) and elsewhere in the rule. The Department has made some changes to section 22 to clarify the application of these criteria.

(541) *Comment:* To minimize groundwater contamination, the rules should establish a default distance of 100 feet for compliance monitoring wells...unless the applicant demonstrates that

an alternative distance would be more effective. Once groundwater contamination spreads over a wide area, as the current rules would allow, it becomes more difficult to control and clean up and greatly increases the risk of surface water pollution, harm to wildlife, and pollution of drinking water supplies. (C-22) (C-114)

*Response:* The Department has proposed language in section 22(B)(1)(a) to address this concern.

(542) *Comment:* I am puzzled about the requirements for groundwater testing in the vicinity of the mining operation. The monitoring wells must be close enough to the actual mine to reflect contamination. Wherever possible 100 feet seems like a reasonable standard. (C-272)

*Response:* The Department has proposed language in section 22(B)(1)(a) to address this concern.

(543) *Comment:* The draft rules do not require ambient air quality monitoring during mining operations. Mining ore can contain significant amounts of toxic metals. Without ambient air monitoring, there is no way to tell whether the employed people and people nearby are breathing unsafe levels of toxic metals unless people become ill. (C-22) (C-114)

*Response:* The Department's final proposal was amended to include includes ambient air quality monitoring requirements in section 22 (B)(17) of the rule.

(544) *Comment:* The new rules as written (and as directed by LD1853) specifically allow groundwater discharges within the mining area. The approval criteria under the new rules only require developers to adhere to applicable water standards outside the mining area. DEP should adopt more stringent groundwater regulations to ensure protection and minimize groundwater contamination. (C-220)

*Response:* As noted by the commenter, unregulated discharges of pollutants to groundwater within mining areas are allowed by 38 M.R.S. § 490-OO(4)(D), although these discharges may not "cause a direct or indirect discharge of pollutants into surface waters or discharge groundwater containing pollutants into surface waters that results in a condition that is in nonattainment of or noncompliance with the standards in article 4-A or section 414-A or 420" (38 M.R.S. § 490-OO(4)(E)). The proposed rule is consistent with these requirements and with the groundwater quality requirements of 38 M.R.S. Article 4-A to the extent those are not restricted for this type of development by 38 M.R.S. § 490-OO(4)(D). The Department may not enforce stricter groundwater quality standards without statutory authorization. No change was made based on this comment.

(545) *Comment:* The present draft rules allow pollution of groundwater within the mining area, thus equivocating about the requirement that tailings impoundments have a protective liner. Groundwater contamination in the mine area, as defined in the draft rules, threatens groundwater outside. It may take a while for groundwater pollution to spread to surface water...but that is an inevitable process over time. Groundwater flows naturally into surface water, so contamination of rivers, lakes, and streams is inevitable given the lack of clear

water-quality requirements in the draft rules. They allow contamination to continue for months without any corrective action. (C-52)

*Response:* Unregulated discharges of pollutants to groundwater within mining areas are allowed by 38 M.R.S. § 490-OO(4)(D), although these discharges may not “cause a direct or indirect discharge of pollutants into surface waters or discharge groundwater containing pollutants into surface waters that results in a condition that is in nonattainment of or noncompliance with the standards in article 4-A or section 414-A or 420” (38 M.R.S. § 490-OO(4)(E)). The proposed rule is consistent with these requirements and with the groundwater quality requirements of 38 M.R.S. Article 4-A to the extent those are not restricted for this type of development by 38 M.R.S. § 490-OO(4)(D). The Department may not enforce stricter groundwater quality standards without statutory authorization. No change was made based on this comment.

(546) *Comment:* Change title of this section to 22. Environmental Monitoring and Reporting Requirements. (C-1)

*Response:* The Department does not find that the proposed change introduces any additional clarity to the rule. No change was made based on this comment.

(547) *Comment:* Revise 22(A)(2) to read “Parameters selected for analysis from any...” (C-1)

*Response:* The Department does not find that the proposed change introduces any additional clarity to the rule. No change was made based on this comment.

## **22 B.**

(548) *Comment:* With respect to subchapter 5 subsection 22.B, the HBMI stated that “Current technology allows for a simple and economical set-up of continuous data collection and real-time data transmission via telemetry systems. These systems are available for both ground and surface water data collection and should be required.” (C-112)

*Response:* The Department has revised section 22 of the rule to clarify that certain key parameters, particularly in surface water and other locations must be monitored more frequently or continuously and in real-time or as near to real-time as practicable. See section 22(B)(2)(c)(ii) and (B)(5).

(549) *Comment:* Revise 22(B) to read “The environmental monitoring plan must include the following elements:” (C-1)

*Response:* The Department does not find that the proposed change introduces any additional clarity to the rule. No change was made based on this comment.

## **22 B (1)**

(550) *Comment:* The commenter points out that much of Maine groundwater does not meet water quality criteria because of high metal content. This includes high arsenic, iron, manganese, lead and other metals. Failure to meet applicable criteria in and of itself should

not be defined as contamination, at least as far as a mine goes. If the mine degraded an aquifer beyond background conditions, than the mine should be held responsible. (C-268)

*Response:* Unregulated discharges of pollutants to groundwater within mining areas are allowed by 38 M.R.S. § 490-OO(4)(D), notwithstanding the requirements of 38 M.R.S. § 465-C. Outside of a mining area, 38 M.R.S. § 465-C would be part of the applicable groundwater quality standards, and groundwater is required to be “free of radioactive matter or any matter that imparts color, turbidity, taste or odor which would impair usage of these waters, other than that occurring from natural phenomena”(38 M.R.S. § 465(C)(1), emphasis added), so that, outside of any mining area, for any criterion which did not already meet the requirements for use in a public water supply (see 38 M.R.S. § 465(C)(1)) under predevelopment conditions, any further degradation of groundwater quality would be a violation of the rule. The proposed rule is consistent with these requirements and with the groundwater quality requirements of 38 M.R.S. Article 4-A to the extent those are not restricted for this type of development by 38 M.R.S. § 490-OO(4)(D). The Department may not enforce stricter groundwater quality standards without statutory authorization. No change was made based on this comment.

(551) *Comment:* Section 22 B.1.a.i relates to the monitoring of groundwater: The relevant statute, 38 M.R.S. § 490-OO.4.D, specifies that: “. . . discharges to groundwater from activities permitted by this article may occur within a mining area, but such discharges may not result in contamination of groundwater beyond each mining area,....” The term “mining area” is defined in 38 M.R.S. § 490-MM.12 as essentially all of any area from which earth has been removed (including the current and future pit area), plus the land on which any materials are stored. For a metal mine of the type considered here the material moved (but not removed from site) is typically nearly all of the material removed from the pit, which then swells from blasting generally by 20% or more. The “mining area” then also includes all land on which there are any facilities for beneficiation, treatment, etc., etc. In all, the land encompassed within the “mining area” could be only a few acres, but for the mine envisioned on Bald Mountain would more likely be 100s of acres, or more. Typically in a metal mine such as that envisioned at Bald Mountain, only a very few percent of the material is actually removed from site. The rest is heaped up somewhere on site or stored in ponds, etc. The statute allows “discharges” within the perimeter. “Discharges” are not defined. Thus the statute does not necessarily mean it allows “contaminated” discharges within the perimeter. To the extent the statute allows an interpretation that no discharge can contaminate, the Rule needs to enforce that requirement as explicitly as possible. To any extent the statute could be interpreted to allow such contaminated discharges within the perimeter of the mining area while expecting the water will meet standards at the perimeter, it is wholly misguided and represents a major defect. This defect would run in a number of different directions, but primarily in that it would fail to address the fact, depending on underground hydrology, that it can and often does take months or years for contamination to appear. Because the specific parameters of the underground hydraulic regime are unknown, one mis-step in judgment as to the efficacy of a design can result in essentially irreversible groundwater contamination. (C-81)

*Response:* As noted by the commenter, unregulated discharges of pollutants to groundwater within mining areas are allowed by 38 M.R.S. § 490-OO(4)(D), although these discharges may not “cause a direct or indirect discharge of pollutants into surface waters or discharge groundwater containing pollutants into surface waters that results in a condition that is in nonattainment of or noncompliance with the standards in article 4-A or section 414-A or 420” (38 MRS 490-OO(4)(E)). The proposed rule is consistent with these requirements and with the groundwater quality requirements of 38MRS Article 4-A to the extent those are not restricted for this type of development by 38 MRS490-OO(4)(D). The Department may not enforce stricter groundwater quality standards without statutory authorization. No change was made based on this comment.

(552) *Comment:* The proposed rule at Sec. 21.B.1.a.i doesn’t carry forward the best interpretation of the statute. It would be far better to enforce compliance within the mining area as the mining statute formerly required and could be interpreted now to require: In the absence of that, the Department should: first, make sure the alternatives analysis is fully utilized. By this, make sure all possible approaches are examined and evaluated so that the best approach, as brought to the Department from any source, is used. Second, in the event an intermediate monitoring well within the “mining area”, as allowed by the statute and rule, shows any level of deviation from a background norm, require an immediate full response to alleviate it. (C-81)

*Response:* Unregulated discharges of pollutants to groundwater within mining areas are allowed by 38 M.R.S. § 490-OO(4)(D), although these discharges may not “cause a direct or indirect discharge of pollutants into surface waters or discharge groundwater containing pollutants into surface waters that results in a condition that is in nonattainment of or noncompliance with the standards in article 4-A or section 414-A or 420” (38 M.R.S. § 490-OO(4)(E)). The proposed rule is consistent with these requirements and with the groundwater quality requirements of 38 M.R.S. Article 4-A to the extent those are not restricted for this type of development by 38 M.R.S. § 490-OO(4)(D). The Department may require groundwater monitoring within any mining area in order to ensure that the groundwater will not cause or contribute to a violation of surface water quality standards (section 22(B)(1)(a)(iii)), or to assess the performance of liners or other pollution control measures (section 22(B)(1)(a)(ii) and (section 22(B)(5), but it may not enforce stricter groundwater quality standards without statutory authorization. No change was made based on this comment.

(553) *Comment:* Revise 22(B)(1) to read “The following groundwater monitoring criteria shall apply to all mining operations:” (C-1)

*Response:* The Department does not find that the proposed change introduces any additional clarity to the rule. No change was made based on this comment.

(554) *Comment:* Revise last sentence of 22(B)(1)(a)(i) to read “Any new monitoring location used as a compliance point must be established to allow collection of at least one year of data prior to it becoming a point of compliance” (C-1)

*Response:* The Department does not find that the proposed change introduces any additional clarity to the rule. No change was made based on this comment.

(555) *Comment:* Under 22(B)(1)(a)(i): This implies that a monitoring point used as a compliance point does not necessarily have to have been part of the baseline characterization, but could have been, thereby negating the need to collect an additional year's data before using the data from that point for compliance. Is this the intended interpretation? (C-1)

*Response:* An operator may convert a monitoring location previously used for baseline characterization, or for any other purpose, to a compliance point, provided that the Department determines that the location of that point is suitable and, if applicable, the physical condition of the point would allow for collection of reliable data, as determined the Department. Data previously collected from that location would not necessarily be considered baseline data, as it is possible that those data could reflect impacts of the development, although applicable compliance standards might still be met at that location. Only data found by the Department to represent true baseline conditions could be used to define baseline performance criteria at that location. No change was made based on this comment.

(556) *Comment:* Under 22(B)(1)(b): It is conceivable to have background water quality that exceeds the maximum contaminant level for one or more constituents. If this were the case, how would MEDEP resolve such a condition? (C-1)

*Response:* The requirements of 38 M.R.S. § 465-C would be part of the applicable groundwater quality standards outside of any mining area. These require, in part, that groundwater be “free of radioactive matter or any matter that imparts color, turbidity, taste or odor which would impair usage of these waters, other than that occurring from natural phenomena”(38 M.R.S. § 465(C)(1), emphasis added), so that, outside of any mining area, for any criterion which did not already meet the requirements for use in a public water supply (see 38 MRS 465(C)(1)) under predevelopment conditions, any further degradation of groundwater quality would be a violation of the rule. No change was made based on this comment.

(557) *Comment:* Revise 22(B)(1)(i) to read “Any revisions to the environmental monitoring plan are subject to review and approval by the Department.” (C-1)

*Response:* The requested change is within a long list of items that all apply to the monitoring plan. To insert the language here as requested would be repetitive, and the same language would need to be added to each of the required monitoring plan elements above. The Department does not believe that this would add clarity to the rule. No change was made based on this comment.

(558) *Comment:* Format issues noted with 22(B)(3) and (4). (C-1)

*Response:* The identified formatting issues have been addressed.

(559) *Comment:* Under 22(B)(13): A 24-hour notification for failure of a compliance standard is impractical. Analytical data needs to undergo quality control and quality assurance checks before interpretation and distribution, which typically is in excess of 24 hours from laboratory delivery of the data. A 7-day notification window is more appropriate, considering the actual time between collections of field samples, analysis and review. (C-1)

*Response:* The 24-hour notification requirement presumes that the data has been subjected to the appropriate quality control and quality assurance checks. The 24-hour notification requirement would commence once the permittee has possession of valid data. No change was made based on this comment.

## **22 B(2)**

(560) *Comment:* With respect to subchapter 5 subsection 22.B(2)(5), the HBMI stated that “Groundwater has potential to moves at the rate of feet per year, and in various circumstances it can take more than 30 years to surface, so post monitoring should be required beyond 30 years.” (C-112)

*Response:* Subsection 22(B)(1)(a) requires monitoring wells to be placed “as close to all mining operations as practicable”, so that contamination should be detected relatively early, particularly if potential discharge locations are also monitored (Section 22(B)(1)(a)(ii) and (B)(5)). The Department may also extend post-closure monitoring as it determines to be necessary (section 24(B)(3)(b)). No change was made based on this comment.

## **22 B (10)**

(561) *Comment:* The commenter agrees the monitoring data should be provided to the Department promptly. However the 10 day requirement does not allow time for the laboratory data to be reviewed for quality assurance and data validation purposes, nor does it allow the data to be interpreted. I suggest changing this to 30 days. (C-268)

*Response:* The notification requirement does not expect the applicant to have completed interpretation of the data by the time of notification. The Department expects that such follow-up information will be supplied as soon as it is available. Moreover, additional delays in notification may not be appropriate for some parameters and locations that are monitored continuously in real time or as close to real time as practicable. No change was made based on this comment.

## **22 B (11) (a) & (b)**

(562) *Comment:* The commenter recommends that the Department add language that recognizes background conditions may exceed these standards. (C-268)

*Response:* The requirements of 38 M.R.S. § 465-C would be part of the applicable groundwater quality standards outside of any mining area. These require, in part, that groundwater be “free of radioactive matter or any matter that imparts color, turbidity,

taste or odor which would impair usage of these waters, other than that occurring from natural phenomena”(38 M.R.S. § 465(C)(1), emphasis added), so that, outside of any mining area, for any criterion which did not already meet the requirements for use in a public water supply (see 38 MRS 465(C)(1)) under predevelopment conditions, any further degradation of groundwater quality would be a violation of the rule. Similarly, 38 M.R.S. § 464(4)(C), which applies in all areas of the site, states that “Where natural conditions, including, but not limited to, marshes, bogs and abnormal concentrations of wildlife cause the dissolved oxygen or other water quality criteria to fall below the minimum standards specified in sections 465, 465-A and 465-B, those waters shall not be considered to be failing to attain their classification because of those natural conditions”, although further degradation of the applicable criterion or criteria could be considered a violation. No change was made based on this comment.

(563) *Comment:* NRCM also supports Nature Conservancy recommendations for section 22(11). (C-262)

*Response:* No changes were made in response to this comment.

### 23. Reclamation

(564) *Comment:* We recommend modifying section 23.F to read “...in meeting reclamation goals or post-closure site re-use goals” to accommodate the possibility of leaving buildings, power infrastructure, etc. in place for community use after mine closure. (C-41, C-42, C-77)

*Response:* The Department agrees with the commenter and has changed the language that allows structures to remain provided they are part of the mining plan approved by the Department.

(565) *Comment:* Reclamation. H. (p. 65). How does this discussion of diverted streams relate to the prohibition on mining in or under waters of the State? C-63

*Response:* The prohibition section of the rule has been clarified and this reclamation standard is not affected by the clarification made by the Department. The diversion of any stream requires a separate permit under the *Natural Resources Protection Act*, 38 M.R.S. § 480-C. No change made based on this comment.

(566) *Comment:* Reclamation can be thought of as four unique but interdependent process. The four processes include (1) restoration of the land’s topography, (2) restoration of the site’s waterways, (3) replacement and restoration of the soil, and (4) re-establishment of vegetation. While a site is actively mined, temporary measures may be necessary to protect the environment. Ideally, reclamation should occur concurrently with active mining; i.e., as a new mining area is opened, the previously mined area should be closed, as much as is practicable. (C-264)

*Response:* The rule has a provision for contemporaneous reclamation in section 23.D. Contemporaneous reclamation is defined as mining in a manner that creates areas that can be reclaimed as soon after commencement of construction as practicable and continuously as practicable throughout the life of the operation. No change made based on this comment.

(567) *Comment:* One of the greatest obstacles to proper and permanent reclamation of a mine site is the availability of quality soil material. Because of mining activities, both the quantity and quality of a site's soil may be negatively impacted. Manufactured topsoils have been used successfully in reclamation projects nationally and internationally. These projects include the reclamation of landfills, sand and gravel pits, coal mines and metallic mineral mines. Manufactured topsoil materials also provide an additional benefit in that they generally use materials that are being recycled (residuals). These materials, which would otherwise be disposed of in landfills are less costly and can generally be found in closer proximity to affected sites. Since many of these materials have a higher pH, there may also be a side benefit in offsetting the potential formation of acid rock drainage and even the direct neutralization of such drainage. (C-264)

*Response:* The rule does not contain any prohibitions on the use of manufactured topsoil for reclamation purposes. No change made based on this comment.

(568) *Comment:* The vague directive for reclamation taken from LD 1853 seems to allow a developer to define essentially any effort as reasonable, giving them substantial room to violate or mismanage a reclamation plan. DEP should adopt a more explicit, defined, and progressive goal beyond that stated in LD 1853. (C-220)

*Response:* The rule contains many performance based standards and prescriptive standards concerning the reclamation of the mining area and affected area. No change made based on this comment.

### **23.B.**

(569) *Comment:* "Upon written request of a Permittee, the Department may approve with conditions an extension of time to begin or complete final reclamation." The commenter suggests that this section should indicate what conditions justify a delay in starting or completing reclamation. (C-24)

*Response:* Any request for an extension of time to complete reclamation activity requires a modification to the permit, which is an application process. Reclamation could be delayed if operations at the facility are suspended for some period of time. No change made based on this comment.

(570) *Comment:* Paragraph 23.C should be re-worded to provide that reclamation is to the ecological conditions that "existed prior to mining. The rule already contains the qualifiers, "feasible" and "practicable" just above. The reclamation process needn't have more qualifiers. (C-1, C-81)

*Response:* The language contained in this section is taken directly from the framework law, 38 M.R.S § 490-QQ (4). No change made based on this comment.

(571) *Comment:* Under 23(C): Does this mean to say that the mine itself, either an open pit or a series of tunnels, would need to be backfilled as part of achieving pre-mining site conditions? (C-1)

*Response:* No. This language is taken from the framework law. It is the intent of the Department to evaluate each mining project on a case-by-case basis and evaluate the best options to achieve the reclamation performance standards contained in the rule. No change was made based on this comment.

(572) *Comment:* Revise 23(D) to read “To the extent practical and feasible contemporaneous reclamation of the mining area must be conducted consistent with the performance standards of this subchapter.” (C-1)

*Response:* It is the Department’s position that this issue is adequately addressed by the language in the framework law. No change was made based on this comment.

(573) *Comment:* Paragraphs G and H should be modified to use the words “shall be” rather than “is” and “are”. (C-81)

*Response:* Section 23 G and H do not contain the words “is” or ‘are’. No change was made based on this comment.

(574) *Comment:* 23.K. The second sentence needs to be broken up. It is very long, unwieldy and essentially incomprehensible. Further it points out all the more glaringly the general tenor of the proposed Rule which recognizes perpetuity in the potential for contamination. This potential need not exist in as broad a range of expectancy as the sentence seems to suggest. (C-81)

*Response:* The Department agrees with the commenter and removed the language concerning perpetuity.

#### 24. Closure and Post-Closure Maintenance Standards

(575) *Comment:* In section 24.A(1)(b)(iii), replace the word “systems” with “programs.” (C-41, C-42, C-77)

*Response:* The word “system” or “systems” is consistent with the language used in section 22, Monitoring and Reporting Requirements. No change was made based on this comment.

(576) *Comment:* Delete section 24.A(2)(a)(iii). Leaching facilities are not allowed in Maine under section 1.B.1 (C-41, C-42, C-77)

*Response:* The commenters are correct that heap and percolation leaching are prohibited, as defined in subchapter 1. However, other forms of leaching, such as vat leaching, are allowed under this rule, making the current language necessary. No change was made based on this comment.

(577) *Comment:* This subsection requires a closure plan to be submitted at the time of application and this plan must include a “detailed cost estimate of closure activities”. The subsection should be changed to require a “tentative” or “expected” closure plan based on the information that is available at the time the application is filed. The closure plan can then be revised in future years prior to closure to incorporate changes in operations and technology, experience, and the like. (C-41, C-42, C-77)

*Response:* Making the requested change will not add clarity to the rule. It is understood that the closure plan submitted at the time of application filing will be based on the information available at that time. The detailed cost estimate, based on the design available at the time of application filing, is necessary to adequately address the financial assurance requirements. Subchapter 5, section 24.A(2)(b) requires an update to the closure plan at intervals not to exceed 5 years, for the reasons cited by the commenters. There are also requirements for updating the financial assurance needs for a facility, which in part would be based on any updates to the closure plan. No change was made based on this comment.

(578) *Comment:* For consistency in language, delete the word “management” in section 24.A(3)(c) (C-41, C-42, C-77)

*Response:* The Department agrees. The requested change has been made here and in (d) immediately after the referenced item.

(579) *Comment:* Although one is referred to section 24.A(4)(b) in this section regarding an extension application, no DEP process or timetable is described in the Chapter for applying, reviewing, or receiving an extension. We recommend specifying the process for applying for and receiving an extension. (C-41, C-42, C-77)

*Response:* Any request for the extension of time concerning closure for a mine waste unit requires a modification to the permit, which is an application process. No change was made to the rule.

(580) *Comment:* We believe Section 24.B(3) language should mirror section 22.B(6) with regard to termination of monitoring. (C-41, C-42, C-77)

*Response:* The Department has reviewed the language in the two referenced sections of the rule and has not identified any conflict in the requirements. No change was made based on this comment.

(581) *Comment:* We believe the post-closure care period for Group C waste may need a provision for possible extension for periodic vegetation monitoring or maintenance (invasive species, replanting, arborist activities where trees are planted) if the Department or other

agency requests such extended care. For example, for wetland mitigation, the Corps of Engineers and DEP typically require 5 years of monitoring, with possible extensions to manage invasive species or replanting where needed. To address this situation, we recommend modifying the last sentence of section 24.B.(5) to read "...from the time of closure certification, unless otherwise approved or instructed by the Department." (C-41, C-42, C-77)

*Response:* The Department agrees that there may be situations where the post-closure care period may need to be extended for the reasons cited by the commenters. The cited section provides the minimum (and maximum) necessary for the purpose of establishing a goal for stabilizing the waste unit and for establishing financial assurance funding. The requested clarification is already contained in preceding section (3)(b). The Department believes the rule provides adequate clarity and the flexibility requested. No change was made based on this comment.

(582) *Comment:* Length of post-closure care period. [page 71] The post-closure care period for Group A & B wastes is 30 years; for Group C wastes it is 5 years. Given that Group C wastes are essentially inert, why is a post-closure care period even necessary after the closure cap/drainage/cover/landscaping design is implemented? And, what would constitute "care" for Group C waste units that have been properly closed? (C-X)

*Response:* The cover system must not only be 'implemented', it must also establish itself and become stable (such as resistant to erosion of the cover soils). 5 years is a relatively short time to accomplish these goals. No change was made based on this comment.

(583) *Comment:* Tom Whittle stated, "*Section 24 limits the time for post-closure treatment and many argue that the 30 year time period should be shortened to encourage a more timely reclamation effort. It does not seem to address what happens if groundwater contamination occurs after closure certification or at the end of the treatment time period.*" (C-53)

*Response:* The Department does not believe that it is appropriate to arbitrarily shorten the length of post-closure treatment as some have proposed. The 30 year period required in rule is sufficient to establish the response of the site and waste units to the closure plan implemented. The Department has the authority to extend the post-closure care period if necessary as stated in subchapter 5, section 24.B(3)(b). No change was made based on this comment.

(584) *Comment:* This case history on the Red Dog prepared by the Federal EPA is very telling for Bald Mountain. Failure of state officials to require adequate prior ground water study and geochemical analysis lead early on to problems that were never fully mitigated or controlled. These failures lead ultimately to a revocation of the Red Dog permit for Clean Water Act violations. It is now a perpetual care mine costing \$10 million per year into perpetuity for water treatment.

<http://www.blm.gov/pqdata/etc/medialib/blm/akJirmic/usbmrrpts.Par.22991.File.tmp/0FR 93-92.pdf> (C-48)

*Response:* Although the Department will not be responding to comments on this rule that are directed to specific potential projects, the commenter makes the point that the rule needs to have adequate requirements for ground water conditions at any proposed site and a sound understanding of geochemical properties of the wastes. The Department has addressed both of these topics in the rule. No change was made based on this comment.

(585) *Comment:* Under 24(A)(1)(c)(ii): Please clarify this statement. (C-1)

*Response:* The Department agrees that clarification is needed and has removed the reference to ‘run-on/runoff control’ to provide clarity.

(586) *Comment:* Revise 24(A)(3)(a)(iv) to read “Corrective actions in place or planned, if applicable” (C-1)

*Response:* The commenter appears to want clarification that more than one corrective action may be ‘in place or planned’. The Department has made a minor clarification to accommodate singular or plural corrective action(s).

(587) *Comment:* Under 24(A)(3)(c): This is the first time “wet mine waste” has been mentioned in this Chapter. It should be clearly defined. (C-1)

*Response:* The Department has added a definition of wet mine waste to subchapter 1 of the proposal.

(588) *Comment:* Revise 24(A)(4) title to “Mine Waste Unit Closure Trigger.” (C-1)

*Response:* Inserting the suggested language, “Mine Waste Unit” in front of “Closure Trigger” will not add any clarity to the rule. The referenced subsection is one of many subsections within this part of the rule. If the suggested change was made, it should be made for all of the subsection headings. No change was made based on this comment.

### **Closure and Cleanup**

(589) *Comment:* The commenter points out that the draft rules don’t require immediate cleanup of contaminated water and suggests that mines should be required to immediately identify the source of any contaminated water and clean it up. (C-61, C-232).

*Response:* Subchapter 5, subsection 27 includes notification requirements for “...any incident, act of nature or violation of a permit standard or condition...that has created, or may create, a threat to the environment, natural resources, or public health and safety.” This subsection also contains requirements for response actions. In addition, subchapter 8 contains provisions for addressing violations, which includes a corrective action work plan along with implementation time standards. It is not clear from the comment what additional actions are desired. No change was made based on this comment.

## **SUBCHAPTER 6: MINING INSPECTION, RECORDKEEPING AND REPORTING REQUIREMENTS**

## 25. Inspection and Maintenance

(590) *Comment:* In section 25.B, the word “continuous” implies 24/7 inspections. We recommend replacing “continuous” with “periodic.” (C-41, C-42, C-77)

*Response:* No change was made based on this comment; “continuous” means ongoing.

(591) *Comment:* In section 25.B(4)(c)(ii), modify the second sentence to read “Within 10 days of receipt of the necessary corrective measures notification...” (C-41, C-42, C-77)

*Response:* The Department agrees and has made the suggested change.

(592) *Comment:* Perhaps in your review of metallic mining, you saw the EPA study citing the quality of state oversight as a significant factor in mine failures statutory and regulatory errors in mining can be as responsible for mining disasters as the errors and omission of mine operators or technology gone wrong. There is no safety net in federal law which was the point of EPA’s study. (C-24)

*Response:* The Department recognizes the need for state oversight of mining operations, and is committed to dedicating resources sufficient for the proper inspection and monitoring of any future mining operation. The Maine Legislature established an annual license fee of at least \$20,000 and not more than \$50,000 for each mining operation. This fee should prove sufficient to provide proper state oversight of a mine. No changes were made based on this comment. No change was made based on this comment.

(594) *Comment:* Revise 25(B)(1) to read “For the purposes of this section, separate from the Permittee means CQA personnel who are not in the direct employment of the Permittee.” (C-1)

*Response:* The Department has made the suggested correction. The amended draft states:

- (1) For the purposes of this section, separate from the Permittee means CQA personnel who are not in the direct employment of the Permittee. Direct employment of the owner/operator does not include CQA personnel employed by a company under a contractual relationship with the owner/operator, provided that the CQA personnel are employed by a company that:

(595) *Comment:* Revise second sentence of 25(B)(4) to read “These requirements must at a minimum apply...” (C-1)

*Response:* The Department has made the suggested correction. The amended proposal states:

- (4) Inspection and maintenance requirements and schedules for the operation, reclamation, ~~and~~ closure, and post closure phases of the mining operation. These requirements must ~~shall~~ at a minimum apply to any feature or structure that represents

a potential threat to natural resources, the environment and public health and safety, as well as to hydrologic and biologic features in the mining and affected area.

## 26. Reporting Requirements

(596) *Comment:* We recommend replacing section 26.A(1) with “within 90 days of the close of the Permittee’s fiscal year.” What if the mining company’s fiscal year is not a calendar year? There are NI 43.101 information release requirements that may come into play here. Otherwise, a company might need to report production and monitoring records on differing year schedules. (C-41, C-42, C-77)

*Response:* The Department has no way of knowing every company’s fiscal year. The March 15<sup>th</sup> requirement in the rule is a typical reporting timeframe used by the Department in other regulatory programs. No change was made to the rule.

(597) *Comment:* Replace “development rock” with “waste rock.” (C-41, C-42, C-77)

*Response:* The Department has clarified the language in the rule to use the term “mine waste” instead of mine material or development rock and modified the definition of mine waste in subchapter 1.

## 27. Notification Requirements

(598) *Comment:* Under 27(A): “Exceedance” connotes a concentration has been measured which is in excess of a standard. If such measurement is of an analytical nature, a 2-hour notification requirement is not reasonable. SME suggests the notification time period be changed to by the end of the next business day, but in no cases greater than 48 hours. (C-1)

*Response:* The Department believes it is reasonable to report an exceedance of an analytical result (for example, upon receipt of laboratory analysis results, following field measurement of pH) within two hours of becoming aware of the exceedance. It goes without saying that the permittee cannot be aware of an exceedance of a parameter requiring analysis until the results are provided. No changes have been made to the rule as a result of this comment.

(599) *Comment:* This violation notification requirement needs to be clarified. A 0.0001 exceedance of a monitoring parameter is not the same as a fire event. The contingency plan should address notification parameters for significant events. (C-41, C-42, C-77)

*Response:* The Department believes it is reasonable to report an exceedance of an analytical result. The Department response will likely be quite different between a small exceedance of a parameter and a fire. However putting both the Applicant on notice and the Department that there may be a concern is warranted at a mine site. This will provide the public with

more assurance that proper oversight is occurring and will prevent developing problems from being missed. No changes have been made to the rule as a result of this comment.

(600) *Comment:* Additionally, this subsection requires notification to the DEP within 2 hours following any incident or violation that has created, or may create, a threat to the environment, natural resources, or public health and safety. This is a very short and stringent requirement. Moreover, the standard of a potential threat (“may create a threat”) to the environment, without actually causing harm to the environment, makes it excessive. In any event, reporting should occur within 24 hours in such circumstances, not 2 hours. (C-41, C-42, C-77)

*Response:* The Department believes it is prudent to report any incident or violation that has created, or may create, a threat to the environment, natural resources, or public health and safety. This condition provides a mechanism for the Department act in a timely manner to ensure appropriate actions are taken to minimize impacts to the environment, natural resources, or public health, or to prevent such impacts from expanding as a result of a delay in reporting. No changes have been made to the rule as a result of this comment.

## 28. Recordkeeping Requirements

(601) *Comment:* This subsection requires that records of incident reports required under section 27 must be preserved by the permittee for six years or “until the end of the post-closure monitoring period, whichever is later.” During the operation of a mine, this could easily mean that records of these incidents must be kept for well more than 30 years since the post-closure monitoring period is a minimum of 30 years. This is excessive. (C-41, C-42, C-77)

*Response:* The Department’s proposal requires the Permittee to preserve incident reports for six years, or until the end of the post closure monitoring period because these reports provide information that may be valuable to remediating or otherwise addressing threats to the environment, natural resources or public health and safety. Retention of these records until the conclusion of the post-closure period will ensure that information on incidents and violations remains available to all parties in the event that additional remediation is necessary. No change was made based on this comment.

## **SUBCHAPTER 7: SUSPENSION OF MINING**

### 29. Suspension of Mining and Resumption of Mining After Suspension

No comments were received on this section.

## **SUBCHAPTER 8: VIOLATIONS**

(602) *Comment:* The draft rules lack clear water quality compliance requirements. If a mine violates its license by contaminating water, it should have to fix the problem quickly, yet the

draft rules potentially allow contamination to continue for months without any corrective action. Any violation must be ordered to be corrected immediately because toxins can disperse over a large area very quickly and in a short period of time be impossible in practical terms to remediate, as has occurred many times in the past. (C-73, C-160, C-237)

*Response:* The Department has amended its proposal to include more explicit requirements for the corrective action plan. Section 22 (B) (14) of the Monitoring and Reporting Requirements require corrective actions whenever a mine fails to meet a performance standard or when evidence of a deterioration of site conditions occurs. The types of actions that the Department can require in the corrective action include: increased monitoring to better understand the problem; a source investigation to isolate the cause of the problem or determine the impact areas; active corrective actions to stem the migration, treat the problem, and address the root cause of the problem, and modifications of the mining activities to prevent the issue and reverse the damage. All of these actions constitute corrective action which must be financially assured with sufficient funds to perform the necessary actions. In addition section 30(B)(1) requires a Permittee to take immediate action to correct any violation. The rule was changed to clarify the monitoring and corrective action requirements when discharges occur.

(603) *Comment:* The commenter recommends that rules require that the mining operator or owner assume full financial responsibility for non-compliance with existing water quality standards and ongoing and after-mine-closure water quality treatment and land use remediation and that very strict and comprehensive mining rules be fully enforced, will be needed to protect the environment to the maximum extent possible. (C-157)

*Response:* The rule requires that financial assurance cover among other things reclamation, closure, post closure and corrective actions. In addition the rule was modified to ensure that financial assurance is required for as long as the Department determines that the mining operation and any associated waste material could create an unreasonable threat to public health and safety or the environment.

(604) Comment #604 repeated Comment #610 below and was deleted.

(605) *Comment:* The requirements for corrective action are unclear. The rules require the submission of a corrective action plan within two weeks, but this is not immediate action. The rules should require either DEP to investigate an exceedence within 24 hours and work out a plan to confirm and correct it with the applicant within five days, not after two weeks. (C-49, C-84, C-262, C-19)

*Response:* The Department has amended its proposal to include more explicit requirements for the corrective action plan. Section 30(B)(1) requires a Permittee to take immediate action to correct any violation. Section 22 (B) (14) of the Monitoring and Reporting Requirements require corrective actions whenever a mine fails to meet a performance standard or when

evidence of a deterioration of site conditions occurs. The types of actions that the Department can require in the corrective action include: increased monitoring to better understand the problem; a source investigation to isolate the cause of the problem or determine the impact areas; active corrective actions to stem the migration, treat the problem, and address the root cause of the problem, and modifications of the mining activities to prevent the issue and reverse the damage. The rule does retain the 10 days for correction of the violation but actions must begin immediately. Simple fixes are expected to be resolved very quickly; more complex issues may take longer. The rule was changed to clarify the monitoring and corrective action requirements when discharges occur.

### 30. Permittee Required to Correct Violations

(606) *Comment:* The water quality compliance requirements should be strengthened so that a mine that violates its license by contaminating water, is required to fix violations promptly. (C-232)

*Response:* The Department agrees with the commenter and has amended section 30 of its proposal to require the Permittee to correct violations and deteriorations in site conditions. The provisions for corrective action were clarified to include more detail. The rule already required the Permittee to take immediate action to correct a violation including to any water quality issues. By adding site deterioration, the Permittee would be required to address water quality issues as soon as it became apparent that a problem was developing. The intent of this provision is to prevent water quality issues from reaching the point of a violation.

(607) *Comment:* Section 31.B should cite the statutory authority and process for this action by the Department. (C-41, C-42, C-77)

*Response:* The Mining Act at 38 M.R.S. § 490-TT(2)(B) sets forth the authority for section 31(B) of the proposed rule. The Department does not believe citation in the rule to the statute is necessary. The new section 33 contains requirements that any order issued contains findings of fact and states how service is made.

(608) *Comment:* The commenter contends that any violation must be ordered to be corrected immediately because toxins can disperse over a large area very quickly and in a short period of time be impossible in practical terms to remediate, as has occurred many times in the past. (C-73)

*Response:* The Department has revised section 22 of the rule to clarify the connection between monitoring requirements and corrective action plans described in section 30. The rule already required the Permittee to take immediate action to correct a violation including to any water quality issues. By adding site deterioration, the Permittee would be required to address water quality issues as soon as it became apparent that a problem was developing. The intent of this provision is to prevent water quality issues from reaching the point of a violation.

(609) *Comment:* The commenter recommends that if a mine violates its license by contaminating air or water, it should have to fix the problem quickly. The draft rules potentially allow contamination to continue for months without any corrective action. (C-237)

*Response:* The Department has revised section 22 of the rule to clarify the connection between monitoring requirements and corrective action plans described in section 30. The rule already required the Permittee to take immediate action to correct a violation including to any water quality issues. By adding site deterioration, the Permittee would be required to address water quality issues as soon as it became apparent that a problem was developing. The intent of this provision is to prevent water quality issues from reaching the point of a violation.

(610) *Comment:* The commenter wonders if there is any reason to be confident that the same department that neglected to meet critical deadlines for the reauthorization of the Flagstaff Lake dam will zealously enforce any set of mining regulations. (C-128)

*Response:* This comment does not pertain to any specific provisions to the Chapter 200 changes posted for public comment by the Board on October 17, 2013. No changes were made based on this comment.

(611) *Comment:* The commenter points out that the draft rules lack clear water quality compliance requirements. The commenter takes the position that if a mine violates its license by contaminating water, it should have to fix the problem quickly, yet the draft rules potentially allow contamination to continue for months without any corrective action. (C-160)

*Response:* The Department has revised section 22 of the rule to clarify the compliance requirements and the connection between these requirements and corrective action plans described in section 30. The rule already required the Permittee to take immediate action to correct a violation including to any water quality issues. By adding site deterioration, the Permittee would be required to address water quality issues as soon as it became apparent that a problem was developing. The intent of this provision is to prevent water quality issues from reaching the point of a violation.

(612) *Comment:* The requirements for corrective action are unclear. The rules require the submission of a corrective action plan within two weeks, but this is not immediate action. The rules should require either DEP to investigate an exceedence within 24 hours and work out a plan to confirm and correct it with the applicant within five days, not after two weeks. (C-49, C-84, C-262, C-19)

*Response:* The Department has revised section 22 of the rule to clarify the compliance requirements and the connection between these requirements and corrective action plans described in section 30. The rule already required the Permittee to take immediate action to correct a violation including to any water quality issues. By adding site deterioration, the Permittee would be required to address water quality issues as soon as it became apparent

that a problem was developing. The intent of this provision is to prevent water quality issues from reaching the point of a violation.

### 30. Permittee Required to Correct Violations

(613) *Comment:* Tighten water quality compliance requirements so that a mine that violates its license by contaminating water, is required to fix violations promptly. (C-232)

*Response:* The Department agrees with the commenter and has amended section 30 of its proposal to include additional detail on corrective actions.