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January 11, 2011

Bryan W. Shaw, Ph.D., Chairman
Texas Commission on Environmental Quality
12100 Park 35 Circle
Austin, TX 78753

Buddy Garcia, Commissioner
Texas Commission on Environmental Quality
12100 Park 35 Circle
Austin, TX 78753

Re: SOAH DOCKET NO. 582-09-3064/TCEQ DOCKET NO. 2008-1888-UIC
- consolidated with -
SOAH DOCKET NO. 582-09-6184/TCEQ DOCKET NO. 2009-1319-UIC
Reply to Exceptions re: Application of Uranium Energy Corp
for Permit No. UR03075 and for Aquifer Exemption and for
Production Area Authorization UR03075PAA1 in Goliad
County, Texas

Dear Chairman Shaw and Commissioner Garcia:

Applicant Uranium Energy Corp ("UEC") is herewith filing a proposed Order (including findings of fact and conclusions of law) to reflect the action taken by the Commission at its December 14, 2010 agenda with regard to the above-referenced applications.

In accordance with 30 TAC § 10.5 and the Commission's ruling, UEC attempted to reach agreement among the parties on the form of the proposed Order. Toward that end, the proposed Order being filed herewith incorporates all revisions requested by the Executive Director and also incorporates or otherwise reflects several revisions requested by Protestant Goliad County. There remain, however, some areas of disagreement. The purpose of this letter is to briefly set forth the parties' positions with regard to these areas.

1. Findings of Fact related to Issue D (Mine Application)

Goliad County proposes that the following additional finding be added to the proposed Order:

> The specific descriptions in 30 TAC § 331.122 of the factors that the Commission is required to consider, UEC's description of the information that it provided, and the ED's interpretation of the rule as not requiring the exact location of every

future injection well, or the locations of plugged boreholes together show that UEC satisfied the criteria of 30 TAC § 331.122.

It is UEC's position that this proposed additional finding is not necessary and would be superfluous since the proposed Order already contains the following finding:

84. UEC submitted all of the data and each of the items for the applicable criteria listed in 30 TAC § 331.122, and the Commission considered each of these items.

2. Findings of Fact related to Issue F (Mine Application)

Goliad County proposes that the following finding be deleted from the proposed Order:

91. Data in the Mine Application shows that mining fluids will not migrate vertically or horizontally and contaminate an USDW (underground source of drinking water). The findings stated under Section V.R below are incorporated by reference herein.

In the alternative, Goliad County proposes that the following additional finding be added to the proposed Order:

There is some evidence that the underground injection may pollute the fresh water resources of the state, for which underground injection must be prevented.

It is UEC's understanding that these proposed changes relate to the Northwest Fault. However, it is UEC's position that mining fluids will not migrate along or across the Northwest Fault and contaminate an USDW because: 1) UEC may not mine any production area involving the Northwest Fault unless and until it obtains an additional production area authorization; and 2) as a part of that regulatory process, UEC will have to conduct appropriate hydrologic testing to ensure that mining fluids can be controlled.

3. Findings of Fact related to Issue G (Mine Application)

Goliad County proposes that the following additional findings be added to the proposed Order:

A 24-hour pump test provided evidence of whether the Northwest Fault was sealing or transmissive.

The 24-hour pump test is some evidence of transmissivity across the fault. This is some evidence that the underground injection may pollute the fresh water resources of the state.

UEC's understanding of the Commission's position, as enunciated at the December 14, 2010 agenda, is that for purposes of a mine application, an applicant need only identify and describe the location of faults in the mine permit area and describe the hydrologic testing program that will be undertaken as a part of any applications for production area authorizations. In other words, while the presence and location of faults is relevant to Issue G, the transmissivity

of the faults is not relevant to Issue G. Rather, in accordance with the applicable TCEQ rules, fault transmissivity will be addressed if and when UEC applies for a production area authorization for a production area that involves the fault.

4. Findings of Fact related to Issue Q (Mine Application)

Goliad County proposes that the following additional finding be added to the proposed Order:

> The ED will evaluate whether the unconfined nature of Sand A requires additional monitoring or operational requirements, if and when UEC chooses to include Sand A as a production zone in a future PAA application.

It is UEC's position that this proposed additional finding is simply not necessary. Those issues will be taken up as a part of any such future PAA application involving Sand A, regardless of whether or not this finding is included.

5. Findings of Fact and Conclusions of Law related to Issues R and T (Mine Application)

Goliad County proposes that the following additional finding be added to the proposed Order:

> (Under Issue R) Until the issue of the transmissivity of the Northwest Fault is resolved, mining fluids may migrate vertically or horizontally and may contaminate a USDW.
>
> (Under Issue T) Until the issue of the transmissivity of the Northwest Fault is resolved, USDWs within Goliad County outside the proposed aquifer exemption area may be adversely impacted by UEC's proposed in situ uranium operations.

Goliad County also proposes that the following conclusions be deleted from the proposed Order:

> 294. Based on the findings of fact set forth in and/or incorporated into Section V.R above, mining fluids will not migrate vertically or horizontally and contaminate an USDW.
>
> 298. Based on the findings of fact set forth in and/or incorporated into Section V.T above, no USDWs within Goliad County will be adversely impacted by UEC's proposed in situ uranium operations.

It is UEC's position that mining fluids will not migrate along or across the Northwest Fault and contaminate USDWs because: 1) UEC may not mine any production area involving the Northwest Fault unless and until it obtains an additional production area authorization; and 2) as a part of that regulatory process, UEC will have to conduct appropriate hydrologic testing to ensure that mining fluids can be controlled.

6. Findings of Fact related to Baseline Table (PAA-1 Application)

Goliad County proposes that the following finding be deleted from the proposed Order:

> 194. The water samples from which the baseline table in the PAA-1 Application was derived are representative of groundwater quality in the areas where they were collected.

It is UEC's position that this finding is consistent with Judge Wilfong's proposal for decision as modified by the Commission's oral ruling and is otherwise appropriate.

7. Other Additional Findings of Fact

Goliad County Groundwater Conservation District proposes that the following additional finding be added to the proposed Order:

The aquifer exemption is a drinking water aquifer; and

The baseline water quality is an average of the three rounds of water testing.

This first proposed finding is incorrect. An aquifer exemption is a regulatory designation. The second proposed finding is already included and would be superfluous.

Sincerely,

Monica Jacobs,
Attorney for Applicant UEC

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AN ORDER Approving the Applications of Uranium Energy Corp for Issuance of a Class III Injection Well Permit No. UR03075, Aquifer Exemption Order, and Production Area Authorization No. 1 in Goliad County, Texas, TCEQ Docket Nos. 2008-1888-UIC and 2009-1319-UIC, SOAH Docket Nos. 582-09-3064 and 582-09-6184

On December 14, 2010, the Texas Commission on Environmental Quality ("Commission" or "TCEQ") considered the applications of Uranium Energy Corp for a Class III Injection Well Permit No. UR03075, which includes a request for designation of an exempt aquifer ("Mine Application"), and for Production Area Authorization ("PAA") UR03075PAA1 ("PAA-1 Application"). The applications were presented to the Commission with a proposal for decision by the Honorable Richard Wilfong, Administrative Law Judge ("ALJ") with the State Office of Administrative Hearings ("SOAH").

After considering the ALJ's Proposal for Decision ("PFD") and the evidence and arguments presented, the Commission makes the following Findings of Fact and Conclusions of Law:

FINDINGS OF FACT

I. Introduction

1. The Applicant in this case is Uranium Energy Corp ("UEC"). UEC's business address is Suite 800N, 500 Shoreline Blvd., Corpus Christi, TX 78471.

2. The proposed facility is located approximately 13 miles north of the city of Goliad, about 0.9 miles east of the intersection of Highway 183 and Farm-to-Market Road 1961 in Goliad County, Texas.

3. UEC filed its Mine Application seeking Class III Underground Injection Control area permit, Permit No. UR03075 (the "Mine Permit").

4. UEC also filed its PAA-1 Application to authorize UEC to construct and operate Class III injection and production wells for the recovery of uranium in proposed Production Area 1 ("PA-1").

5. The applications, if approved, would set the conditions under which UEC would be permitted to conduct the in situ uranium mining.

6. The Executive Director ("ED") reviewed the Mine Application and PAA-1 Application (the "Applications") and concluded that the Applications meet all legal standards.

7. The ED prepared a draft Mine Permit, a draft Aquifer Exemption Order, and a draft PAA for the Commission's approval.

8. After the parties requesting denial ("Protestants") filed their protests, the Commission referred these disputed issues of fact ("Issues") to SOAH for a contested case hearing:

A. Whether the use and installation of the injection wells are in the public interest under TEX. WATER CODE § 27.05 1(a). Public interest in regard to this issue includes whether UEC's mining operation or restoration activities will adversely impact the public interest by unreasonably reducing the amount of groundwater available for permitting by the Goliad County Groundwater Conservation District.

B. Does the applicant's compliance history require denial of the application under TEX. WATER CODE § 27.05 1(e) and 30 TEX. ADMIN. CODE (TAC) Ch. 60?

C. Does the application adequately and accurately describe baseline conditions of the groundwater in the proposed permitted area under applicable requirements of 30 TAC Ch. 331?

D. Does the application meet all applicable criteria of 30 TAC § 331.122, related to required consideration by the Commission prior to issuing a Class III Injection Well Area Permit?

E. Has the applicant demonstrated that the proposed exempted aquifer meets the applicable criteria of 30 TAC § 331.13?

F. Is the application sufficiently protective of groundwater quality?

G. Does the application adequately characterize and describe the geology and hydrology in the proposed permit area, including fault lines, under the applicable rules?

H. Do the geologic and hydraulic properties of the proposed permit area indicate that the applicant will be able to comply with rule requirements?

I. Does the applicant meet the applicable requirements for financial assurance under

TEX. WATER CODE §§ 27.051 and 27.073, and 30 TAC Ch.37 and 331?

J. Is the application sufficiently protective of surface water quality?

K. Are local roadways sufficient to handle traffic to and from the proposed facility?

L. Whether UEC's proposal for restoration of groundwater to baseline levels as contained in the permit application is reasonable and adequate?

M. Will the applicant's proposed activities negatively impact livestock and wildlife, including endangered species?

N. Will the applicant's proposed activities negatively impact the use of property?

O. Will the applicant's proposed activities adversely affect public health and welfare?

P. Whether the proposed mining is in the recharge zone of the Gulf Coast Aquifer (Evangeline component)?

Q. Whether the Gulf Coast Aquifer is a confined aquifer in the areas of Goliad County where UEC will conduct UIC [underground injection control] activities?

R. Whether mining fluids will migrate vertically or horizontally and contaminate an USDW [underground source of drinking water]?

S. Whether there are any USDWs within the injection zones proposed by UEC?

T. Whether any USDWs within Goliad County will be adversely impacted by UEC's proposed *in situ* uranium operations?

U. Whether there is a practical, economic and feasible alternative to an injection well reasonably available within the meaning of that term as set forth in TEX. WATER CODE § 27.051(d)(2)?

9. In addition, the Commission referred UEC's PAA-1 Application directly to SOAH. The issue in that referral was whether the application complies with all applicable statutory and regulatory requirements.

II. Parties and Procedural History

10. On August 9, 2007, UEC filed its Mine Application.

11. On August 29, 2007, TCEQ declared the Mine Application to be administratively complete.

12. Following a technical review of the Mine Application, during which the ED requested and received additional information from UEC, the ED made a preliminary determination

that the Mine Application meets all applicable statutory and regulatory requirements for issuance of a mine permit and aquifer exemption order.

13. The ED prepared UEC's compliance history and determined that UEC's compliance classification is average by default.

14. On January 24, 2008, the ED held a public meeting in Goliad to receive public comment regarding the Mine Application.

15. On June 4, 2008, the ED issued a draft Mine Permit and a draft Aquifer Exemption Order.

16. On September 4, 2008, UEC filed its PAA-1 Application with TCEQ.

17. On September 19, 2008, the ED made an official determination that the PAA-1 Application was administratively complete.

18. On October 31, 2008, the ED issued written responses to public comments regarding the Mine Application ("RTC Regarding Mine Application").

19. On February 25, 2009, TCEQ held an open meeting at which the Commissioners evaluated requests for a contested case hearing on the Mine Application (TCEQ Docket No. 2008-1888-UIC).

20. On March 3, 2009, TCEQ issued an Interim Order by which it:

a) granted the requests for a contested case hearing filed by Goliad County (the "County"), Goliad County Groundwater Conservation District (the "District"), Ander-Weser Volunteer Fire Department, St. Peter's Lutheran Church, Mary and Tom Anklam, Raymond and Karon Arnold, Aldon and Brenda Bade, Mickey and Elizabeth Beard, Richard and Catherine Bettge, Otto and Ruth Bluntzer, Matt and Erika Bochat, Gene and Reta Brown, John and Pearl Caldwell, Lynn and Ginger Cook, Luann and Craig Duderstadt, Darwyn and Waynell Duderstadt, Wilburn and Doris Duderstadt, Douglas and Wanda Franke, Mary Kathryn Bluntzer Gray, Joel and Jana Grieser, Brenda Jo Hardt, Ernest and Frances Hausman, Gaylon and Barbara Kornfuehrer, Ted and Pam Long, Mr. and Mrs. Jason Mikeska, Ricki McKinney, Susan and Weldon Orr, Margaret Rutherford, Wayne and Margie Smith, and Dorian and Carol Thurk;

b) referred the matter to SOAH;

c) directed the ED to participate in the contested case hearing;

d) established a one year maximum duration of the hearing from the first day of the preliminary hearing to the date the proposal for decision is issued by SOAH; and

e) referred the twenty-one Issues, which had been raised in public comments, to SOAH.

21. On May 14, 2009, the SOAH ALJ held a preliminary hearing in Goliad, Texas during which he admitted the following parties:

PARTY	REPRESENTATIVE
Uranium Energy Corp (Applicant)	Monica Jacobs, Attorney
The Executive Director of the Texas Commission on Environmental Quality	Shana Horton, Staff Attorney
Office of Public Interest Counsel	Garrett Arthur, Attorney
Goliad County	James B. Blackburn, Attorney
Goliad County Groundwater Conservation District	Rob Baiamonte, Attorney
Goliad County Farm Bureau, individually and as representative of specified entities and landowners who are aligned parties[1]	P.T. Calhoun, President
Raymond V. Carter, Jr., aligned with Applicant	Aligned Property Owners
Tom E. Stockton, aligned with Applicant	Aligned Property Owners
Mona Samford and brother, Sidney Braquet, aligned with Applicant	Aligned Property Owners

22. On May 27, 2009, by SOAH Order No. 2, and on May 28, 2009, by SOAH Order No. 3, the ALJ established a procedural schedule, and set a hearing on the merits to be commenced on January 4, 2010. The procedural schedule was later extended based on agreed or unopposed motions filed by the parties and granted by the ALJ pursuant to 30 TAC § 80.4(c)(17).

23. Following a technical review of the PAA-1 Application, during which the ED requested and received additional information from UEC, the ED made a preliminary determination that the PAA-1 Application meets all applicable statutory and regulatory requirements for issuance of a PAA.

24. On June 2, 2009, the ED issued a Technical Summary and ED's Preliminary Decision.

25. On June 9, 2009, the ED issued a draft PAA.

26. On August 14, 2009, UEC filed a request for the direct referral of the PAA-1 Application to SOAH for a contested case hearing pursuant to 30 TAC § 55.210.

27. On August 18, 2009, UEC filed an Unopposed Motion to Abate Procedural Schedule for Purposes of Consolidating Production Area Authorization.

[1] Those entities and landowners are: Ander-Weser Volunteer Fire Department, St. Peter's Lutheran Church, Mary and Tom Anklam, Raymond and Karon Arnold, Aldon and Brenda Bade, Mickey and Elizabeth Beard, Richard and Catherine Bettge, Otto and Ruth Bluntzer, Matt and Erika Bochat, Gene and Reta Brown, John and Pearl Caldwell, Lynn and Ginger Cook, Luann and Craig Duderstadt, Darwyn and Waynell Duderstadt, Wilburn and Doris Duderstadt, Douglas and Wanda Franke, Mary Kathryn Bluntzer Gray, Joel and Jana Grieser, Brenda Jo Hardt, Ernest and Frances Hausman, Gaylon and Barbara Kornfuehrer, Ted and Pam Long, Mr. and Mrs. Jason Mikeska, Ricki McKinney, Susan and Weldon Orr, Margaret Rutherford, Wayne and Margie Smith, and Dorian and Carol Thurk.

28. On August 24, 2009, by SOAH Order No. 4, the ALJ abated the procedural schedule and adopted a revised schedule.

29. On September 11, 2009, by SOAH Order No. 5, the ALJ confirmed the location for hearing on the merits.

30. On September 29, 2009, by SOAH Order No. 6, the ALJ ordered a portion of the hearing to be held in Goliad, Texas.

31. On September 29, 2009, UEC filed an Agreed Motion to Consolidate for Purposes of Hearing its PAA-1 Application with its Mine Application (the "Motion to Consolidate").

32. On October 5, 2009, the ED held a public meeting in Goliad to receive public comment regarding the PAA-1 Application.

33. On October 6, 2009, SOAH held a preliminary hearing in Goliad, Texas and designated parties.

34. On October 8, 2009, the ALJ issued SOAH Order No. 7, by which he granted the Motion to Consolidate.

35. On October 26, 2009, UEC filed an unopposed motion to abate this proceeding to allow it to make minor amendments to its Mine Application and PAA-1 Application. On October 26, 2009, the ALJ issued SOAH Order No. 8, by which he granted the abatement.

36. On November 6, 2009, UEC filed amendments to its Mine Application and its PAA-1 Application to reflect changes to its plans for the uranium processing facility. The amendments reflect that the final stages of uranium recovery would occur at an off-site location, rather than at the proposed Goliad facility. These amendments result in a smaller footprint of the Goliad processing facility.

37. By a Joint Status Report filed on December 15, 2009, the parties proposed a date of May 3, 2010, for the hearing on the merits and proposed a procedural schedule leading up to that hearing date.

38. On December 18, 2009, the ALJ issued SOAH Order No. 9, by which he set the hearing on the merits for May 3, 2010, and established a procedural schedule as proposed by the parties. The parties also reached an agreement regarding the location of the hearing.

39. On January 20, 2010, the ALJ issued SOAH Order No. 10, which in accordance with the parties' agreement provided that if the hearing on the merits continued into a second week (*i.e.*, into the week of May 10th), that portion of the hearing would be held in Goliad.

40. On January 28, 2010, the ED issued written responses to public comments regarding the PAA-1 Application ("RTC Regarding PAA-1 Application").

41. On April 30, 2010, the ALJ held a prehearing conference.

42. The hearing on the merits was conducted by ALJ Richard Wilfong on May 3 through 11, 2010. From May 3 through May 7, 2010, the hearing was held in Austin, Texas at the State Office of Administrative Hearings, William Clements State Office Building, 4th Floor. On May 10 and 11, the hearing was held in Goliad County at the Goliad County Courtroom, 127 North Courthouse Square, Goliad, Texas 77963.

43. The Parties and their representatives who participated in the hearing of this case were:[2]

PARTY	REPRESENTATIVE
UEC	Monica Jacobs and Diana Nichols, Attorneys, Austin, Texas
ED	Shana Horton, Staff Attorney, TCEQ
Office of Public Interest Counsel ("OPIC")	Garrett Arthur, Attorney
Goliad County	James B. Blackburn and Adam M. Friedman, Attorneys, Houston, Texas
Goliad County Groundwater Conservation District	Rob Baiamonte, Attorney, Goliad, Texas

44. The Parties filed Closing Argument Briefs on July 9, 2010.

45. The Parties filed Replies to Closing Argument Briefs on July 30, 2010, and the record closed.

III. Notice and Jurisdiction

46. Notice of Receipt of Application and Intent to Obtain a New Underground Injection Control Permit was mailed to the application mailing list on September 5, 2007, and was published in the *Victoria Advocate* on September 19, 2007 and the *Texan Express* on September 26, 2007.

47. Notice of Application and Preliminary Decision for Class III Injection Well, including notice of the request for designation of an exempt aquifer, was mailed to the application mailing list on June 17, 2008 and was published in the *Victoria Advocate* on June 20, 2008 and the *Texan Express* on June 25, 2008.

48. Notice of Receipt of Application and Intent to Obtain a New Production Area Authorization (PAA) was mailed to the application mailing list on September 26, 2008 and

[2] These persons were designated as parties but did not participate in the hearing: Raymond V. Carter, Tom E. Stockton, Mona Samford and Sidney Braquet, aligned with UEC; and Goliad County Farm Bureau, individually and as representative of the following aligned protestant entities and land owners: Ander-Weser Volunteer Fire Department, Mary and Tom Anklam, Raymond and Karon Arnold, Aldon and Brenda Bade, Mickey and Elizabeth Beard, Richard and Catherine Bettge, Otto and Ruth Bluntzer, Matt and Erika Bochat, Gene and Reta Brown, John and Pearl Caldwell, Lynn and Ginger Cook, Luann and Craig Duderstadt, Darwyn and Waynell Duderstadt, Wilburn and Doris Duderstadt, Douglas and Wanda Franke, Mary Kathryn Bluntzer Gray, Joel and Jana Grieser, Brenda Jo Hardt, Ernest and Frances Hausman, Gaylon and Barbara Kornfuehrer, Ted and Pam Long, Ricki McKinney, Mr. and Mrs. Jason Mikeska, Susan and Weldon Orr, Margaret Rutherford, Wayne and Margie Smith, St. Peter's Lutheran Church, and Dorian and Carol Thurk.

published in the *Victoria Advocate* on September 26, 2008 and the *Texan Express* on October 1, 2008.

49. The Amended Notice of Hearing on the Class III area application and the request for designation of an exempt aquifer was mailed to the application mailing list and applicant contacts on April 3, 2009. The Amended Notice of Hearing was mailed to the adjacent and permit area landowners on April 7, 2009, as required by 30 TAC § 39.651(f). The Amended Notice of Hearing was published in the *Victoria Advocate* in Victoria County on April 7, 2009; *The Countywide* in Karnes County, *Texan Express* in Goliad County, *Cuero Record/Yorktown News-View* in DeWitt County, and *Beeville Bee-Picayune* in Bee County on April 8, 2009; and The *Refugio County Press* in Refugio County on April 9, 2009.

50. On May 14, 2009, the ALJ held a preliminary hearing in Goliad, Texas during which he established jurisdiction over the Mine Application.

51. Revised Notice of Application and Preliminary Decision for New Production Area Authorization was mailed to the application mailing list on June 18, 2009 and published in the *Victoria Advocate* on June 23, 2009 and the *Texan Express* on June 24, 2009.

52. On October 6, 2009, SOAH held a preliminary hearing in Goliad, Texas and established jurisdiction over the PAA-1 Application.

53. All public notices were in proper form and given to the required notice recipients in the required manner.

IV. Background

54. Before beginning operations, a mine operator must receive an underground injection permit to establish a mine, an aquifer exemption to conduct mining activities within an aquifer, and at least one PAA, which is an administrative designation of a production area within the boundary of the approved mining area.

Mine Permit

55. The Mine Permit authorizes UEC to construct and operate Class III injection and production wells for recovery of uranium from a certain portion of the Goliad Formation.

56. The area within the boundary of the proposed Mine Permit is approximately 1,139.4 contiguous acres, including a 100-foot buffer zone (the "Mine Permit Area").

Aquifer Exemption

57. The Mine Application includes a request for an aquifer exemption.

58. An exempted aquifer is an aquifer or a portion of an aquifer which meets the criteria for fresh water but which has been designated an exempted aquifer by the Commission after notice and opportunity for public hearing. The Commission's administrative order

designating the aquifer exemption requested in the Mine Application ("Aquifer Exemption Order") is attached as Exhibit B.

59. The requested aquifer exemption covers approximately 423.8 acres within the larger Mine Permit Area and applies from a depth of 45 to 404 feet within the Goliad Formation (the "Aquifer Exemption Area").

PAA Application

60. UEC also filed its PAA-1 Application to authorize UEC to construct and operate Class III injection and production wells for the recovery of uranium in proposed PA-1 within the Mine Permit Area.

61. The requested PAA is issued under the terms of the proposed Mine Permit. The area within the boundary of proposed PA-1 is approximately 36.1 acres within a 94.2-acre mine area in the southern portion of the proposed Mine Permit Area.

62. The draft PAA includes: a mine plan with estimated schedules for mining and aquifer restoration, a baseline water quality table, a restoration table, control parameter upper limits, monitor well locations, and cost estimates for aquifer restoration and well plugging and abandonment.

V. Issues Referred to SOAH Regarding the Mine Application

A. Whether the use and installation of the injection wells are in the public interest under Texas Water Code §27.051(a). Public interest in regard to this issue includes whether UEC's mining operation or restoration activities will adversely impact the public interest by unreasonably reducing the amount of groundwater available for permitting by the Goliad County Groundwater Conservation District.

63. UEC's proposed installation and use of Class III injection wells for in situ mining of uranium are in the public interest, in accordance with the criteria in TEX. WATER CODE § 27.051(a).

64. Uranium, in contrast with oil and gas, is a very scarce natural resource that exists in commercially mineable concentrations in only a few areas of the United States, including Goliad County, Texas.

65. It is in the public interest for this natural resource to be produced to meet the energy needs of the United States, and for the mineral owners to realize the economic benefits of uranium production on their property.

66. A review of the ED's RTC Regarding Mine Application shows that the ED considered a wide range of issues regarding public interest, including: economic impacts and quality of life, health and welfare, groundwater quality, geology/hydrology of the aquifer, monitoring, control of migration of mining fluids, aquifer restoration, financial assurance, and compliance history.

67. The ED undertook a balancing approach and considered potential negative impacts in making a determination of public interest.

68. The ED also reviewed the Mine Application to ensure that UEC would meet all regulatory requirements.

69. UEC's projected water consumption is between 133 and 206 acre-feet per year.

70. The District's Management Plan anticipated the need to plan for groundwater usage for uranium mining purposes. The Plan projects 800 acre-feet per year of groundwater usage for such purposes, which is almost four times the amount that UEC projects it will use on an annual basis.

71. UEC's estimated water use over the life of the project and projected maximum monthly water use are also projected to fall within the limits of the District's current water usage rule.

72. UEC's mining operation and restoration activities will not unreasonably reduce the amount of groundwater available for permitting by the District.

73. UEC's compliance history does not show that granting the Mine Application would be against the public interest. The findings set forth in Section V.B below are incorporated by reference herein.

74. UEC's ability to meet applicable financial assurance requirements does not show that granting the Mine Application would be against the public interest. The findings set forth in Section V.I below are incorporated by reference herein.

75. UEC's restoration proposal and past groundwater restoration efforts by other operators do not show that granting the Mine Application would be against the public interest. The findings set forth in Section V.L below are incorporated by reference herein.

76. There is no practical, economic and feasible alternative to an injection well reasonably available within the meaning of that term as set forth in TEX. WATER CODE § 27.051(d)(2). The findings set forth in Section V.U below are incorporated by reference herein.

B. Does the Applicant's compliance history require denial of the application under TEX. Water Code § 27.051(e) and 30 TAC Chapter 60?

77. The ED prepared a compliance history summary in accordance with Tex. Water Code § 27.051(e) and 30 TAC Chapter 60.

78. In the compliance history summary, UEC received a rating of 3.01, which is an average classification by default since UEC has no history of operations in Texas.

C. Does the application adequately and accurately describe baseline conditions of the groundwater in the proposed permitted area under applicable requirements of 30 TAC Chapter 331?

79. Local water quality was established by sampling all existing wells within the Mine Permit Area and by sampling nearly all the existing wells within 1 kilometer of the permit area boundary. In addition, UEC completed and sampled 20 baseline wells.

80. The locations of the 20 baseline wells largely correspond to the area where UEC anticipates mining (*i.e.*, areas of high uranium mineralization).

81. The Mine Application contains the water quality results for the 20 baseline wells and the 47 area wells located inside the permit area boundary or within 1 kilometer of the permit area boundary.

82. Groundwater quality data from the 20 baseline wells is remarkably similar to the data from the 47 wells for all constituents with the exception of uranium and radium-226, which are significantly higher in the baseline wells.

D. Does the application meet all applicable criteria of 30 TAC § 331.122, related to required consideration by the Commission prior to issuing a Class III Injection Well Area Permit?

83. UEC described the list of the items that the Commission is required to consider in its administrative and technical review under 30 TAC § 331.122 before issuing an area permit, as well as the location of each such item in the Mine Application.

84. UEC submitted all of the data and each of the items for the applicable criteria listed in 30 TAC § 331.122, and the Commission considered each of these items.

E. Has the Applicant demonstrated that the proposed exempted aquifer meets the applicable criteria of 30 TAC § 331.13?

85. There are no water wells that are used for human consumption within the proposed Aquifer Exemption Area.

86. UEC demonstrated that the area of the exempted aquifer is uranium-bearing with production capability.

87. In addition, the groundwater in the proposed exempted aquifer is contaminated due to the uranium mineralization such that it would be economically or technologically impractical to render the water fit for human consumption.

88. The proposed aquifer exemption area was properly delineated.

F. Is the application sufficiently protective of groundwater quality?

89. In accordance with 30 TAC § 331.102, UEC is or will be required to:

- Identify existing wells that could serve as a conduit for mining solutions to move outside the production zone or the production area (30 TAC § 331.42);

- Construct wells in accordance with construction requirements (30 TAC § 331.82);

- Maintain mechanical integrity of all Class III wells (30 TAC § 331.4);

- Implement corrective action standards to prevent or correct pollution of a USDW (30 TAC § 331.44);

- Obtain ED approval of construction and completion of wells (30 TAC § 331.45);

- Operate wells in accordance with operation requirements (30 TAC § 331.83);

- Monitor wells in accordance with monitoring requirements (30 TAC § 331.84);

- Submit reports in accordance with reporting requirements (30 TAC § 331.85); and

- Close wells in accordance with a plugging and abandonment plan in a manner which will not allow the movement of fluids through the well, out of the injection zone, or to the land surface (30 TAC §§ 331.46 and 331.86).

90. The geologic and hydraulic properties of the Mine Permit Area indicate that UEC will be able to comply with rule requirements. The findings stated under Section V.H below are incorporated by reference herein.

91. Data in the Mine Application shows that mining fluids will not migrate vertically or horizontally and contaminate an USDW (underground source of drinking water). The findings stated under Section V.R below are incorporated by reference herein.

92. UEC's proposal for restoration of groundwater to baseline levels as contained in the Mine Application is reasonable and adequate. The findings stated under Section V.L below are incorporated by reference herein.

93. The Mine Application is sufficiently protective of groundwater quality.

G. Does the application adequately characterize and describe the geology and hydrology in the proposed permit area, including fault lines, under the applicable rules?

94. The application adequately characterizes and describes the geology and hydrology in the Mine Permit Area, including fault lines, under the applicable rules.

95. The Mine Application contains: a narrative description of the hydrology in the proposed Mine Permit Area; a narrative description of the geology in the proposed Mine Permit Area; permit-area cross sections (and a cross section index map); structure and isopach maps for each of the four sands (Sands A-D); and potentiometric surface maps—both within each sand and for the region—that show the direction of groundwater flow.

96. UEC presented a wealth of information about the geology and hydrology of the area, including the areas within and surrounding the proposed Mine Permit Area.

97. Two faults exist within the proposed Mine Permit Area: the Northwest Fault and the Southeast Fault.

98. The Northwest Fault is the larger of the two and runs along the northwest portion of the proposed Mine Permit Area, near the perimeter of proposed production areas A and C and very near the perimeter of proposed production area D.

99. Further characterization of the Northwest Fault is not required for the Mine Permit. Where applicable, future PAA applications will include the results of hydrologic testing and an interpretation of those results with respect to any faults to determine the hydrologic connection both across the fault and vertically along the fault.

100. The Southeast Fault transects only a small part of the southeast corner of the proposed Mine Permit Area and touches none of the proposed production areas.

101. The Mine Application accurately and adequately describes all faults in the proposed Mine Permit Area.

102. The Mine Application meets all applicable criteria of 30 TAC § 331.122, related to required consideration by the Commission prior to issuing a Class III Injection Well Area Permit. The findings set forth in Section V.D above are incorporated by reference herein.

H. Do the geologic and hydraulic properties of the proposed permit area indicate that the Applicant will be able to comply with rule requirements?

103. The geologic and hydraulic properties of the proposed Mine Permit Area indicate that UEC will be able to comply with rule requirements.

104. Sands B, C and D in the Mine Permit Area are confined aquifers. They are saturated with groundwater.

105. Sand A in the Mine Permit Area is hydraulically unconfined, but still isolated from the deeper sands by a low permeability confining layer throughout the Mine Permit Area.

106. Throughout the Mine Permit Area, each of the sands (Sands A—D) is separated from one another by continuous confining layers consisting largely of low permeability clay.

107. These confining layers average between thirty and forty-five feet in thickness in the Mine Permit Area.

108. For the most part, the hydraulic gradient within the Mine Permit Area is relatively flat, resulting in a slow rate of groundwater flow.

109. Regionally, the direction of groundwater flow is typical of coastal plain aquifers, that is, coastward. Thus, groundwater flow in the Mine Permit Area is generally to the southeast.

110. Mining fluids will not migrate vertically or horizontally and contaminate an USDW (underground source of drinking water). The findings set forth and/or incorporated by reference in Section V.R below are incorporated by reference herein.

I. Does the Applicant meet the applicable requirements for financial assurance under Texas Water Code §§ 27.051, 27.073, and 30 TAC Chapters 37 and 331?

111. UEC presented evidence showing its compliance with the detailed specifications and requirements about financial assurance that are prescribed by the TCEQ rules.

112. UEC's application does not lack specificity regarding the form and quality of financial assurance.

113. UEC meets the applicable requirements for financial assurance under Texas Water Code §§ 27.051, 27.073, and 30 TAC Chapters 37 and 331.

114. The Mine Application sets out a total preliminary estimated cost for the plugging of the wells in the four planned production areas. The estimate was derived by multiplying the total estimated footage for all wells by a cost per foot that reflects all costs, *i.e.*, labor, equipment, per diem, and materials, and specifies that the plugging material will be cement.

115. The Mine Application contains a description of the plugging method—cementing from bottom to top—that will be used to ensure that there will be no movement of fluid through the wells after abandonment, and a description of the restoration process that will ensure that no movement of contaminants will move from the production zone into a USDW.

116. The Mine Application contains a commitment that UEC will follow the requirements of 30 TAC § 331.86 in plugging the wells.

117. The ED reviewed the submitted cost estimates and determined that the coverage will be sufficient for the financial assurance that must be submitted after the permits and licenses are issued.

J. Is the application sufficiently protective of surface water quality?

118. Class III area permit applications address protection of surface water only in a general sense. The specific regulatory requirements for containment of surface fluids are included in a radioactive material license ("RML"). An in situ uranium mine operator is required to have a RML.

119. UEC's Mine Application contains operational measures to comply with the Draft Mine Permit's prohibition against discharge of fluids into surface waters.

120. No impacts to wetlands are anticipated as a result of UEC's proposed operations.

121. The Mine Application describes design features related to the management of flooding and runoff. These features will prevent and/or minimize contact of mining fluids with the ground surface.

122. With proper construction practices, mining activities will not impact the quality of runoff caused by flooding.

123. Accidental spills at the plant, in the field, and at the Class I waste disposal well areas will be minimized by automated monitoring equipment, daily visual inspections and reporting, and by UEC's corrective action program.

124. UEC has adopted Operating, Safety and Emergency Procedures that establishes safety protocols for transporting shipments, including shipments of loaded resin or solid byproduct waste. It also establishes emergency response protocols to be implemented in the event of an accident.

125. Any concerns regarding possible migration of constituents from a production area in Sand A to Fifteen Mile Creek can be appropriately addressed in connection with the PAA application process for Sand A.

126. The Mine Application is sufficiently protective of surface water quality.

K. Are local roadways sufficient to handle traffic to and from the proposed facility?

127. Local roadways are sufficient to handle traffic to and from the proposed facility.

128. UEC's site access plan provides that UEC will construct a new road so that the main entrance to the proposed site will be directly onto US Highway 183.

129. US Highway 183 is designed for higher volume traffic and larger vehicles than local county roadways.

130. The local roadways will not be adversely affected by the traffic created by the proposed *in situ* uranium mining operation.

L. Whether UEC's proposal for restoration of groundwater to baseline levels as contained in the permit application is reasonable and adequate.

131. UEC's proposal for restoration of groundwater to baseline levels as contained in the Mine Application is reasonable and adequate.

132. The Mine Application contains a description of UEC's proposed restoration procedures, plans for a restoration demonstration and report to TCEQ regarding the demonstration.

133. UEC's restoration proposal incorporates improvements as compared to past restoration efforts in Texas. These include: 1) the use of reverse osmosis on a commercial scale during mining to provide a jump start on restoration; 2) the initiation of restoration as soon as mining ends in a production area; and 3) the continued use of the ion exchange (IX) columns to remove residual uranium during restoration instead of only during mining.

134. In addition, UEC's restoration efforts will benefit from technological advancements. The membranes that are used in the reverse osmosis process are now specifically designed to function with a longer life span and higher performance in the particular water quality in which they will be used.

135. Even though no restoration model is required, UEC does have a state-of-the-art hydrogeological model that it can use to increase its restoration success in its first production area.

136. Within 18 months after initiation of mining in the first production area (PA-1), UEC will conduct a restoration demonstration. If the results of that demonstration indicate the assumed number of pore volumes required for aquifer restoration is inadequate, the ED will require the amount of financial assurance for aquifer restoration to be adjusted accordingly.

137. Specific requirements for restoration of groundwater after the completion of mining are addressed in PAAs rather than in Class III injection well area permits.

M. Will the Applicant's proposed activities negatively impact livestock and wildlife, including endangered species?

138. The proposed uranium mining activities will not negatively impact livestock and wildlife, including endangered species.

139. If there is no contamination of the air, soil, surface water, or groundwater outside the production area, then animals are not impacted. The Mine Application complies with the rules designed to eliminate these possible pathways for contamination of animals.

140. The Mine Application is sufficiently protective of surface water quality. The findings of fact set forth and/or incorporated by reference in Section V.J above are incorporated by reference herein.

141. Groundwater is adequately protected from pollution. The findings set forth in and/or incorporated by reference into Sections V.F, V.H., and V.L above and Section V.R below are incorporated by reference herein.

142. UEC has adopted an Operational Monitoring Program, which is set forth in its RML Application. Pursuant to the RML, UEC will be required to conduct regular sampling of air, vegetation (including a grazing crop), soil, sediment, surface water and groundwater at pre-determined locations on a quarterly and annual basis throughout its operations.

This monitoring will enable UEC to detect any potential breach of the controls required by the RML.

N. Will the Applicant's proposed activities negatively impact the use of property?

143. UEC's proposed activities will not negatively impact the use of property.

144. Existing land uses adjacent to the Mine Permit Area include low density, scattered rural residential, cattle ranching, cropland, and oil and gas production.

145. UEC has demonstrated its compliance with the TCEQ regulatory scheme governing in situ uranium mining. Fresh water and air are adequately and sufficiently protected from pollution, soil and vegetation are adequately and sufficiently protected from contamination, and UEC's proposed activities will not negatively impact livestock and wildlife, including endangered species. The findings set forth in Sections V.F, V.H., V.J., V.L, V.M above and in Section V.R below are incorporated by reference herein.

146. The proposed mining operations and restoration activities will not adversely impact the public interest by unreasonably reducing the amount of groundwater available for permitting by the District. The findings set forth in Section V.A above are incorporated by reference herein.

O. Will the Applicant's proposed activities adversely affect public health and welfare?

147. UEC's proposed activities will not adversely affect public health and welfare.

148. UEC's proposed installation and use of Class III injection wells for in situ mining of uranium are in the public interest, in accordance with the criteria in TEX. WATER CODE § 27.051(a). The findings set forth in Section V.A above are incorporated by reference herein.

149. Fresh water and air are adequately and sufficiently protected from pollution; soil and vegetation are adequately and sufficiently protected from contamination; and UEC's proposed activities will not negatively impact livestock and wildlife, including endangered species. The findings set forth in Sections V.F, V.H., V.J., V.L, V.M above and in Section V.R below are incorporated by reference herein.

150. Local roadways are sufficient to handle traffic to and from the proposed facility. The findings set forth in Section V.K above are incorporated by reference herein.

P. Whether the proposed mining is in the recharge zone of the Gulf Coast Aquifer (Evangeline component).

151. The proposed mining is not in the recharge zone of the Gulf Coast Aquifer (Evangeline component).

Q. Whether the Gulf Coast Aquifer is a confined aquifer in the areas of Goliad County where UEC will conduct UIC activities.

152. Sands B, C and D in the Mine Permit Area are confined aquifers.

153. Sand A in the Mine Permit Area is hydraulically unconfined, but still isolated from the deeper sands by a low permeability layer throughout the Mine Permit Area and thus confined in a geologic sense.

R. Whether mining fluids will migrate vertically or horizontally and contaminate an USDW (underground source of drinking water).

General

154. Data in the Mine Application shows that mining fluids will not migrate vertically or horizontally and contaminate an USDW (underground source of drinking water).

155. UEC's proposed methods of confinement have long been supported by the ED and accepted by the Commission.

156. TCEQ rules require the confinement of mining solutions and monitor wells in and above the production zone.

157. The use of a bleed is well-established as a method of confining mining fluids in a production area. The mine will be monitored carefully by UEC and will be subject to scrutiny by the ED during the initial phases of its development.

158. The geologic and hydraulic properties of the proposed Mine Permit Area indicate that UEC will be able to comply with rule requirements. The findings of fact set forth in Section V.H above are incorporated by reference herein.

159. PA-1 is not involved with the Northwest Fault. Prior to commencing mining operations near the Northwest Fault, UEC will have to apply for, and the Commission will have to issue a production area authorization for at least one of the other proposed production areas. To obtain such a PAA, UEC will have to design and conduct a hydrologic testing program for the production area in which it seeks authorization to mine and submit the results of such hydrologic testing as a part of its PAA application. The PAA application will also include an interpretation of those results with respect to any faults to determine the hydrologic connection both across the fault and vertically along the fault.

160. The Southeast Fault is located well outside the proposed Aquifer Exemption Area and over 1,500 feet downgradient from the closest proposed production area, which is PA-1.

Horizontal Containment

161. Maintaining a cone of depression during mining operations prevents the horizontal migration of mining fluids.

162. Water levels in monitor wells are monitored regularly and pumping is adjusted where and when needed to provide horizontal confinement.

163. UEC's proposal for restoration of groundwater to baseline levels as contained in the permit application is reasonable and adequate. The findings of fact set forth and/or incorporated by reference in Section VI.L above are incorporated by reference herein.

Vertical Containment

Clay Confining Layers

164. The findings of fact set forth in Sections V.H and V.Q above (regarding confinement and confining layers) are incorporated by reference herein.

Boreholes

165. Boreholes will not serve as a conduit for vertical migration.

166. All exploration boreholes drilled by UEC were plugged with cement from total depth to at least 3 feet below ground surface and no closer than 1.5 feet from the surface. The remainder of the hole between the top of the plug and the surface was filled with cuttings or non-toxic soil.

167. In the early 1980s, Moore Energy Corporation ("Moore Energy") drilled about 487 boreholes throughout its entire exploratory permit area, which covered 17,635 square acres of land surface (some of which overlaps with UEC's exploratory permit area, but much of which does not).

168. Only three of the boreholes drilled by Moore Energy were logged before May 7, 1982 (the effective date of the Texas Railroad Commission's ("TRC") plugging regulation in effect at the time of the contested case hearing). All of the other boreholes were logged after March 15, 1983, and were likely drilled shortly before that. Thus, assuming compliance with the TRC's plugging regulation, these boreholes were plugged in a manner that prevented the mixing of water from different sand units within the hole.

169. Even if not plugged in accordance with the TRC's plugging regulation in effect at the time of the contested case hearing, the Moore Energy boreholes would not serve as conduits for vertical migration.

a. At a minimum, the drilling mud would have been left in the boreholes.

b. Uncased boreholes will typically collapse, and the thick sequence of clays will move across the borehole, further sealing and preventing migration. Even a few centimeters of clay will substantially retard fluid movement.

c. Even in the absence of clay from a collapsed borehole wall, drilling mud in a borehole, in and of itself, constitutes a significant barrier to groundwater flow, particularly after it has been allowed to gel for a time.

S. Whether there are any USDWs within the injection zones proposed by UEC.

170. There are USDWs within the injection zones proposed by UEC.

171. Each of the four proposed production zones is a USDW.

T. Whether any USDWs within Goliad County will be adversely impacted by UEC's proposed in situ uranium operations.

172. Data in the Mine Application shows that USDWs within Goliad County will not be adversely impacted by UEC's proposed in situ uranium operations.

173. The geologic and hydraulic properties of the proposed permit area indicate that the Applicant will be able to comply with rule requirements. The findings set forth in Section V.H above are incorporated by reference herein.

174. Mining fluids will not migrate vertically or horizontally and contaminate an USDW (underground source of drinking water). The findings set forth in Section V.R above are incorporated by reference herein.

175. UEC's proposal for restoration of groundwater to baseline levels as contained in the Mine Application is reasonable and adequate. The findings set forth in Section V.L above are incorporated by reference herein.

U. Whether there is a "practical, economic and feasible alternative to an injection well reasonably available" within the meaning of that term as set forth in TWC § 27.051(d)(2).

176. There are no practical, economic and feasible alternatives to the use of injection wells for uranium mining in the Mine Permit Area.

177. The available alternative methods for recovering uranium are underground and open pit (surface) mining, both of which involve de-watering the production zone sands, removing huge quantities of surface and subsurface material (*i.e.*, the overburden), and creating substantial amounts of solid waste (*i.e.*, tailings).

178. The in situ mining process is a more environmentally-protective means of uranium mining. As compared to the available alternatives, in situ uranium mining greatly minimizes physical damage to the land and subsurface and results in much less solid waste.

VI. PAA-1 Application

A. Mine Plan

179. UEC submitted an updated mine plan as part of its PAA-1 Application. The draft PAA, UR03075PAA1 (PAA1), includes the updated mine plan.

180. The updated mine plan includes a map of the proposed production areas and an updated estimated schedule for production and restoration.

181. According to UEC's mine plan, UEC will begin restoration operations in PA-1 promptly after mining.

B. Restoration Table

182. UEC's proposed restoration table for PA-1 is contained in the PAA-1 Application and in the draft PAA, UR03075PAA1 (PAA1), as Attachment 6.

Parameters

183. UEC's proposed restoration table includes all parameters in the suite established in accordance with the requirements of 30 TAC § 331.104(b).

a. UEC requested that ammonia, cadmium, lead and mercury be excluded from the restoration table.

b. Ammonia, cadmium, lead and mercury are not suitable restoration parameters because (1) they do not occur in the production zone; (2) these elements are not included in the proposed injection solution; (3) they are not subject to being dissolved by mining solutions (because they are not in the production zone), and (4) extensive water quality sampling indicates that these elements are not in the aquifer in general.

Values

184. TCEQ's application form instructs applicants to base the restoration table on the required groundwater analysis report summary. The format of the groundwater analysis report summary is dictated by Figure 3, which is attached to the application form.

185. The values in UEC's restoration table included in its PAA-1 Application consist of the column headed production area average for parameters shown on the production area baseline water quality table, which is included in the draft PAA as Attachment 4A.

186. The values in UEC's restoration table included in its PAA-1 Application were derived from groundwater samples collected at the eighteen baseline wells for PA-1, consisting of PTW-1 through PTW-14 and RBL Wells 1, 3, 4 and 5.

187. When UEC sampled PTWs 7-14, the PAA-1 Application was still in the technical review phase.

188. The restoration values in UEC's restoration table included in its PAA-1 Application are the mean concentration or value for each parameter based on all measurements from groundwater samples collected from baseline wells at the time that the draft PAA was issued. After issuance of the draft PAA, UEC took and analyzed additional groundwater samples (referred to as rounds 2 and 3) from its baseline wells in PA-1.

189. The restoration values in the restoration table attached hereto as Attachment 6 in Exhibit D are the mean concentration or value for each parameter based on all measurements from groundwater samples collected from the PA-1 baseline wells, including (a) those collected at the time that the draft PAA was issued and (b) those collected in rounds 2 and 3.

C. Baseline Table

190. UEC's baseline groundwater summary table for PA-1 is contained in Chapter 6 of its PAA-1 Application and in Attachments 4A and 4B of the draft PAA, UR03075PAA1 (PAA1).

191. The findings of fact set forth in and/or incorporated into Section V.C. are incorporated by reference herein.

The Groundwater Quality Data from Which the Baseline Table in the PAA-1 Application Was Derived (First Round)

192. The baseline groundwater summary table in the PAA-1 Application contains values derived from (a) 22 mine area monitor wells completed in the production zone (BMW-1 through BMW-22); (b) 18 baseline wells completed in the production zone within the production area (PTW-1 through PTW-14; RBLB-1; RBLB-3 through RBLB-5); and (c) nine mine area monitor wells completed in the nonproduction zone (OMW-1 through OMW-9).

193. The baseline groundwater summary table contains: a) the averages and ranges of the parameter values determined for the designated production zone monitor wells (BMW-1 through BMW-22), which are monitor wells completed in the production zone; (b) the averages and ranges of the parameter values determined from eighteen designated production zone wells in the production area (PTW-1 through PTW-14; RBLB-1; RBLB-3 through RBLB-5), which are baseline wells completed in the production zone within the production area; and (c) the averages and ranges by zone of the parameter values determined for designated nonproduction zone monitor wells (OMW-1 through OMW-9), which are monitor wells completed in nonproduction zone.

194. The water samples from which the baseline table in the PAA-1 Application was derived are representative of groundwater quality in the areas where they were collected.

The Values in the Baseline Table in the PAA-1 Application

Production Zone Monitor Wells (BMW-1 through BMW-22)

195. The water samples obtained from the designated production zone monitor wells (BMW-1 through BMW-22) and used to derive the data included in the baseline groundwater summary table are representative of groundwater quality in the area of the monitor well ring surrounding PA-1.

196. This data establishes an average value for radium-226 of 12.1 pCi/l, which exceeds the EPA drinking water standard for radium-226 (5 pCi/l).

Nonproduction Zone Monitor Wells (OMW-1 through OMW-9)

197. The water samples obtained from the designated nonproduction zone monitor wells (OMW-1 through OMW-9) and used to derive the data included in the baseline groundwater summary table are representative of groundwater quality in Sand A overlying the PA-1 production area.

198. This data establishes an average value for arsenic of .018 mg/l, which exceeds the EPA drinking water standard for that constituent (.010 mg/l). With the exception of one well, all of the OMWs have arsenic values in excess of the .010 mg/l standard.

Production Zone Baseline Wells (PTW-1 through PTW-14; RBLB-1; RBLB-3 through RBLB-5)

199. The water samples obtained from the eighteen baseline wells (PTW-1 through PTW-14; RBLB-1; RBLB-3 through RBLB-5) and used to derive the data included in the baseline groundwater summary table are representative of groundwater quality in the areas where UEC plans to mine.

200. This data establishes an average value for radium-226 of 1684.0, which greatly exceeds the EPA drinking water standard of 5 pCi/l for radium-226. Every one of the baseline wells has a radium-226 value in excess of the 5 pCi/l standard. The lowest value is 10 pCi/l.

201. This data establishes an average value for uranium of .804 mg/l, which exceeds the EPA drinking water standard of .03 mg/l for uranium.

Later Sampling (Second and Third Rounds)

202. Constituent values in groundwater (including values for uranium and radium-226) naturally vary over time, even in the same location.

203. The variance in uranium levels between the sampling rounds is consistent with natural conditions and natural variability.

204. The variance in radium-226 levels between the sampling rounds is consistent with natural conditions and natural variability.

205. The baseline groundwater summary tables attached hereto as Attachments 4A and 4B in Exhibit D include values from all groundwater samples collected from baseline wells, including those collected at the time that the draft PAA was issued and those collected in rounds 2 and 3.

206. The water samples collected in rounds 2 and 3 are representative of groundwater quality in the areas where they were collected.

D. Control parameter upper limits

207. UEC's proposed upper limits control parameters are contained in Table 6.5 in the PAA-1 Application and Attachment 5 of the draft PAA, UR03075PAA1 (PAA1).

208. The control parameters proposed by UEC and set forth in the draft PAA are chloride and conductivity.

209. The control parameter upper limits for the production zone monitor wells (BMWs) were calculated by adding 25% to the highest recorded values for chloride and conductivity from those wells, BMW-1 through BMW-22.

210. The control parameters for the nonproduction zone monitor wells (OMWs) were calculated by adding 25% to the highest value recorded for chloride and conductivity from the those wells, OMW-1 through OMW-9.

211. Chloride and conductivity will provide timely detection of any migration of mining fluids.

    a. Because of the production process, the mining fluid will contain elevated levels of chlorides.

    b. Conductivity and chloride are conservative parameters in that they move with the groundwater without undergoing retardation.

212. As shown on Attachment 5 in Exhibit D, the highest values for the control parameters—chloride and conductivity—are different than the values listed in the draft PAA-1 and the PAA-1 Application due to the incorporation of the additional two sample sets, rounds 2 and 3. The upper limits control parameters contained in Attachment 5 in Exhibit D hereto are based upon the revised tables attached hereto as Attachments 4A and 4B in Exhibit D, and thus incorporate those differences.

E. Monitor wells

213. The monitor wells for PA-1 are described in the PAA-1 Application and the draft PAA, UR03075PAA1 (PAA1).

214. The hydrologic test results and interpretation are included in the PAA-1 Application.

Production Zone Monitor Wells (BMW-1 through BMW-22;GW-1; GW-2)

215. UEC has installed twenty-two production zone monitoring wells, BMW-1 through BMW-22. These wells form a ring around the outside of the production area for PA-1, and each one is completed in Sand B, where the mining is proposed to occur.

216. Each of the BMWs was installed in accordance with the applicable TCEQ standards. Each well was properly cased and cemented from bottom to top.

217. Each of the BMWs are located within 400 feet from the production area for PA-1.

218. The angle formed by lines drawn from any one of the BMWs to the nearest BMW is not greater than 75 degrees. The spacing of the monitor wells is adequate to intercept excursions.

219. The hydrologic test results demonstrate that the BMWs are hydraulically connected to the production area.

220. Pursuant to the draft PAA-1, UEC will also install two additional production zone monitoring wells, GW-1 and GW-2, prior to the commencement of mining operations in PA-1. GW-1 and GW-2 will be located approximately 80 feet inside the monitor well ring and will provide additional monitoring protection. An excursion in this location would be detected in the GWs before it would hit the monitor ring wells.

Nonproduction Zone Monitor Wells (OMW-1 through OMW-9)

221. UEC has installed nine (9) nonproduction zone monitor wells, OMW-1 through OMW-9.

222. Each of the OMWs was installed in accordance with applicable TCEQ standards.

223. Each of these wells is located inside the production area for PA-1 and is completed in Sand A.

224. The PA-1 production area is approximately 36 acres. Thus, there is one OMW per every four acres of production area.

Buffer Zone

225. All designated monitoring wells (BMWs, GWs and OMWs) are located at least 100 feet inside the boundary of the Mine Permit Area.

F. Cost estimates for aquifer restoration and well plugging and abandonment

226. UEC meets the applicable requirements for financial assurance under TEX. WATER CODE §§ 27.051, 27.073, and 30 TAC Chapters 37 and 331.

227. UEC's cost estimates for aquifer restoration and well plugging and abandonment for PA-1 are contained in the PAA-1 Application and in the draft PAA, UR03075PAA1 (PAA1), and they comply with all applicable regulatory requirements.

228. The cost estimate covers the plugging of monitor wells, baseline wells and injection/production wells in accordance with the closure plan, including all costs related thereto. The cost estimate accounts for the quantity of cement needed to cement each well from bottom to top, which will prevent movement of fluids through the wells out of the injection zone or to the land surface.

229. The cost estimate also includes a detailed estimate for the cost of restoration of groundwater in PA-1, including all costs related thereto. The estimate accounts for pumping and electrical costs, treatment costs, repairs and maintenance, labor, laboratory analysis, and operating expenses, while taking into account number and size of well patterns, screen lengths, effective porosity and a flare factor.

G. Other information required to evaluate the application

230. UEC included all applicable information required by the ED in its PAA-1 Application and its response to the ED's notice of deficiency.

231. UEC included all applicable information required by the instructions on the PAA application form promulgated by the Commission.

a. UEC provided a map that locates and identifies the lease area, permit area, and existing and proposed production areas with respect to easily identifiable landmarks such as towns or main roads. This information is contained in Chapter 1.0 and Figure 1-3, Mine Location Map.

b. UEC provided an oriented drawn to scale map locating all monitor wells, production wells, and baseline wells, and indicating acreage of the permit area, mine area, depth to the top of the production zone, and elevation of the production zone. This information is contained in Chapter 1.0 and Figure 1-4, Production Area Map.

c. UEC provided detailed cross-sections along the dip and strike accurately identifying all overlying aquifers, the first underlying aquifer, and the geologic interval to be mined. The geologic interval identified as the "production zone" will be the zone authorized for production by the proposed authorization. The lithologic columns are supported with electric logs, and the piezometric levels are indicated. This information is contained in Chapter 3.0 and Figures 3-1 through 3-5a.

d. UEC provided a written description of the geology and hydrology of the mine area, which is supported with maps, cross-sections showing geologic units, lithology, structural features, and other pertinent information. For hydrologic verification, a description of the major aquifer, hydraulic gradient, water quality indicators (*i.e.*, TDS, Na, SO4) for the mine area, and other pertinent information are included. This information is contained in Chapters 3.0 and 5.0.

e. UEC provided maps showing piezometric levels and TDS contours for production and non-production zone aquifers with baseline wells located and identified. This information is contained in Chapter 5.0 and associated contour maps showing TDS and piezometric levels.

f. UEC provided all required information regarding each of the monitor wells and the baseline wells completed in the production and non-production aquifers. This information is contained in Chapters 5.0 and 6.0.

g. UEC provided a Restoration Progress Report:
   1) A description of restoration procedures or restoration demonstration procedures, proposed, in progress, or completed.
   2) A description of the restoration progress that currently has been achieved.
   3) A description of the fluid handling capacity of the disposal facilities required to accomplish restoration using the proposed restoration procedure within the time frame specified in the mine plan. This information is contained in Chapter 7.0.

h. UEC provided a detailed calculation and tabulation of the volume of fluids to be handled by storage and disposal facilities at their maximum, and comparative capacity of the facilities that will be available. This information is contained in Chapter 7.0 and Table 7.2, Updated Fluid Handling Requirements vs. Capacity.

H. Whether the application for PAA-1 complies with all applicable statutory and regulatory requirements.

232. The PAA-1 Application complies with all applicable statutory and regulatory requirements.

VII. Other Findings

233. Based on the above findings of fact, the use or installation of the injection wells is in the public interest.

234. Based on the above findings of fact, no existing rights, including, but not limited to, mineral rights, will be impaired.

235. Based on the above findings of fact, both groundwater and surface fresh water can be adequately protected from pollution with proper safeguards. The draft Mine Permit and draft PAA-1 impose terms and conditions reasonably necessary to protect fresh water from pollution.

236. Based on the above findings of fact, UEC has made a satisfactory showing of financial responsibility to the extent required by Section 27.073 of the Texas Water Code.

237. Any Finding of Fact more appropriately considered a Conclusion of Law is hereby adopted as such.

CONCLUSIONS OF LAW

VIII. Jurisdiction

238. The Commission has jurisdiction over UEC's application for Class III UIC area permit UR03075, its request for an aquifer exemption, and its application for production area authorization UR03075PAA1 as part of the Commission's authority to permit Class III injection wells, pursuant to TEX. WATER CODE §§ 5.013(a)(8) and 27.011.

239. Based on the above Findings of Fact, public notice of UEC's application for Class III UIC area permit UR03075 and request for aquifer exemption and application for production area authorization UR03075PAA1 were provided as required by the TEX. WATER CODE and Title 30 of the Texas Administrative Code (TAC), and affected persons were provided an opportunity to request a hearing on UEC's Applications in the manner required by law.

240. The Commission has authority to hold hearings concerning UEC's Applications, pursuant to the provisions of TEX. WATER CODE §§ 5.102(b) and 27.018.

241. Proper notice of the hearing and the preliminary hearings was provided to affected persons pursuant to TEX. GOV'T CODE §§ 2001.051 and 2001.052 and TEX. WATER CODE § 27.018.

242. SOAH has jurisdiction to conduct a hearing and to prepare a PFD in this matter. TEX. GOV'T CODE § 2003.047.

IX. Burden of Proof

243. As to the Applications referred by the Commission to SOAH, UEC has the burden of proving that its application for Class III UIC area permit UR03075, its request for an aquifer exemption, and its application for production area authorization UR03075PAA1 comply with applicable law by a preponderance of the evidence. 30 TAC § 80.17(a).

X. Mine Application

A. Whether the use and installation of the injection wells are in the public interest under Texas Water Code §27.051(a). Public interest in regard to this issue includes whether UEC's mining operation or restoration activities will adversely impact the public interest by unreasonably reducing the amount of groundwater available for permitting by the Goliad County Groundwater Conservation District.

244. Based on the findings of fact set forth in and incorporated into Section V.A above, UEC's Mine Application is in the public interest consistent with the policy of the state as defined by the Legislature under TEX. WATER CODE § 27.051(a).

245. TCEQ rules require TCEQ to implement Chapter 27 of the Texas Water Code in a manner consistent with the policy of this state to: maintain the quality of fresh water in the state to the extent consistent with the public health and welfare and the operation of existing industries, taking into consideration the economic development of the state; prevent underground injection that may pollute fresh water; and require the use of all reasonable methods to implement this policy.

246. The scope of the public interest consideration must be appropriately limited so that it does not conflict with other law.

247. It is contrary to legislative intent and principles of statutory interpretation to interpret a more general statutory requirement, like the public interest requirement, to override more

specific law--such as the rule of capture and the exemption from groundwater conservation district regulation of groundwater used for *in situ* mining.

248. The Class III injection well requirements that apply to in situ mining do not regulate the volume of fresh water used by a permittee.

249. In Texas, groundwater law is based upon the "rule of capture."

250. Texas Water Code Section 36.117(l) specifically states that Chapter 36 of the Texas Water Code does not apply to production or injection wells drilled for uranium.

B. Does the Applicant's compliance history require denial of the application under TEX. WATER CODE § 27.051(e) and 30 TAC Chapter 60?

251. Based on the findings of fact set forth in Section V.B above, UEC's compliance history does not require denial of the Mine Application under TEX. WATER CODE § 27.051(e) and 30 TAC Chapter 60.

252. Section 60.2 sets forth the method by which a person's compliance history is classified – i.e., as "high," "average" or "poor." Section 60.2 provides that "[i]f there is no compliance information about the site at the time the executive director develops the compliance history classification, then the classification shall be designated as 'average performer by default.'"

253. The compliance history prepared by the ED was prepared in accordance with Texas Water Code § 27.051(e) and 30 TAC Chapter 60.

C. Does the application adequately and accurately describe baseline conditions of the groundwater in the proposed permitted area under applicable requirements of 30 TAC Chapter 331?

254. Based on the findings of fact set forth in Section V.C above, the Mine Application adequately and accurately describe baseline conditions of the groundwater in the proposed Mine Permit Area under applicable requirements of 30 TAC Chapter 331.

255. There are no TCEQ rule requirements for establishing baseline conditions as part of the Class III application, but baseline quality is defined as "[t]he parameters and their concentrations that describe the local groundwater quality of an aquifer prior to the beginning of injection operations." 30 TAC § 331.2(12).

D. Does the application meet all applicable criteria of 30 TAC § 331.122, related to required consideration by the Commission prior to issuing a Class III Injection Well Area Permit?

256. Based on the findings of fact set forth in Section V.D above, the Mine Application meets all applicable criteria of 30 TAC § 331.122, related to required consideration by the Commission prior to issuing a Class III Injection Well Area Permit.

257. Section 331.122 provides a list of items the Commission shall consider in its administrative and technical review before issuing an area permit.

E. Has the Applicant demonstrated that the proposed exempted aquifer meets the applicable criteria of 30 TAC § 331.13?

258. Based on the findings of fact set forth in Section V.E above, UEC has demonstrated that the proposed exempted aquifer meets the applicable criteria of 30 TAC § 331.13. This conclusion is further supported by the holding in *Western Nebraska Resources Council v. United States Environmental Protection Agency*, 943 F.2d 867, 870 (8th Cir. 1991).

259. For a portion of an aquifer to be exempted, Section 331.13 requires that the portion of the aquifer (1) not currently serve as a source of drinking water for human consumption; and (2) will not in the future serve as a source of drinking water for human consumption for one or more specified reasons. 30 TAC § 331.13(c)(1),(2).

260. The test for the first subpart (*i.e.*, that the portion of the aquifer not currently serve as a source of drinking water) is whether or not anyone is "currently using water for human consumption from the [aquifer] in the specific lateral boundary" of the proposed exemption area. 50 Fed. Reg. 5253 (February 7, 1985), at 5253; 55 Fed. Reg. 21191 (May 23, 1990), at 21192.

261. The second subpart under Section 331.13 is that the portion of the aquifer sought to be exempt will not in the future serve as a source of drinking water for human consumption for one or more specified reasons. Those reasons include:

> (A) It is mineral, hydrocarbon or geothermal energy bearing with production capability;
> ... or
> (C) It is so contaminated that it would be economically or technologically impractical to render the water fit for human consumption.

30 TAC § 331.13(c)(2)(A), (C).

262. No designation of an exempted aquifer shall be final until approved by the EPA as part of the delegated Underground Injection Control Program.

F. Is the application sufficiently protective of groundwater quality?

263. Based on the findings of fact set forth in and/or incorporated into Section V.F above, the Mine Application is sufficiently protective of groundwater quality.

G. Does the application adequately characterize and describe the geology and hydrology in the proposed permit area, including fault lines, under the applicable rules?

264. Based on the findings of fact set forth in and/or incorporated into Section V.G above, the Mine Application adequately characterizes and describes the geology and hydrology in

the proposed permit area, including fault lines, under the applicable rules.

265. Section 331.122(2)(A) requires a map showing "faults, if known or suspected. Only information of public record is required to be on this map . . . ." 30 TAC § 331.122(2)(A).

H. Do the geologic and hydraulic properties of the proposed permit area indicate that the Applicant will be able to comply with rule requirements?

266. Based on the findings of fact set forth in and/or incorporated into Section V.H above, the geologic and hydraulic properties of the proposed permit area indicate that the Applicant will be able to comply with rule requirements.

267. Hydrologic testing is not required for a Class III Underground Injection Control permit, although an applicant must provide a description of the proposed hydrologic testing program. 30 TAC § 331.122(2)(G).

268. Prior to conducting any mining operations near the Northwest Fault, UEC will have to apply for, and the Commission will have to issue one or more PAAs in addition to the PAA for PA-1.

269. The results of the hydrologic testing program must be submitted with an application for a PAA, which is needed to mine an ore body within an area permit. 30 TAC § 305.49(b)(6).

I. Does the Applicant meet the applicable requirements for financial assurance under Texas Water Code §§ 27.051, 27.073, and 30 TAC Chapters 37 and 331?

270. Based on the findings of fact set forth in Section V.I above, the Applicant meets the applicable requirements for financial assurance under Texas Water Code §§ 27.051, 27.073, and 30 TAC Chapters 37 and 331.

271. Applicable law does not require UEC to include estimated restoration costs for all production areas, and the assertion to the contrary is not supported by the plain meaning of the applicable TCEQ rules.

272. Section 27.051(a)(4) of the Texas Water Code provides that a permit may be issued if the Commission finds that the applicant has made a satisfactory showing of financial responsibility if such showing is required by Section 27.073.

273. Section 27.073(a-1), in turn, requires a person to whom an in situ uranium mining injection, monitoring or production well permit is issued to maintain financial security to ensure that each abandoned well is properly plugged.

274. Chapter 37 of the TCEQ rules describes acceptable forms of financial assurance, specifies the precise wording of the various instruments that may be used, and imposes requirements to insure that the issuer or trustee of the instrument is solvent and

financially and otherwise qualified to perform if called upon. 30 TAC §§ 37.71, 37.201, 37.231, 37.211, 37.301, 37.321, 37.331.

275. In addition, Section 37.7021 of Chapter 37 addresses the timing of the provision of financial assurance. It provides that financial assurance for well plugging and abandonment must "be in effect before commencement of drilling operations." 30 TAC § 37.7021(c).

276. Section 331.143 of the TCEQ rules requires (a) the preparation of a written cost estimate of plugging the wells; (b) that this cost estimate take into account all applicable costs and be kept at the facility for the life of the project; and (c) that this cost estimate be reviewed and updated as necessary on an annual basis, including adjustments for inflation.

277. Section 331.143 also incorporates by reference the requirements listed in Sections 331.46 and 331.86. Section 331.46 contains requirements that well plugs shall not allow the movement of fluids through the wells, out of the injection zone or to the land surface and shall consist of cement or an equally protective material; closure plans must demonstrate that no movement of contaminants that will cause pollution from the production zone into a USDW will occur; and lists factors for consideration in determining the adequacy of plugging and abandonment plans.

278. Section 331.86 lays out the timeframe for effectuating plugging and abandonment and requires written acknowledgment from the ED after the fact. Under Section 331.144, financial assurance cannot be released without the written approval of the ED.

J. Is the application sufficiently protective of surface water quality?

279. Based on the findings of fact set forth in Section V.J above, the Mine Application is sufficiently protective of surface water quality.

280. In the context of in situ uranium mining, an RML is a license that authorizes the possession, receipt, processing, and temporary storage of natural uranium prior to transfer to authorized recipients. 30 TAC §§ 336.1, 336.211. An RML also authorizes temporary storage of byproduct material (waste) prior to transfer to authorized recipients and authorized disposal facilities. *Id.* at § 336.1101.

281. The RML application process focuses on facility design and standard operating procedures that ensure the safety of workers, the environment and members of the public from radiation exposure. 30 TAC § 336.304.

282. Applicants for an RML must examine levels of radiological exposure to facility workers and members of the public via various pathways, including surface water. 30 TAC §§ 336.301 – 336.368 (Subchapter D, Standards for Protection Against Radiation).

283. An integral part of an RML application includes Operational Safety and Emergency Procedures to specifically address potential exposure to employees and the public; it also provides procedures for ensuring that potential exposures are minimized to the lowest extent possible. 30 TAC § 336.210.

K. Are local roadways sufficient to handle traffic to and from the proposed facility?

284. Based on the findings of fact set forth in Section V.K above, local roadways are sufficient to handle traffic to and from the proposed facility.

L. Whether UEC's proposal for restoration of groundwater to baseline levels as contained in the permit application is reasonable and adequate.

285. Based on the findings of fact set forth in Section V.L above, UEC's proposal for restoration of groundwater to baseline levels as contained in the permit application is reasonable and adequate.

M. Will the Applicant's proposed activities negatively impact livestock and wildlife, including endangered species?

286. Based on the findings of fact set forth in and/or incorporated into Section V.M above, the Applicant's proposed activities will not negatively impact livestock and wildlife, including endangered species.

287. Applicants for an RML must examine levels of radiological exposure to facility workers and members of the public via various pathways such as air, soils, surface water, and food chain (crops, cattle, etc.). 30 TAC §§ 336.301 – 336.368 (Subchapter D, Standards for Protection Against Radiation).

N. Will the Applicant's proposed activities negatively impact the use of property?

288. Based on the findings of fact set forth in and/or incorporated into Section V.N above, the Applicant's proposed activities will not negatively impact the use of property.

289. TCEQ does not have jurisdiction to consider effects on property values when determining whether to approve or deny a Class III injection well application.

290. The issuance of an injection well permit "does not convey any property rights of any sort" and "does not authorize any injury to persons or property or an invasion of other property rights, or any infringement of state or local law or regulations." 30 TAC § 305.122 (b)-(c); *see also id.* § 305.125(16) (providing that all injection well permits must include a condition stating that it "does not convey any property rights of any sort, or any exclusive privilege").

O. Will the Applicant's proposed activities adversely affect public health and welfare?

291. Based on the findings of fact set forth in and/or incorporated into Section V.O above, the Applicant's proposed activities will not adversely affect public health and welfare.

P. Whether the proposed mining is in the recharge zone of the Gulf Coast Aquifer (Evangeline component).

292. There is no statute or rule prohibiting in situ mining within an aquifer recharge zone.

Q. Whether the Gulf Coast Aquifer is a confined aquifer in the areas of Goliad County where UEC will conduct UIC activities.

293. There is no statutory or regulatory prohibition against conducting in situ uranium mining in an unconfined aquifer.

R. Whether mining fluids will migrate vertically or horizontally and contaminate an USDW (underground source of drinking water).

294. Based on the findings of fact set forth in and/or incorporated into Section V.R above, mining fluids will not migrate vertically or horizontally and contaminate an USDW.

295. The version of TRC's plugging rule in effect at the time of the contested case hearing, 16 TAC § 11.139, became effective on May 7, 1982, and required that boreholes be plugged in a manner that prevents the mixing of water from different sand units within the hole.

296. Prior to commencing mining operations in any additional production area(s), UEC will have to apply for, and the Commission will have to issue a production area authorization. To obtain a production area authorization, an applicant must design and conduct a hydrologic testing program for the production area in which it seeks authorization to mine and must submit the results of such hydrologic testing as a part of its PAA application.

S. Whether there are any USDWs within the injection zones proposed by UEC.

297. Under the TCEQ rules, a USDW is an aquifer or its portions (A) which supplies drinking water for human consumption; or (B) in which the groundwater contains fewer than 10,000 milligrams per liter total dissolved solids; and (C) which is not an exempted aquifer. 30 TAC § 331.2(107).

T. Whether any USDWs within Goliad County will be adversely impacted by UEC's proposed in situ uranium operations.

298. Based on the findings of fact set forth in and/or incorporated into Section V.T above, no USDWs within Goliad County will be adversely impacted by UEC's proposed in situ uranium operations.

299. Once an aquifer exemption is issued, the exempted aquifer is no longer a USDW.

U. Whether there is a "practical, economic and feasible alternative to an injection well reasonably available" within the meaning of that term as set forth in TWC § 27.051(d)(2).

300. Based on the findings of fact set forth in Section V.U above, there is no "practical, economic and feasible alternative to an injection well reasonably available" within the meaning of that term as set forth in TEX. WATER CODE § 27.051(d)(2).

301. Section 27.051(d) of the Texas Water Code provides that in determining if the use or installation of an injection well is in the public interest, the Commission must consider whether there is an alternative to "an injection well," not whether there is an alternative to the proposed injection well location.

XI. PAA-1 Application

A. Mine Plan

302. Based on the findings of fact set forth in and/or incorporated into Section VI.A above, the PAA-1 Application's mine plan complies with all applicable regulatory requirements.

303. A mine plan is defined as a plan for operations at a mine, consisting of: (A) a map of the permit area identifying the location and extent of existing and proposed production areas; and (B) an estimated schedule indicating the sequence and timetable for mining and any required aquifer restoration. 30 TAC § 331.2(63).

B. Restoration Table

304. Based on the findings of fact set forth in and/or incorporated into Section VI.B above, the PAA-1 Application's restoration table complies with all applicable regulatory requirements.

305. A restoration table must include all parameters in the suite established in accordance with the requirements of 30 TAC §331.104(b). 30 TAC § 331.107(a)(1).

306. Under 30 TAC § 331.104(b), any of the parameters in the suite, except for uranium and radium-226, may be removed from the list of restoration parameters if an applicant can demonstrate that a parameter or parameters is not a suitable restoration parameter.

307. When UEC filed its PAA-1 Application, the TCEQ regulations required that each production area authorization contain a restoration table developed by using either:

(1) the higher value in either the column headed mine area average or the column headed production area average for parameters shown on the production area baseline water quality form for the production zone; or

(2) predictions of restoration quality that are reasonably certain after giving consideration to the factors specified in §331.107(f) of this title (relating to Restoration).

30 TAC § 331.104(d) (West 2008).

308. Under the current TCEQ regulations, the restoration values shall consist of either:

(a) the mean concentration or value for that parameter based on all measurements from groundwater samples collected from baseline wells prior to mining activities; or

(b) a statistical analysis of baseline well information proposed by the owner or operator and approved by the executive director that demonstrates that the restoration table value is representative of baseline quality.

30 TAC § 331.107(a)(1).

C. Baseline water quality table

309. Based on the findings of fact set forth in and/or incorporated into Section VI.C above, the PAA-1 Application's baseline table complies with all applicable regulatory requirements.

310. A baseline water table must be submitted with an application for a production area authorization. 30 TAC § 305.49(b)(3).

311. The baseline water table or groundwater analysis report summary serves as the basis for the restoration table. Figure 3 of the application form promulgated by the Commission sets forth the format of the groundwater analysis report summary.

312. When UEC filed its PAA-1 Application, the TCEQ regulations required one or more samples from each designated monitor well (production and nonproduction zone) and each designated production well in the production area, to be summarized as follows:

(1) mine area baseline-the averages and ranges of the parameter values determined for the designated production zone monitor wells;
(2) production area baseline-the averages and ranges of the parameter values determined from at least five designated production zone wells in the production area; and
(3) nonproduction zone baseline-the averages and ranges by zone of the parameter values determined for designated nonproduction zone monitor wells.

30 TAC § 331.104 (West 2008).

313. The requirements of the current TCEQ regulations are similar in many ways, specifying independent and representative samples from:

(1) mine area monitor wells completed in the production zone;
(2) mine area monitor wells completed in nonproduction zones; and
(3) baseline wells completed in the production zone within the production area.

30 TAC § 331.104(a).

314. Under the current TCEQ regulations, however, the number of wells must be "a minimum of five baseline wells, or one baseline well for every four acres of production area, whichever is greater . . . completed within the production zone of the production area." 30 TAC § 331.104(c).

315. UEC was not obligated to amend its PAA-1 Application to include water quality data obtained after issuance of the draft PAA.

316. Baseline wells must be completed "in the production zone." 30 TAC § 331.104(a)-(b). The TCEQ regulations do not require that the wells be fully screen across the entire thickness of the sand unit.

D. Control parameter upper limits

317. Based on the findings of fact set forth in and/or incorporated into Section VI.D above, the PAA-1 Application's proposed control parameter upper limits comply with all applicable regulatory requirements.

318. The draft PAA, UR03075PAA1 (PAA1), establishes conductivity and chloride as the two control parameters to be used, and prescribes the manner of calculation for the upper limit values to be used in production and non-production zones.

319. Control parameter upper limits for production zone monitor wells are to be derived from pre-mining groundwater sample data from production zone monitor wells, and control parameter upper limits for nonproduction zone monitor wells are to be derived from pre-mining groundwater sample data from nonproduction zone monitor wells. 30 TAC § 331.104(e).

320. The PAA application form promulgated by the Commission instructs applicants to provide a proposed control parameter table based on the groundwater analysis summary table with the control parameter upper limit being either 25% or 5 mg/l above the highest value for each control parameter.

E. Monitor wells

321. Based on the findings of fact set forth in and/or incorporated into Section VI.E above, the monitor wells for the proposed production area comply with all applicable regulatory requirements.

322. The number, placement and construction of the monitor wells conforms to the requirements of Sections 331.82, 103 and 104; all applicable requirements have been met.

Production Zone Monitor Wells (BMW-1 through BMW-22; GW-1; GW-2)

323. "Designated production zone monitor wells shall be spaced no greater than 400 feet from the production area, as determined by exploratory drilling. ... The angle formed by lines drawn from any production well to the two nearest monitor wells will not be greater than 75 degrees." 30 TAC § 331.103(a).

Nonproduction Zone Monitor Wells (OMW-1 through OMW-9)

324. "At a minimum, designated nonproduction zone monitor wells shall be completed in the production area in any freshwater aquifer overlying the production zone. These wells shall be located ..... with a minimum of one per every four acres of production area for wells completed in the first overlying freshwater aquifer ...." 30 TAC § 331.103(b).

325. The applicable regulatory requirements do not require monitoring in Sand C.

Buffer Zone

326. Designated monitoring wells must be installed at least 100 feet inside any permit area boundary.

F. Cost estimates for aquifer restoration and well plugging and abandonment

327. Based on the findings of fact set forth in and/or incorporated into Section VI.F above, UEC meets the applicable requirements for financial assurance under Texas Water Code §§ 27.051, 27.073, and 30 TAC Chapters 37 and 331.

328. The cost estimates for aquifer restoration and well plugging and abandonment related to the PAA-1 Application comply with all applicable regulatory requirements.

329. Section 331.143 of the TCEQ rules requires (a) the preparation of written cost estimates of plugging and abandonment and aquifer restoration; (b) that these cost estimates take into account all costs related to these activities and be kept at the facility for the life of the project; and (c) that these estimates be reviewed and updated as necessary on an annual basis, including adjustments for inflation.

330. UEC does not have to recalculate cost estimates for aquifer restoration due to the revision of the PAA-1 restoration table, but will be required to update such estimates under 30 TAC § 331.143(c).

331. Section 331.46 of the TCEQ rules contains requirements that well plugs shall not allow the movement of fluids through the wells, out of the injection zone or to the land surface and shall consist of cement or an equally protective material; closure plans must demonstrate that no movement of contaminants that will cause pollution from the production zone into a USDW will occur; and lists factors for consideration in determining the adequacy of plugging and abandonment plans.

G. Other information required to evaluate the application

332. Based on the findings of fact set forth in and/or incorporated into Section VI.G above, UEC included all of the additional applicable information required by the ED in its PAA-1 Application and its response to the ED's notice of deficiency.

333. Based on the findings of fact set forth in and/or incorporated into Section VI.G above, UEC included all of the additional applicable information required by the instructions on the PAA application form promulgated by the Commission.

334. Based on the findings of fact set forth in Section VI above, UEC submitted all data, information and items required by the applicable regulatory requirements related to the PAA-1 Application, and the Commission considered all such data, information and items.

H. Whether the application for PAA-1 complies with all applicable statutory and regulatory requirements.

335. Based on the findings of fact set forth in Section VI above, the PAA-1 Application complies with all applicable regulatory requirements.

XII. Transcript Costs

336. The following factors are to be considered in allocating reporting and transcription costs among the parties: (1) the party who requested the transcript, (2) the financial ability of the party to pay the costs, (3) the extent to which the party participated in the hearing, (4) the relative benefits to the various parties of having a transcript, (5) the budgetary constraints of a state or federal administrative agency participating in the proceeding, and (6) any other factor which is relevant to a just and reasonable assessment of costs. 30 TAC § 80.23(d).

337. Reporting and transcript costs shall be apportioned 75% to UEC and 25% to Protestants.

XIII. Other Conclusions

338. Based on the findings of fact set forth herein, the use or installation of the injection well(s) is in the public interest. TEX. WATER CODE § 27.051(a)(1).

339. Based on the findings of fact set forth herein, no existing rights, including, but not limited to, mineral rights, will be impaired. TEX. WATER CODE § 27.051(a)(2).

340. Based on the findings of fact set forth herein, both groundwater and surface fresh water can be adequately protected from pollution with proper safeguards. TEX. WATER CODE § 27.051(a)(3). The draft Mine Permit and draft PAA-1 impose terms and conditions reasonably necessary to protect fresh water from pollution.

341. Based on the findings of fact set forth herein, UEC has made a satisfactory showing of financial responsibility to the extent required by Section 27.073 of the Texas Water Code. TEX. WATER CODE § 27.051(a)(4).

342. Any Conclusion of Law more appropriately considered a Finding of Fact is hereby adopted as such.

NOW, THEREFORE, BE IT ORDERED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY THAT:

1. The applications of Uranium Energy Corp for Issuance of a Class III Injection Well Permit No. UR03075, Aquifer Exemption Order, and Production Area Authorization UR03075PAA1 in Goliad County, Texas, TCEQ Docket Nos. 2008-1888-UIC and 2009-1319-UIC, SOAH Docket Nos. 582-09-3064 and 582-09-6184 are approved in accordance with the terms and conditions contained in the attached Permit No. UR03075 (Exhibit A), Aquifer Exemption Order (Exhibit B), and Production Area Authorization UR03075PAA1 (Exhibit C) with the following changes: The current Attachments 4A, 4B, 5 and 6 in the

draft PAA-1 (Exhibit C) will be replaced with the versions of those Attachments contained in the attached Exhibit D.

2. UEC shall pay 75% ($10,586.33) of the cost of reporting and transcription, and Protestants shall pay 25 % ($3,528.77) of the cost of reporting and transcription of the hearing in this case, no later than thirty (30) days after the effective date of this Order.

3. The Chief Clerk of the TCEQ shall forward a copy of this Order and attached Permit, Aquifer Exemption Order, and Production Area Authorization as changed to conform to this Order to all parties and issue the attached Permit, Aquifer Exemption Order, and Production Area Authorization as changed to conform to this Order.

4. If any provision, sentence, clause or phrase of this Order is for any reason held to be invalid, the invalidity of such portion shall not affect the validity of the remaining portions of the Order.

5. The effective date of this Order is the date the Order is final, as provided by 30 TAC § 80.273 and § 2001.144 of the Administrative Procedure Act.

Issue Date: _____

TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

_____
Bryan W. Shaw, Ph.D, Chairman

EXHIBIT A

AREA PERMIT NO. UR03075
Goliad Project In Situ Uranium Mine

Texas Commission on Environmental Quality
Austin, Texas

AREA PERMIT to construct and operate
Class III underground injection wells for
in situ recovery of uranium and groundwater
restoration under Chapter 27 Texas Water Code

I. Permittee: Uranium Energy Corp (UEC)
100 East Kleberg, Suite 310
Kingsville, TX 78363

II. Type of Permit: Initial __X__ Amended _____ Renewal_____

III. Nature of Business: In Situ Uranium Mining

IV. General Description and Location of Injection Activity

The Goliad Project In Situ Uranium Mine (as shown in Attachment 1) is approximately 13 miles north of the city of Goliad, about 0.9 miles east of the intersection of State Highway 183 and Farm-to-Market Road 1961, in Goliad County. The permit area (as shown in Attachment 2A) for this site is a total of 1139.4 aces as documented in the metes and bounds description (Attachment 3). The production zones are in sands of the Pliocene Goliad Formation. These sands, designated "A", "B", "C", and "D" from shallowest to deepest, range in depth from 45 to 304 feet below land surface.

CONTINUED on Pages 2 through 13

The permittee is authorized to conduct injection activity in accordance with limitations, requirements, and other conditions set forth herein. This permit is granted subject to the rules and orders of the commission, and the laws of the State of Texas. The permit will be in effect for ten years from the date of approval or until amended or revoked by the commission. If this permit is appealed and the permittee does not commence any action authorized by this permit during judicial review, the term will not begin until judicial review is concluded.

ISSUED DATE:

_____
For The Commission

V. Standard Provisions

A. Production Area Authorization

1. Mining in a production area within the permit area (Attachment 2A) requires a production area authorization (PAA) from the Texas Commission on Environmental Quality (TCEQ). Mining shall not begin until the production area authorization is obtained.

2. Each PAA shall include an updated Mine Plan (as provided in Attachments 2A and 2B), and be in accordance with 30 TAC §305.155.

B. Mechanical Integrity

1. In compliance with 30 TAC §331.43(d), 30 TAC §331.82, 30 TAC §331.85, and as specified in the application, proof of mechanical integrity for all Class III wells shall be demonstrated by well completion (cementing) records and by a pressure test. Information required to demonstrate mechanical integrity shall be reported to the executive director before injection of mining solution.

2. A pressure test shall also be conducted each time a tool that could affect mechanical integrity is run into the well in accordance with 30 TAC §331.82(c)(2).

C. Operating Requirements

1. Mining solutions shall be confined to the production zone within the area of designated production zone monitor wells in accordance with 30 TAC §331.102. This shall be accomplished in each production area by a rate of withdrawal of water that exceeds the rate of injection of water.

2. Monitor wells shall be positioned to provide horizontal and vertical surveillance of groundwater quality to monitor confinement of the mining solutions in accordance with 30 TAC §§331.82(g) and 331.103.

3. Before making any modification in the composition of the mining solutions from that described in the application incorporated by Provision VIII.B., the permittee shall provide adequate descriptive information and obtain authorization by permit amendment or modification.

4. The fluid used for uranium mining shall consist of native groundwater supplemented with bicarbonate ions, sodium hydroxide, and oxygen or hydrogen peroxide.

5. Discharge of fluids into the surface waters of the State is not authorized by this permit.

D. Wellhead Pressure

1. Pressure gauges shall be installed, easily readable, and maintained in working condition on all injection wells or on the injection manifold with the maximum allowable injection pressure clearly marked on each gauge.

2. Wellhead pressures shall be limited to minimize the possibility of leakage from the production zone into the non-production zones. Injection pressures shall not exceed 0.40 psi per foot of well depth or the internal yield pressure of the casing.

E. Monitoring Parameter Upper Limits

1. Chloride, conductivity, and total dissolved solids shall be used as control parameters in monitoring for excursions of mining solutions from each production area. Upper limit concentrations that indicate the presence of an excursion shall be calculated for the production zone by adding 25% to the maximum values determined in the sampling of the production zone wells for each production area.

2. In the event of an excursion, as defined in provision V.G.2. of this permit and in 30 TAC §331.2, monitoring for uranium and radium^{226} shall be required. Sampling and analysis for uranium and radium^{226} shall be in accordance with provision V.G.2. of this permit.

F. Sampling, Preservation, Analysis and Quality Control

1. To obtain a valid sample, during completion each sample well shall be pumped until the water is free of mud and foreign material and until conductivity and pH are reasonably constant. As samples are taken during baseline, routine, and restoration sampling, the sampling method, as described in the application or subsequent amendments, shall assure that the water sampled is formation water. Excess water pumped from the production wells or monitor wells containing mining solutions shall not be discharged into the surface waters of the State.

2. a. Sample preservation, analysis and analytical quality control shall be as defined in the most recent issue of Methods for Chemical Analysis of Water and Wastes (EPA - Technology Transfer). Total Dissolved Solids shall be determined by evaporation at 180°C. All data submitted to the TCEQ shall be in a manner consistent with the latest version of the "Quality Assurance Project Plan for Environmental Monitoring and Measurement Activities Relating to the Resource Conservation Recovery Act and Underground Injection Control" (TCEQ QAPP), which applies to oversight responsibilities of all regulated entities conducting environmental activities.

b. Any other method not specified in the referenced EPA document shall be approved by the executive director.

3. The permittee shall notify the Field Operations Division MC 174, P. O. Box 13087, Austin, TX 78711-3087 of intent to collect samples for baseline and final closing of each PAA at least two weeks before sample collection to allow the staff an opportunity to split samples for confirming analysis.

G. Monitoring and Reporting Requirements

1. Routine Mining Operations

a. Water samples shall be taken at least twice each month at two-week intervals from all monitor wells for production areas in which mining solutions have been introduced, and shall be analyzed for the control parameters identified in Section V.F. of this permit and 30 TAC §331.105(1) and (2). This monitoring program shall be continued for each subject production area until the Field Operations Division, Region 14 – Corpus Christi Office, 6300 Ocean Dr., Unit 5839, Corpus Christi, TX 78412-5839 and Industrial and Hazardous Waste Permits Section, MC 130, P. O. Box 13087, Austin, TX 78711-3087 are officially notified that restoration has commenced.

b. As required by 30 TAC §331.85(e), routine monitoring data shall be reported at least quarterly to the Field Operations Division, MC 174, P. O. Box 13087, Austin, TX 78711-3087 on a form provided by the executive director, in accordance with the form completion instructions and postmarked no later than the 10th day of the following reporting period.

c. The permittee shall retain in an organized fashion and furnish to the TCEQ's representative, upon request, records of all monitoring information, copies of all reports and records required by this permit, for a period of at least 3 years from the date of the sample, measurement, report, record, certification, or application.

d. In addition to the recordkeeping and reporting requirements specified elsewhere in this permit, the permittee shall maintain at the permitted mining site all data from monitoring and testing, inspections, and other records required by the provisions of 30 TAC Chapters 305 and 331 and the permit. These records will be made available to representatives of the TCEQ upon request.

e. The permittee shall keep records throughout the term of the permit of data used to complete the final application, any supplemental information, and a copy of the issued area permit and PAAs. All copies of any renewals, amendments, revisions, and modifications must also be kept at the facility such that the most current documents are available for inspection at all times.

f. All materials, including any related information submitted to complete the application shall be retained, not just those materials which have been incorporated into the permit as required by 30 TAC §305.47.

2. Excursions

a. An excursion (defined by 30 TAC § 331.2 as the movement of mining solutions into a designated monitor well) is indicated by the sampled concentration of any control parameter provided in Section V.E.1. of this permit being equal to or above the upper limit established for the applicable PAA. Within two days of detecting an apparent excursion, the permittee shall repeat the sampling and complete a verifying analysis of the samples taken from each apparently affected well in accordance with 30 TAC §331.105(3).

b. If the verifying analysis confirms the existence of an excursion, the permittee shall notify the Field Operations Division, Region 14 – Corpus Christi Office, by the next working day by telephone and by letter postmarked within 48 hours of identification of the excursion. The notification must identify the affected monitor well and the control parameter concentrations.

c. While mining solutions are present in a designated monitor well, the permittee shall conduct sampling and analysis of each affected well at a frequency of at least two times per week in accordance with 30 TAC §331.105(4).

d. Reporting shall be monthly according to 30 TAC §331.85(f) (by the second day after each sample is taken). Parameters analyzed and reported during periods of excursions shall consist of the control parameters specified in Provision V.E.1 of this permit plus uranium and radium^{226} as specified in Provision V.E.2. of this permit.

3. Restoration

a. The executive director shall be notified when routine mining operations have ceased within a given production area and the permittee shall commence groundwater restoration according to 30 TAC §331.107(b).

b. As specified in §331.105(2), regular monitoring shall be continued until the executive director has been officially notified that restoration has commenced. Sampling of monitor and baseline wells for the production area during restoration shall occur at least quarterly, and shall be analyzed for certain parameters provided in the Restoration Table for the applicable production area.

c. Beginning six months after the date of initiation of restoration of a production area, the permittee shall provide to the Field Operations Division MC 174, P. O. Box 13087, Austin, TX 78711-3087 semi-annual restoration progress reports until restoration is accomplished for the production area.

4. Stability Sampling

a. Upon performing groundwater restoration as required by 30 TAC §331.107(b) or as provided by §331.107(f), the permittee shall conduct stability sampling for the parameters listed in the Restoration Table from all production area baseline wells as required by 30 TAC §331.107(e).

b. A minimum of three sample sets, taken at a minimum of 30-day intervals, shall be reported to the executive director over a period of one calendar year between cessation of restoration operations and the final set of stability samples in accordance with §331.107.

c. Stability sampling shall comply with the requirements provided by 30 TAC §331.107(f), in the event the restoration table is amended.

5. Annual Report

By December 31st of each year, the permittee shall submit to the Industrial and Hazardous Waste Permits Section, MC 130, P. O. Box 13087, Austin, TX 78711-3087 an annual report. The annual report shall include:

a. For injection wells, production wells, baseline wells, and monitor wells authorized under the Class III area permit and production area authorizations, the number and identity of wells plugged and wells constructed during the report period, and the total number of unplugged wells at the time of reporting;

b. A revised calculation of plugging cost for unplugged wells as specified in subsection V.H.5.a. of this permit;

c. An updated map and tabulation of newly constructed or newly discovered artificial penetrations of the subsurface within the area of review, and for such penetrations, assessment of need for corrective action under 30 TAC §331.44; and

d. An updated mine plan showing the estimated schedule of the sequence and timing for mining and aquifer restoration in each production area authorization.

H. Plugging and Abandonment

1. All of the wells in each PAA associated with this permit, including baseline wells, monitor wells, and injection/production wells, shall be plugged in accordance with 30 TAC § 331.46 within 120 days of completion of final restoration of the each PAA unless revisions of the time requirements are approved by the executive director under 30 TAC §331.86(a).

2. The permittee shall notify the executive director in writing at least two weeks before commencing plugging and abandonment.

3. Plugging and abandonment shall be accomplished according to the plans and specifications submitted in the application identified in Provision VIII.B and as modified by Provision V.H.5. Any revised, updated, or additional plugging and abandonment plans shall be approved by the executive director through the permit amendment or modification process.

4. Within 30 days after completion of well closure (plugging), a closure report shall be filed with the Industrial & Hazardous Waste Permits Section, MC 130, P. O. Box 13087, Austin, TX 78711-3087 in accordance with §331.46(m).

5. The wells shall be plugged and abandoned in accordance with the requirements of 30 TAC TAC §331.86 and with the following requirements:

   a. Removal of all equipment from the well;

   b. Cementing the wellbore from total depth to the surface with a cement slurry with a weight of no less than 9.5 lbs/gallon;

   c. Cutting and removal of the casing from a depth of 3 feet to the surface; and

   d. Backfilling the hole with native soil, graded to approximately the natural contour of the land.

6. All production and injection wells that remain unplugged for use in restoration activities shall be temporarily capped in a manner to preclude the introduction of any material from the surface into the borehole.

VI. Radioactive Materials License

The permittee shall have a valid license(s) from the TCEQ covering the handling and processing of radioactive materials for this facility, prior to mining for the recovery of uranium. The primary and supporting production/processing facilities, along with supplies and materials used by or resulting from these facilities, are to be installed, operated, maintained and handled in accordance with the plans, specifications, and descriptions submitted as part of the application for commission licensing in order to prevent spills, discharges, or dispersion of any materials, directly or indirectly, to surface or ground waters.

VII. Financial Assurance

A. The permittee shall secure and maintain in full force and effect at all times an acceptable financial assurance mechanism, following 30 TAC §§ 331.141 - 331.144, to provide for plugging and abandonment of the permitted Class III wells, baseline wells, and monitoring wells.

B. The amount of financial assurance shall be updated annually for all production areas (PAs) to provide for adequate plugging and to reflect changes in the costs of materials and labor.

C. This permit does not authorize underground injection of fluid unless the permittee has in effect an acceptable financial assurance mechanism as described above. Financial assurance shall be submitted at least 60 days prior to commencement of drilling operations in each PA and be effective before drilling begins in accordance with 30 TAC §37.7021(c).

D. To obtain release of financial assurance, a professional engineer or professional geologist licensed in Texas shall certify that plugging and abandonment has been accomplished in accordance with the permittee's plugging and abandonment plan in accordance with 30 TAC §331.144.

VIII. Additional Provisions

A. The following rules are incorporated as terms and conditions of this permit by reference:

1. Financial Assurance of Underground Injection Control Wells
30 TAC Chapter 37 Subchapter Q;

2. Consolidated Permits
30 TAC Chapter 305 Subchapters A, C, F, and H; and

3. Underground Injection Control
30 TAC Chapter 331 Subchapters A, C, E, F, G, and I.

B. This permit is based on, and the permittee shall follow the plans and specifications contained in the Class III Underground Injection Control Application dated July 27, 2007 and revised October 2, 2007, December 7, 2007, January 30, 2008, February 19, 2008, March 19, 2008, and April 3, 2008, which is hereby approved subject to the terms of this permit and any other

orders of the TCEQ. These materials are incorporated into this permit by reference as if fully set out herein. Any and all revisions to these elements shall become conditions of this permit upon the date of approval by the commission.

C. Acceptance of this permit by the permittee constitutes an acknowledgment and agreement that the permittee will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the commission in accordance with 30 TAC §305.124.

D. This permit is subject to further orders and rules of the commission. In accordance with the procedures for amendments and orders, the commission may incorporate into permits already granted, any condition, restriction, limitation, or provision reasonably necessary for the administration and enforcement of Texas Water Code Chapters 27. Additionally, the permittee has a duty to comply with the following permit conditions:

1. Modification of Permitted Wells, Operational Methods, and Related Specifications

The wells and operational methods authorized are limited to those described herein and by the application submittals. All wells and operational methods are subject to the terms and conditions of this permit and TCEQ rules. Prior to constructing or operating any wells in a manner which differs from either the related plans and specifications contained in the permit application or the limitations, terms, or conditions of this permit, the permittee must comply with the TCEQ permit amendment or modification rules as provided in 30 TAC §§305.62 and 305.72, respectively.

2. Definitions

For purposes of this permit, terms used herein shall have the same meaning as those in 30 TAC Chapters 37, 305, and 331 unless this permit specifically provides otherwise; where terms are not defined in the regulations or the permit, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

3. Permit Expiration

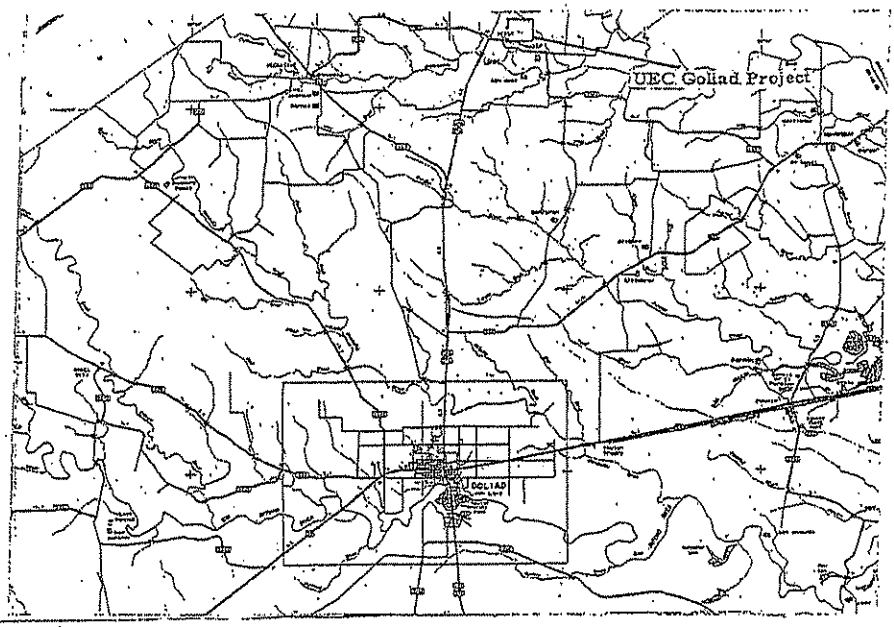
In order to continue a permitted activity after the expiration date of the permit the permittee shall submit an application for permit renewal at least 180 days before the expiration date of the effective permit, unless permission for a later date has been granted by the executive director in accordance with 30 TAC §305.65. Authorization to continue such activity will terminate upon the effective denial of said application.

E. This permit does not convey any property rights of any sort, nor any exclusive privilege, and does not become a vested right in the permittee in accordance with 30 TAC §§305.122(b) and 305.125(a)(16).

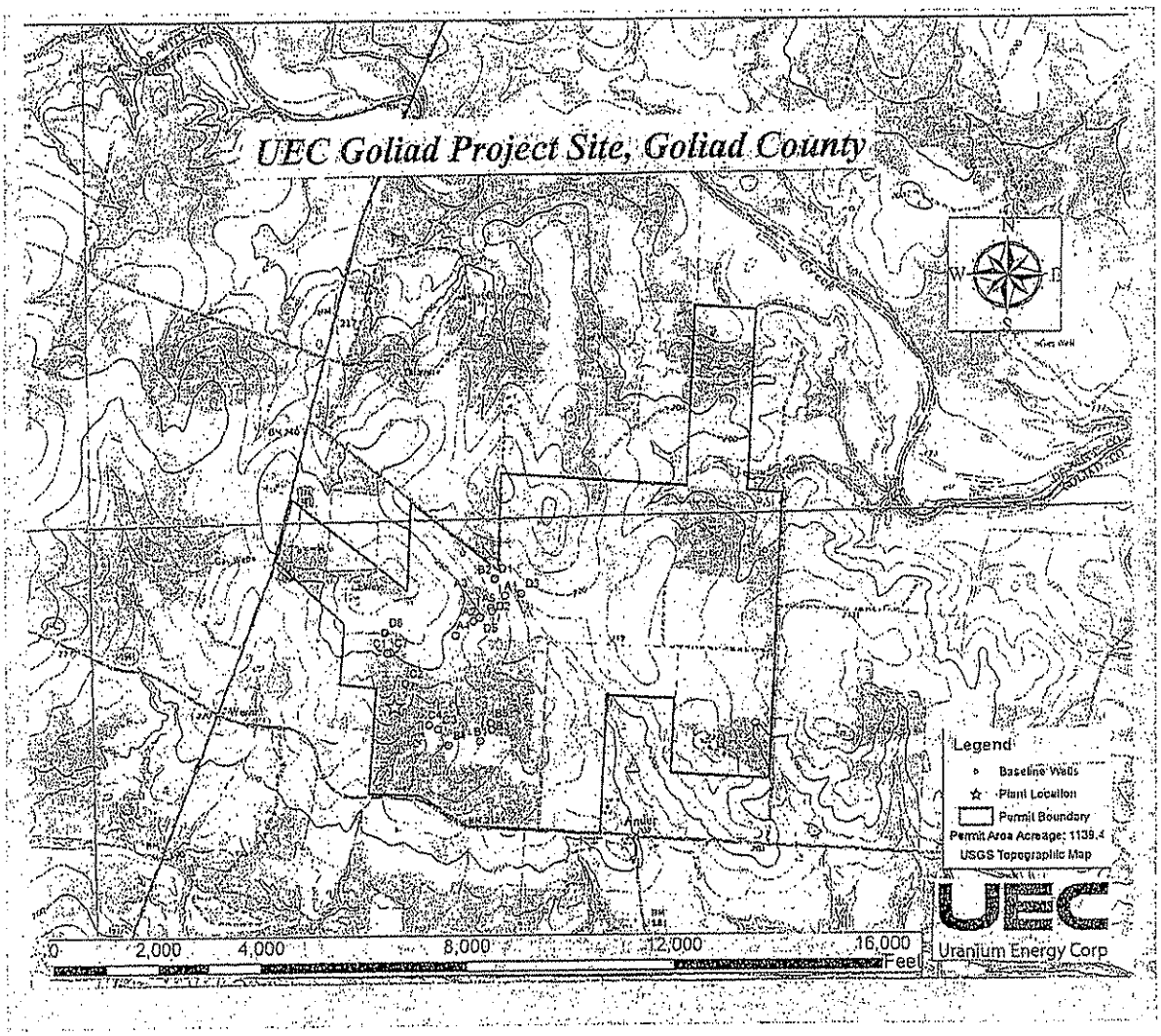
F. The issuance of this permit does not authorize any injury to persons or property or an invasion of other property rights, or any infringement of state or local law or regulations in accordance with 30 TAC §305.122(c).

G. In the event of conflict between the application, permit, rules, and statutory requirements the most stringent requirement shall apply in accordance with 30 TAC §305.154(a).

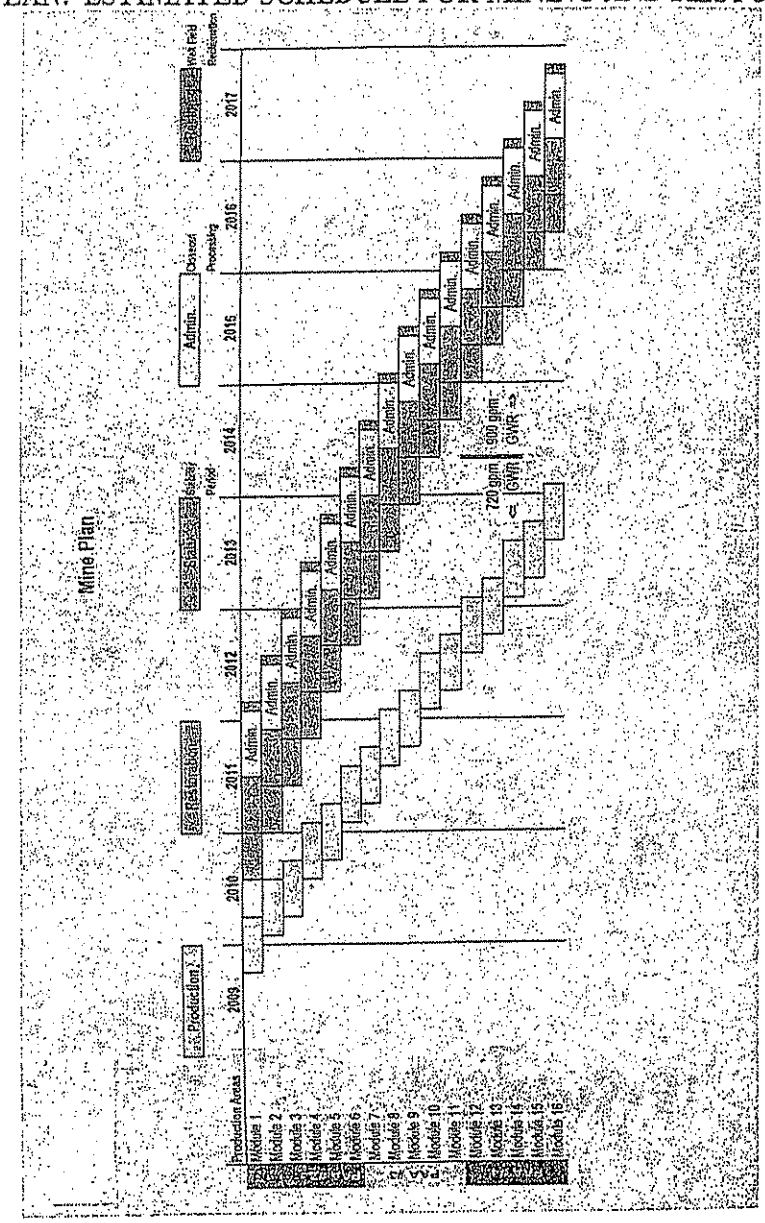
ATTACHMENT 1
PERMIT AREA MAP



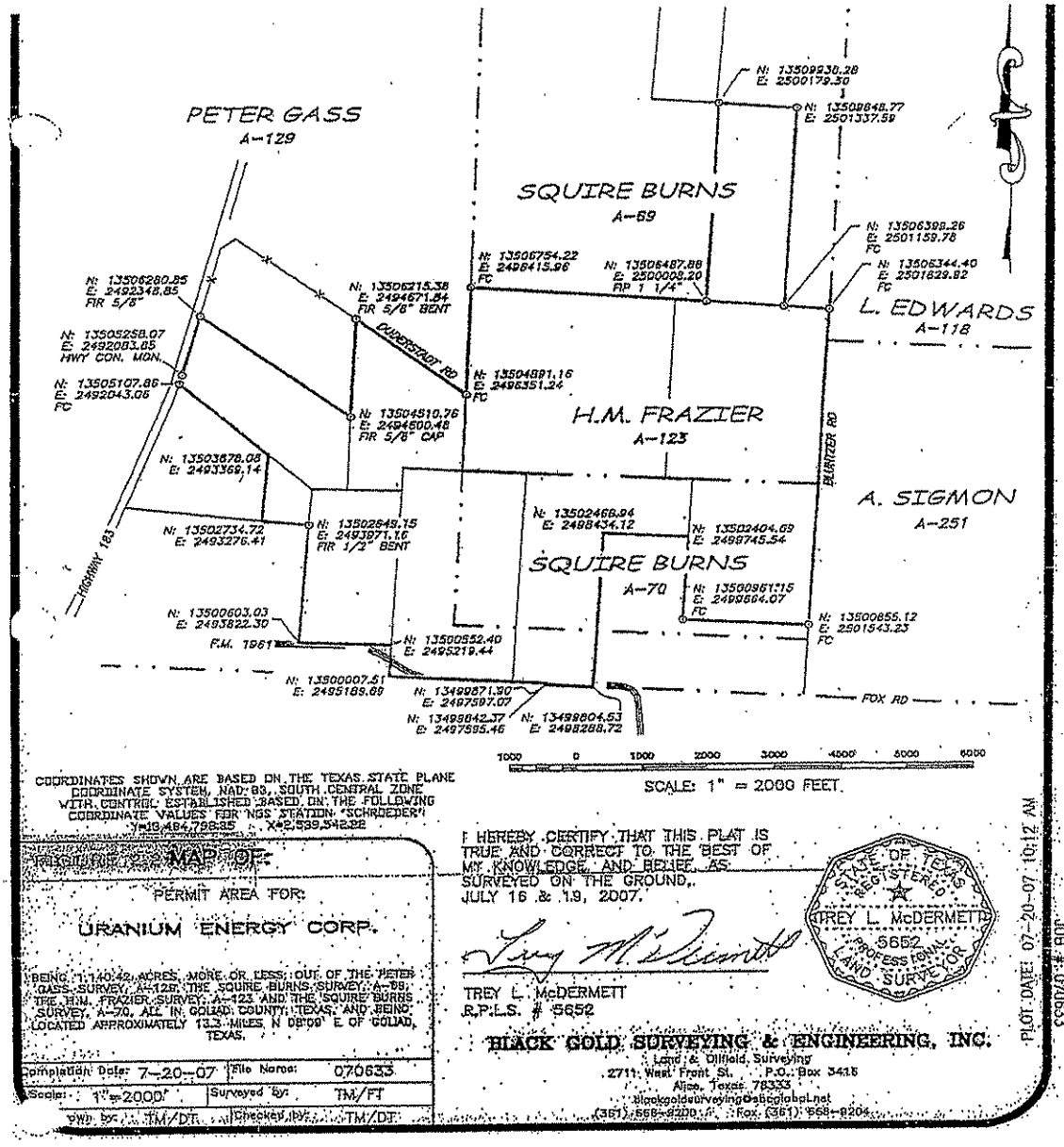
ATTACHMENT 2A
MINE PLAN: MINE AREA MAP



ATTACHMENT 2B
MINE PLAN: ESTIMATED SCHEDULE FOR MINING AND RESTORATION



ATTACHMENT 3
METES AND BOUNDS DESCRIPTION OF THE GOLIAD PRIJECT PERMIT AREA



COORDINATES SHOWN ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NAD 83, SOUTH CENTRAL ZONE WITH CONTROL ESTABLISHED BASED ON THE FOLLOWING COORDINATE VALUES FOR NGS STATION "SCHROEDER": Y=13,484,798.35 X=2,539,542.22

MAP OF:

PERMIT AREA FOR:

URANIUM ENERGY CORP.

BEING 1,140.42 ACRES, MORE OR LESS, OUT OF THE PETER GASS SURVEY, A-129, THE SQUIRE BURNS SURVEY, A-69, THE H.M. FRAZIER SURVEY, A-123 AND THE SQUIRE BURNS SURVEY, A-70, ALL IN GOLIAD COUNTY, TEXAS, AND BEING LOCATED APPROXIMATELY 13.3 MILES N 08°09' E OF GOLIAD, TEXAS.

Completion Date:	7-20-07	File Name:	070633
Scale:	1"=2000'	Surveyed by:	TM/FT
DWG by:	TM/DT	Checked by:	TM/DT

I HEREBY CERTIFY THAT THIS PLAT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AS SURVEYED ON THE GROUND, JULY 16 & 19, 2007.

TREY L. McDERMETT
R.P.L.S. # 5652

STATE OF TEXAS · REGISTERED · TREY L. McDERMETT · 5652 · PROFESSIONAL LAND SURVEYOR

BLACK GOLD SURVEYING & ENGINEERING, INC.
Land & Oilfield Surveying
2711 West Front St. P.O. Box 3418
Alice, Texas 78333
blackgoldsurveying@sbcglobal.net
(361) 668-9200 Fax (361) 668-9204

PLOT DATE: 07-20-07 10:12 AM JOB # 070633

EXHIBIT B

TCEQ DOCKET NO. 2008-1888-UIC

APPLICATION BY	§	**BEFORE THE**
	§	
URANIUM ENERGY CORP	§	
	§	**TEXAS COMMISSION ON**
FOR AQUIFER EXEMPTION	§	
	§	
DESIGNATION	§	**ENVIRONMENTAL QUALITY**

AQUIFER EXEMPTION ORDER

The Texas Commission on Environmental Quality finds that:

1. On August 9, 2008, Uranium Energy Corp (UEC) submitted an application for a Class III Injection Well Area Permit that includes a request for designation of an exempted aquifer.

2. UEC requests designation of a portion of the Goliad Formation from a depth of 45 to 404 feet, seen on the electric logs in cross sections in figure 6.8 through 6-13 in the Class III Well Area Permit application. The requested exemption extends over an area of approximately 423.8 acres in Goliad County, as illustrated in figure 1.3 in the Class III Well Area Permit application. A map depicting the extent of the exempted aquifer is attached.

3. The groundwater in the portion of the Goliad Formation described in Finding #2 contains an average of 568 mg/l total dissolved solids; therefore the aquifer would be considered an underground source of drinking water if it were not designated as an exempted aquifer.

4. UEC is an *in situ* uranium mining company and requests the designation of the exempted aquifer in conjunction with the use of the injection wells proposed to be permitted under TCEQ Permit No. UR03075 for injection of native groundwater fortified with oxygen or hydrogen peroxide, and bicarbonate ions. UEC cannot inject into the formation without the aquifer exemption.

5. An exempted aquifer is an aquifer or a portion of an aquifer which meets the criteria for fresh water but has been designated an exempted aquifer by the commission after notice and opportunity for hearing.

6. An aquifer or portion of an aquifer may be designated as an exempted aquifer if the following criteria are met:

(1) It does not currently serve as a source of drinking water for human consumption; and

(2) Until exempt status is removed according to 30 TAC §331.13(f), it will not in the future serve as a source for human consumption because:

(A) It is mineral, hydrocarbon or geothermal energy bearing with production capability;

(B) It is situated at a depth or location which makes recovery of water for drinking water purposes economically or technically impractical;

(C) It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or,

(D) It is located above a Class III well mining area subject to subsidence or catastrophic collapse.

7. UEC has demonstrated that the portion of the Goliad Formation described in Finding #2 does not currently serve as a source of drinking water for human consumption by conducting a data search and a ground investigation that showed that there are no water wells that withdraw water used for human consumption from the Goliad Formation within the designated area.

8. UEC has demonstrated that the portion of the Goliad Formation described in Finding #2 will not serve in the future as a source of drinking water for human consumption because it contains excessive amounts of radium-226 and uranium.

9. UEC has demonstrated with analytical data from water samples and geophysical logs that the portion of the Goliad Formation described in Finding #2 is uranium-bearing with production capability.

10. Notice of the aquifer exemption was issued on June 20, 2008 and June 25, 2008, published in *The Texan Express* and the *Victoria Advocate*, and mailed to the same recipients required for notice of an injection well permit application.

11. The notice described the process for submitting comments and requesting a hearing on the aquifer exemption.

12. The Executive Director of the Texas Commission on Environmental Quality provided a response to all timely, relevant and material, or significant public comments on the application.

Now, therefore, be it ordered by the Texas Commission on Environmental Quality that:

1. The portion of the Goliad Formation described in Finding #2 be designated as an exempted aquifer under 30 TAC § 331.13(c);

2. The Executive Director of the Texas Commission on Environmental Quality submit a program revision to the United States Environmental Protection Agency (EPA) under 40 CFR §§ 144.7, 146.4, and 145.32 to reflect this aquifer exemption designation for the Underground Injection Control program for the State of Texas; and

3. No designation of an exempted aquifer shall be final until approved by the EPA as part of the delegated Underground Injection Control Program.

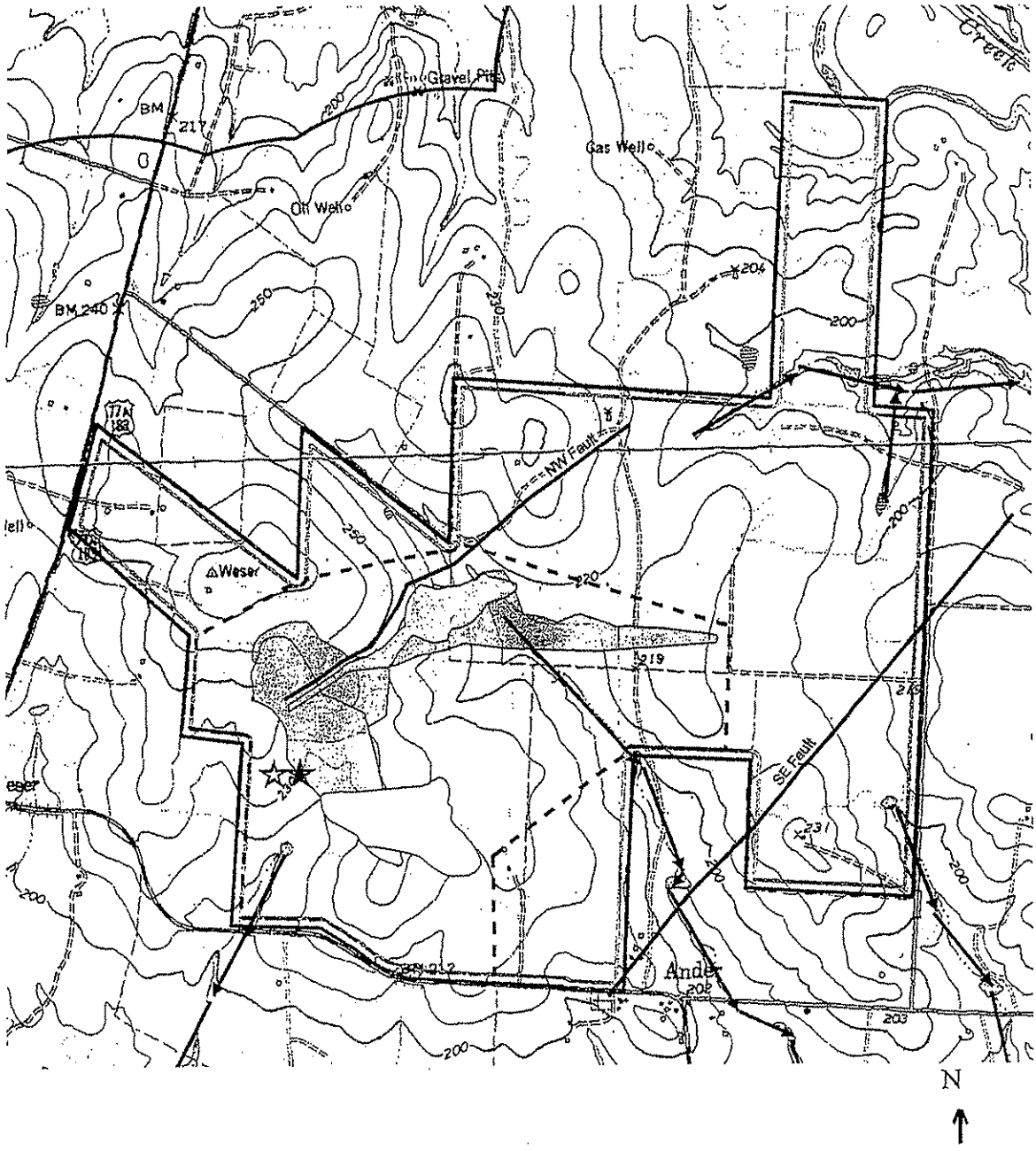
Issue Date:

Texas Commission on
Environmental Quality

_____

Bryan W. Shaw, Ph.D., Chairman

Aquifer Exemption for Proposed Permit UR03075



— permit area boundary (1139.4 acres)
--- aquifer exemption boundary (423.8 acres)
The aquifer exemption applies to the Goliad Formation from a depth of 45 feet to 404 feet within the permit area in Goliad County.

EXHIBIT C

Texas Commission on Environmental Quality
Austin, Texas

PRODUCTION AREA AUTHORIZATION PAA1
under Area Permit No. UR03075
Goliad Project In Situ Uranium Mine

AUTHORIZATION to operate Class III underground injection wells for in situ recovery of uranium and aquifer restoration

I. Name of Permittee:

A. Name: Uranium Energy Corp

B. Address: 100 East Kleberg, Suite 310
Kingsville, Texas 78363

II. Name of Mine: Goliad Project In Situ Uranium Mine

III. Standard Provisions:

A. Mine Plan

1. Permit Area and Production Area Maps (Attachments 1A and 1B)

Attachment 1A shows the general location of PAA1 within the Goliad Project mine permit and lease areas. Attachment 1B provides a more detailed map of PAA1 bounded by the monitor well ring and with locations of baseline/monitoring wells indicated.

2. Estimated Schedule of Mining and Aquifer Restoration (Attachment 2)

An update of the estimated schedule of the sequence and timing for mining and aquifer restoration shall be provided with each annual report prepared and submitted pursuant to 30 TAC §305.155 and the area permit UR03075 Provision V.A.2.

CONTINUED on Pages 2 through 12

The permittee is authorized to conduct injection activity in accordance with limitations, requirements, and other conditions set forth herein. This authorization is granted subject to the provisions of Area Permit No. UR03075. This authorization will be in effect for ten years from the date of approval of the area permit, or until revocation of the area permit, or amendment of the authorization. If this authorization is appealed and the permittee does not commence any action authorized by this authorization during judicial review, the term will not begin until judicial review is concluded.

ISSUED DATE:

For The Commission

B. Monitor Well and Baseline Wells

1. Monitor Well and Baseline Well Locations (Attachment 1B)

2. Designated Monitor Well and Baseline Well Table (Attachment 3)

Routine water quality sampling according to 30 TAC §331.105 and the area permit UR03075 Provision V.G. is required for all designated monitor wells and baseline wells.

C. Baseline Water Quality Table (Attachments 4A-4B)

D. Control Parameter Upper Limits Table (Attachment 5)

If the results of routine sample analysis from a designated monitor well show that the value of any control parameter is equal to or above the values listed in Attachment 5, the operator shall follow all procedures for verification, notification, and remediation according to 30 TAC §§331.105 - 331.106 and the area permit UR03075 Provisions V.E. and V.G.2.

E. Restoration Table (Attachment 6)

As required by 30 TAC §331.107(b) when mining of the production area is completed, the permittee shall notify the Region 14 – Corpus Christi Office and the executive director. After such notification, the permittee shall proceed with reestablishing groundwater quality in the affected permit or production areas in accordance with the requirements of 30 TAC §331.107(a) or obtain an amendment to the Restoration Table according to 30 TAC §331.107(g).

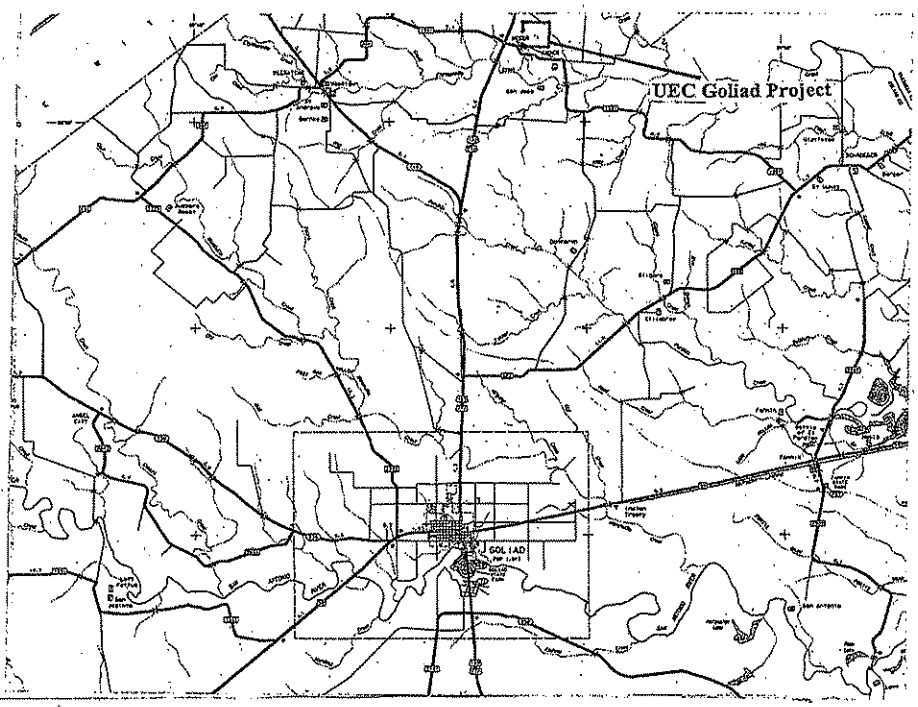
IV. Financial Assurance:

A. Aquifer Restoration. The cost estimate for financial assurance for aquifer restoration of the production area is $1,934,742 (2009 dollars). The permittee must review and update the cost estimate as provided in 30 TAC §331.143. The permittee shall establish and maintain, in accordance with the permittee's radioactive materials license authorizing source material recovery, financial assurance that includes sufficient funds in an amount that is no less than the current cost estimate to carry out aquifer restoration of Production Area 1 as required in 30 TAC §336.1125.

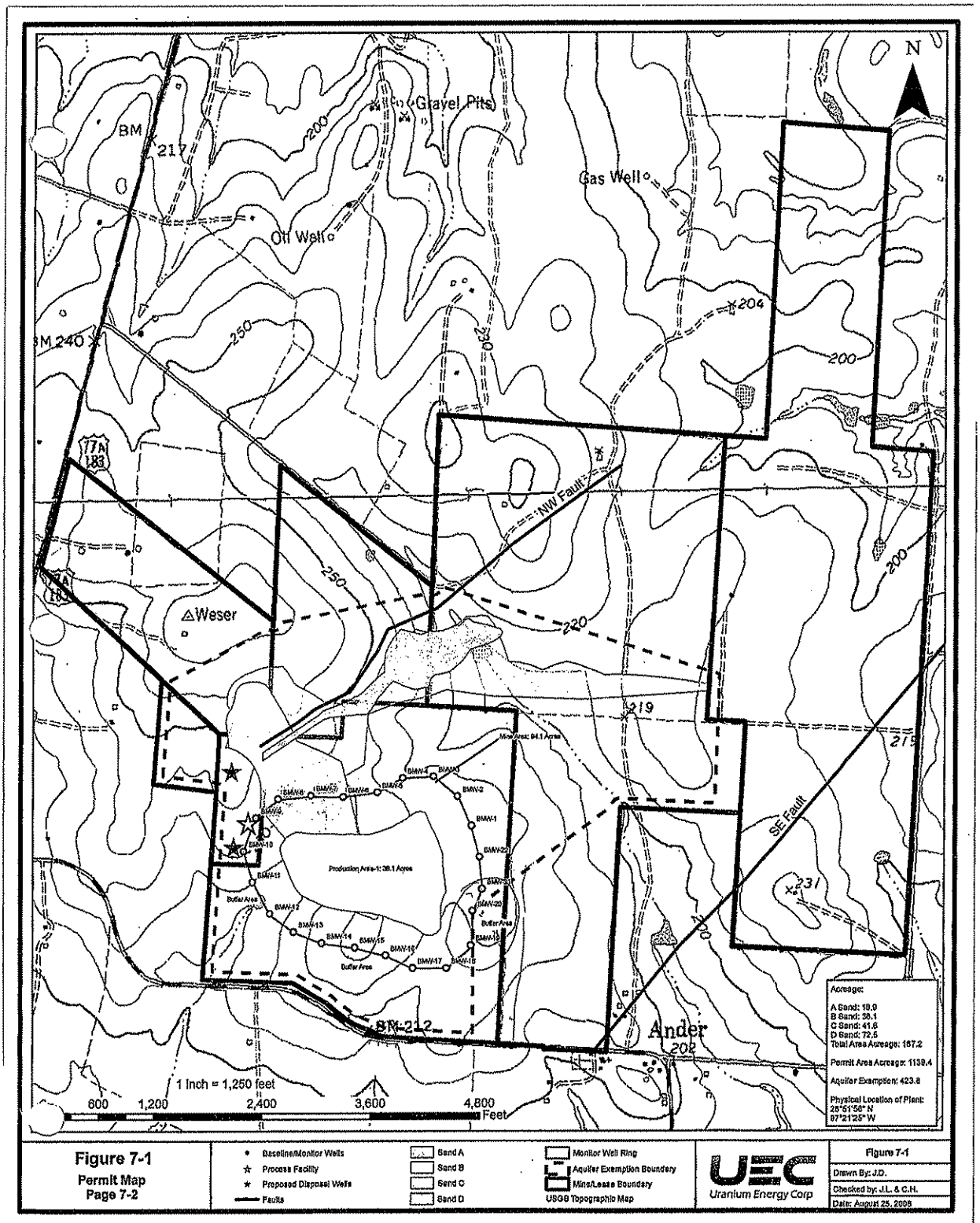
B. Plugging and Abandonment of Wells. The cost estimate for financial assurance for plugging and abandonment of injection wells, production wells, monitor wells, and baseline wells for the production area is $173,519 (2009) dollars. The permittee must review and update the cost estimate as provided in 30 TAC §331.143. The permittee shall secure and maintain financial assurance for plugging and abandonment in the amount of the plugging and abandonment cost estimate as required under TCEQ Permit No. UR03075, 30 TAC §§331.142-144, and Subchapter Q of 30 TAC Chapter 37. The financial assurance shall be provided to the Texas Commission on Environmental Quality, Attention: Financial Assurance Unit, Mail Code 184, P.O. Box 13087, Austin, TX 78711-3087 (mailing address) or 12100

Park 35 Circle, Building A, Austin, TX 78753 (delivery by courier) at least 60 days prior to the commencement of drilling operations. For converted wells and other previously constructed wells, financial assurance must be provided at least 30 days prior to Production Area Authorization issuance and be in effect upon permit issuance.

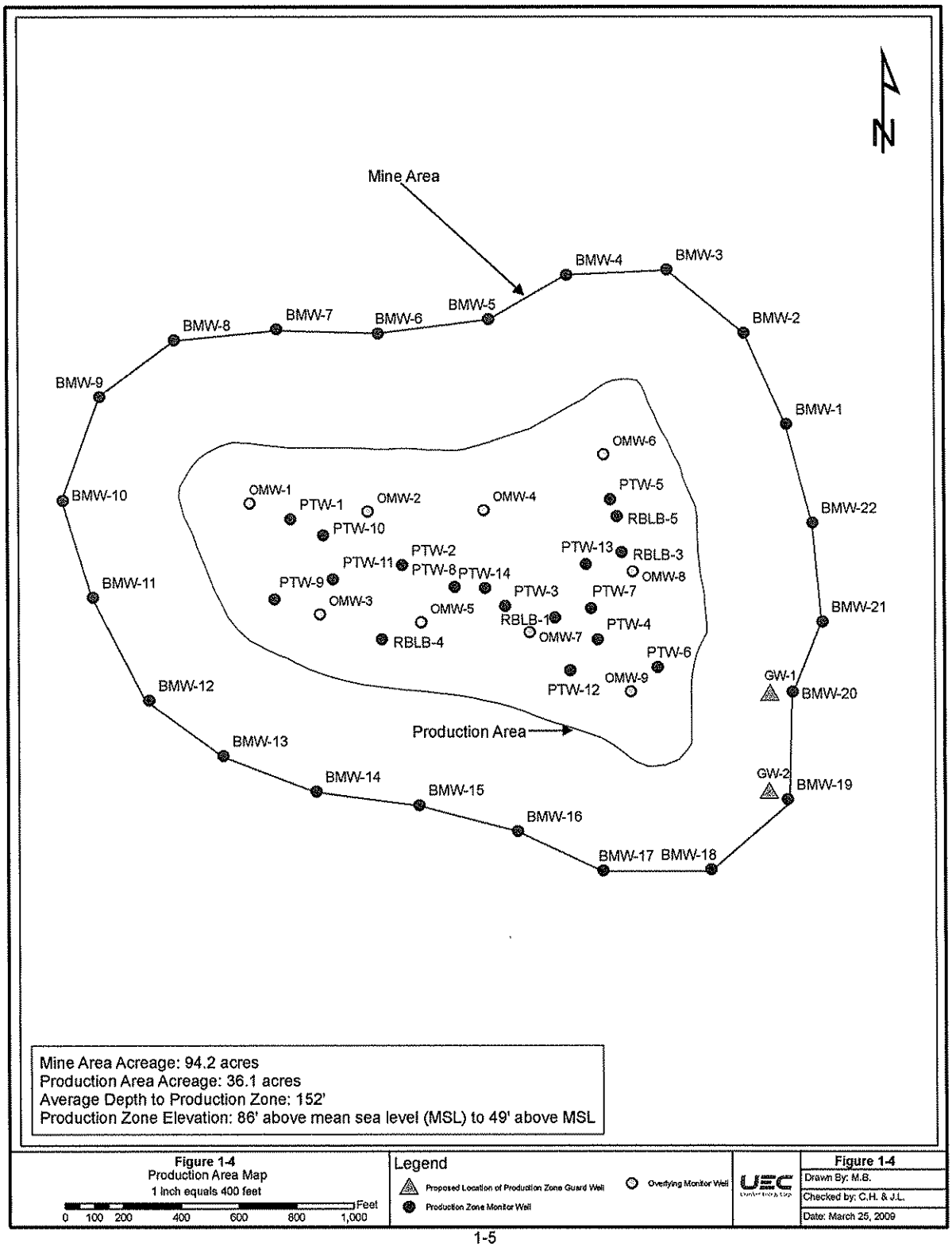
ATTACHMENT 1A
PERMIT AREA
MAP



ATTACHMENT 1B
PRODUCTION AREA MAP (Map 1)



ATTACHMENT 1B
PRODUCTION AREA MAP (Map 2)



ATTACHMENT 2

ESTIMATED SCHEDULE OF MINING AND AQUIFER RESTORATION		
PA1	Production	4th Qtr 2010 through 3rd Qtr 2011
	Aquifer Restoration	4th Qtr 2011 through 4th Qtr 2012
PA2	Production	Middle of 3rd Qtr 2011 through middle 3rd Qtr 2012
	Aquifer Restoration	Middle 3rd Qtr 2012 through 1st Qtr 2014
PA3	Production	2nd Qtr 2012 through middle 3rd Qtr 2013
	Aquifer Restoration	4th Qtr 2013 through middle 1st Qtr 2016
PA4	Production	Middle 3rd 2013 through middle 1st Qtr 2015
	Aquifer Restoration	Middle 1st Qtr 2015 through 3rd Qtr 2017

PA = Production Area

This Mine Plan represents an estimate for the timing for the event listed. The timing of these events is dependent on many factors beyond the control of the permittee including the following:

1) timing of the approval of the permits required to mine the various ore bodies;
2) the ore bodies response to the lixiviant used for recovery;
3) the ultimate economic recovery of uranium from each ore body;
4) the sequence of mining the various ore bodies; and
5) the response of each ore body to the restoration techniques employed.

ATTACHMENT 3
DESIGNATED MONITOR WELL AND BASELINE WELL TABLE

Monitor Wells					Production Area Baseline Wells (production zone)
Production Zone (monitor well ring)	Non-Production Zone				
	Sand A 1st Overlying Aquifer	[name] Sand 2nd Overlying Aquifer	[name] Sand 3rd Overlying Aquifer	[name] Sand 4th Overlying Aquifer	
BMW-1	OMW-1	NA	NA	NA	PTW-1
BMW-2	OMW-2				PTW-2
BMW-3	OMW-3				PTW-3
BMW-4	OMW-4				PTW-4
BMW-5	OMW-5				PTW-5
BMW-6	OMW-6				PTW-6
BMW-7	OMW-7				PTW-7
BMW-8	OMW-8				PTW-8
BMW-9	OMW-9				PTW-9
BMW-10					PTW-10
BMW-11					PTW-11
BMW-12					PTW-12
BMW-13					PTW-13
BMW-14					PTW-14
BMW-15					RBLB-1
BMW-16					RBLB-3
BMW-17					RBLB-4
BMW-18					RBLB-5
BMW-19					
BMW-20					
BMW-21					
BMW-22					
GW-1					
GW-2					

ATTACHMENT 4A
BASELINE WATER QUALITY TABLE
GOLIAD PROJECT SAND B PRODUCTION ZONE

PRODUCTION ZONE									WELL ID BY AREA*	
Parameter		Units	Mine Area**			Production Area			Production Zone	
			Low	Ave.	High	Low	Ave.	High	Mine	Prod.
1	Calcium	mg/l	82	97	110	87	97	110	BMW-1	PTW-1
2	Magnesium	mg/l	14.5	17.5	20	10.9	16.2	20.2	BMW-2	PTW-2
3	Sodium	mg/l	93	105	120	94	102	117	BMW-3	PTW-3
4	Potassium	mg/l	2.92	3.79	5.13	2.5	7.1	16.5	BMW-4	PTW-4
5	Carbonate	mg/l	0	0	0	0	0	0	BMW-5	PTW-5
6	Bicarbonate	mg/l	294	319	350	251	331	368	BMW-6	PTW-6
7	Sulfate	mg/l	15	58	89	9	41	82	BMW-7	PTW-7
8	Chloride	mg/l	158	165	172	150	163	168	BMW-8	PTW-8
9	Fluoride	mg/l	0.51	0.58	0.65	0.52	0.64	0.80	BMW-9	PTW-9
10	Nitrate-N	mg/l	<0.01	0.01	0.01	0.02	0.41	1.73	BMW-10	PTW-10
11	Silica	mg/l	12.3	15.7	18.1	12.1	26.4	37.5	BMW-11	PTW-11
12	pH	std. units	7.28	7.58	8.18	7.30	7.52	7.96	BMW-12	PTW-12
13	TDS	mg/l	575	652	705	584	638	698	BMW-13	PTW-13
14	Conductivity	µmhos	1040	1104	1140	950	1041	1160	BMW-14	PTW-14
15	Alkalinity	mg/l	241	262	287	206	272	302	BMW-15	RBLB-1
16	Ammonia-N	mg/l	<0.1	0.1	0.2	0.06	<0.1	<0.1	BMW-16	RBLB-3
17	Arsenic	mg/l	<2E-3	8E-3	0.069	0.010	0.011	0.030	BMW-17	RBLB-4
18	Cadmium	mg/l	<1E-3	1E-3	<1E-3	<1E-3	<5E-3	<5E-3	BMW-18	RBLB-5
19	Iron	mg/l	<3E-2	0.043	0.196	<3E-2	0.034	0.063	BMW-19	
20	Lead	mg/l	<2E-3	2E-3	2E-3	<1.2E-2	<1.2E-2	<1.2E-2	BMW-20	
21	Manganese	mg/l	0.007	0.017	0.050	<0.010	0.006	0.025	BMW-21	
22	Mercury	mg/l	4E-4	<4E-4	<4E-4	<4E-4	<4E-4	<4E-4	BMW-22	
23	Molybdenum	mg/l	<0.01	0.035	0.481	0.014	0.037	0.136		
24	Selenium	mg/l	<3E-3	3E-3	6E-3	1E-3	2E-3	0.003		
25	Uranium	mg/l	<1E-3	0.020	0.188	0.005	0.115	0.804		
26	Radium-226	pCi/l	0.9	12.1	41	10.0	333.8	1684.0		

*List the identification numbers of wells used to obtain the high and low values for each parameter

**Monitor Wells

ATTACHMENT 4B
BASELINE WATER QUALITY TABLE
GOLIAD PROJECT SAND A NONPRODUCTION ZONE

Parameter		Units	Non-Production Zone			Well ID for Non-Production Zone
			Low	Ave.	High	OMW-1
1	Calcium	mg/l	114	184	310	OMW-2
2	Magnesium	mg/l	9.2	18.7	32.4	OMW-3
3	Sodium	mg/l	83	110	133	OMW-4
4	Potassium	mg/l	1.8	2.2	2.6	OMW-5
5	Carbonate	mg/l	0	0	0	OMW-6
6	Bicarbonate	mg/l	299	331	370	OMW-7
7	Sulfate	mg/l	47	99	168	OMW-8
8	Chloride	mg/l	146	266	584	OMW-9
9	Fluoride	mg/l	0.36	0.45	0.62	
10	Nitrate-N	mg/l	1.90	5.26	8.20	
11	Silica	mg/l	16.1	18.3	21.4	
12	pH	std. units	6.98	7.24	7.39	
13	TDS	mg/l	615	904	1340	
14	Conductivity	µmhos	1040	1520	2450	
15	Alkalinity	mg/l	245	271	303	
16	Ammonia-N	mg/l	<0.1	<0.1	0.1	
17	Arsenic	mg/l	0.010	0.018	0.031	
18	Cadmium	mg/l	<1E-3	1E-3	1E-3	
19	Iron	mg/l	<3E-2	<3E-2	<3E-2	
20	Lead	mg/l	<2E-3	2E-3	3E-3	
21	Manganese	mg/l	<3E-3	0.02	0.09	
22	Mercury	mg/l	<4E-4	4E-4	4E-4	
23	Molybdenum	mg/l	<1E-2	0.012	0.024	
24	Selenium	mg/l	<3E-3	0.007	0.012	
25	Uranium	mg/l	0.006	0.009	0.014	
26	Radium-226	pCi/l	0.5	2.3	6	

ATTACHMENT 5
CONTROL PARAMETER UPPER LIMITS TABLE

Production Zone	
Control Parameter	Sand B
Chloride, mg/l	210
Conductivity,umhos/cm	1,450

Non-Production Zone	
Control Parameter	Sand A 1st Overlying Aquifer
Chloride, mg/l	730
Conductivity, umhos/cm	3,062

ATTACHMENT 6
RESTORATION TABLE

Parameter	Unit	Concentration
Calcium	mg/l	97
Magnesium	mg/l	16.2
Sodium	mg/l	102
Potassium	mg/l	7.1
Carbonate	mg/l	0.0
Bicarbonate	mg/l	332
Sulfate	mg/l	41
Chloride	mg/l	163
Nitrate-N	mg/l	0.41
Fluoride	mg/l	0.64
Silica	mg/l	26.4
TDS	mg/l	636
Conductivity	µmhos/cm	1044
Alkalinity	mg/l as $CaCO_3$	272
pH	Std. Units	7.3 to 7.96
Arsenic	mg/l	0.011
Iron	mg/l	0.038
Manganese	mg/l	0.015
Molybdenum	mg/l	0.037
Selenium	mg/l	0.002
Uranium	mg/l	0.115
$Radium^{226}$	pCi/l	333.8

EXHIBIT D

ATTACHMENT 4A
BASELINE WATER QUALITY TABLE
GOLIAD PROJECT SAND B PRODUCTION ZONE

PRODUCTION ZONE									WELL ID BY AREA*	
Parameter		Units	Mine Area**			Production Area			Production Zone	
			Low	Ave.	High	Low	Ave.	High	Mine	Prod.
1	Calcium	mg/l	82	97	110	81	96	110	BMW-1	PTW-1
2	Magnesium	mg/l	14.5	17.7	21.2	10.9	17.8	20.3	BMW-2	PTW-2
3	Sodium	mg/l	83	102	120	82	97	117	BMW-3	PTW-3
4	Potassium	mg/l	2.92	4.31	7.81	2.5	6.4	16.5	BMW-4	PTW-4
5	Carbonate	mg/l	0	0	0	0	0	3	BMW-5	PTW-5
6	Bicarbonate	mg/l	268	311	350	251	308	368	BMW-6	PTW-6
7	Sulfate	mg/l	0	50	89	1.5	43.2	82	BMW-7	PTW-7
8	Chloride	mg/l	147	164	185	150	164	180	BMW-8	PTW-8
9	Fluoride	mg/l	<0.5	0.57	0.71	<0.50	0.58	0.80	BMW-9	PTW-9
10	Nitrate-N	mg/l	<0.01	#	0.05	<0.01	0.14	1.73	BMW-10	PTW-10
11	Silica	mg/l	12.3	26.2	34.9	<0.05	29.8	37.5	BMW-11	PTW-11
12	pH	std. units	6.97	7.40	8.18	7.18	7.48	7.96	BMW-12	PTW-12
13	TDS	mg/l	260	595	810	390	586	698	BMW-13	PTW-13
14	Conductivity	µmho/cm	953	1082	1140	950	1084	1190	BMW-14	PTW-14
15	Alkalinity	mg/l	224	256	287	206	253	302	BMW-15	RBLB-1
16	Ammonia-N	mg/l	<0.1	0.12	0.34	<0.05	#	0.3	BMW-16	RBLB-3
17	Arsenic	mg/l	<2E-3	0.009	0.069	<0.01	0.011	0.030	BMW-17	RBLB-4
18	Cadmium	mg/l	<1E-3	##	##	<0.001	<0.007	<0.01	BMW-18	RBLB-5
19	Iron	mg/l	<3E-2	0.095	0.776	<0.01	0.067	0.322	BMW-19	
20	Lead	mg/l	<2E-3	##	##	<0.002	#	0.004	BMW-20	
21	Manganese	mg/l	<0.01	0.013	0.050	<0.010	0.027	0.026	BMW-21	
22	Mercury	mg/l	<1E-4	##	##	<0.0001	##	##	BMW-22	
23	Molybdenum	mg/l	<0.01	0.032	0.481	<0.01	0.185	0.136		
24	Selenium	mg/l	<3E-3	6E-3	6E-3	<0.003	+	0.002		
25	Uranium	mg/l	<1E-3	0.009	0.188	<0.003	0.50	0.804		
26	Radium-226	pCi/l	0.1	13.7	48	10.0	385.1	2000.0		

*List the identification numbers of wells used to obtain the high and low values for each parameter
**Monitor Wells
Only one value quantified; different detection limits for each of 3 sampling rounds.
No quantified values.
+ Only 4 quantified values; different detection limits for each of 3 sampling rounds.

ATTACHMENT 4B
BASELINE WATER QUALITY TABLE
GOLIAD PROJECT SAND A NONPRODUCTION ZONE

Parameter		Units	Non-Production Zone			Well ID for Non-Production Zone
			Low	Ave.	High	OMW-1
1	Calcium	mg/l	101	181	310	OMW-2
2	Magnesium	mg/l	9.2	21.2	40.5	OMW-3
3	Sodium	mg/l	83	105	133	OMW-4
4	Potassium	mg/l	0	1.7	4.4	OMW-5
5	Carbonate	mg/l	0	0	0	OMW-6
6	Bicarbonate	mg/l	246	315	370	OMW-7
7	Sulfate	mg/l	36	103	181	OMW-8
8	Chloride	mg/l	122	264	648	OMW-9
9	Fluoride	mg/l	0.32	0.46	0.63	
10	Nitrate-N	mg/l	1.90	6.16	10.5	
11	Silica	mg/l	16.1	33.8	51.2	
12	pH	std. units	6.70	7.14	7.44	
13	TDS	mg/l	403	923	2350	
14	Conductivity	µmhos	1040	1549	2520	
15	Alkalinity	mg/l	202	258	303	
16	Ammonia-N	mg/l	<0.1	0.13	0.47	
17	Arsenic	mg/l	<0.01	0.013	0.031	
18	Cadmium	mg/l	<1E-3	#	#	
19	Iron	mg/l	<3E-2	0.085	0.890	
20	Lead	mg/l	<2E-3	##	3E-3	
21	Manganese	mg/l	<3E-3	0.026	0.09	
22	Mercury	mg/l	<1E-4	#	#	
23	Molybdenum	mg/l	<1E-2	##	0.024	
24	Selenium	mg/l	<3E-3	0.011	0.013	
25	Uranium	mg/l	<3E-3	0.01	0.016	
26	Radium-226	pCi/l	0.2	1.4	6	

No quantified values.

Only two quantified value; different detection limits for 3 sampling rounds.

ATTACHMENT 5
CONTROL PARAMETER UPPER LIMITS TABLE

Production Zone	
Control Parameter	**Sand B**
Chloride, mg/l	231
Conductivity,umhos/cm	1,425

Non-Production Zone	
Control Parameter	**Sand A 1st Overlying Aquifer**
Chloride, mg/l	810
Conductivity, umhos/cm	3,150

ATTACHMENT 6
RESTORATION TABLE

Parameter	Unit	Concentration
Calcium	mg/l	96
Magnesium	mg/l	17.8
Sodium	mg/l	97
Potassium	mg/l	6.4
Carbonate	mg/l	0.0
Bicarbonate	mg/l	308
Sulfate	mg/l	43.2
Chloride	mg/l	164
Nitrate-N	mg/l	0.14
Fluoride	mg/l	0.58
Silica	mg/l	29.8
TDS	mg/l	587
Conductivity	µmhos/cm	1084
Alkalinity	mg/l as $CaCO_3$	253
pH	Std. Units	7.18 to 7.96
Arsenic	mg/l	0.010
Iron	mg/l	0.68
Manganese	mg/l	0.027
Molybdenum	mg/l	0.185
Selenium	mg/l	0.007
Uranium	mg/l	0.050
$Radium^{226}$	pCi/l	391