

**Wyoming Department of Environmental Quality
Water Quality Division, Underground Injection Control Program
Responses to Public Comments**

Permit: Lost Creek ISR, Class I, Permit 09-586

Public Comment Period: March 26, 2010 to April 26, 2010

Date of Responses: May 26, 2010

Comment 1

From: Mark Kot
Sweetwater County Community Development Division
80 W. Flaming Gorge Way, Suite 109
Green River, Wyoming 82935

Date Received: May 6, 2010 (written March 30, 2010)

Description:

Lost Creek ISR has obtained a Sweetwater County Development Plan and will be required to obtain a construction/use permit prior to construction of each Class I well. County permits are conditioned upon compliance with other local, state, and federal regulations.

Response:

Section U of the draft permit states, "This permit does not authorize . . . any infringement of federal, state, or local laws or regulations." Sweetwater County's requirement that Lost Creek ISR comply with state regulations helps ensure that Lost Creek ISR is aware of and will fulfill its responsibilities to the state.

Permit Changes: None.

Comment 2

From: Patrick Madigan
U.S. Bureau of Land Management
P.O. Box 2407
Rawlins, Wyoming 82301-2407

Date Received: April 9, 2010

Description:

The Bureau of Land Management agreed that use of the water in the proposed discharge zone would be economically impractical.

Response:

This comment supports WDEQ's Class VI designation of the Fort Union Formation at depths of 6,300-9,600 feet.

Permit Changes: None.

Comment 3

From: Charles W. Popovich
1311 LaCledde Street
Sheridan, Wyoming 82801

Date Received: April 19, 2010 (by email)

Description:

WDEQ should impose no permit conditions that would delay development of the Lost Creek Project.

Response:

The permit for the Class I disposal wells is only one of several permits Lost Creek ISR must obtain for the Lost Creek Project. This permit will be issued prior to the Land Quality Division's permit to mine and prior to the U.S. Nuclear Regulatory Commission's source material license.

Permit Changes: None.

Comment 4

From: John Emmerich
Wyoming Game and Fish Department
5400 Bishop Blvd.
Cheyenne, Wyoming 82006

Date Received: April 22, 2010, revised letter received May 18, 2010

Description:

The Lost Creek Project lies within core sage grouse habitat and the Governor's Executive Order 2008-2 on Greater Sage-Grouse Core Area Protection requires that new land use or development "be authorized or conducted only when it can be demonstrated by the state agency that the activity will not cause declines in Greater Sage-Grouse populations." The Governor's Sage Grouse Implementation Team has adopted restrictions on timing of activity, areas and number of habitat disturbances, and surface occupancy within 0.6 mile of a lek.

Impacts to aquatic resources in the ephemeral drainages in the project area would be minimal.

The department recommended that Lost Creek ISR conduct surveys and observations of Great Basin spadefoot toads.

Response:

Because the Class I wells will be within the area covered by the Land Quality Division's permit to mine, wildlife protection issues are best addressed in the permit to mine. Given the limited footprint of a Class I wells, they could individually and collectively comply with the restrictions suggested by the Game and Fish Department whereas the cumulative impacts of the Class I wells

and the other mine facilities might not. The permit to mine has not yet been issued and the Land Quality Division is currently working closely with the Game and Fish Department to develop conditions that will be protective of wildlife.

Permit Changes:

The following has been inserted into the final permit.

“The following conditions are adopted to comply with the Governor’s Executive Order 2008-2 on Greater Sage-Grouse Core Area Protection:

- No construction activities related to the Class I wells may begin until Lost Creek ISR has obtained a permit to mine from the Land Quality Division.
- All activities and habitat disturbances related to the Class I wells shall be covered by the relevant stipulations to protect sage grouse habitat in the permit to mine.
- Any conditions in the permit to mine regarding the Great Basin spadefoot toad shall become conditions of this permit to the extent they are applicable to the construction and operation of the Class I wells.”

Comment 5

From: Stephen S. Tuber
U.S. Environmental Protection Agency, Region 8
1595 Wynkoop Street
Denver, Colorado 80202-1129

Date Received: April 26, 2010

Description:

As WDEQ offered to provide a summary document detailing the basis for the proposed approval of the Lost Creek permit, including WDEQ’s classification of the aquifers below the injection zone as non-underground sources of drinking water, EPA requested that such documentation be provided to EPA and the public for review and comment in an additional 30-day public comment period.

EPA rated the U.S. Nuclear Regulatory Commission’s (NRC) Supplemental Environmental Impact Statement (SEIS) for the Lost Creek Project as inadequate due to insufficient discussion of alternatives to disposal in Class I wells, waste management impacts, impacts by potential air pollutants, and mitigation measures. Information developed by NRC to revise the SEIS and respond to EPA’s comments may be useful to WDEQ.

Response:

WDEQ provided supplementary information on the water quality of the Fort Union and lower aquifers to EPA by email on May 28, 2010 and to the public by posting on the Water Quality Division web site (<http://deq.state.wy.us/wqd/events/index.asp>) on May 28, 2010. WDEQ also agreed that additional documentation will be provided for subsequent Class I permits.

Because no one other than EPA requested such information, the Administrator of the Water Quality Division informed EPA of his decision not to hold a second public comment period in a May 14, 2010 letter.

Permit Changes: None.

Changes by WDEQ

The discharge zone of LC DW No.1 was changed to 6,139-9,590 feet based on further clarification by Lost Creek ISR.

The tops of the discharge zones for LC DW No. 2, No. 3, No. 4, and No.5 were raised by 50 feet to 6,250, 6,350, 6,450, and 6,600 feet, respectively, to better account for uncertainty in the depths to the top of the Fort Union Formation.

References to “injection zone” were changed to “discharge zone” to avoid any ambiguity in the application of Ch13, Sec.12(a) or Ch13, Sec18(b)(ii). In practice, the injection zone could be considered the interval between the top and bottom perforations whereas the discharge zone would include parts of the receiving aquifer above and below the perforations.

The last paragraph in Wells and Areas of Review was deleted because it is redundant with Radius of Influence under Operational Monitoring.

Table 4, with aquifer parameters and fluid characteristics, and the discussion of area of review and radius of influence was removed as inappropriate for inclusion in the permit.

Equations, pressures, and heads were removed from Table 4 (old Table 5) as too busy. Only the results of the area of review calculations were retained in Table 4.

Table 6, with additional waste front and pressure front calculations, was removed as inappropriate for inclusion in the permit.

The statement about aquifer exemption under Groundwater Classification was removed.

The maximum instantaneous injection rate was moved to Table 6 (old Table 8). The sentence on alarms and kill switches was moved from Monitoring Requirements to Authorized Operations.

The description of permitted waste was modified to include wash water for the waste disposal system equipment, drilling fluids from wells at the Lost Creek project, and storm water, which were inadvertently omitted from the draft permit. A reference to Ch13, Sec8(d)(v) was added.

The Standard Industrial Classification Code was deleted as obsolete. The North American Industry Classification System code replaces it.

The requirement for a kill switch to prevent excessive injection pressure was moved from Monitoring Requirements to Authorized Operations.

The requirement for placing a down hole pressure device within 20 feet of the top of the perforations was replaced by a requirement for placement within 100 feet of, above or below,

the packer to allow for long tail pipes below the packer and for scaled tubing that would prevent lowering a pressure device to the bottom of the tubing.

The reference to tubing friction loss was removed from Injection Pressure, Authorized Operations, and Table 6 (old Table 8) as it is not generally considered in the calculation of limiting surface injection pressure.

Clarification on when step-rate test data must be submitted was included in Authorized Operations.

Annulus pressure limits reverted to past practice of setting the minimum at 200 psig and the maximum at 800 psig.

Maximum injection rate and maximum and minimum annulus pressures were added to Table 6 (old Table 8).

The restriction on packer placement was changed to 500 feet as required in the regulation.

Language under New Well Construction, Authorized Operations, was changed to verbatim repetition of the applicable regulations.

The condition that financial assurance be demonstrated before injection was added to New Well Construction.

A redundant reference to Ch13, Sec18(b)(i) was removed from Prohibitions.

Language under Operation and Maintenance was changed to verbatim repetition of the applicable regulations.

Paragraph 1 under Monitoring Requirements was removed due to redundancy with Section J, Sampling and Test Procedures.

Sections on Pre-Operational Monitoring, Post-Operational Monitoring, and those related to Chapter 13, Section 13(f) were removed because there are no monitoring requirements.

References to alarms and kill switches under Operational Monitoring were transferred to Authorized Operations.

Under Operational Monitoring, a statement requiring that the injection and fall-off periods for the first annual pressure fall-off test be calculated using "UIC Pressure Falloff Testing Guideline" (USEPA, Region 6, August 2002) was inserted for clarification.

Where applicable, the due date for well test results was changed to either the next quarterly report due date or within 30 days, whichever is later, consistent with the language in Ch13, Sec15(f).

The requirement for updating the radius of influence calculation after each annual pressure fall-off test was changed to eliminate the option of using alternate methods and to require a new map showing the updated radius regardless of the change in radius.

Injectate monitoring was changed to allow sample collection from the waste discharge pipe from the uranium processing plant rather than at the individual wellheads because the applicant confirmed that a single waste stream will exit the processing plant and will then be partitioned to the various disposal wells. If multiple wells are injecting simultaneously, the waste in each would be the same. Sampling procedures were clarified after the applicant stated it could analyze for temperature, specific conductance, pH, specific gravity, and total dissolved solids on site. It was mutually agreed that the applicant would collect samples weekly for measurement of the first five parameters in Table 7 and then report the mathematical average for the quarter. Weekly samples would be physically composited and then sent to a certified lab quarterly for the uranium and radium analyses.

Precision and detection limits were removed from Table 7 (old Table 14) but a requirement that uranium and radium be analyzed in a lab certified for radionuclide analysis by EPA was added. Method 200.7 was added to Table 7 to provide more flexibility for uranium analyses.

The discussion of reporting units under Sampling and Test Procedures was revised to make it clear that strontium and gross alpha particle radioactivity don't necessarily have to be measured.

Under Records and Reports, paragraph 1, well "plugging" was replaced by well "closure" because regulations use the term well closure.

Language under Records and Reports, paragraph 3, was changed to verbatim repetition of the applicable regulations.

Records and Reports, paragraph 4, was moved to Noncompliance Events.

Report submission in Records and Reports, paragraph 6 (old paragraph 7), and where applicable elsewhere in the permit, was changed to "to the Administrator" rather than to the Water Quality Division to more closely follow the language in the regulations.

Records and Reports, paragraph 6 (old paragraph 7), was changed to specify that data on rates, pressures, and volumes be reported for each well.

Reference to a target annulus pressure was removed from Record and Reports, paragraph 6 (old paragraph 7) due to the reversion to 200-800 psig limits.

The reference to Chapter 13, Section 15(c)(ii) was removed from Records and Reports, paragraph 6 (old paragraph 7) because it does not refer to all permit exceedances.

The requirement to report percentages of the waste discharge derived from production versus groundwater restoration was removed because comparable information on mine unit status is reported to the Land Quality Division under the permit to mine.

Acceptable file types were added to Records and Reports, paragraph 7 (old paragraph 8).

Clarification that well test reports are to be submitted with the next quarterly report or within 30 days was added to Records and Reports.

Under Records and Reports, reports for aborted operations were put in a separate paragraph from reports for plugging and abandonment.

Records and Reports, paragraph 8, was modified to specify the same due date as the regulation.

Records and Reports, paragraph 11, was moved to the end of the section so that if it were deleted for a permit without any new wells, it would not change the paragraph numbers of other items in Records and Reports.

In the first paragraph under Permit Conditions, “shall” was changed to “should” and the three month notice was changed to four months. The last sentence was deleted to give the Administrator more flexibility.

The possibility of a “suspended” permit was removed from Permit Conditions because it is not mentioned in the regulations.

Causes for revocation or modification of a permit under Permit Conditions were changed to verbatim repetition of the applicable regulations.

A requirement that the two parts of a mechanical integrity test be completed within three months of each other was added under Mechanical Integrity.

Under the description of Part I of Mechanical Integrity, the pressure differential at the packer was increased from 10 to 20 psi after realization that measurement error could exceed 5 psi and “loss” was changed to “change” because an increase in pressure would suggest transient effects that invalidate the test.

Part II of Mechanical Integrity was clarified to show that fluid movement behind casing is not a concern within the discharge zone but is only a concern above the topmost perforation.

The required notice to WQD prior to a mechanical integrity test was changed from two weeks to 30 days to give WQD greater flexibility in coordinating witnessing an MIT with inspections of other facilities in the area.

In the first and second sentences of the last paragraph under Mechanical Integrity, “permitted receiver” was changed to “discharge zone” because “permitted receiver” is not defined elsewhere in the permit.

Circumstances which would require plugging and abandonment of a disposal well were added to Plugging and Abandonment.

Notice required prior to plugging and abandonment was changed from one month to 90 days.

Closure of related surge ponds was added to the surface reclamation required during plugging and abandonment of a disposal well.

Under Duties of Permittee, the duty to provide records was put in a separate heading rather than being included under the duty to provide information for permit modification.

In the first sentence under Financial Responsibility, financial “responsibility and resources” was changed to financial “assurance” in recognition of WDEQ’s current practice of no longer accepting financial statements or statements of resources to demonstrate financial responsibility.

Under Financial Responsibility, the bond amount required for LC DW No. 4 and LC DW No. 5 was deleted because bond amounts for the Land Quality Division’s permit to mine are reviewed annually and the cost of well plugging and abandonment may rise before the wells are constructed.

For Special Permit Conditions, WDEQ accepted the applicant’s request to substitute water quality analyses for fracture finder logs in order to demonstrate the hydraulic integrity of the confining zone.

Language under Noncompliance was changed to verbatim repetition of the applicable regulations.

Descriptions of the required oral and written reports were moved from Records and Reports to Noncompliance.

The first paragraph under Severability had been copied to Permit Conditions in the draft permit so this paragraph is redundant and was deleted.

A list of abbreviations used in the text was added for easy reference.

The following Water Quality Rules and Regulations from Chapter 13 were added to the permit for completeness:

Section 9(d)(xxv) under Authorized Operations,
Section 9(d)(xxiv) under Authorized Operations,
Section 9(d)(xiii) under Environmental Monitoring Program for Groundwaters of the State,
Section 14(a) under Sampling and Test Procedures,
Section 8(i) under Permit Conditions,
Section 17(c) under Financial Responsibility, and
Section 8(j) under Permit Transfer.

In addition, there were several changes to wording and punctuation to make the permit easier to understand.