

Documentation of Land Use Plan Conformance and NEPA Adequacy (DNA)
U.S. Department of the Interior Bureau of Land Management
Grand Junction Field Office, Colorado
Red Rock Gathering Company, LLC HDU Gas Gathering Pipeline Right-of-Way
DOI-BLM-CO-130-2014-0021-DNA

Background

On May 1, 2013, the BLM Grand Junction Field Office (BLM-GJFO) issued a Finding of No Significant Impact (FONSI) and a Decision Record (DR) for the Black Hills DeBeque Exploratory Proposal Environmental Assessment (EA). The exploratory proposal was submitted by Black Hills Plateau Production, LLC (Black Hills). Also on May 1, 2013, four Black Hills Applications for Permit to Drill (APDs), proposed as part of the DeBeque Exploratory Project, were approved by the BLM GJFO, for Federal Wells 9-11AH, 9-11BH, 9-41AH, and 9-41BH, in the Homer Deep Unit.

In February 2014, Red Rock Gathering Company, LLC (RRGC) filed a right-of-way application for a gas gathering pipeline which is one of the components analyzed in the Black Hills DeBeque Exploratory Proposal EA. Construction and operation of the gas pipeline is the Proposed Action for this Determination of NEPA Adequacy (DNA).

A. Purpose and Need:

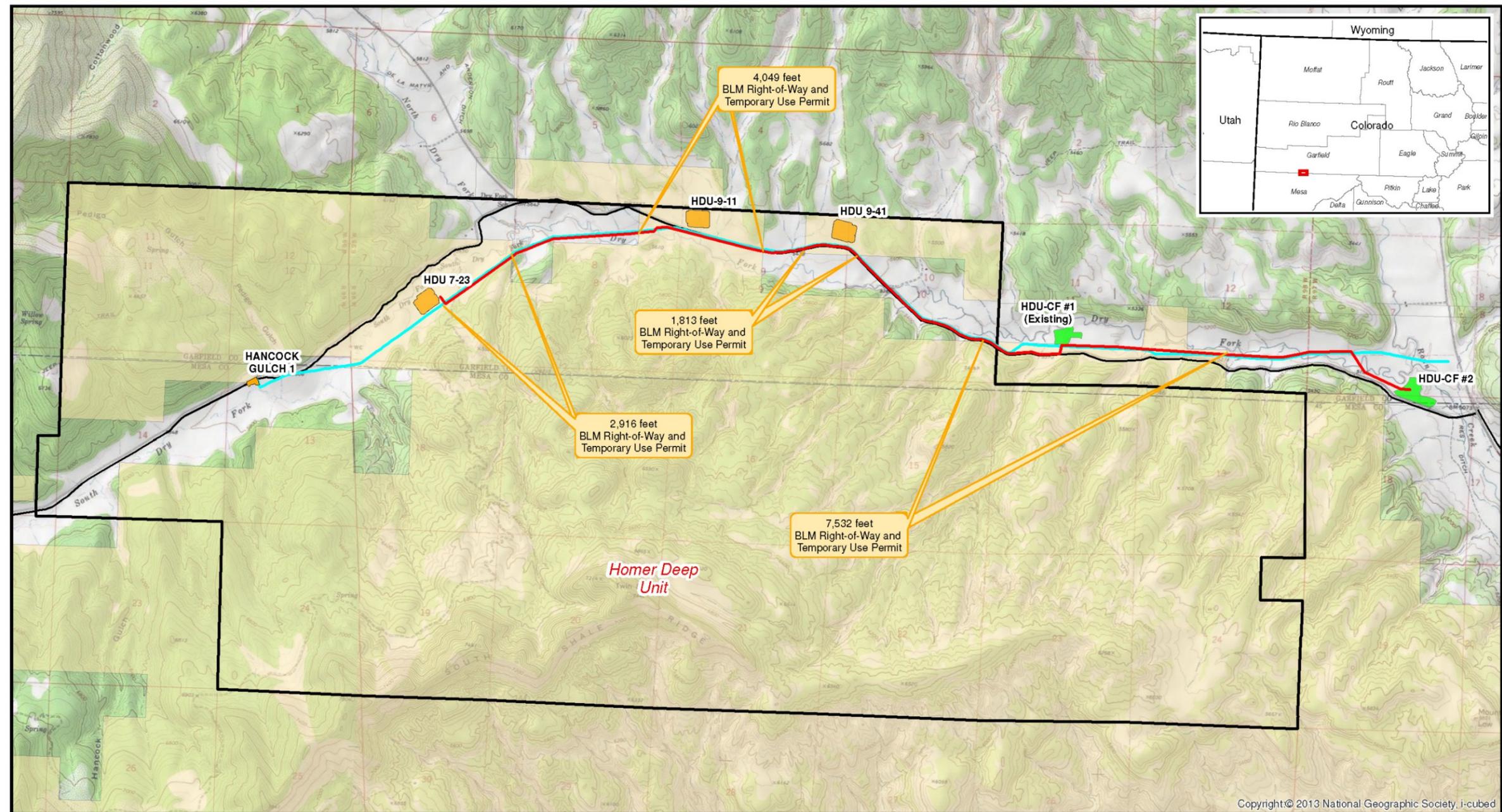
The purpose for the Proposed Action (Red Rock Gathering Company, LLC – RRGC HDU Gas Gathering Pipeline ROW) is to provide the applicant with the opportunity to construct and operate infrastructure that would support the development and exploration of the oil and gas resources in the Homer Deep Unit.

The need for the Proposed Action is established under the Mineral Leasing Act of 1920 (MLA) which establishes the BLM's responsibility to respond to oil and gas pipeline right-of-way applications and temporary use permits.

B. Proposed Action:

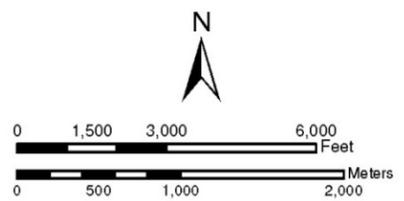
The Black Hills Exploratory Proposal EA (Section 2.2.1) described installation of 25.35 miles of gas gathering, water supply, and produced water pipelines to be co-located in the same trench within or immediately adjacent to existing, upgraded, or proposed roads and pipelines. Fifty feet of disturbance width was approved for installation of the gathering pipelines.

RRGC proposes to construct and operate the HDU Gas Gathering Pipeline which is a component included in the pipelines discussed above and analyzed in the DeBeque Exploratory Proposal EA. The proposed pipeline is a 12-inch diameter, 6.18 mile (3.08 miles on BLM-administered lands) pipeline (see Map 1). The pipeline would deliver gas from Black Hills' existing and proposed well pads ultimately to the DeBeque Processing Plant located in Section 29, T. 8 S., R. 97 W. on private lands. Specifically, the gas gathering pipeline would be constructed from the proposed HDU 7-23 well pad on the west end of the Homer Deep Unit to the proposed Centralized Facility #2 on private lands (see Map 1). The legal description for the gas gathering pipeline is provided in Exhibit 1.



- Legend**
- Unit Boundary
 - Centralized Facilities
 - Well Pads
 - Gas Pipeline
 - Existing ETC Pipeline

- Surface Ownership**
- BLM Lands
 - Private



Map 1

Red Rock Gathering Company, LLC

HDU Gas Gathering Pipeline

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RRGC is requesting a 50 foot construction right-of-way for installation of 16,310 feet of gas gathering pipeline (30 foot right-of-way and 20 foot for temporary use) as described in the Black Hills DeBeque Exploratory Proposal EA. The permanent right-of-way on BLM-administered lands would be 11.23 acres and the temporary use area would be 7.49 acres.

RRGC anticipates installation of the gas gathering pipeline once all permits and approvals are obtained with consideration for other resource constraints (see Exhibit 2 - attached Conditions of Approval - COAs). RRGC will abide by all the COAs attached to the Black Hills DeBeque Exploratory Proposal Decision Record (Exhibits 3 and 4).

The project also includes an 8-inch produced water line which would be installed in the same trench but would be owned and operated by Black Hills. The water pipeline would deliver produced water from existing and proposed well pads in the Homer Deep Unit to the DeBeque Pumping Station and would deliver fresh water for drilling from the Homer Deep Centralized Facilities to well pads. Black Hills is not required to hold rights-of-way grants and temporary use permits for the portion of the water line inside the Homer Deep Unit. Black Hills has submitted separate applications for a right-of-way grant for the portion of the water line outside of the Homer Deep Unit.

C. Land Use Plan (LUP) Conformance

The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: GRAND JUNCTION Resource Management Plan

Date Approved: JANUARY, 1987

Decision Number/Page: Page 2-29.

Decision Language: The objective of the GJFO RMP under Public Utilities Management is “to respond in a timely manner, to requests for utility authorizations on public land while considering environmental, social, economic, and interagency concerns.”

D. Identify applicable NEPA documents and other related documents that cover the proposed action.

Grand Junction Resource Area RMP Environmental Impact Statement, January 1987

Black Hills DeBeque Exploratory Proposal EA (DOI-BLM-CO-130-2012-0021-EA), for which the FONSI and Decision Record were signed on May 1, 2013.

E. NEPA Adequacy Criteria

1. Is the current proposed action substantially the same action (or is a part of that action) as previously analyzed? Is the current proposed action located at a site specifically analyzed in an existing document?

Yes, the current Proposed Action is part of the action in the DeBeque Exploratory Proposal EA (see Section 2.2.1). There are no changes in geographic location or scope of the project.

2. Is the range of alternatives analyzed in the existing NEPA document(s) appropriate with respect to the current proposed action, given current environmental concerns, interests, and resource values?

Given current environmental concerns, interests, and resource values, the range of alternatives analyzed in the DeBeque Exploratory Proposal EA (Section 2.2) is appropriate with respect to the current Proposed Action. The basic elements of the Proposed Action in the Black Hills DeBeque Exploratory Proposal EA remain unchanged by this action.

3. Is the existing analysis valid in light of any new information or circumstances?

The existing analysis is valid. No new information or circumstances exist.

4. Do the methodology and analytical approach used in the existing NEPA document(s) continue to be appropriate for the current proposed action?

Yes. The methodology and analytical approaches used in the existing EA are appropriate for this action because this proposal is part of the Proposed Action in the DeBeque Exploratory Proposal EA (see Section 2.2.1).

5. Are the direct and indirect impacts of the current proposed action substantially unchanged from those identified in the existing NEPA document(s)? Does the existing NEPA document analyze site-specific impacts related to the current proposed action?

Yes. The current Proposed Action is part of the Proposed Action in the DeBeque Exploratory Proposal EA (Chapter 3). There are no new direct or indirect impacts that were not previously analyzed.

6. Are the cumulative impacts that would result from implementation of the current proposed action substantially unchanged from those analyzed in the existing NEPA document(s)?

Yes. The current Proposed Action is part of the Proposed Action in the DeBeque Exploratory Proposal EA (Chapter 4) and would result in no new cumulative impacts.

7. Are the public involvement and interagency review associated with existing NEPA document(s) adequate for the current proposed action?

Yes. The public involvement and interagency review associated with existing NEPA documents, specifically the Black Hills DeBeque Exploratory Proposal EA (Section 1.5), are adequate for the current Proposed Action. The current Proposed Action is part of the Proposed Action in the DeBeque Exploratory Proposal EA.

F. Interdisciplinary Analysis: Team members conducting or participating in the NEPA analysis for the Black Hills DeBeque Exploratory Proposal EA (DOI-BLM-CO-130-2012-0021-EA), for which the FONSI and Decision Record were signed on May 1, 2013.

<u>Name</u>	<u>Title</u>
Anna Lincoln	Ecologist
Heidi Plank	Wildlife Biologist
Alissa Leavitt-Reynolds	Archaeologist
Natalie Clark	Archaeologist
Julia Christiansen	Natural Resource Specialist
Oneita Potter	Land Law Examiner
Wayne Werkmeister	Associate Field Manager

NAME OF ENVIRONMENTAL COORDINATOR: Christina Stark

DATE: 5/23/14

Conclusion

Based on the review documented above, I conclude that this proposal conforms to the applicable land use plan and that the NEPA documentation fully covers the proposed action and constitutes BLM's compliance with the requirements of NEPA. Site Specific Surface Use COAs that apply are attached as Exhibit 2. BLM GJFO Standard Surface Use COAs are attached as Exhibit 3. Project Design Features (from DeBeque Exploratory Proposal) are attached as Exhibit 4.

SIGNATURE OF AUTHORIZED OFFICIAL:



Katie Stevens

DATE SIGNED:

5-27-2014

The signed Conclusion on this Worksheet is part of an interim step in the BLM's internal decision process and does not constitute an appealable decision.

EXHIBITS:

- Exhibit 1 – Legal Description
- Exhibit 2 – Site Specific Conditions of Approval
- Exhibit 3 – Standard Surface Use Conditions of Approval
- Exhibit 4 – Proponent Design Features

EXHIBIT 1
LEGAL DESCRIPTION

6th Principal Meridian, Garfield County, Colorado

T. 8 S., R. 98 W., Sec. 7, S2NE $\frac{1}{4}$, NW $\frac{1}{4}$ SE $\frac{1}{4}$
 Sec. 8, NE $\frac{1}{4}$ NE $\frac{1}{4}$
 Sec. 9, NE $\frac{1}{4}$ NE $\frac{1}{4}$, N2NW $\frac{1}{4}$
 Sec. 10, SW $\frac{1}{4}$ NW $\frac{1}{4}$
 Sec. 11, S2SW $\frac{1}{4}$, S2SE $\frac{1}{4}$
 Sec. 12, S2SW $\frac{1}{4}$

EXHIBIT 2
SITE SPECIFIC SURFACE USE CONDITIONS OF APPROVAL
Red Rock Gathering Company, LLC
HDU Gas Gathering Pipeline Right-of-Way
May, 2014

The following measures are required by the BLM:

Soils and Water Resources

- Pre-construction inspections shall include on-the-ground review of installed pre-construction storm water BMPs and limit-of-disturbance staking.
- Exposed rock outcrops present in pipeline corridors or on proposed well pad locations shall be removed intact, as possible (salvaging large pieces from the outcrop), and replaced on the ground surface at the margins of the corridor and/or as close to the original location as practical, to be redistributed as part of reclamation. Equipment bridges and mats shall be used where soils are saturated, to minimize compaction of soils and subsequent stream bank erosion.
- A copy of the SPCC Plan shall be provided to the BLM prior to construction.
- If hydrostatic test water or trench dewatering water is discharged, it shall be discharged to an upland area at least 150 feet from WoUS and wetlands, to infiltrate into the ground without causing erosion. BLM approval of the discharge location and proposed BMPs shall be obtained before discharging hydrostatic test water to an upland area.
- Pipeline construction across ephemeral and intermittent drainages shall occur when no flowing water is present.
- Emergency spill response equipment shall be stored and staged at strategic locations along perennial water courses, to expedite effective spill response.
- Avoid locating staging, refueling and storage areas within 300 feet of any natural perennial or seasonally flowing stream, wetland, reservoir, or lake.
- Avoid low water crossings. Structures for perennial or intermittent stream channel crossings shall be engineered using bridges or appropriately sized culverts.
- Pipelines that cross perennial, intermittent and ephemeral stream channels shall be constructed to withstand floods of extreme magnitude, to prevent rupture and accidental contamination of runoff. Closely follow methods and analysis outlined in BLM technical note 423-Hydraulic Considerations for Pipelines Crossing Stream Channels, to prevent undesirable events.

Noise

- Construction shall occur during daylight hours, when there is less sensitivity to sound.
- All equipment shall have sound control devices no less effective than those provided by the manufacturer. All equipment shall have muffled exhausts.
- Trucks shall not use engine brakes on BLM roads.

Invasive Non-Native Species

- Weed treatments shall be limited to spot treatments within areas with sensitive plant species, subject to site-specific pre-approval by the BLM.

Vegetation

- Vegetation removal and grading shall be minimized. Shrubs and trees shall be shredded or cut at ground level to facilitate reestablishment from existing root systems, to support reclamation and minimize erosion.
- Exclusion fencing shall be erected along the revegetated pipelines and road disturbances in highly vulnerable areas (i.e., along stream banks) to exclude livestock, accelerate reclamation of surface disturbance and minimize weed infestations, until monitoring determines that reclamation is successful. The BLM will determine exclusion areas.

Wetlands

- In areas that have not been previously surveyed, a monitor shall be on site during pipeline routing to identify potential wetlands and avoid, if feasible. A wetland delineation shall be conducted for the wetlands that cannot be avoided; and appropriate permits from the USACE shall be obtained.
- Riparian canopy or stream bank vegetation shall not be removed, where possible.
- Woody debris shall be retained as much as possible during in-stream construction.
- The construction corridor and ROW width at perennial and intermittent stream crossings shall be reduced to 30 feet to reduce impacts.
- Site-specific riparian-appropriate species plantings, BMPs and restoration techniques shall be implemented.
- Riparian tree saplings, such as cottonwoods and box elders, with a diameter at breast height of 1 inch or greater, shall not be removed.

Special Status Animal Species

- If water is extracted from within critical habitat, extraction procedures shall follow conservation measures to qualify for ESA section 7 consultation compliance under the 2008 PBO including, but not limited to the following conservation measures:
 - Screening of pump intakes with ¼ inch (or finer) mesh;
 - Placing the pump intake into faster moving water;
 - Pumping from off-channel locations without a connection to the river.
- Water shall not be withdrawn from a Colorado Department of Transportation (CDOT) pond near Interstate-70 that is used as rearing habitat for razorback suckers.

ESA and Sensitive Plant Species

- A BLM-approved biologist shall review the Site Specific Conservation Plan (Appendix B to the Programmatic Biological Assessment for the Black Hills DeBeque Exploratory Proposal EA) to make sure identified measures to protect ESA and Sensitive Plant Species are protected prior to construction.

- A BLM-approved biological monitor shall be on-site during all ground-disturbing activities, including installation of conservation measures identified on Maps 1 through 6. Areas requiring monitors shall include activities within 100 meters of Colorado hookless cactus plants and within 200 meters of DeBeque phacelia suitable habitat.
- Selected sites with Colorado hookless cactus and/or DeBeque phacelia shall be monitored within varying distances of disturbance every 5 years throughout the life of the project, or at other recommended frequency as determined by monitoring results, to determine long-term effects on special status plants/habitat, effectiveness of conservation measures, and to develop adaptive conservation measures.
 - Site selection and monitoring shall be coordinated with the FWS.
 - Sample plots shall be photographed 1) prior to disturbance, 2) every 5 years after disturbance and 3) at the end of the proposed project (estimated to be 20 years).
 - Plants at each site shall be counted, if present; health and status of the plants and habitat shall be documented.
 - A monitoring report shall be submitted to the BLM and the FWS by December 1 of each monitoring year.

Colorado Hookless Cactus

- No individuals shall be directly affected by project activities.
- Well pads, centralized facilities, and new roads shall all be kept further than 20 meters from individual hookless cacti.
- In areas where listed plants occur, buried pipelines shall be co-located with existing roads or existing pipeline corridors. This minimizes fragmentation of undisturbed habitats, but could lead to the burial of a pipeline nearer to plants than 20 meters.

In this situation, the pipeline shall be buried on the far side of the existing disturbance from the hookless cactus to maximize its distance from the pipeline disturbance. As a result, new disturbance will not be closer to hookless cactus than existing disturbance (e.g., existing access roads and/or pipeline corridors).

- No surface-disturbing activities shall occur within 100 meters of Colorado hookless cactus plants during the cactus flowering season (April through May), to minimize indirect effects (dust, etc.) to pollinators and cactus reproduction.
- Silt barriers and fugitive dust control measures (watering roads/surface disturbance; no additives) shall be implemented, to minimize effects to cactus within 100 meters of existing disturbances (see Maps 1 through 6).
- Temporary fencing near occupied habitats shall be installed prior to any disturbance, to prevent trampling by workers or equipment. Fencing shall be removed immediately after activities are complete.
- The required project SWMP shall include implementation, monitoring and maintenance of site-specific BMPs, such as straw wattles, to minimize or avoid alteration of hydrologic conditions when project activities are located within 20 meters of documented hookless cactus plants.
- Herbicides shall not be used to control weeds within 100 meters of Colorado hookless cactus plants unless approved by BLM. Noxious weeds closer to Colorado hookless

cactus plants shall be removed by hand prior to soil disturbance, to reduce reestablishment and potential re-distribution of weed seed and/or propagules. Prior to weed control, operator shall consult with BLM on a site-specific basis. Areas where weed treatment may be restricted are shown on Maps 1 through 6.

- Colorado hookless cactus plants growing within 20 meters of project activities shall be monitored annually for a minimum of 3 years after ground-disturbing activities. Additionally, select sites shall be monitored every 5 years throughout the life of the project (estimated to be 20 years) to determine long-term effects, if any, on hookless cactus survival and recruitment near the project. Monitoring of cacti within 20 meters of disturbance may be necessary within the areas identified on Maps 1 through 6 as “Restricted Weed Treatment/Dust Abatement.” Monitoring results shall be presented to both the BLM and the FWS.
- In areas where surveys were not conducted along private lands (Map 6), a biological monitor shall be on-site while staking the proposed gathering pipeline route to confirm absence of plants and/or advise placement of pipeline if Colorado hookless cactus are observed. If cactus plants are observed, BLM GJFO would revise Map 6 and identify measures taken to minimize or avoid affects to the cactus plants.

DeBeque Phacelia

- No individuals shall be directly affected by project activities.
- Well pads, centralized facilities, and new roads shall all be kept further than 100 meters from individual DeBeque phacelia plants and suitable habitats.
- In areas where DeBeque phacelia plants or suitable DeBeque phacelia habitat occurs, buried pipelines shall be co-located with existing roads or existing pipeline corridors. This minimizes fragmentation of undisturbed habitats, but could lead to the burial of a pipeline nearer to phacelia habitat than 100 meters. In this situation, the pipeline shall be buried on the far side of the existing disturbance from the phacelia habitat to maximize its distance from the pipeline disturbance. As a result, new disturbance will not be closer to phacelia habitat than existing disturbance (e.g., existing access roads and/or pipeline corridors).
- No surface-disturbing activities shall occur within 200 meters of DeBeque phacelia suitable habitat during the growing/flowering season (April through June), to minimize indirect effects (dust, etc.) to pollinators and plant reproduction.
- Areas within 100 meters of DeBeque phacelia habitat planned for well pads and associated project components, which have not yet been surveyed in a reliable year, may require additional botanical surveys within the areas identified on Maps 1 through 6 as “Restricted Weed Treatment/Dust Abatement” prior to ground-disturbing activities.
- Silt barriers and fugitive dust control (watering roads and surface disturbance; no additives) measures shall be implemented, to minimize effects to DeBeque phacelia within 100 meters of existing disturbance (See Maps 1 through 6).
- Temporary fencing near occupied habitats shall be installed prior to any disturbance, to prevent trampling by workers or equipment. Fencing shall be removed immediately after activities are complete.

- The required project SWMP shall include implementation, monitoring and maintenance of site-specific BMPs, such as straw wattles, to minimize or avoid alteration of hydrologic conditions when project activities are located within 100 meters of documented DeBeque phacelia habitat.
- Herbicides shall not be used to control weeds within 200 meters of DeBeque phacelia suitable habitat unless approved by the BLM. Noxious weeds closer than 200 meters to such habitat shall be removed by hand prior to soil disturbance, to reduce reestablishment and potential re-distribution of weed seed and/or propagules. Prior to weed control, operator shall consult with the BLM on a site-specific basis. Areas where weed treatment may be restricted are shown on Maps 1 through 6.
- DeBeque phacelia habitats within 100 meters of project activities shall be monitored annually for a minimum of 3 years after ground-disturbing activities. Additionally, select sites shall be monitored every 5 years throughout the life of the project (estimated to be 20 years) to determine long-term effects, if any, on DeBeque phacelia survival and recruitment, and habitat suitability, near the project. Monitoring of DeBeque phacelia habitats within 100 meters of project activities may be necessary within the areas identified on Maps 1 through 6 as “Restricted Weed Treatment/Dust Abatement.” Monitoring results shall be provided to both BLM and the FWS.

Wildlife

- All equipment used within drainages, which could transfer materials from one waterway to another, shall be sanitized per CPW protocols, including water extraction equipment.
- As part of the Bear Aware program, all project personnel shall review the CPW publication “Living with Bears” (<http://wildlife.state.co.us/WildlifeSpecies/LivingWithWildlife/Mammals/Pages/LivingWithBears.aspx>), developed as part of the Bear Aware program.
- Project staff shall report poaching incidents to Operation Game Thief.
- Workers shall carpool to drilling locations from December thru April.

Cultural Resources, Tribal and Native American Religious Concerns

- A contracted archaeologist from a permitted cultural resource firm approved by the GJFO archaeologist shall monitor known sites during any and all construction activity within 100 yards, to prevent direct impacts to sites. Known sites along the pipeline route include 5GF4762 and 5GF4765. 5GF4765 shall also be fenced during construction and monitoring.

Wastes

- If a reportable spill occurs, immediately contact the BLM, CDPHE Water Quality Control Division and CPW.
- Spill station locations shall be established and placed in strategic locations.

Recreation

- Warning signs shall be posted on project area roads to alert recreationists and project personnel to each other’s presence and to help avoid accidents.

- Construction timing shall be coordinated with area outfitters and landowners, to avoid conflicts with users of dispersed recreation sites and to mitigate impacts to them.

Range Management

- Planned activities shall be coordinated with affected grazing permit holders.

Forest Management

- When not shredded and salvaged with topsoil, woody materials 4+ inches in diameter shall be cut into sections not to exceed 4 feet, to be replaced following reclamation.

Fire and Fuels Management

- A Fire Management Plan specific to oil and gas operations shall be prepared to assist RRGCC and contractors to prevent and/or contain project-related accidental ignitions.
- Develop and inform employees and contractors of a fire safety and evacuation plan, in the event a wildfire moves toward an active pad/facility.
- Any welding, acetylene or other open flame, shall be operated in an area barren or cleared of all flammable materials and no closer to vegetation than at least 10 feet.
- Internal combustion engines shall be equipped with approved spark arrestors and vehicles shall be parked in designated areas without fire/fuels hazards.

Attach Maps 1 through 6

EXHIBIT 3
BLM GJFO Standard Surface Use Conditions of Approval
Red Rock Gathering Company, LLC
HDU Gas Gathering Pipeline Right-of-Way
May, 2014

The following standard surface use COAs are in addition to all stipulations attached to the respective Federal lease.

1. Administrative Notification & Requirements. The operator will notify the BLM representative at least 48 hours prior to initiation of construction or reclamation activities. A pre-construction meeting may be scheduled to review all conditions and or stipulations with the operator. Complete copies of all applicable permits, will be kept on site during construction and drilling activities. All on-site personnel will review the approved permit with the COAs before working on the project.
2. Fire. The operator will implement measures to prevent fires on public and private land and be responsible for the costs of suppressing fires on public lands that result from the actions of its employees, contractors, or subcontractors. Range or forest fires caused or observed by such personnel will be immediately reported to the BLM Grand Junction Dispatch at 970-257-4800. All fires or explosions that cause loss of oil or gas, damage to property or equipment, or injuries to personnel will immediately be reported to the BLM Grand Junction Field Office at 970-244-3000. During conditions of extreme fire danger, surface-use operations may be restricted or suspended in specific areas. Additional measures could be required by the BLM.

The BLM may require adaptive management techniques to minimize fire hazards/risks.

3. Other Permits. BLM authorization is contingent upon receipt of and compliance with all applicable federal, state, county, municipal and local permits, including all necessary environmental clearances and permits (Colorado Oil and Gas Conservation Commission (COGCC), U.S. Army Corps of Engineers (USACE), U.S. Fish & Wildlife, U.S. Forest Service, Colorado Department of Transportation, Colorado Department of Health & Environment, County Oil and Gas liaisons, County Health and Road Departments, municipalities, etc.).
4. Existing Uses. The operator will obtain agreements allowing construction and maintenance with all existing right-of-way holders, authorized users, and pipeline operators prior to surface disturbance or construction of the location or access across or adjacent to any existing or approved rights-of-way or pipelines. In the case of privately owned surface, the operator will certify to BLM that a Surface Use Agreement has been reached with the private surface owners prior to commencing construction and that the owner has been provided a copy of the Surface Use Plan of Operations (SUPO) that is part of a Federal APD. If Agreement cannot be reached, the operator will comply with provisions of the law or regulations governing the Federal right of re-entry to the surface (43 CFR 3814).
5. Migratory Bird Act. New surface disturbance, especially vegetation removal, will not be allowed between May 15 and July 15, to prevent potential taking of migratory birds and/or eggs, unless otherwise approved in writing by the Grand Junction Field Manager. If surface disturbance is proposed during this period, a written request for exception and a migratory bird survey will be submitted for approval prior to any surface disturbance. If vegetation removal is accomplished prior to May 15, exception may be granted to allow project activities to proceed during the closure period.

Permanent caps will be placed on or fill placed in any open metal or plastic pipe or post to prevent entrapment of birds.

6. Federally Protected Species Notifications. If the operator discovers a dead or injured federally protected species (i.e., migratory bird species, bald or golden eagle, or species listed by the FWS as threatened or endangered) in or adjacent to a pit, trench, tank, exhaust stack, or fence. (If the operator is unable to contact the FWS Law Enforcement office, the operator must contact the nearest FWS Ecological Services office.)
7. Jurisdictional Waters of the U.S. The operator will obtain appropriate permits from the U.S. Army Corps of Engineers (USACE) prior to discharging fill material into waters of the U.S. in accordance with Section 404 of the Clean Water Act. Waters of the U.S. are defined in 33 CFR Section 328.3 and may include wetlands as well as perennial, intermittent, and ephemeral streams. Permanent impacts to waters of the U.S. may require mitigation. Copies of any printed or emailed approved USACE permits or verification letters will be forwarded to the BLM.

When activity in a wetland is unavoidable, the operator may be required to prevent disturbance by use of wooden or other protective mats and will restore all temporarily disturbed wetlands or riparian areas. The operator will consult with the BLM to determine appropriate mitigation, including verification of native plant species to be used in restoration. Temporary and permanent impacts to jurisdictional waters of the U.S. may require additional mitigation, including compensatory offsite mitigation. Contact the USACE, Colorado West Regulatory Branch, at 970-243-1199.

9. Heritage Resources - Cultural and Paleontological. All persons in the area who are associated with this authorization will be informed that any person who, without a permit, injures, destroys, excavates, appropriates or removes any vertebrate fossil, historic or prehistoric ruin, artifact, object of antiquity, Native American remains, Native American cultural item, or archaeological resources on public lands is subject to arrest and penalty of law (16 USC 433, 16 USC 470, 18 USC 641, 18 USC 1170, and 18 USC 1361). Any heritage resource discovered requires that work in the area must stop and the BLM Authorized Officer notified. Strict adherence to the confidentiality of information concerning the nature and location of archeological resources will be required of the proponent and all of their subcontractors (Archaeological Resource Protection Act, 16 U.S.C. 470hh).

Inadvertent Discovery:

- a) The **National Historic Preservation Act (NHPA)** [16 USC 470s., 36 CFR §800.13], as amended, requires that if newly discovered historic or archaeological materials or other cultural resources are identified during the Proposed Action implementation, work in that area must stop and the BLM Authorized Officer (AO) must be notified immediately. Within five working days the AO will determine the actions that will likely have to be completed before the site can be used, assuming in place preservation is not necessary §800.13(b)(3).
- b) The **Native American Graves Protection and Repatriation Act (NAGPRA)** [25 USC 3001 et seq., 43 CFR 10.4] requires that if inadvertent discovery of Native American Human Remains or Objects of Cultural Patrimony occurs, any activity must cease in the area of discovery, a reasonable effort made to protect the item(s) discovered, and immediate notice be made to the BLM Authorized Officer, as well as the appropriate Native American group(s) (IV.C.2). Notice may be followed by a 30-day delay (NAGPRA §3(d)).
- c) The **Paleontological Resources Preservation Act (PRPA)** [16 U.S.C. 470aaa] requires the proponent to immediately suspend activities in the vicinity, protect the discovery from damage and notify the BLM Authorized Officer of any paleontological resources discovered as a result of operations under this authorization. The Authorized Officer will evaluate, or will have evaluated, such discoveries as soon as possible, but not later than 10 working days after being notified. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the Authorized Officer after consulting with the operator. Within 10 days, the

operator will be allowed to continue construction through the site, or will be given the choice of either (1) following the Authorized Officer's instructions for stabilizing the fossil resource in place and avoiding further disturbance to the fossil resource, or (2) following the Authorized Officer's instructions for mitigating impacts to the fossil resource prior to continuing construction through the project area.

- d) If human remains are discovered on private or state land associated with this authorization, the BLM will notify the State of Colorado Archaeologist immediately, who will comply with Colorado Revised Statutes (Appendix) regarding the discovery of human remains (24-80-1302).
 - e) In a new discovery situation, the operator may relocate activities to avoid the expense of mitigation and delays associated with this process, as long as the new area has been appropriately inventoried and has no resource concerns, and the exposed materials are recorded and stabilized. Otherwise, the operator will be responsible for mitigation costs. The BLM authorized officer will provide technical and procedural guidelines for relocation and/or to conduct mitigation. Upon verification from the BLM authorized officer that the required mitigation has been completed, the operator will be allowed to resume construction.
10. Big Game Winter Range Timing Limitation. Where winter range areas identified by BLM are not protected by lease stipulations, an annual Timing Limitation (TL) period will apply from January 1 to March 1, to minimize impacts to wintering big game. All construction, drilling, completion, work-overs and other intensive activities are excluded during the 60-day period. Requests for exceptions to Timing Limitations will be submitted in writing to the BLM via a Sundry Notice.
 11. Range Management. Damage to range improvements (fences, gates, reservoirs, pipelines, etc.) will be avoided, but if they are damaged, the operator will immediately repair or replace them. Where an access road bisects an existing livestock fence, a steel frame gate or a cattle-guard with a bypass gate will be installed across the roadway.
 12. Soils. Cuts and fills will be minimized when working on erosive soils and on slopes in excess of 30 percent. Cut-and-fill slopes will be stabilized through revegetation practices with an approved seed mix shortly following construction activities, to minimize the potential for slope failures, erosion and soil loss. Fill slopes adjacent to drainages will be protected with BMPs designed to minimize sediment transport. On slopes greater than 50 percent, BLM may require a professional geotechnical analysis and/or engineered plans prior to construction.
 13. Weed Control. Before any mobilization of equipment onto public lands, to prevent the spread of invasive species, the operator will perform inspections to insure that all construction equipment and vehicles are clean and free of soil, mud and vegetative material. Avoid driving through or parking on weed infestations.
 14. Dust Abatement. The operator will prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations or wind events. If dust abatement is insufficient, the BLM may direct the operator to change the level and type of treatment. BLM approval is required before application of surfactants, binding agents, or other dust-suppression chemicals on federally permitted projects and on public lands. More stringent dust control may be required in areas adjacent to Federal- or State-listed threatened, endangered, or sensitive plant species.
 15. Pre-Construction and Limits of Disturbance. Construction control and limit-of-disturbance stakes will be placed before construction, and maintained in place throughout, to ensure construction in accordance with the surface use plan.

Cut and fill slopes and spoil storage areas will be marked with flagging, snow fence, stakes or lath,

visible one to another, in a distinctive color. All boundary markers will be maintained in place until final construction cleanup is completed. If markers are disturbed, they will be replaced before construction proceeds.

Access road, pipeline and pad edges will be marked by construction control stakes to ensure construction in accordance with the specifications. Stakes will be visible from one to the next and be staked with no more than 100-foot stationing. If stakes are disturbed, they will be replaced before construction proceeds.

16. Storm Water Management and Soil Protection. A General Construction Permit from the Colorado Department of Public Health and Environment (CDPHE) is required and a copy will be provided to the BLM prior to construction. Permit compliance requires a site-specific Storm Water Management Plan, establishment of directed run-off management and adaptive Best Management Practices (BMPs) for the location, as well as systematic monitoring and maintenance of all BMPs. Storm Water BMPs may also incorporate or function as Spill Prevention, Control and Countermeasures (SPCC) controls.

All BMPs must be maintained in good repair and functional condition, including clean-out of sediment basins and catchments, and replacement of straw wattles/ bales or silt fence.

17. As-Built Details. Within 30 days of setting production facilities, the operator will submit to the BLM a digital as-built file of the following: the perimeter of the pad and all related BMPs, to be collected at the base of fill slopes, the head of cut slopes, and to include all associated soil storage areas and storm water BMPs, as well as the wellhead(s) and the centerline of the access road. The digital depiction will be in a format that is GIS compatible (shapefiles) in NAD83, UTM coordinate system, Zone 13North.

18. Drainage Crossings and Culverts. Pads, roads, and pipelines will be located away from defined drainages where possible. In areas where construction is located within 100 feet of a drainage, an adequate vegetative buffer, artificial buffer (e.g., straw bales, matting, etc.), or filter strip will be maintained between the constructed feature road and the drainage, to minimize sediment transport into the drainage.

All vehicles will be fueled at least 100 feet from stream corridors.

Any construction activities at perennial, intermittent and ephemeral drainage crossings (e.g. burying pipelines, installing culverts) will be timed to avoid high flow conditions. The minimum culvert diameter in any installation for a drainage crossing or road drainage will be 24 inches. Culverts on perennial and intermittent streams will be designed to allow for passage of aquatic biota. Culverts at drainage crossings will be designed and installed to pass, without development of a static head at the pipe inlet, at least a 25-year storm event, but may be deemed to require additional culvert design capacity. Due to the flashy nature of area drainages and anticipated culvert maintenance, the USACE recommends designing drainage crossings for the 100-year event. Contact the USACE Colorado West Regulatory Branch at 970-243-1199.

19. Road Construction, Use and Maintenance. Roads will be crowned or sloped, drained with ditches, culverts and/or water dips, and constructed, sized and surfaced in compliance with BLM Gold Book standards (pp. 24-28). Water outlets such as turn-outs and culverts, will incorporate BMPs like rip-rap, sediment catchments and anchored check structures which slow water velocity, to prevent erosion and sediment transport. If applicable, initial gravel application will be to a minimum depth of 4 inches.

When saturated soil conditions exist on access roads or location, or rutting deepens to 3 inches, construction and travel will be halted until soil material dries out, is frozen sufficiently or is otherwise

brought to standards appropriate for resource protection and road construction. Use will not proceed under conditions of undue damage and erosion to soils, roads and/or locations. All drainage ditches and culverts will be kept clear and free flowing, and be maintained in good condition.

Where roads are located near drainages, vegetated buffer strips will be left between areas of disturbance and drainages. (See Drainage Crossings and Culverts.)

The operator will provide timely maintenance of roads. A regular schedule for maintenance will include, but not be limited to dust abatement, reconstruction of the crown, slope, or water dips/bars; blading or resurfacing; clean-out of ditches, culverts, catchments and other BMPs. When rutting of the travel-way deepens to 3 inches, maintenance or upgrade will be conducted as approved by BLM.

Roads that access active construction and drilling sites will be posted with warning signs to alert hunters and recreational vehicle users that project personnel and vehicles are in the area. Project personnel will restrict activities and travel to permitted roads and sites.

Operator will install speed control measures on project-related unpaved roads.

Ditches may be revegetated and/or include large rocks or other BMPs, to slow drainage velocity and settle sediment. Ditch seeding and revegetation may be required in erodible soils.

All cut and fill slopes for roads (and well pads and related locations) will be protected against rilling and erosion with BMPs such as soil texturing and seeding or additional measures approved by the BLM. Measures may include geotextiles, weed-free straw crimping/ bales/ wattles/ matting, as needed or as detailed by storm water plan or BLM permit. BMPs will be monitored and maintained in functional condition.

20. Visual Resource Protection. Pads, roads, pipelines and production facilities will be located and placed to avoid or minimize visibility from travel corridors, residential areas and other sensitive observation points—unless directed otherwise by the BLM—and will be designed to maximize reshaping of cut/fill slopes and interim reclamation of the pad.

To the extent practical, existing vegetation will be preserved when clearing and grading for pads, roads, and pipelines. Tree or shrub removal may be required by cutting or by shredding to provide slope stability or leave root systems in place. BLM may direct that cleared trees and rocks be salvaged and redistributed over reshaped cut-and-fill slopes or along linear features.

To mitigate straight-line visual contrast effects of cut/ fill slopes, pad margins or cleared vegetation, adaptive management techniques may be required by the BLM before or after construction. Example: Additional tree removal along contrasting edges, to create irregularly shaped openings or natural-looking mosaic patterns; texturing or coloring surfaces to mitigate visual contrasts.

To blend with the natural environment, all permanent above-ground facilities placed on the location will be painted a natural color to blend with the background landscape, in a non-reflective finish. A BLM Standard Environmental Color may be specified.

21. Construction, Vegetation Removal, Topsoil Stripping and Storage. Pre-construction BMPs will be installed before construction. Areas of approved activities will be cleared of brush and trees, usually chipped or shredded in place, then salvaged and stored with topsoil. No stump left in place will exceed six inches in height. Cleared trees and shrubs that are not shredded may be salvaged and stored as storm water perimeter controls for later redistribution on reclaimed areas, as appropriate.

When saturated soil conditions exist on access roads or location, construction will be halted until soil dries or until activities can proceed without soil damage. No saturated or frozen topsoil will be stripped.

At the time of construction, (well pads, pipelines, roads, or other surface facilities) topsoil will be stripped following vegetation removal. Topsoil will include all suitable growth medium present at a site, as indicated by color or texture - depths may vary across a site. Stripped topsoil and vegetation smaller than 4 inches in diameter will be segregated and stored separately from subsoils or other excavated material and replaced prior to final seedbed preparation.

To facilitate its replacement, extend its biological viability and create a berm to control storm water, topsoil will be wind-rowed around pad perimeter wherever practical. Along pipelines and roads, topsoil will be wind-rowed, segregated and stored for later redistribution during reclamation.

Within 30 days of completion of pad construction, topsoil storage piles, storm water control features, temporarily disturbed areas along roads and pipelines, and cut and fill slopes will undergo temporary seeding to stabilize the materials, maintain biotic soil activities, and minimize weed infestations. Seedbed preparation may not be required for topsoil storage piles or other areas of temporary seeding, but track-walking is typical.

22. Chemical and Fuels - Secondary Containment /Exclosure Screening – The operator will prevent all hazardous, poisonous, flammable and toxic substances from contacting soil and/or water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable or toxic substances. Containment will be sufficient to contain 110% of the contents as well as any drips, leaks and anticipated precipitation.

All installed production facilities (storage tanks, load outs, separators, treating units, etc.) with the potential to leak or spill oil, condensate, produced water, glycol, or other fluid which could be a hazard to public health or safety will be placed within appropriate impervious secondary containment structure that will hold 110% of the capacity of the largest single container within it for 72 hours.

Chemical containers will be clearly labeled, maintained in good condition and placed within secondary containment. They will not be stored on bare ground, nor exposed to sun and moisture.

Any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 will be reported per the Comprehensive Environmental Response Compensation and Liability Act of 1980, Section 102b (CERCLA). Copies of any report to any Federal agency or State government as a result of a reportable release/ spill of any toxic substances will be furnished to the BLM, concurrent with the filing of the reports to any Federal agency or State government.

The operator will dispose of any fluids that collect in the containment system which do not meet applicable State or U.S. Environmental Protection Agency livestock water standards, per State law and in a manner so that fluids do not drain to the soil or ground.

All secondary containment systems will be designed, constructed, and maintained to prevent wildlife and livestock exposure to harmful substances. The operator will install effective wildlife and livestock exclosure systems like fencing, netting, expanded metal mesh, lids and grate covers.

23. Pipelines. Buried pipelines will have a minimum cover of 48 inches in a roadway and at road crossings, 36 inches through typical soil and rock, and 24 inches in areas requiring rock blasting. The permit holder is responsible for burying a pipeline to a depth that safely accommodates existing land and road uses and maintenance activities.

Pipeline warning signs permanently marked with the operator's and owner's names (emergency contacts) and purpose (product) of the pipeline will be installed within five days of construction completion and prior to use of the pipeline. Pipeline warning signs are required at all road crossings and along the alignment, visible from sign to sign.

Pipelines installed beneath stream crossings will be buried to a minimum depth of 4 feet below the channel substrate, to avoid pipeline exposure by channel scour and degradation. Following pipeline burial, the channel grade and substrate composition will be returned to pre-construction conditions.

All pipeline welds within 100 feet of a perennial stream will be x-rayed to prevent leakage. Where pipelines cross streams that support Federal- or State-listed threatened or endangered species or other sensitive species, the BLM may require additional safeguards, including double-walled pipe, and remotely-actuated block or check valves on both sides of the stream.

Buried pipelines will be reclaimed to final reclamation at the time of installation.

24. Well Drilling, Testing, and Completion (Pits). Substances specifically listed as hazardous waste or demonstrating character of a hazardous waste (40 CFR 261) will not be used in drilling, testing, or completion operations, nor introduced at any time into the reserve or cuttings pit.

The operator will minimize or preclude releases of hydrocarbons into open pits. Unless the authorized officer approves the release, no oil shall go into a pit except in an emergency. The operator shall remove any hydrocarbons (oil, condensate, paraffin, diesel, etc.) introduced a pit within 24 hours of discovery.

Fluids will be confined to pits or tanks during air drilling, flaring or fracturing operations. Flare or blooey lines will be directed into a pit and against a bank to prevent dispersion of materials or flame. Any blooey line will be misted to prevent dispersion of materials.

All pits that may contain liquid material will be lined to prevent seepage into the ground. The pit liner will be maintained in good working condition, with no tears or holes, until the pit is closed.

Pits will be constructed to preclude the accumulation of precipitation runoff and maintain a minimum of 2 feet of freeboard between the maximum fluid level and the lowest point of containment. If pit fluids threaten to rise to a level above that, the operator will immediately prevent introduction of additional fluids until sufficient pit capacity has been restored through fluid removal or will install an alternative approved containment method.

The operator will prevent wildlife and livestock access (including avian wildlife) to fluids pits that contain or have the potential to contain salinity sufficient to harm wildlife or livestock, to contain hydrocarbons, surfactants, or Resource Conservation and Recovery Act-exempt hazardous substances.

For reserve pits, fence all four sides as soon as the pit is constructed. Reconstruct any damage to the rig side of the fence immediately following release of the drilling rig. At a minimum, the operator will adequately fence all fluids pits and open cellars during and after drilling operations until the pit is free of fluids and the operator initiates backfilling.

Fencing for pits and other facilities with potential to cause harm to big game and other wildlife will be 8-foot woven wire fence with adequate bracing. Construct the fence at least 2 feet from the edge of the pit. The bottom two feet of mesh will be no larger than 1½ inch openings, to preclude small animals from entering the pit. All corners will be braced and fence construction

will be on cut or undisturbed ground. The fence will be maintained erect and in good condition to exclude wildlife and livestock. (Fencing: BLM Manual Handbook H-1741-1, p. 16)

All open top tanks and pits will be covered or netted to eliminate any hazard to birds and flying mammals (CERCLA Section 101(14)). At a minimum, the operator will install approved netting in these circumstances, immediately following release of the drilling rig. Note: The BLM does not approve flagging, strobe lights, metal reflectors or noisemakers to deter wildlife.

Minimum Netting Requirements: The operator will:

- a. Construct a rigid structure of steel tubing or wooden posts with cable strung across the pit no further apart than 7-foot intervals along the X- and Y-axes to form a grid of 7-foot squares.
- b. Suspend netting a minimum of 4 to 5 feet above the pit surface.
- c. Use a maximum netting mesh size of 1½ inches to allow for snow loading while excluding most birds in accordance with Fish and Wildlife Service recommendations. Refer to: <http://www.fws.gov/mountain-prairie/contaminants/contaminants1c.html>
- d. Cover the top and sides of the netting support frame with netting and secure the netting at the ground surface around the entire pit to prevent wildlife entry at the netting edges.
Note: Other fencing or a wire mesh panel with openings larger than 1½ inches does not sufficiently exclude small wildlife and songbirds unless covered by smaller meshed netting.
- e. Monitor and maintain the netting sufficiently to ensure the netting is functioning as intended, has not entrapped wildlife, and is free of holes and gaps greater than 1½ inches.

Any wildlife or birds found dead or apparently ill in or near pits must be reported to the Grand Junction Field Office immediately.

Any lined pit, any pit constructed with a slope steeper than 3:1, or where entrapment hazards may exist, will include escape ramps or ladders installed every 50 feet along the slope and at each corner. Example: anchored sections of galvanized chain-link fence at least 24 inches wide extending from the bottom of the pit to the top of the pit slope and across the top edge of the pit liner for at least two feet.

Operator and all subcontractors will comply with all State wildlife laws. As per Colorado Revised Statute 33-6-109 (1), it is unlawful for anyone to hunt, take or possess wildlife except as permitted by Colorado Statute or by Colorado Wildlife Commission regulation. Colorado statute defines “hunt” to include “trapping” and “capturing.” The trapping and subsequent drowning of wildlife within a pit may be viewed as illegal taking of wildlife and criminal or civil actions/ penalties for wildlife could be imposed. “Wildlife friendly” conditions are intended to prevent wildlife loss and potential legal consequences.

Pits will be dry prior to soil testing and backfilling and closed per COGCC standards. Before backfilling, impervious pit liner will be removed and disposed of properly. Liquids and solids collected on/in the liners will not be allowed to come into contact with the pad surface, parent soil or any other earthen layers during site cleanup. Liners will be properly cleaned prior to removal or removed in such a manner that liquids/solids do not escape. Liners may be washed off into lined ditches, lined sumps or into the lined cellar and then pumped to the lined sumps prior to being removed. At the time of backfilling, all muds and associated solids will be confined to the pit, with none squeezed out or incorporated into surface materials. A minimum of 4 feet of cover (overburden)

is required above any muds or solids. When work is complete, the pit area must support the weight of heavy equipment without subsidence.

25. Production. Production facilities will be located and arranged to facilitate safety and minimize long-term surface disturbance. Typically, they will be clustered at the access end of the pad with tanks in cut. Access to facilities shall be provided by a teardrop-shaped road through the production area, so that the driving area may be clearly defined and limited so that teardrop center may be revegetated.

To blend with the natural environment, all permanent above-ground facilities placed on the location will be painted a natural color that blends with the background landscape, in a non-reflective finish. A BLM Standard Environmental Color may be specified.

26. Interim Reclamation of Producing Wells.

- a. *Deadlines and Objectives. (Deadlines are subject to extension on a case-by-case basis, following application in writing to the BLM.)*

Within 30 days of completion of pad construction, topsoil storage berms, storm water control features, temporarily disturbed areas along roads and pipelines, and cut and fill slopes will undergo temporary seeding to stabilize materials, maintain biotic soil activities, and minimize weed infestations.

Within 6 months following completion of the last well planned on a pad, or after a year has passed with no new wells drilled, interim reclamation (IR) will be completed to reduce the well pad to the smallest size needed for production. IR will include earthwork, seeding and BMPs.

Interim reclamation will restore landforms; reestablish/maintain biologically active topsoil, including vegetative cover; control erosion and sediment transport; and minimize losses of habitat, visual resources, and forage throughout the life of the well.

Prior to interim reclamation, the operator will meet with BLM to inspect the disturbed area, to review the existing reclamation plan and agree upon any revisions to the plan.

Seed tags will be submitted for BLM approval at least 14 days before proposed seeding date.

Notify the BLM at least 48 hours prior to beginning any reclamation work.

Weed-free certification, seed tags, and a Subsequent Report Sundry Notice describing the reclamation will be submitted to the Grand Junction Field Office within 30 days of seeding.

IR performance standards will be considered met when disturbed areas not needed for long-term production operations or vehicle travel have been recontoured and stabilized; revegetated with a self-sustaining, vigorous, diverse, native (or otherwise approved) plant community that minimizes visual impacts, provides forage and stabilizes soils.

At a minimum, the established plant community will consist of species included in the seed mix and/or desirable species which occur in the surrounding natural vegetation. Permanent vegetative cover will be determined successful when the basal cover of desirable perennial species is at least 80 percent of the basal cover of the adjacent undisturbed area or of potential basal cover as defined in the National Resource Conservation Service Ecological Site(s) for the area.

Operators and right-of-way holders are required to meet reclamation performance standards. Successful compliance with standards is determined by the BLM. If revegetation is unsuccessful, subsequent treatments and reseeding will be required until standards are met.

- b. *Recontouring and Seedbed Preparation.* Leaving in place only the areas needed for production, pull fill slope soils up and return them to cut areas, pushing up and over the edges of the cut. Compacted areas to be reclaimed will be ripped in two passes at opposite directions before being reshaped (at least 18 inches deep, furrows spaced at 2 feet).

Following final contouring, evenly redistribute salvaged topsoil. BLM may require soil amendments. Final seedbed preparation will consist of scarifying (raking or harrowing) or roughening spread topsoil prior to seeding, unless seeding takes place immediately. Seedbed preparation techniques may include pocking, ripping, disking or other soil roughening techniques. If contour cultivating is approved, it will be 4-6 inches deep or to the depth of redistributed topsoil. If pocking, pit the surface with small depressions to form micro-basins, in a "fish scale" pattern. Construct them along the contour, perpendicular to the natural flow of water and/or prevailing wind.

- c. *Seed Mixes.* All disturbed areas will be seeded with a seed mixture approved by the BLM, consistent with BLM standards in terms of species and seeding rate for the specific habitat type within the project area.
- Seed will contain no noxious, prohibited or restricted weed seeds and contain no more than 0.5 percent by weight of other weed seeds.
 - Only viability-tested, certified seed for the current year, with a minimum germination rate of 80% and a minimum purity of 90% will be used.
 - Seed that does not meet the above criteria will not be applied to public lands.
- d. *Seeding procedures.* Seeding will be conducted no more than 24 hours following final seedbed preparation. If interim revegetation is unsuccessful, the operator will implement subsequent reseedings until interim reclamation standards are met.

Where possible, drill seed ½ inch deep, following the contour of the site. Follow drill seeding with culti-paction or crimped weed-free straw mulch, to enhance seed-to-soil contact and prevent loss of seeds and soil. In areas that cannot be drilled, broadcast seed at 2.0 times the application rate, within 24 hours of soil work. If seeding takes place later than within 24 hours of dirt work, cover seed ½ to 1 inch deep with a harrow or drag bar, unless pocking. When pocking is used as seedbed preparation, seed must be broadcast within 24 hours of soil prep.

- e. *Erosion Control.* Cut-and-fill slopes will be protected against erosion with the use of pocking/pitting, lateral furrows, hydromulch or other measures approved by the BLM. Near drainages or in areas with high erosion potential, additional revegetation, BMPs or methods may be required, to reduce soil erosion and offsite transport of sediments.
- f. *Fencing and Site Protection.* The pad will be fenced to BLM standards to exclude grazing livestock for the first two growing seasons or until seeded species are firmly established, whichever comes later. The BLM will approve the type of fencing.

In deer and elk habitat, fences for livestock exclusion will not exceed 40 inches. The four-strand fence will have smooth top and bottom wires. Distance from the ground to the bottom smooth wire will be no less than 16 inches. Distance from the top wire to the second wire will be no less than 12 inches. Middle wires will be barbed, with 6 inch spacing.

- g. *Monitoring.* The operator will regularly monitor, for reclamation success and for invasive species, all sites categorized as "operator reclamation in progress" and will submit an annual monitoring report of these sites to the BLM by December 1 of each year. The annual report will document whether attainment of reclamation objectives appears likely. If objectives appear

unlikely to be achieved, the report will identify appropriate corrective actions. Upon review and approval of the report by the BLM, the operator will be responsible for implementing approved or specified measures.

27. Final Reclamation. The long-term objective of final reclamation is to return the land, following use for energy development, to a condition approximating that which existed prior to disturbance. This includes restoration of the landform and natural vegetative community, hydrologic systems, visual resources, and wildlife habitats.

A well pad that no longer has a producing well will undergo final reclamation within no more than 1 year following plugging and abandonment of the final well on that pad. Buried pipelines will be reclaimed to final reclamation standards at the time of installation.

Prior to final reclamation of a well pad or pipeline, the operator will meet with BLM to inspect the disturbed area, review the existing reclamation plan, and agree to any changes to the plan.

The BLM will be notified at least 48 hours prior to commencing any reclamation work and within 48 hours of completion of reclamation work.

Prior to recontouring and reseeding the pad, the operator will complete the following:

- All equipment, facilities, and trash will be removed from the location.
- Each borehole will be plugged and capped, and its related surface equipment removed.
- Subsurface pipelines will be purged and plugged at specific intervals.
- Dry hole markers will be subsurface, to prevent their use as perching sites by raptors.

Recontouring for final reclamation will consist of returning the pad, material storage piles, cut-and-fill slopes, and storm water control features to natural contours that blend with adjacent undisturbed areas, as specified in the final reclamation plan or final reclamation plat approved by BLM.

Requirements for seedbed preparation, soil amendments, seed, seeding procedures, mulching, erosion control, fencing, site security, and monitoring will be as specified for interim reclamation.

EXHIBIT 4
Project Design Features (from DeBeque Exploratory Proposal)
Red Rock Gathering Company, LLC
HDU Gas Gathering Pipeline Right-of-Way
May, 2014

General

- Black Hills will comply with the BLM Standard Conditions of Approval for Oil and Gas.

Air Quality

- All drilling rig engines will be Tier 2 compliant, reducing emissions.
- Drilling and completion workers will carpool to well locations reducing traffic and thereby reducing fugitive dust emissions.
- Black Hills will control fugitive dust on the access roads and within disturbed surfaces during construction. Speed limits will be enforced from the beginning of construction throughout the life of the project, and where speed limits are not posted on unpaved access roads, speeds will not exceed 20 miles per hour.

Mineral Resources

- Drilling operations will be conducted in compliance with all Federal Onshore Oil and Gas Orders and other applicable rules and regulations.
- The proposed casing and cementing program will be designed to protect and/or isolate all usable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones and prospectively valuable deposits of Cameo coal.

Soils

- Black Hills will implement measures included in the Stormwater Management Plan (SWMP) including Best Management Practices (BMPs) including run-on/run-off controls, such as swales, ditches or berms, sediment catchments and anchored barriers such as erosion blankets or straw wattles to minimize erosion and the potential increase in sediment transport.

Water Resources

- Drilling will use a closed loop drilling system. Drilling fluids will be transferred to tanks and hauled off site to an approved disposal facility. Cuttings will be disposed of on-site in accordance with BLM and COGCC regulations. The fluids pit will initially contain fresh water used for drilling and completion and be continually refilled with fresh water as needed. During well completion, flowback water from hydraulic fracturing operations will be introduced and held in the fluids pit. Before introduction into the pit, the flowback water will undergo a separation process to remove hydrocarbons. No oil will be expected to be in the fluids pit. Concentrations of solids in the pit fluids will increase as pit water evaporated. The fluids pit will be double lined, both liners will have a minimum thickness of 24 mil and would be installed in accordance with Colorado Oil and Gas Conservation Commission (COGCC) rules.
- Surface casing will be installed to a minimum depth of 100 feet deeper than any freshwater aquifer located within one-mile of the well. The borehole will be cased with steel and cemented in place entirely from ground level to a depth determined for each well and included in that well's APD.

- Prior to drilling below the surface casing, a BOP will be installed on the surface casing and both the BOP and the surface casing will be tested for pressure integrity. BOPs and related equipment are required to meet the requirements of Onshore Oil and Gas Order No. 2. The BLM will be notified in advance of all pressure tests and test results will be recorded and reported to the BLM.
- After drilling the borehole to its final depth, geophysical logging tools will be run into the well to evaluate potential hydrocarbon resources. If hydrocarbon resources were present, adequate and recoverable, steel production casing will be run and cemented into place in accordance with the well design approved by the APD.
- The proposed production casing and cementing protocols will be designed to protect and/or isolate all usable groundwater zones, lost circulation zones, abnormally high pressured zones and any prospectively valuable deposits of minerals. Approval from the BLM will be required prior to the use of any medium other than cement for sealing the well annulus between the production casing and borehole.
- After production casing was cemented, the drill rig will be removed and a completion rig would take its place. Well completion will include running a cement bond log to evaluate cement integrity and to correlate the cased borehole logs with the open borehole logs. The steel production casing will be perforated across the hydrocarbon-producing zones and the formation will then be stimulated to enhance oil and gas production.
- Details will be provided on every chemical's supplier, its purpose, ingredients, the Chemical Abstract Service (CAS) number, the maximum concentration in the additive and the maximum concentration in the hydraulic fracturing fluid, along with specific details for each well, including total depth and water volume, per COGCC rules.
- Dry or non-producing wells will be plugged, abandoned and reclaimed within 90 days of well completion, weather permitting. After abandonment, each borehole will be plugged, capped and its related surface equipment removed. A Sundry Notice will be submitted to the BLM, with details of engineering, technical and/or environmental aspects of final plugging and abandonment. A well configuration diagram, a summary of plugging procedures and a job summary with techniques used to plug the wellbore (e.g., cementation) will be included in the Sundry Notice. Proposed final reclamation procedures and mitigation measures will also be included in the Sundry Notice. Well abandonment procedures will follow the BLM GJFO Standard Conditions of Approval (COAs) and COGCC rules.
- Black Hills will implement the SWMP and Spill Prevention Control and Countermeasure (SPCC) Plan to minimize impacts to water quality.

Invasive Non-Native Species

- Black Hills will implement measures outlined in the BLM's *Noxious and Invasive Weed Management Plan for Oil and Gas Operators* to reduce or eliminate noxious weeds identified on BLM-administered lands within the project area and prevent the spread of weeds into uninfested areas, including:
 - The project area would be inventoried prior to ground-disturbing activities. If Class A or Class B noxious weeds are documented within 100 feet of proposed disturbance, they would be treated or removed prior to ground-disturbing activities (Class B and Class C weeds were documented within 100 feet of the proposed project on BLM-administered lands).
 - All equipment used at previous construction sites, or within sites with weed seed contaminated soil would be power-washed to remove mud, weed seeds and propagules before entering the construction area and/or moving to

uncontaminated terrain. All maintenance vehicles would be regularly cleaned of soil.

- Treatment strategies for weedy species documented will consider effective methods and timing for preventing seed production of that species and could include hand/machine pulling, cutting roots just below soil level, treatment with herbicides, or mowing, as directed by the BLM.
- Surface disturbances will be reseeded at the appropriate time and with a palatable, native species desirable to wildlife including shrubs, grasses and forbs seed mixture as follows:

Seed Mixture for Reclamation/Revegetation on BLM-Administered Lands

Common Name	Scientific Names	Variety	Season	Form	PureLiveSeed (PLS) lbs/acre*
Grasses					
Bottlebrush Squirreltail	<i>Elymus elymoides</i> , <i>Sitanion hystrix</i>	Toe Jam Creek	Cool	Bunch	2.0
Slender Wheatgrass	<i>Elymus trachycaulus</i> , <i>Agropyron trachycaulum</i>	Revenue, Pryor	Cool	Bunch	3.0
Western Wheatgrass	<i>Pascopyrum smithii</i> , <i>Agropyron smithii</i>	Barton, Rodan, Rosana, Arriba, Walsh	Cool	Sod-forming	4.8
Indian Ricegrass	<i>Achnatherum hymenoides</i> , <i>Oryzopsis hymenoides</i>	Nezpar, Paloma, Star Lake	Cool	Bunch	2.8
Junegrass	<i>Koeleria cristata</i> , <i>Koelaria macrantha</i>		Cool	Bunch	0.1
Forbs					
Blue Flax	<i>Linum lewisii</i>	Maple grove			0.5
Northern sweetvetch	<i>Hedysarum borale</i>	Timp			0.5
Palmer Penstemon (OR Rocky Mtn Pen)	<i>Penstemon palmerii</i> <i>Penstemon strictus</i>	VNS** VNS			0.5
Small Burnet	<i>Sanguisorba minor</i>	Delar			1.0
Western Yarrow	<i>Achillea millefolium</i> [occidentalis]				0.1
Shrubs					
Four-wing saltbush	<i>Atriplex canescens</i>				2.0
Shadscale	<i>Atriplex confertifolia</i>				1.5
Winterfat	<i>Krascheninnikovia lanata</i> , <i>Ceratoides lanata</i>				0.5
Antelope bitterbrush	<i>Purshia tridentate</i>	VNS			1.0
TOTAL Pure Live Seed per acre					20.3
*Based on 80 pure live seeds (PLS) per square foot, broadcast-seeded. No hydroseeding.					
** Variety Not Specified					

- Black Hills will provide an annual report to the BLM that identifies the extent of noxious weed infestations and treatment used to eradicate or minimize undesirable plant species. The report would be provided by December 1, annually, until the desired reclamation level is achieved.
- Prior to the use of herbicides, a Pesticide Use Plan (PUP) will be approved by the BLM.

Vegetation

- Black Hills will use brush-hogging techniques for clearing in big sagebrush shrublands, where appropriate, to leave root structure intact and to preserve seed stock and promote faster sagebrush revegetation.
- Black Hills will control fugitive dust on the access roads and within disturbed surfaces during construction to minimize effects to adjacent vegetation. Speed limits will be enforced from the beginning of construction throughout the life of the project, and where speed limits are not posted on unpaved access roads, speeds will not exceed 20 miles per hour.

ESA and Sensitive Animal Species

- Avoid entrainment by pumping from off-channel locations (e.g., ponds, lakes, and diversion ditches), not directly connected to the mainstem rivers even during high spring flows;
- If the pump head must be located in the river channel where larval fish are known to occur (generally within Designated Critical Habitat), the following measures apply:
 - Do not situate the pump in a low-flow or no-flow area as these habitats tend to concentrate larval fishes. Instead place the pump into fast moving riffle habitat.
 - Restrict the amount of pumping, to the greatest extent possible, during that period of the year when larval fish may be present (June 1 to August 15).
 - Avoid pumping, to the greatest extent possible during the pre-dawn hours (two hours prior to sunrise) as larval fish drift studies indicate that this is a period of greatest daily activity.
- Screen all pump intakes with ¼ inch or finer mesh material.
- Report any fish impinged on any intake screens to FWS at (970) 243-2778 or the Colorado Parks and Wildlife Northwest Region, 711 Independent Avenue, Grand Junction, Colorado, 81505, (970-255-6100).
- All hydrostatic test water will be discharged in a vegetated upland area at a distance from waterbodies to encourage infiltration and minimize flow into waterbodies. The water discharge from these activities will be directed to a temporary catch basin consisting of straw bales, Mirafi fabric, and /or silt fence to dissipate energy to prevent erosion and to filter the discharge in order to avoid sedimentation. Sediment barriers (e.g., silt fence and/or straw wattles) will also be utilized as necessary between the surface discharge point to remove sediment from any surface runoff that might occur. The discharge location will be approved by BLM prior to discharge.
- Water withdrawal will occur from locations other than the Colorado River between June 1 and August 15, if possible.

ESA and Sensitive Plant Species

- No well pads or centralized facilities will be constructed within 100 meters of suitable or potentially suitable DeBeque phacelia habitat, or within 20 meters of documented Colorado hookless cactus plants, unless existing disturbance is closer to the documented plants or habitat. When feasible, well pads and/or centralized facilities will be placed further than 20 meters from BLM-sensitive plants.
- Pipeline corridors will be constructed adjacent to existing disturbance (roads or existing pipeline corridors) where feasible, or collocated with new proposed access roads.

- Pipeline corridors and new access roads will be constructed further than 100 meters from suitable or potentially suitable DeBeque phacelia habitat, or further than 20 meters from documented Colorado hookless cactus plants and BLM-sensitive plants, if feasible. In situations that this scenario is not possible for pipeline corridors, Black Hills will minimize effects to special status plants to the extent practicable by reducing the construction corridor width, constructing the pipelines on the opposite side of existing disturbance if special status plants are not present, or constructing the pipelines within an existing road if special status plants are present on both sides of the road.
- Construction will occur outside of the special status plant flowering season and spatial buffers, identified below:
 - No construction within 200 meters of DeBeque phacelia suitable or potentially suitable habitat between April and late June.
 - No construction within 100 meters of Colorado hookless cactus plants between April and late May.
 - No construction within 100 meters of Naturita milkvetch plants between April and early June.
- Orange fencing will be erected along well pad, centralized facility, pipeline, and access road construction disturbance extents within 20 meters of known Colorado hookless cactus and BLM-sensitive plant species and within 100 meters of suitable or potentially suitable DeBeque phacelia habitat to ensure construction traffic and workers would not accidentally crush plants.
- Surface pipelines will be securely fastened so that the pipeline does not migrate into suitable or potentially suitable DeBeque phacelia habitat, or known special status plant sites. Surface pipelines will be monitored daily.
- During construction, Black Hills will water (no additives) existing gravel/dirt roads, pipeline construction corridors, well pads, and/or centralized facilities within 100 meters on either side of known special status plants (200 meters within DeBeque phacelia suitable or potentially suitable habitat) to reduce possible dust deposition. Water will be obtained from an approved water source.
- Straw bale wattles, silt fences, or other measures will be installed on the edge of proposed ground-disturbance and existing access roads if proposed disturbance is within 20 meters of documented Colorado hookless cactus and/or BLM-sensitive plants, and/or 100 meters of suitable or potentially suitable DeBeque phacelia habitat to reduce the potential for altering hydrology/habitat.
- A biological monitor will be present on-site during all ground-disturbing activities, including installation of BMPs (conservation measures) and reclamation activities to ensure effects to special status plants are minimized as much as possible. Areas requiring a biological monitor will be determined in conjunction with the BLM.
- Black Hills will follow BLM's *Noxious and Invasive Management Plan for Oil and Gas Operators* (BLM, 2007) to control or eliminate noxious weeds and other undesirable plants documented within the Project area.
- Black Hills will inform all employees about prohibitions against possessing, damaging, and destroying ESA-listed plants.
- Colorado hookless cactus plants documented within 20 meters (328 feet) and suitable or potentially suitable DeBeque phacelia habitat documented within 100 meters (656 feet) of Project disturbance will be monitored annually during the appropriate flowering period for a minimum of 3 years after ground-disturbing activities.

- Plants and/or habitat will be photographed from a staked location prior to ground-disturbing activities and annually during the appropriate flowering season.
- Plant and/or habitat status and health will be described, including presence of weed species, if any.
- Black Hills will submit monitoring reports to BLM GJFO and the FWS after each annual survey.

Migratory Birds and Raptors

- Black Hills would revisit nests documented within 0.5 mile of proposed project components during 2013 surveys to determine status in 2013 prior to construction. If a nest is determined to be occupied, Black Hills would adhere to the spatial and temporal buffers for each species as identified in Table 3.3-16 in the EA and in the Biological Resources Protection Plan.
- Vegetation clearing will not occur between May 15 and July 15, effectively avoiding the core migratory bird nesting period for most species but might affect late or second nesting attempts.

Wildlife and Aquatic

- Black Hills will implement seasonal timing limitations within big game sensitive wildlife habitats (winter range) as required by lease stipulation or as required by the BLM where there is no lease stipulation to protect wintering big game in big game sensitive wildlife habitats.
- Black Hills proposes to meet with CPW and BLM around July 1 each year to discuss drilling plans for the following winter as well as to address requests for exceptions to timing limitations in sensitive big game winter habitats.
- Between December 1 and May 1, operational traffic within big game sensitive wildlife habitats (winter range) will be limited to emergency traffic only within 3 hours of sunrise and sunset (between 10 a.m. and 3 p.m.). Requests for exceptions will be submitted in writing, either by letter or Sundry Notice.
- A policy stating that no guns, dogs, drugs, or alcohol will be in place for all employees and subcontractors to minimize potential conflicts with wildlife.
- Environmental awareness training will be provided describing the consequences of poaching and information on Colorado wildlife laws, licensing, and residency requirements.
- Measures described in the SWMP and SPCC will be followed to minimize the potential for spills of fuel and/or other hazardous materials to reach drainages.
- Remote telemetry will be used for all well locations during operations. Initially, regular visits (daily) are necessary but once the well has been in production for some period of time, the daily trips can be reduced to a single weekly or monthly visit.
- Bear-resistant containers will be used and refuse will be collected frequently to minimize potential for conflicts with bears.
- A flume crossing technique (dry open-cut) will be used when water is present in drainages to maintain water flow, minimize changes in waterbody flow characteristics, and eliminate a significant quantity of downstream turbidity and sedimentation.
- Native stream-bed materials will be used for trench backfill.

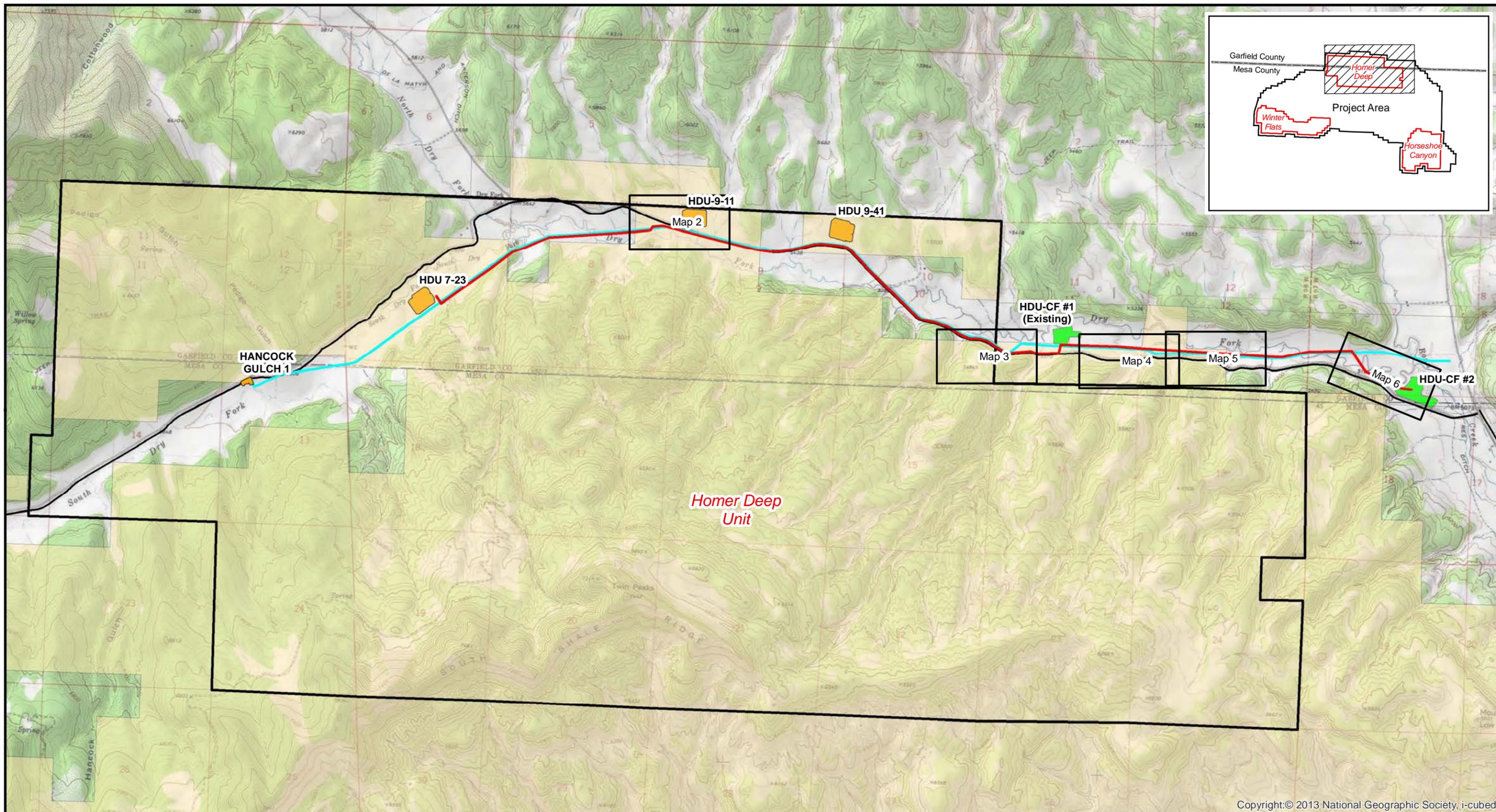
- Application of herbicides will be avoided within 100 feet of wetlands and floodplains.

Transportation

- A produced water gathering system will be installed, reducing heavy truck traffic.
- Existing roads will be used to the maximum extent possible and gathering pipelines would be placed adjacent to both existing and new roads to minimize disturbance.
- Workers will carpool to drilling locations when feasible.
- Remote telemetry will be used for well locations during operations wherever topographically feasible.
- Disposal wells within the project area will be used for injection of produced water, reducing the need for heavy truck traffic hauling produced water outside of the project area.
- A water supply delivery system will be developed as part of the Proposed Action which could reduce the number of heavy truck trips delivering water from outside the project area.
- Black Hills employees and contractors will follow all posted speed limits. Where no speed limit is posted, speeds on unpaved access roads or disturbed areas will not exceed 20 miles per hour to reduce dust.

Wastes

- Black Hills will implement SWMPs, BMPs, and the SPCC Plan.
- Bear-resistant containers will be used and refuse would be collected frequently to minimize potential for conflicts with bears.



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Legend	
Unit Boundary	Surface Ownership
Centralized Facilities	BLM Lands
Well Pads	Private
Gas Pipeline	
Existing ETC Pipeline	

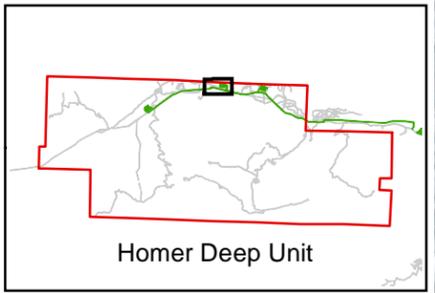
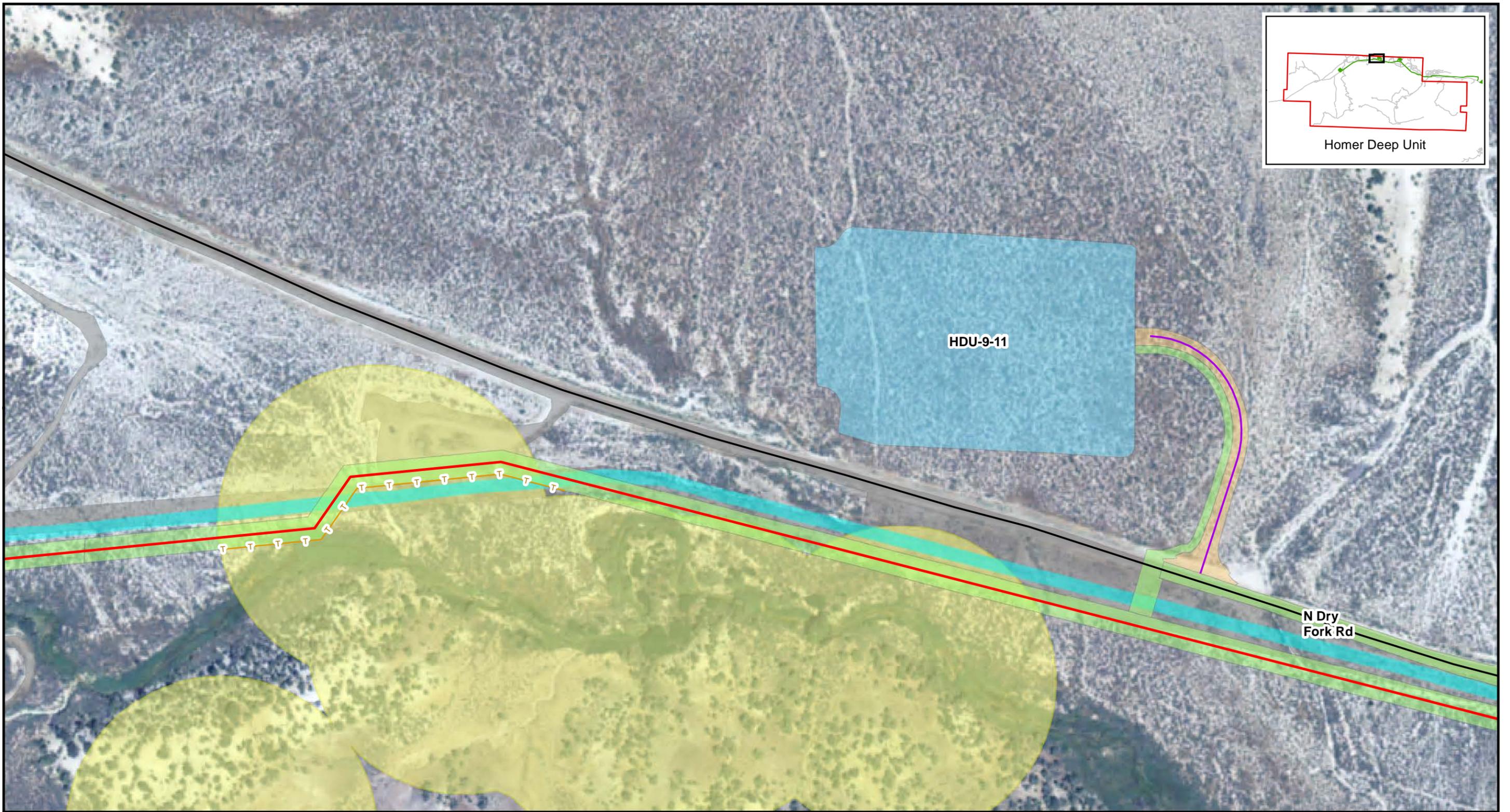
Map 1

Red Rock Gathering Company, LLC

HDU Gas Gathering Pipeline

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5/21/2014



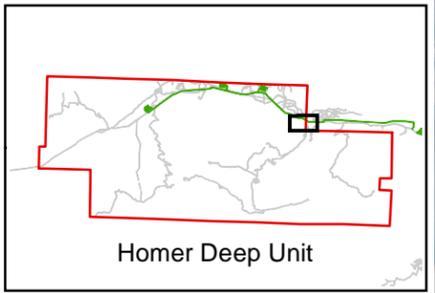
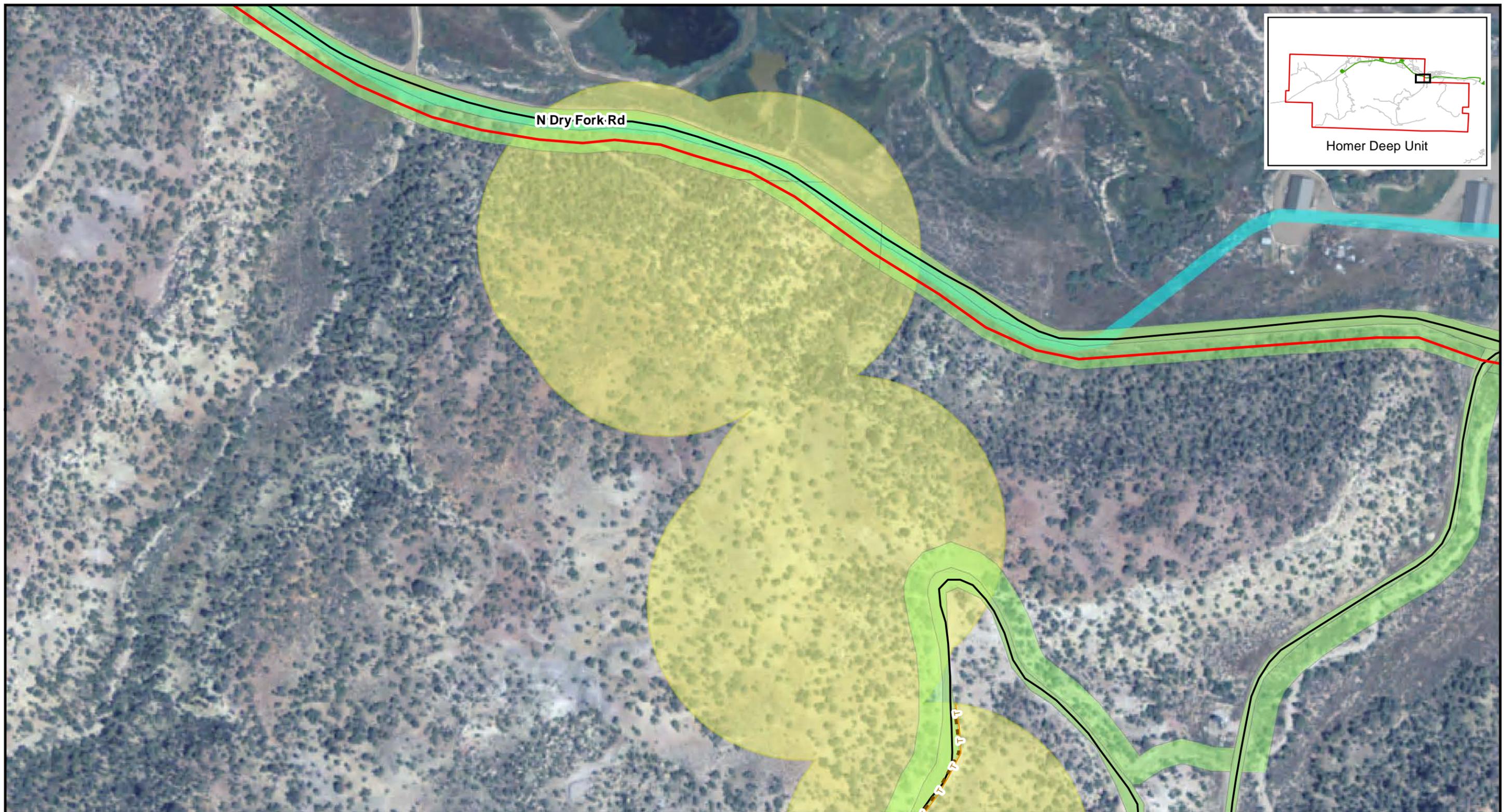
Legend		Suggested Mitigation	
Proposed Disturbance	RedRock	Access Roads	Suggested Mitigation
Centralized Facility	Gas Pipeline	Existing - No Improvement	T-posts with orange fencing
Well Pad	Existing ETC Pipeline	New Resource Road	Post and Cable Fence
Pipeline			Sediment Barrier (Stormwater BMPs)
Road			Silt Fence
			Hay Wattles
			Restricted Weed Treatment / Dust Abatement

Map 2

Red Rock Gathering Company, LLC

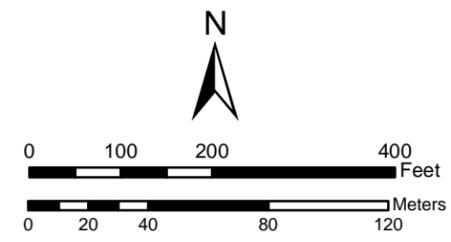
HDU Gas Gathering Pipeline

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Homer Deep Unit

Legend		Suggested Mitigation	
Proposed Disturbance	RedRock	Access Roads	Suggested Mitigation
Centralized Facility	Gas Pipeline	Existing - No Improvement	T-posts with orange fencing
Well Pad	Existing ETC Pipeline	Post and Cable Fence	Sediment Barrier (Stormwater BMPs)
Pipeline		Silt Fence	Hay Wattles
Road		New Resource Road	Restricted Weed Treatment / Dust Abatement

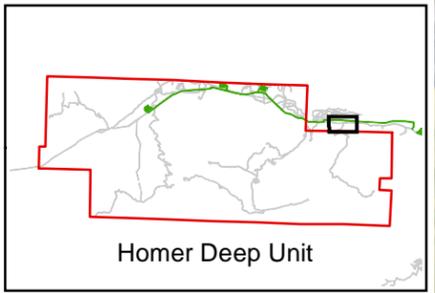


Map 3

Red Rock Gathering Company, LLC

HDU Gas Gathering Pipeline

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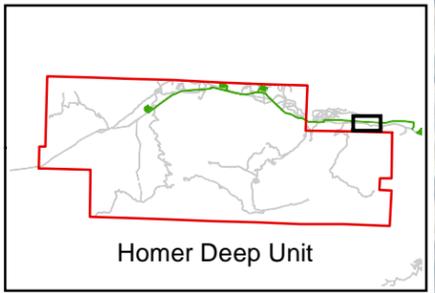
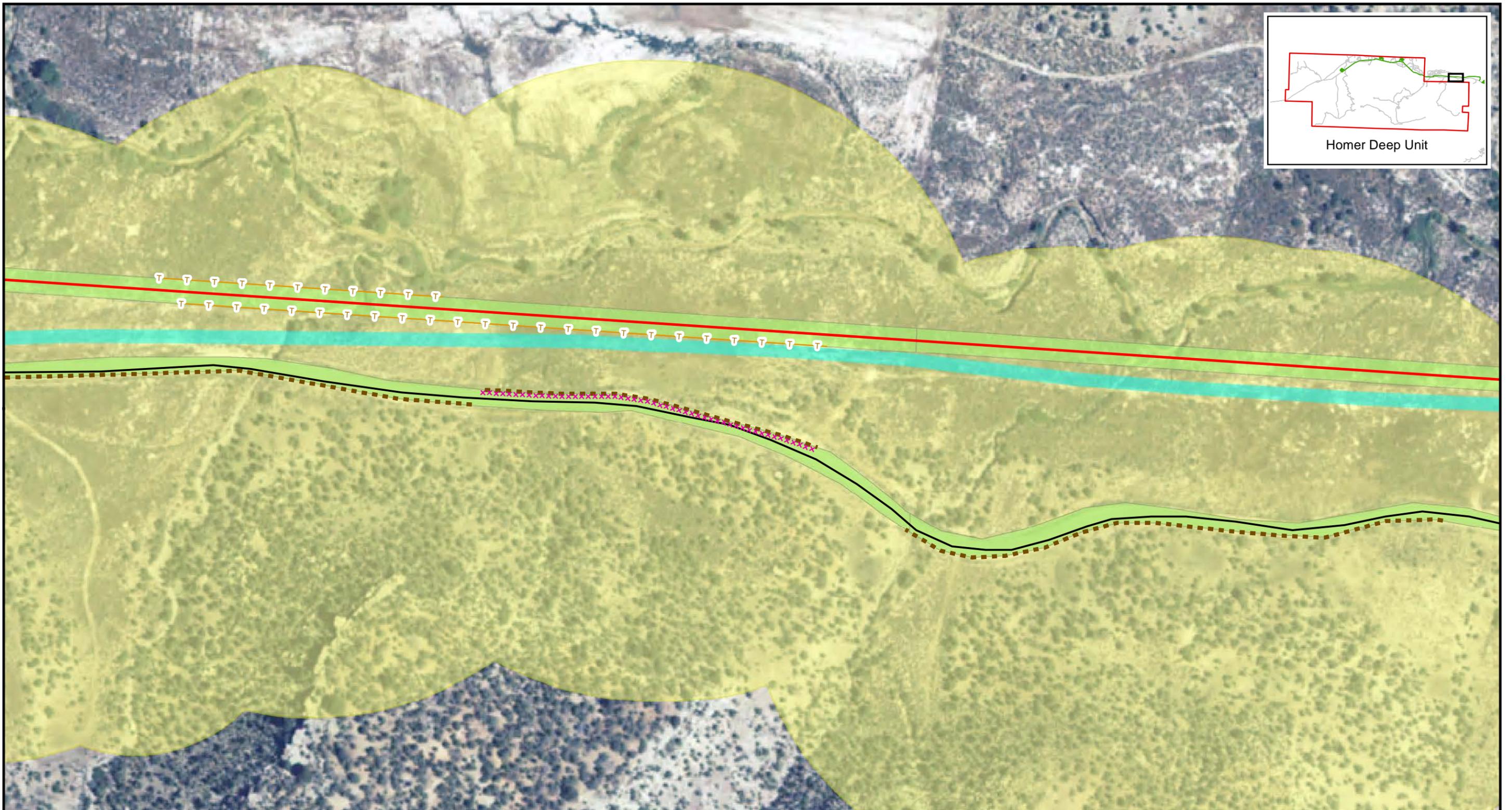
Legend		Suggested Mitigation	
Proposed Disturbance	RedRock	Access Roads	
Centralized Facility	Gas Pipeline	Existing - No Improvement	T-posts with orange fencing
Well Pad	Existing ETC Pipeline	New Resource Road	Post and Cable Fence
Pipeline			Sediment Barrier (Stormwater BMPs)
Road			Silt Fence
			Hay Wattles
			Restricted Weed Treatment / Dust Abatement

Map 4

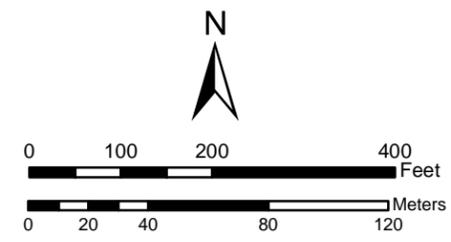
Red Rock Gathering Company, LLC

HDU Gas Gathering Pipeline

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Legend			
Proposed Disturbance	RedRock	Access Roads	Suggested Mitigation
Centralized Facility	Gas Pipeline	Existing - No Improvement	T-posts with orange fencing
Well Pad	Existing ETC Pipeline	New Resource Road	Post and Cable Fence
Pipeline			Sediment Barrier (Stormwater BMPs)
Road			Silt Fence
			Hay Wattles
			Restricted Weed Treatment / Dust Abatement

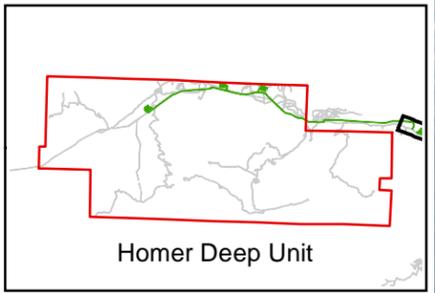
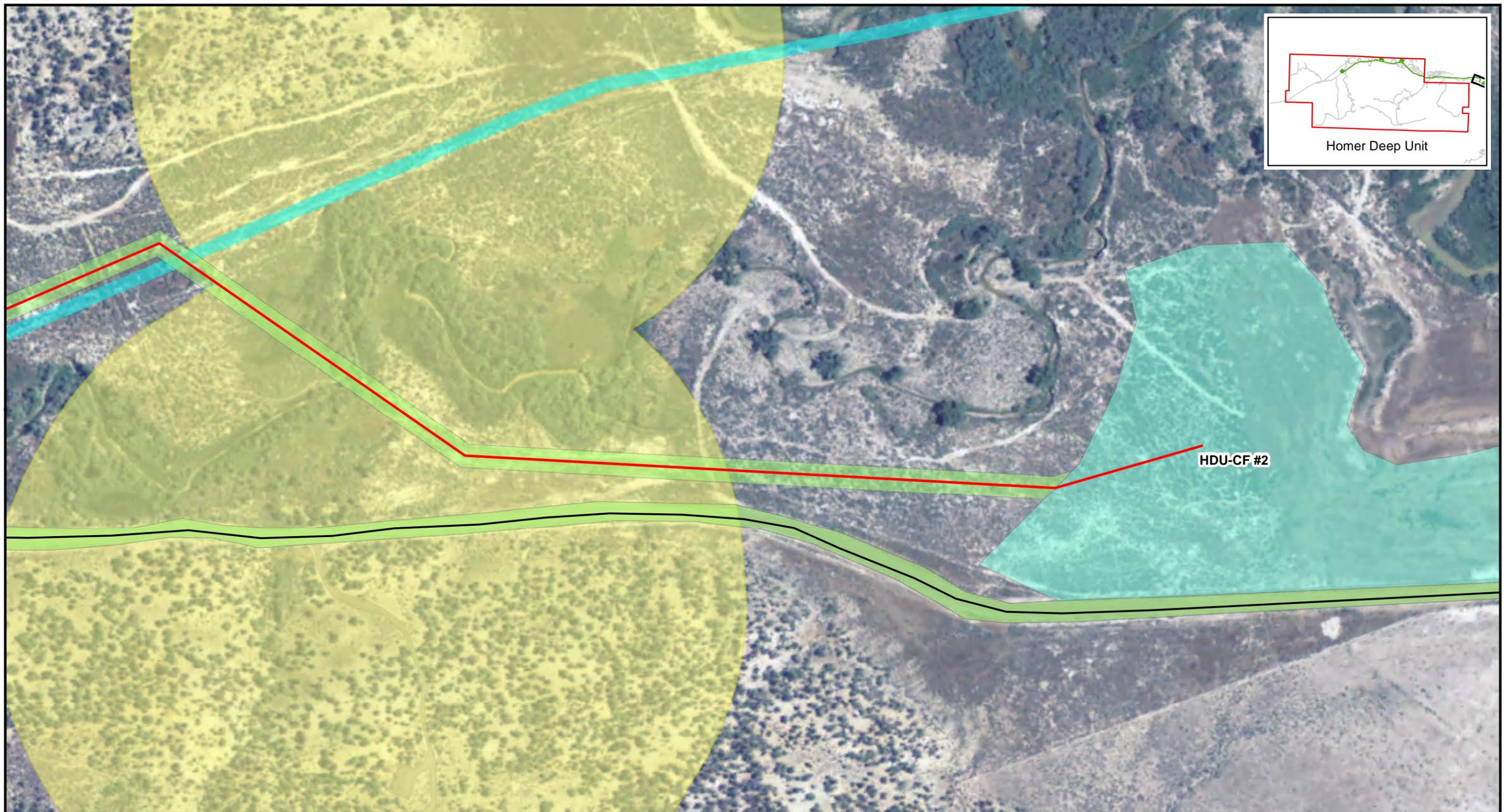


Map 5

Red Rock Gathering Company, LLC

HDU Gas Gathering Pipeline

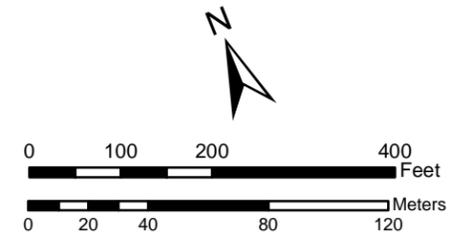
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Homer Deep Unit

HDU-CF #2

Legend			
Proposed Disturbance	RedRock	Access Roads	Suggested Mitigation
Centralized Facility	Gas Pipeline	Existing - No Improvement	T-posts with orange fencing
Well Pad	Existing ETC Pipeline	New Resource Road	Post and Cable Fence
Pipeline			Sediment Barrier (Stormwater BMPs)
Road			Silt Fence
			Hay Wattles
			Restricted Weed Treatment / Dust Abatement



Map 6

Red Rock Gathering Company, LLC

HDU Gas Gathering Pipeline

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