



THE DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CASPER FIELD OFFICE



DECISION RECORD/FINDING OF NO SIGNIFICANT IMPACT

Howell Petroleum Corporation – Phase III/IV CO₂ Enhanced Oil Recovery Project – Salt Creek Oil Field Environmental Assessment WY060-EA06-18

Introduction

Howell Petroleum Corporation (HPC) proposes to continue their ongoing Carbon Dioxide (CO₂) Enhanced Oil Recovery (EOR) Project in the Second Wall Creek Sandstone reservoir in Salt Creek oil field by implementing Phase III/IV of the CO₂ EOR Project. Implementation of Phase III/IV will be done in accordance to a Plan of Development (POD) dated January 2006 and includes master drilling and surface use plans.

The first two phases of the CO₂ EOR Project have been completed with associated increases in oil production and recovery. The "Salt Creek Environmental Assessment CO₂ EOR Project" (EA WY-060-04-001) was completed in November of 2003 and assessed the potential environmental impacts of developing a full-field CO₂ EOR Project over 10 expansion phases and analyzed the detailed development of Phase I of the CO₂ EOR Project. In April of 2004, the "Environmental Assessment of Howell Petroleum Corporation's CO₂ Phase II Expansion, CO₂ EOR Project, Salt Creek Oil Field" (EA WY060-04-053) analyzed the environmental impacts of implementing Phase II of the CO₂ EOR Project.

The proposed Phase III/IV of the CO₂ EOR Project encompasses approximately 1,423-acres in Sections 18, 19, and 30, T. 40 N., R. 78 W., and Sections 13, 24, and 25, T. 40 N., R. 79 W. The electric ancillary facilities are located in Sections 30 and 31, T. 40 N., R. 78 W., and Sections 34, 35, and 36, T. 40 N., R. 79 W. Phase III/IV would require 92 injection wells and 75 production wells. In addition, HPC would have to evaluate all of the existing wells in the Phase III/IV, re-plug 142 existing abandoned wells, and reactivate 80 previously abandoned wells. Up to 14 additional new wells would also have to be drilled to implement the project.

Facilities required for the implementation of Phase III/IV would be similar to those installed for Phases I and II of the project and include new flow lines, injection lines, main water, oil, and CO₂ trunk lines, and production and injection headers. Existing facilities and produced water discharge facilities at LACT 4 and 5 would also be utilized. New fiberglass flow lines would be installed for each producing well and run to 8 new production test headers. New injection lines would be installed for each injection well and run to 8 new injection headers. The new injection headers would distribute either CO₂ or water and the injection system design would be similar to the design for Phases I and II.

A new compressor station would be installed in the NW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 31, T. 40 N., R. 78 W., to handle the increased volume of injected CO₂ and an electrical substation and associated power lines would be installed to get electricity to the new compressor station. The electrical substations, including the electric substation authorized by a ROW, will be located in the NE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 34, T. 40 N., R. 79 W. The ROW power lines will be located in the SW $\frac{1}{4}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$ and the staging areas in NW $\frac{1}{4}$ SW $\frac{1}{4}$ and NW $\frac{1}{4}$ SE $\frac{1}{4}$, and the new constructed portion of the access road in NE $\frac{1}{4}$ SW $\frac{1}{4}$, NW $\frac{1}{4}$ SE $\frac{1}{4}$, all within Section 34, T. 40 N., R. 79 W.

Implementation of Phase III/IV and construction of the electric facilities would result in the total surface disturbance of 523.4 acres. This total includes 356.7 acres of previously disturbed surface, 114.9 acres of new temporary use disturbance, and 52.3 acres of new disturbance. After successful reclamation, it is estimated that only 21.6 acres of the total disturbed surface would exist as new long term surface disturbance. The above acreage figures are slightly adjusted from the figures disclosed in the EA, but they are addressed in the POD for Phase III/IV which was updated in January of 2006.

In addition to the wells and facilities, HPC has also developed a comprehensive CO₂ Seep Containment Plan in response to the CO₂ seep areas that have developed in Phase I of the CO₂ EOR Project and due to the proximity of Phase III/IV to the communities of Midwest and Edgerton, Wyoming. The CO₂ Seep Containment Plan includes remedial well work prior to implementing the project, establishing a subsurface pressure "water curtain" around the town of Midwest, installing monitor wells, installing shallow vertical wells in fractured zones below seep areas, installing horizontal bores below seep areas, and installing drains in areas where CO₂ seeps surface. The containment plan includes measures that are designed to prevent or contain the surface expression of CO₂ seeps thus eliminating or minimizing potential risks to human health, safety, and the environment.

The Bureau of Land Management is required by the National Environmental Policy Act of 1969 (NEPA) to review the environmental impacts associated with HPC's proposed Phase III/IV CO₂ EOR Project through the preparation of an environmental analysis; in this case an Environmental Assessment (EA). The EA is available to the public at the Casper Field Office at 2987 Prospector Drive, Casper, Wyoming 82604.

Public Involvement

HPC held a town meeting in Midwest on July 26, 2005, to present the proposed development for Phase III/IV of the CO₂ EOR Project. Topics discussed included: (1) future phase development within the Salt Creek oil field, (2) CO₂ seeps from Phases I and II, (3) a CO₂ Seep Containment Plan, and (4) monitoring plans for the town of Midwest. In addition, comments from the Wyoming Game and Fish Department were received in response to the Notice of Scoping for the environmental assessment for Phase III/IV of the CO₂ EOR Project.

Finding of No Significant Impact

The proposed action is in conformance with the Platte River Resource Area Resource Management Plan of July 1985. I have reviewed the above mentioned EA and determined that HPC's proposal to implement Phase III/IV of the CO₂ EOR Project will not significantly affect the quality of the human environment and an environmental impact statement is not required. This determination is based on the rationale that significance criteria as defined by the Council on Environmental Quality (**40 CFR 1508.27**) are not being met, or if met will be mitigated to a level that will not be significant. The following rationale was used to determine that significant impacts were not present for each criteria mentioned in **40 CFR 1508.27**:

Rationale for Decision

- (1) The short and long term impacts as disclosed in the EA are not considered to be significant to the human environment. The short term impacts from implementation of the proposed action are local and not national or regional in nature.
- (2) Implementation of the proposed action will not adversely affect the goals of the Platte River Resource Area Resource Management Plan.
- (3) Mitigation measures identified in the EA and in the master surface use plan for Salt Creek Field will be applied and will limit the adverse impacts of the proposed action.
- (4) Due to the development and implementation of a comprehensive CO₂ Seep Containment Plan, public health and safety will not be affected by the proposed action.
- (5) There will be no significant irreversible resource commitments or irretrievable loss to areas of critical environmental concern, cultural resources, prime or unique farmlands, Native American religious concerns, threatened and/or endangered species, wetlands or riparian zones, wild and scenic rivers, or wilderness.
- (6) There are no known affects on the human environment that are highly uncertain or involve unique or unknown risks.
- (7) The proposed action does not set a precedent.
- (8) The proposed action does not violate Federal, State, or local law requirements imposed for the protection of the environment.

DECISION

It is my decision to approve the proposed action, as described in EA WY060-EA06-18, the Master POD, and the revised POD for Phase III/IV of the CO₂ EOR Project along with the mitigation measures identified below.

Air Quality, Water Quality, Wetlands, Riparian, Visual, Soils, & Vegetation Resources Protection Measures and Mitigation

- (1) The Applicant Committed Environmental Protection Measures identified in Section 2.1.6 of EA WY060-04-001 for the Salt Creek CO₂ EOR Project shall apply to all project components for Phase III/IV.
- (2) Individual components of Phase III/IV shall use to the greatest extent possible existing well pads, access roads, facilities, and power lines to minimize areas of disturbance.
- (3) Pipelines shall be installed within the same corridor and/or follow existing right-of-ways and linear features, e. g. roads, whenever possible. HPC shall have a Construction Supervisor to ensure that pipeline construction is completed per the original design and specifications in the approved permit.
- (4) If pipeline crossings of streams will be done by boring underneath the stream, boring pits shall be located far enough back from the channel to prevent bank instability.
- (5) Where pipeline crossings of perennial or intermittent streams will be trenched, stream banks should be re-stabilized with large angular rock (greater than 2 feet in one dimension) or wire enclosed riprap structures. Riprap should be placed from the channel bottom to the top of the normal high water line on the bank. Double-ditching techniques should be used to separate the top one-foot of stream bottom substrate from deep soil layers and the substrate layers should be replaced in the same order that they are removed.
- (6) For pipeline crossings of streams, riparian canopy or stabilizing vegetation should not be removed if possible. Crushing or shearing streamside woody vegetation is preferable to complete removal and any such vegetation that is removed should be re-established as soon as possible following completion of the crossing.
- (7) Riparian areas and floodplains should not be used as staging or refueling areas and all chemicals, solvents, and fuels should be kept at least 150 feet away from any streams or riparian areas.

Human Health & Safety Protection Measures and Mitigation

- (1) The comprehensive CO₂ Seep Containment Plan as described in Section 2.1.3 of EA WY060-EA06-18 and the POD for Phase III/IV shall be implemented for Phase III/IV of the CO₂ EOR Project.

Range Management and Grazing Resources Protection Measures and Mitigation

- (1) HPC shall coordinate with the grazing lessee to minimize grazing impacts from the implementation of Phase III/IV. Options to minimize grazing impacts shall include but not be limited to temporary fencing of reclaimed areas and providing alternate grazing pastures or supplemental livestock feed.
- (2) Whenever possible, construction activities shall be conducted when the construction area is not actively in use for grazing.
- (3) Fences shall be constructed to prevent conflict between grazing operations and oil field development activities.
- (4) Fences shall be constructed around production facility areas that present a risk to livestock or to prevent damage to the facility from livestock.

Wildlife & Special Status Species Protection Measures and Mitigation

- (1) No drilling or surface disturbing activities shall occur within ½-mile of an occupied raptor nest from February 1st through July 31st without the consent of the Authorized Officer.
- (2) New electric distribution lines shall be built in accordance to the Avian Power Line Interaction Committee's (APLIC) "Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996 (APLIC 1996)".
- (3) Existing electric distribution lines and/or electric structures where future bird fatalities may be recorded shall be retrofitted according to the APLIC guidelines.
- (4) Existing de-energized electric distribution lines that are re-energized in the future shall also be retrofitted according to the APLIC guidelines.
- (5) If project development occurs within suitable mountain plover habitat from April 10th through July 10th surveys shall be required in accordance to BLM Instructional Memorandum No. WY-2004-035. Two surveys shall be conducted that are 14 days apart and the results need to be submitted to the Authorized Officer for approval prior to initiating any project actions.
- (6) Project development shall avoid active prairie dog colonies whenever possible. In the event project development can not avoid a prairie dog colony, the applicant shall advise the Authorized Officer and get approval prior to proceeding with the action.

This decision does not grant final approval for the project components in the Phase III/IV of the CO₂ Project. Before any permit is issued authorizing an action on public lands (i.e. Application for Permit to Drill, Sundry Notice and report on Wells, or Right-of-Way) the final location for each well site, access road, pipeline, header, production unit, utility line, or other facility, the CFO shall make a site-specific evaluation specifically through a categorical exclusion (CX), a documentation of NEPA adequacy (DNA) or an environmental assessment (EA) which may be required to conduct the site-specific evaluation in accordance with the BLM NEPA Handbook (H-1790-1) and Section 390 of the Energy Policy Act of 2005.

Necessary permits and authorizations from the Bureau of Land Management will be issued pursuant to the Mineral Leasing Act of 1920, as amended, and the Federal Land Policy and Management Act of 1976, as amended, and will be subject to the rules and regulations in 43 CFR 2800 and 43 CFR 3000. All activities associated with federal oil and gas development, operation and production, and abandonment would be conducted in compliance with all applicable Federal, State and County laws, regulations, and stipulations.

This decision is based on the "Salt Creek Environmental Assessment CO₂ EOR Project" (EA WY-060-06-18) completed for the Phase III/IV Proposed Action. This decision applies only to the public land surface and federal mineral estate subject to administration by the BLM. Policies for development and land use decisions within the project area are contained in the Final Platte River Resource Area (PRRA) Resource Management Plan (RMP) and Record of Decision (ROD) (BLM 1985).

APPEAL OPPORTUNITY

This decision is subject to appeal. Under BLM regulation, this decision is subject to administrative review in accordance with 43 CFR 3165. Any request for administrative review of this decision must include information required under 43 CFR 3165.3(b) State Director Review, including all supporting documentation. Such a request must be filed in writing with the State Director, Bureau of Land Management, P. O. Box 1828, Cheyenne, WY 82003 within 20 business days of the date of this decision.

APPROVED BY:

/s/ Patrick Moore
Assistant Field Manager, Lands and Minerals
Casper Field Office

February 2, 2006
Date