



New Mexico Energy, Minerals and Natural Resources Department

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**Bill Richardson**  
Governor

**Jon Goldstein**  
Cabinet Secretary

**Jim Noel**  
Deputy Cabinet Secretary

**Mark Fesmire**  
Division Director  
Oil Conservation  
Division



## NEWS RELEASE

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### **Energy, Minerals and Natural Resources Department Issues \$2.6 Million Compliance Order to Carlsbad Brine Well Operator for Failure to Address Subsidence Issues**

SANTA FE, NM – The New Mexico Energy, Minerals and Natural Resources Department's Oil Conservation Division issued a Compliance Order today with a proposed civil penalty of \$2,637,000.00 to I&W, Inc. for violating multiple conditions of its discharge permit for its brine well facility operated in the City of Carlsbad.

**Violations include:**

- Failure to provide a subsidence monitoring program and a health and safety plan;
- Failure to provide capacity/cavity configuration data along with geologic and engineering information demonstrating the integrity of the solution mining system;
- Failure to maintain a ground water monitoring program;
- Failure to provide production/injection volumes; and
- Failure to provide analysis of the injection fluid and brine.

"The Oil Conservation Division has taken numerous steps to work with the operator," stated Cabinet Secretary Jon Goldstein. "Their failure to accept responsibility for the brine well they own, operate and profit from has forced the department to step in and require them with this enforceable order to do the right thing to protect human health and safety."

The Oil Conservation Division made numerous verbal and written requests to I&W concerning permit compliance, most recently in a November 20, 2009, letter. I&W did not comply with these requests. The Compliance Order issued to I&W requires it to take the actions it agreed upon when it accepted its permit. The division is reviewing all brine wells in the state on permit compliance.

"Brine well permits contain monitoring systems and health and safety plans," stated Oil Conservation Division Director Mark Fesmire. "Operators in New Mexico are responsible for knowing the terms of their permits and complying with them."

The Oil Conservation Division has been investigating and studying brine wells in New Mexico since two brine wells catastrophically collapsed without warning last year in Eddy County. The I&W facility in Carlsbad with two brine wells raised red flags for the Oil Conservation Division due to its location, which is between US 285 and US 180/62 where those two highways meet at a Y-shaped intersection. Certain aspects of the Carlsbad facility, such as the shallow depth and length of time in service, are similar to the two wells that already collapsed and the Oil Conservation Division has concluded that the site poses a serious risk to human life and to property. The division has spent over \$563,000 monitoring the site, characterizing the underground cavity and installing an early warning system.

The Compliance Order states that I&W, Inc. is ordered to take the following corrective actions by April 22, 2010:

- Submit the following information:
  - A subsidence monitoring report;
  - A health and safety plan;
  - Capacity/cavern configuration information;
  - Ground water monitoring analytical reports;
  - Analyses of brine and fresh water;
- Reimburse the Oil Conservation Division for the \$563,000 in costs incurred to establish and monitor the survey system and early warning system;
- Post a financial assurance in the amount of \$1,000,000 in the form of a surety bond to provide funding for the continued operation of the subsidence monitoring system and early warning system
- Submit a closure plan for the facility to prevent exceeding the standards of Section 20.6.2.3103 NMAC or the presence of a toxic pollutant in ground water in the event of a cavern collapse. The plan shall include, at a minimum:
  - A health and safety plan;
  - A report on closure measures already taken for the Eugenie #1 and the Eugenie #2;
  - A plan for assuming financial responsibility for the monitoring system put in place by the Oil Conservation Division and continued monitoring by an independent third party acceptable to the Oil Conservation Division;
  - A plan for assuming financial responsibility for the early warning system put in place by the Oil Conservation Division and continued operation of the early warning system by an independent third party acceptable to the Oil Conservation Division;
  - Run-on/run-off controls to prevent water ponding over the area of the brine well cavern;
  - A maintenance plan for the run-on/run-off controls;
  - A maintenance plan, including security of all monitoring benchmarks, survey points and utilities that support the early warning system;
  - An annual post-closure report;
  - A proposal for closing the facility providing for either the safe backfilling of the salt cavern in place, or for the acquisition of surrounding properties which may be adversely affected along with long-term site security and monitoring;
  - Additional financial assurance to support the proposal for closing the facility; and
  - A contingency plan to remediate ground water that will be impacted by a collapse of the cavern.

I&W has 30 days from the receipt of this order to acknowledge the violation and pay the \$2,637,000.00 civil penalty, request a public hearing or initiate settlement discussions. See order attached below.

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***The Energy, Minerals and Natural Resources Department provides resource protection and renewable energy resource development services to the public and other state agencies.***



**STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION**

**IN THE MATTER OF**

**I &W INC.,  
Respondent.**

**COMPLIANCE ORDER**

Pursuant to the New Mexico Water Quality Act (“WQA”), Chapter 74, Article 6 NMSA 1978, the Oil Conservation Division (“OCD”) issues this Compliance Order (“Order”) to Respondent I &W, Inc. (“I&W” or “Respondent”).

**I. FINDINGS OF FACT**

**Parties:**

1. The OCD is a division of the New Mexico Energy, Minerals and Natural Resources Department, and is the administrative arm of the Oil Conservation Commission (OCC). The OCC is a “constituent agency” of the Water Quality Control Commission (WQCC) under the WQA. NMSA 1978, Section 74-6-2(J)(4). The OCD has express statutory authority to administer the WQA. NMSA 1978, Section 70-2-12(B)(22).

2. I&W is a domestic profit corporation that since 1995 has operated a facility under OCD discharge permit BW-006 (“Facility”). The Facility is located in Units L and M of Section 17, Township 22 South, Range 27 East, NMPM, Eddy County, New Mexico.

**Background:**

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3. The Facility includes trucking operations and a solution mining operation to produce brine sold for use in oil and gas operations.

4. In a solution mining operation to produce brine, a well is drilled into the salt zone. The operator injects fresh water into the salt zone, where it dissolves the salt. The resulting brine is pumped and sold. As the mining process continues, the salt zone dissolves, leaving an underground cavern filled with brine.

5. The Facility first began producing brine in August of 1978, using a single well: the Eugenie #1 (API 30-015-22574). The depth from ground surface to salt observed during the drilling of this well was 456 feet, and casing was set to this depth. The total drilled depth of the hole was 663 feet.

6. In 1979 the operator installed a second well at the Facility: the Eugenie #2 (API 30-015-23031). Casing on the Eugenie #2 was set to 285 feet with tubing advanced to 583 feet. The operator hydraulically fractured the salt zone between the two wells. The Facility then operated as a two-well system, with fresh water introduced down the Eugenie #2 and brine produced from the Eugenie #1.

7. The depth to ground water beneath the Facility is approximately 50 feet.

8. I&W acquired the Facility in 1995, notifying the OCD of the transfer by letter dated August 10, 1995.

9. During a cavern integrity test in November 1999, the Eugenie #2 well, which was being used to inject fresh water, showed brine leakage at the surface. I&W plugged the Eugenie #2 in January 2000.

10. I&W returned to single-well brine production using the Eugenie #1 in June 2000.

11. On July 16, 2008 Jim's Water Service brine well (BW-005) collapsed.
12. On July 18, 2008, two days after the collapse at Jim's Water Service, the OCD recommended to I&W that it cease producing brine from the Eugenie #1 well. The depth to salt at I&W's Facility is similar to the depth to salt at Jim's Water Service, and the production history at the two facilities is similar.
13. On July 22, 2008, I&W shut in the Eugenie #1 well.
14. On August 1, 2008, as part of its review of brine well operations after the collapse at Jim's Water Service, the OCD sent a "Brine Well Information Request" to all brine well operators in New Mexico, including I&W. The four-page form requested information about the operator's brine well(s), including information on well construction, well operations, and monitoring. The cover letter sent with the form required operators to return the completed form by September 5, 2008. I&W did not respond.
15. I&W plugged the Eugenie #1 on October 31, 2008.
16. On November 3, 2008 the Loco Hills Water Disposal Company brine well (BW-021) collapsed. This well had been plugged on June 19, 2008.
17. On January 29, 2009 the OCD increased the area of review for any Application for Permit to Drill to one-half mile from the I&W Facility. Any such application would have to be jointly approved by the OCD office in Santa Fe and the OCD's District II office in Artesia.
18. On March 11, 2009 OCD urged I&W to cease truck operations above the existing cavern and develop an adequate contingency plan incorporating the local

emergency response infrastructure and notification of neighboring property owners who may be adversely affected by a collapse.

19. In March 2009 the OCD hosted a Brine Well Workgroup to discuss potential causes of brine well collapses, and methods for evaluating the potential for brine well collapses. Numerous participants expressed concern that the brine wells at I&W's Facility could or would collapse because they were similar in geology and production life to the two wells that had already collapsed.

20. If the I&W brine wells collapse, fresh water in the overburden will mix with the brine in the salt cavern. Brine produced at the I&W Facility contains approximately 193,000 milligrams/liter (mg/l) chloride according to I&W's January 2006 analysis of brine in the cavern. The maximum concentration of chloride allowed in ground water is 250 mg/l. See 20.6.2.3103.B(1) NMAC. One gallon of brine therefore has the potential to contaminate 772 (193,000/250) gallons of fresh water. Based on the available information, the OCD estimates that the underground cavern at the Facility presently contains 34 million gallons of brine. If the cavern roof fails and the falling overburden displaces the brine upward where it can mix with the overlying fresh ground water, more than 26 billion gallons of water (approximately 80,600 acre-feet) will be contaminated.

21. Because the Facility is located in a developed area of the City of Carlsbad, between two major highways and adjacent to the Carlsbad Irrigation Canal, a church, a feed store and a mobile home park, a collapse has serious potential for injury or loss of life, and property damage.

22. During the period April 1 through April 27, 2009, OCD staff spoke by telephone with I&W and its counsel and met with I&W and its counsel to request that I&W cease all operations at the Facility. The OCD also retained a contractor to provide technical assistance on data review, to survey the site to determine subsidence and tilt rates at the surface, remotely confirm the cavern configuration, make technical recommendations, and establish a continuously operating subsidence monitoring system which might yield warning of imminent or ongoing collapse.

23. On April 27, 2009, I&W agreed to cease trucking operations at the site and allow OCD access to the site to install monitoring equipment.

24. OCD contractors have since conducted a seismic reflection survey to determine the extent of the cavern. The data has been evaluated by independent experts. They interpret the survey to indicate a cavern with lateral dimensions of more than 500 feet by 300 feet, with significant salt removal in the area of Eugenie #1.

25. Independent studies of salt cavern collapses indicate that roof failure is not likely to occur when the ratio of cavern diameter to cavern depth is significantly smaller than 0.67. The ratio of diameter to depth for the cavern at the I&W Facility ranges between 0.66 and 1.10 based on the seismic reflection survey. According to OCD estimates, the cavern that collapsed at Jim's Water Service (BW-005) had a ratio of 1.13, and the cavern that collapsed at Loco Hills Water Disposal Company (BW-021) had a ratio of 0.70.

26. OCD contractors established a surface subsidence monitoring system, which includes installation of surface monitoring points that are surveyed with a theodolite and the installation of surface tiltmeter plates, along with the installation of

continuously monitored subsurface borehole tiltmeters and pressure transducers placed into existing ground water monitor wells. Information from the borehole tiltmeters and pressure transducers is transmitted to an early warning system.

27. The OCD's outside costs for these efforts to date total \$563,420.00. Some costs associated with the monitoring are paid through June 30, 2010. Continued monitoring using the existing subsidence monitoring system and early warning system is expected to cost between \$2,000.00 and \$10,000.00 per month, depending on the level of maintenance and data analysis required.

28. As discussed in more detail below, I&W is in violation of multiple conditions of Discharge Permit BW-006:

- I&W has failed to provide a subsidence monitoring program and a health and safety plan;
- I&W has failed to provide capacity/cavity configuration data along with geologic and engineering information demonstrating the integrity of the solution mining system;
- I&W has failed to maintain a ground water monitoring program;
- I&W has failed to provide production/injection volumes; and
- I&W has failed to provide analysis of the injection fluid and brine.

**Claim 1: Failure to Provide a Subsidence Monitoring Program and a Health and Safety Plan**

29. The requirement for a subsidence survey first appeared in the 1996 renewal of BW-006, issued April 15, 1996:

“Subsidence Survey: I&W will design and install a series of survey points over the area of the facility and the salt cavern by December 31, 1996 to monitor any future surface subsidence. The OCD will be notified at least 72 hours prior to all testing so that an OCD representative may witness the testing.”

BW-006, Discharge Permit Approval Conditions, Paragraph 7 (1996).



30. OCD records show no evidence that I&W installed subsidence survey points as required by the 1996 renewal.

31. The next renewal of BW-006, issued July 16, 2001, contained the following requirements for subsidence monitoring:

“I&W, Inc. shall submit for OCD approval a method to detect long-term subsidence. Please submit the plan by August 15, 2001.”

BW-006, Discharge Permit Approval Conditions, Paragraph 25 (2001).

32. By letter dated August 17, 2001, the OCD extended the deadline for submittal of the plan until January 31, 2002.

33. OCD records show that I&W did not submit a plan for subsidence detection by the January 31, 2002 deadline.

34. By letter dated December 11, 2007, I&W indicated to the OCD that it intended to set monitoring points in the ground in the next few weeks.

35. The next renewal of BW-006, issued January 24, 2008, is the current Discharge Plan. It contains the following requirements for subsidence monitoring:

**“Subsidence Monitoring System:** I&W, Inc. shall submit for long-term subsidence, a report displaying all subsidence monitoring stations and monitoring completed to date to address the requirements of the prior discharge plan by June 30, 2008. The report shall summarize and include subsidence tables and graphs to 0.01 ft. A map shall depict the facility and monitoring points to scale with verification of certified surveyor geodetic datums or elevations are properly recorded. The report shall propose a schedule for long-term surveying to ensure public safety subsidence/collapse issues are addressed due to the shallow nature of the brine cavity. The report shall also include: a health and safety plan for alerting the proper authorities, ensuring prompt evacuation of the community, and protection health and safety of the general public.”

BW-006, Discharge Permit Approval Conditions, Paragraph 20(B) (2008).

36. On July 2, 2008, after the due date set by the 2008 renewal, OCD personnel e-mailed I&W regarding the subsidence monitoring requirement.

37. The “Brine Well Information Request Form” the OCD sent to I&W on August 1, 2008 requested information on subsidence monitoring and asked if the operator had submitted all reports to the OCD. I&W did not respond to the OCD’s request for information.

38. On November 4, 2008 OCD personnel e-mailed I&W requiring it to submit a contingency plan, and describing the issues to be included in the plan. According to a subsequent e-mail from the OCD to I&W dated November 17, 2008, it appears that I&W provided some information to the OCD, but the OCD informed I&W that it was insufficient.

39. By letter dated April 9, 2009 the OCD notified counsel for I&W regarding the OCD’s concerns about the lack of subsidence monitoring. The letter included the following demand:

“Cooperate with monitoring. The OCD has been working with I&W to establish a monitoring program for the site, but has not seen proof that the monitoring is in place, and has not received monitoring data. As we have discussed, the OCD’s experience is that weekly or daily monitoring will not provide adequate warning of a collapse. The OCD is working to determine if a real-time monitoring system can be designed that will provide sufficient warning to prevent loss of life or property, and will require I&W’s cooperation in that monitoring program.”

40. A demand letter from OCD to counsel for I&W on April 23, 2009 included a demand that I&W “[p]rovide the monitoring data it has previously promised the OCD.” In addition, the letter put I&W on notice that the OCD considered I&W to be in violation of its permit conditions regarding monitoring:

“Paragraph 20(B) requires I&W to submit a plan for long-term subsidence, including a schedule for long-term surveying to ensure public safety subsidence/collapse issue, a health and safety plan for alerting the proper authorities, ensuring prompt evacuation of the community, and protection of the health and safety of the general public. I&W has not provided the plans required by Paragraph 20(B).

....Paragraph 21(F) also allows the OCD to require installation of subsidence monitoring in order to demonstrate the integrity of the system. The OCD previously required I&W to provide weekly subsidence monitoring; as discussed in my letter of April 9, 2009, I&W has not provided the monitoring data, nor does it appear to have fully implemented subsidence monitoring in the past. Given the probability of a collapse, the OCD is now requiring real-time subsidence monitoring and an early-warning system....”

41. On April 27, 2009, the OCD received an e-mail from I&W containing limited subsidence data, describing a total of 22 monitoring events starting on May 9, 2008 and ending April 13, 2009. The data show no elevation changes to an accuracy of 0.001 feet at the Eugenie #1, the Eugenie #2, or at three established benchmarks.

42. The April 27, 2009 e-mail did not provide the additional information required by the terms of BW-006, such as the proposed schedule for long-term surveying or the health and safety plan.

43. The subsidence survey conducted by OCD’s own contractor between May 6 and September 18, 2009 contradicts the subsidence data provided by I&W. The subsidence survey indicates rates of subsidence and heaving at the surface approaching one inch per year. Review of available information by OCD’s contractor indicates ground movements not inconsistent with a possible catastrophic failure of the cavern roof at some as yet undetermined time in the foreseeable future.

44. A July 2, 2009 demand letter from the OCD to the attorney for I&W, seeking reimbursement of the costs incurred by the OCD, offered I&W the option of

assuming control of and responsibility for the subsidence monitoring system and the early warning system.

45. The November 20, 2009 demand letter from the OCD to I&W specifically referenced the 2008 renewal condition requiring I&W to provide a subsidence report including a schedule for long-term surveying and a health and safety plan. The letter required that information to be submitted as part of a closure plan. As authority for requiring a closure plan including this information, the letter cited BW-006, Discharge Permit Approval Conditions, Paragraph 23, which provides that I&W must submit a closure plan upon the OCD's request, and the following regulations under the Water Quality Act: 20.6.2.3107.A(10) and (11) NMAC (contingency plans and closure plans for discharge permits); 20.6.2.5005 NMAC (closure requirements for brine wells); 20.6.2.5209 NMAC (plugging and abandonment of brine wells); and 20.6.2.5210(B)(17) NMAC (measures necessary to prevent contamination after cessation of operations, including proper closing and post-operational monitoring).

46. In addition, the November 20, 2009 demand letter required I&W to post a financial assurance in the amount of \$1,000,000.00 in the form of a surety bond to provide funding for the continued operation of the subsidence monitoring system and early warning system in the event I&W fails to maintain those systems. BW-006 specifically provides that the OCD may require I&W to provide additional financial assurance. See BW-006, Discharge Permit Approval Conditions, Paragraph 23.

47. To date, I&W has not submitted additional subsidence data, has not taken any action to assume responsibility for subsidence monitoring or the early warning system, has not submitted a contingency/health and safety plan, has not posted the

required financial assurance, and has not reimbursed the OCD for its expenditures to provide the cavern delineation, subsidence monitoring and early warning system that I&W failed to provide.

**Claim 2: Failure to Provide a Capacity/Cavity Configuration and Subsidence Survey**

48. In its August 10, 1995 letter notifying the OCD that it had acquired the Facility and was assuming the obligations under BW-006, I&W stated that it would “[p]erform a sonar log before the expiration of the active discharge plan on June 19, 1996.”

49. I&W failed to perform the sonar survey by its self-assumed June 19, 1996 deadline.

50. The 1996 permit renewal contained the following requirement:

“Capacity and Cavity Configuration: The capacity and configuration of the salt cavern will be determined by December 31, 1996 by sonar survey or an alternate method approved by the OCD. The OCD will be notified at least 72 hours prior to all testing so that an OCD representative may witness the testing.”

BW-006, Discharge Permit Approval Conditions, Paragraph 6 (1996).

51. During 1995 and 1996 the OCD repeatedly tried to schedule integrity testing and a cavern survey without success. On October 11, 1996, the OCD ordered I&W to cease brine production because of its failure to schedule mechanical integrity tests and a sonar survey.

52. Eight days later, on October 18, 1996, I&W completed a sonar survey of the Eugenie #1, the brine extraction well. The cavern roof appeared to be 135 feet across, but only the uppermost 45 feet of the solution cavern was logged, with a calculated

capacity of less than 31,000 barrels. The logging tool could not be lowered to greater depth due to interbedding. I&W did not perform a sonar test of the Eugenie #2.

53. Although production records are incomplete, historic brine production by October 1996 may have reached 4.5 million barrels. Assuming a 15% salt content by volume in brine, the solution cavern would have been 673,000 barrels. Therefore the area of the salt cavern logged by the sonar survey would represent only a small fraction of the cavern.

54. The 2001 permit renewal referenced receipt of the 1996 survey log. BW-006, Discharge Permit Approval Conditions, Paragraph 25 (2001).

55. On August 30, 2007 a firm under contract to I&W conducted sonar logging on the Eugenie #1. The depth interval that was imaged by that log spanned from 434.7 feet to 473.8 feet below surface and indicated a cavern volume of 47,823 barrels between depths of 444 and 473 feet which at its maximum was approximately 170 feet across.

56. Estimated historic brine production by the time of the 2007 sonar logging was in excess of 5 million barrels, which should have left a cavern with a volume of more than 800,000 barrels. Therefore, the sonar logging in 2007 probably imaged only 6% of the cavern. This is most likely due to an inability to lower the sonar tool any deeper. Total depth on the Eugenie #1 when it was drilled was 663 feet, and records indicate tubing depths during production of at least 587 feet. It appears that only 49 vertical feet were logged, leaving anywhere from 114 to 190 vertical feet of cavern unlogged.

57. The 2008 permit renewal contained the following requirement:

“Capacity/Cavity Configuration and Subsidence Survey: The operator shall provide information on the size and extent of the solution cavern and geologic/engineering data demonstrating that continued brine extraction will not cause surface subsidence, collapse or damage to property, or become a threat to public health and the environment. This information shall be supplied in each annual report. OCD may require the operator to perform additional well surveys, test, and install subsidence monitoring in order to demonstrate the integrity of the system. If the operator cannot demonstrate the integrity of the system to the satisfaction of the Division then the operator may be required to shut-down, close the site and properly plug and abandoned (sic) the well.”

BW-006, Discharge Permit Approval Conditions, Paragraph 21(F)(2008).

58. A separate provision in the 2008 permit renewal provides that the annual report is due on January 31 of each year. BW-006, Discharge Permit Approval Conditions, Paragraph 21(L)(2008).

59. I&W did not file an annual report for 2008, which would have been due January 31, 2009.

60. The “Brine Well Information Request Form” the OCD sent to I&W on August 1, 2008 requested information on sonar logs, cavern configuration (dimensions and volume) and the method or methods used to estimate the cavern size, and asked if the operator had submitted all reports to the OCD. I&W did not respond to the OCD’s request for information.

61. In an April 23, 2009 letter to I&W’s counsel, the OCD put I&W on notice that it considered I&W to be in violation of its permit terms:

“I&W is in violation of Paragraph 21(F) because it cannot demonstrate the integrity of the brine well system. The OCD has outlined its concerns in several telephone conversations with you, at a meeting in your offices on April 6, 2009, in a letter faxed and mailed to you on April 9, 2009, and at a meeting in Carlsbad on April 9, 2009 hosted by New Mexico Homeland Security and Emergency Management. To summarize, based on the age of I&W’s operations, the amount of brine produced, the well

configuration, and the limited sonar data currently available, the OCD concludes that the cavern under the wells is large with a broad roof, and is relatively close to the surface. I&W's operation shares these features with the two brine wells that suffered catastrophic collapses last year: Jim's Water Service (BW-5) and Loco Hills Water Disposal (BW-12). I&W's operation has additional factors that make it vulnerable to collapse: fresh water infiltrating the ground from the unlined irrigation ditch that runs adjacent to the facility may be dissolving the salt zone from the top, and vibrations from the truck yard currently being operated over the cavern could trigger a collapse."

62. The April 23, 2009 letter went on to state, "I&W cannot demonstrate that its brine well system has integrity both because of the circumstances summarized above and because it is in violation of other provisions of its permit," specifically citing the requirement in Paragraph 21(F) that I&W provide information in each annual report on the size and extent of the solution cavern and geologic/engineering data demonstrating that continued brine extraction will not be a hazard, and requiring, and the requirements in Paragraph 21(F) and Paragraph 20(B) for subsidence monitoring.

63. Because of I&W's failure to provide information on the configuration of the cavern, and its failure to demonstrate that the system had integrity, the OCD hired contractors to delineate the cavern. The OCD's demand letter of July 20, 2009, seeking reimbursement for those costs, offered I&W the opportunity to take over the evaluation and remediation efforts.

64. The OCD's November 20, 2009 demand letter to I&W reiterated that "I&W failed to comply with the terms of its permit that required it to provide information necessary to determine the size and extent of the cavern and the integrity of the system," and that the OCD had to take the actions I&W failed to take. As discussed above, the letter further required that I&W to submit a closure plan for the facility.



65. Delineation of the cavern is necessary to develop an appropriate closure plan. By the express terms of BW-006 the OCD may require submittal of a closure plan. See BW-006, Discharge Permit Approval Conditions, Paragraph 23. Proper monitoring and closure are required under Water Quality Control Commission rules. See 20.26.2.3107.A(10) and (11) NMAC (contingency plans and closure plans for discharge permits); 20.6.2.5005 NMAC (closure requirements for brine wells); 20.6.2.5209 NMAC (plugging and abandonment of brine wells); and 20.6.2.5210(B)(17) NMAC (measures necessary to prevent contamination after cessation of operations, including proper closing and post-operational monitoring).

**Claim 3: Failure to Provide Ground Water Monitoring**

66. The 2001 renewal of BW-006 was the first renewal after the discovery of brine leakage at the surface of the Eugenie #1. The 2001 renewal contained the following provision:

Groundwater Monitoring Program: OCD requires I&W Inc. to maintain a groundwater monitoring program to provide detection for any excursion of formation fluids outside of the extraction area. The following will be initially required:

A. Collect annual water samples from the two on-site monitor wells. These wells shall be purged, sampled and analyzed for General chemistry, total dissolved solids, pH (EPA method CFR 40 136.3) and New Mexico Water Quality Control Commission (WQCC) metals, all using EPA approved methods and quality assurance/quality control (QA/QC) procedures. Submit the analytical results in the annual report. All sampling shall be witnessed by OCD....

BW-006, Discharge Permit Approval Conditions, Paragraph 8 (2001).

67. The 2008 renewal of BW-006 contains the same requirements at Paragraph 20.A.

68. The “Brine Well Information Request Form” the OCD sent to I&W on August 1, 2008 requested information on ground water monitoring, and asked if the operator had submitted all reports to the OCD. I&W did not respond to the OCD’s request for information.

69. To date, I&W has provided ground water analysis information on only three occasions: April 2000, September 2001 and December 2002.

**Claim 4: Failure to Provide Injection/Production Volumes.**

70. Injection and production volumes can be used to calculate the amount of salt dissolved, and the size of the resulting salt cavern.

71. BW-006 requires the operator to report injection and production volumes. See BW-006, Discharge Permit Approval Conditions, Paragraph 6 (2001) and BW-006, Discharge Permit Approval Conditions, Paragraph 21.G (2008).

72. The “Brine Well Information Request Form” the OCD sent to I&W on August 1, 2008 required the operator to provide information on injection and production, including the total volume of fresh water injected into the brine well to date, the total volume of brine water produced to date, and how the operator determined those volumes. The form also asked the operator if it had submitted all reports to the OCD. I&W did not respond to that request.

73. I&W’s most recent report of injection and production volumes is for the first quarter of 2007. I&W did not shut in the Eugenie #1 well until July 22, 2008.

**Claim 5: Failure to Provide Analysis of Brine and Fresh Water**

74. In its August 10, 1995 letter notifying the OCD that it had acquired the Facility and was assuming the obligations under BW-006, I&W stated that it would “submit annual fresh and brine water analysis.”

75. The permit renewals for BW-006 in 2001 and 2008 require the operator to provide an analysis of the injection fluid and brine with each annual report. The analysis is for General Chemistry (Method 40 CFR 136.3) using EPA methods. See BW-006, Discharge Permit Approval Conditions, Paragraph 7 (2001) and BW-006, Discharge Permit Approval Conditions, Paragraph 21.H (2008).

76. OCD files contain information on analysis of brine water from the I&W Facility on the following occasions after I&W’s August 10, 1995 acquisition of the Facility: 10/6/95, 1/24/01, 12/4/01, and 1/25/06. OCD files contain information on analysis of fresh water injected at the I&W Facility on the following occasions after I&W’s August 10, 1995 acquisition of the Facility: 10/9/95, 1/24/01 and 12/4/01.

77. The “Brine Well Information Request Form” the OCD sent to I&W on August 1, 2008 asked if the operator had submitted all reports to the OCD. I&W did not respond to the OCD’s request for information.

## **II. APPLICABLE STATUTES AND RULES**

1. The Environmental Protection Agency granted primacy to the WQCC, the Environmental Improvement Division and the OCD over the underground injection control program for Class III wells in the State of New Mexico. 40 CFR 147.1601. In the grant of primacy, the Environmental Protection Agency cited and incorporated by reference New Mexico’s Water Quality Act.

2. The Environmental Protection Agency classifies brine wells as Class III underground injection control wells. 40 CFR 144.6(c)(3).
3. The WQCC enacted regulations specifically governing brine wells as Class III wells. See 20.6.2.5002 NMAC.
4. The WQCC delegated authority over Class III brine wells to the OCD. The OCD is the administrative arm of the OCC, a constituent agency of the WQCC under NMSA 1978, Section 74-6-2(J)(4).
5. Operation of a Class III well must be pursuant to a discharge permit. See 20.6.2.5101.B NMAC.
6. The WQA provides that the WQCC may require persons to obtain discharge permits from a constituent agency. NMSA 1978, Section 74-6-5.
7. When a constituent agency determines that a person violated or is violating a condition of a permit issued pursuant to that WQA, the constituent agency may issue a compliance order requiring compliance immediately or within a specific time period or issue a compliance order assessing a civil penalty or both. NMSA 1978, Section 74-6-10(A)(1).
8. Under the express terms of Respondent's discharge permit, and under WQA rules, the OCD may require Respondent to file a facility closure plan. BW-006, Discharge Permit Approval Conditions, Paragraph 23 (2008). 20.6.2.3107.A(10) and (11) NMAC (contingency plans and closure plans for discharge permits); 20.6.2.5005 NMAC (closure requirements for brine wells); 20.6.2.5209 NMAC (plugging and abandonment of brine wells); and 20.6.2.5210(B)(17) NMAC (measures necessary to

prevent contamination after cessation of operations, including proper closing and post-operational monitoring).

9. Under the express terms of Respondent's discharge permit, and under WQA rules, the OCD may require Respondent to post financial assurances. BW-006, Discharge Permit Approval Conditions, Paragraph 23 (2008). 20.6.2.5210(B)(17) NMAC and 20.6.2.3107.A(10) NMAC.

10. If a person fails to take corrective actions within the time specified in a compliance order, the constituent agency may assess a civil penalty of not more than twenty-five thousand dollars for each day of continued noncompliance with the compliance order. NMSA 1978, Section 74-6-10(F)(1).

11. For purposes of the WQA, "person" is defined to include corporations. NMSA 1978, Section 74-6-2(I).

### **III. CONCLUSIONS OF LAW**

1. I&W is a "person" as defined in NMSA 1978, Section 74-6-2(I).
2. I&W's operation of the Facility is subject to the provisions of the WQA, the rules adopted pursuant to the WQA, and the conditions of BW-006.
3. I&W is in violation of discharge permit BW-006 because it has failed to provide:
  - A report displaying all subsidence monitoring stations and monitoring completed, summarizing all subsidence tables and graphs to 0.01 feet, a map depicting the facility and monitoring points to scale with verification of certified surveyor geodetic datums or elevations;
  - A proposed schedule for long-term surveying to ensure public safety subsidence/collapse issues; and

- A health and safety plan for alerting the proper authorities, ensuring prompt evacuation of the community, and protection health and safety of the general public.

4. I&W is in violation of discharge permit BW-006 because it has failed to provide:

- Information on the size and extent of the solution cavern and geologic/engineering data demonstrating that continued brine extraction will not cause surface subsidence, collapse or damage to property, or become a threat to public health and the environment; and
- Subsidence monitoring.

5. I&W is in violation of discharge permit BW-006 because it has failed to provide the ground water monitoring program as required, including the submittal of annual analytical results.

6. I&W is in violation of discharge permit BW-006 because it has failed to provide injection/production volumes.

7. I&W is in violation of discharge permit BW-006 because it has failed to provide analyses of brine and fresh water.

8. OCD has authority under the WQA rules as the conditions of BW-006 agreed to by I&W to require I&W to close the site and to impose additional requirements on I&W to prevent a collapse or damages to property or public health.

9. The OCD may issue a compliance order requiring corrective actions under NMSA 1978, Section 74-6-10(A)(1).

#### **IV. COMPLIANCE ORDER**

Based upon the foregoing findings and conclusions, I&W is hereby ordered to take the following corrective actions by April 22, 2010:

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1. Submit the following information to the OCD as required by BW-006:
  - a subsidence monitoring system report, as required by Paragraph 20.B of discharge permit BW-006 (2008);
  - a health and safety plan, as required by Paragraph 20.B of discharge permit BW-006 (2008);
  - Capacity/cavern configuration information, as required by Paragraph 21.F of discharge permit BW-006 (2008);
  - Ground water monitoring analytical reports, as required by Paragraph 20.A of discharge permit BW-006 (2008);
  - Injection/production volume reports as required by Paragraph 21.6 of discharge permit BW-006 (2008); and
  - Analyses of brine and fresh water, as required by Paragraph 21.H of discharge permit BW-006 (2008).
  
2. Reimburse the OCD for the \$563,420.00 in costs incurred to establish and monitor the survey system and early warning system.
  
3. Post a financial assurance in the amount of \$1,000,000 in the form of a surety bond to provide funding for the continued operation of the subsidence monitoring system and early warning system.
  
4. Submit a Facility closure plan to prevent exceeding the standards of Section 20.6.2.3103 NMAC or the presence of a toxic pollutant in ground water in the event of a cavern collapse. The Facility closure plan shall include, at a minimum:
  - A report on closure, plugging and abandonment measures already taken for the Eugenie #1 and the Eugenie #2;
  - A plan for assuming financial responsibility for the monitoring system put in place by the OCD and continued monitoring by an independent third party acceptable to the OCD;
  - A plan for assuming financial responsibility for the early warning system put in place by the OCD and continued operation of the early warning system by an independent third party acceptable to the OCD;
  - Run-on/run-off controls to prevent water ponding over the area of the brine well cavern;
  - A maintenance plan for the run-on/run-off controls;
  - A maintenance plan, including security of all monitoring benchmarks, survey points and utilities that support the early warning system;

- An annual post-closure report;
- A proposal for closing the facility providing for either the safe backfilling of the salt cavern in place, or for the acquisition of surrounding properties which may be adversely affected along with long-term site security and monitoring;
- Additional financial assurance to support the proposal for closing the facility; and
- A contingency plan to remediate ground water that will be impacted by a collapse of the cavern.

## **V. CIVIL PENALTY**

1. NMSA 1978, Section 74-6-10(C) authorizes assessment of a civil penalty of up to \$15,000 per day for each violation of NMSA 1978, Section 74-6-5, any regulation adopted pursuant to that section, or any permit issued pursuant to that section. Section 74-6-10(C) also authorizes assessment of a civil penalty of up to \$10,000 per day for each violation of a provision of the WQA other than the provisions in Section 74-6-5 or of a regulation or water quality standard adopted pursuant to the WQA.

2. The OCD hereby assesses a penalty of \$2,637,000.00 against I&W for I&W's failure to comply with the terms of BW-006 requiring submittal of a subsidence monitoring system report, a health and safety plan, capacity/cavern configuration information, ground water monitoring analytical reports, injection/production volume reports, and brine and fresh water analyses. In calculating the penalty amount, the OCD considered: the number of violations; the serious nature of the violations; the potential risk to public health, welfare, environment and property posed by the violations; the length of time I&W has been out of compliance; the willfulness of the violations; and the economic benefit to I&W of the non-compliance.

## **VI. RIGHT TO ANSWER AND REQUEST A HEARING**



1. Pursuant to NMSA 1978, Section 74-6-10(G), Respondent has the right to request a hearing to contest the Order.

2. An Order hearing shall be initiated by the filing of a Request for Order Hearing within thirty days after the Compliance Order is served. The Respondent shall file the original of the Request for Order Hearing with the Water Quality Control Commission, and serve a copy on the OCD. See 20.1.3.400.A(1) NMAC.

3. The Request for Order Hearing shall also serve as an Answer to the Compliance Order and shall:

(a) clearly and directly admit or deny each of the factual assertions contained in the Compliance Order; but where the Respondent has no knowledge of a particular factual assertion and so states, the assertion may be denied on that basis. Any allegation of the Compliance Order not specifically denied shall be deemed admitted;

(b) indicate any affirmative defenses upon which the Respondent intends to rely. Affirmative defense not asserted in the Request for Order Hearing, except a defense asserting lack of subject matter jurisdiction, shall be deemed waived;

(c) be signed under oath or affirmation that the information contained therein is, to the best of the signer's knowledge, believed to be true and correct; and

(d) attach a copy of the compliance order.

See 20.1.3.400.A(2) NMAC.

## **VII. FINALITY OF ORDER**

1. This Order shall become final unless the Respondent files a Request for Order Hearing with the Water Quality Control Commission within 30 days of receipt of

this Order. Failure to file a Request for Order Hearing constitutes an admission of all facts alleged in the Order and a waiver of the right to a hearing under NMSA 1978, Section 74-6-10(G) concerning this Order. Unless the Respondent files a Request for Order Hearing the Order shall become final.

### **VIII. SETTLEMENT CONFERENCE**

1. Respondent may confer with the OCD concerning settlement, regardless of whether Respondent files a Request for Order Hearing. The Water Quality Control Commission encourages settlement consistent with the provisions and objectives of the WQA and applicable rules. Settlement discussions do not extend the thirty (30) day deadline for filing the Respondent's Request for Order Hearing, or alter the deadlines for compliance with this Order. See 20.1.3.700.B NMAC. Settlement discussions may be pursued as an alternative to and simultaneously with the hearing proceedings. The Respondent may appear at the settlement conference itself and/or be represented by legal counsel.

2. Any settlement reached by the parties shall be finalized by a written, stipulated final order, which must resolve all issues raised in the Order, shall be final and binding on all parties to the Order, and shall not be appealable. If reached more than thirty days following the issuance of this Compliance Order, the Water Quality Control Commission must approve a stipulated final order.

3. To explore the possibility of settlement in this matter, contact Glenn von Gonten, Environmental Bureau, New Mexico Oil Conservation Division, 1220 S. St. Francis Drive, Santa Fe, NM 87505, (505) 476-3488.

4. Compliance with the requirements of this Order does not relieve Respondent of the obligation to comply with all other applicable laws and rules.

**IX. TERMINATION**

This Order shall terminate when Respondent certifies that all requirements of this Order have been met and the OCD has approved such certification, or when the parties have entered into a stipulated final order, which has been, if applicable, approved by the Water Quality Control Commission.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Mark Fesmire, P.E.  
Director, Oil Conservation Division