

U.S. Department of the Interior
Bureau of Land Management
Glenwood Springs Energy Office
2425 S. Grand Avenue, Suite 101
Glenwood Springs, CO 81601

Statutory Categorical Exclusion, DOI-BLM-CO-N040-2009-0079-SCX

Project: Proposal to Drill One Horizontal Well into Federal Lease COC64191 from the Existing F21OU Pad Located on BLM Land in the Orchard Unit (Orchard II Master Development Pad). Also Identify Surface Facility Locations that Support a Pending Injection Well on the F21OU Pad.

Location: Township 8 South, Range 96 West, Section 21, SE $\frac{1}{4}$ NW $\frac{1}{4}$, 6th PM

Proposal: EnCana Oil & Gas (USA) Inc. (EnCana) proposes to directionally drill one horizontal Federal well from the existing F21OU pad located on public land to access fluid minerals in Federal lease COC64191 (Table 1). The pad would be expanded from its original disturbance footprint of 4.5 acres analyzed in Orchard Unit GAP (September 2005) to a revised pad footprint of 5.5 acres. The expanded disturbance would accommodate a PACE rig layout, which requires a larger pad surface. Additionally, the existing gas well (Orchard Unit 21-6) on the pad is planned for conversion to an injection well. Support facilities such as a pump house, generator, and storage tanks would be incorporated into the 5.5-acre pad expansion footprint. The pad is presently in a state of interim reclamation with a disturbed working area of about 1.5 acres (Figures 1 and 2).

The spud date of the existing gas well on the F21OU pad was 8/18/05. Resource surveys including migratory bird, sensitive plant, and cultural resources were completed relative to the 2005 APD issuance. The existing access road and pipeline would continue to serve the F21OU pad in its present condition. The onsite visit would determine if a new buried water line to serve the injection well would be installed.

Table 1. Surface and Bottomhole Locations of Proposed Federal Wells

<i>Proposed Wells</i>	<i>Federal Lease</i>	<i>Surface Locations</i>	<i>Bottomhole Locations</i>
Orchard Unit 21-6H (F21OU)	COC64191	1697 feet FSL, 1722 feet FWL SE $\frac{1}{4}$ NW $\frac{1}{4}$, Section 21, T8S R96W	1972 feet FNL, 1064 feet FWL NW $\frac{1}{4}$ SE $\frac{1}{4}$, Section 21, T8S R96W

Lease Stipulations: The specific stipulations listed on Federal lease COC64191 are not applicable to the F21OU location. In the absence of a winter timing limitation for the F21OU pad, a Condition of Approval restricting any construction, drilling, or completion activities would be invoked from January 1 through February 29 to protect wintering wildlife.

BLM Conditions of Approval: Conditions of Approval (COAs) that would be included on the Applications for Permit to Drill (APDs) are attached.

NEPA Compliance: The following category of Categorical Exclusions pursuant to Section 390 of the Energy Policy Act (Act of 2005) applies to this proposal:

Category #1: *Individual surface disturbances of less than five (5) acres so long as the total surface disturbance on the lease is not greater than 150 acres and site-specific analysis in a document prepared pursuant to NEPA has been previously completed.* The well pad expansion would amount to 1.0 acre of additional surface disturbance. Upon visual review of the surface disturbance in Leases COC64191, the total disturbance area of the leases is far less than the allowable 150 acres.

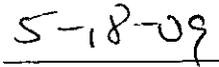
Category #2: *"Drilling an oil and gas location or well pad at a site which drilling has occurred within five (5) years prior to the date of spudding the well."* The existing gas well (Orchard Unit 21-6) on the F21OU pad was spudded on August 18, 2005.

Category #3: *Drilling an oil or gas well within a developed field for which an approved land use plan or any environmental document prepared pursuant to NEPA analyzed drilling as a reasonably foreseeable activity, so long as such plan or document was approved within five (5) years prior to the date of spudding the well.* The F21OU pad was identified as an existing well pad in the Orchard II Master Development Plan (EA #CO140-2008-0032 approved on 10/14/08) and is subject to the Standard Conditions of Approval identified in that plan. Furthermore, EA #CO140-2005-046 identified and analyzed F21OU well pad development including the drilling of the existing gas well (approved May, 2005).

Prepared by: Jim Byers, Natural Resource Specialist 4/13/09

Approval: It is my decision to approve the proposed action with the above referenced terms and conditions:


Allen B. Crockett, Ph.D., J.D.
Supervisory Natural Resource Specialist


Date

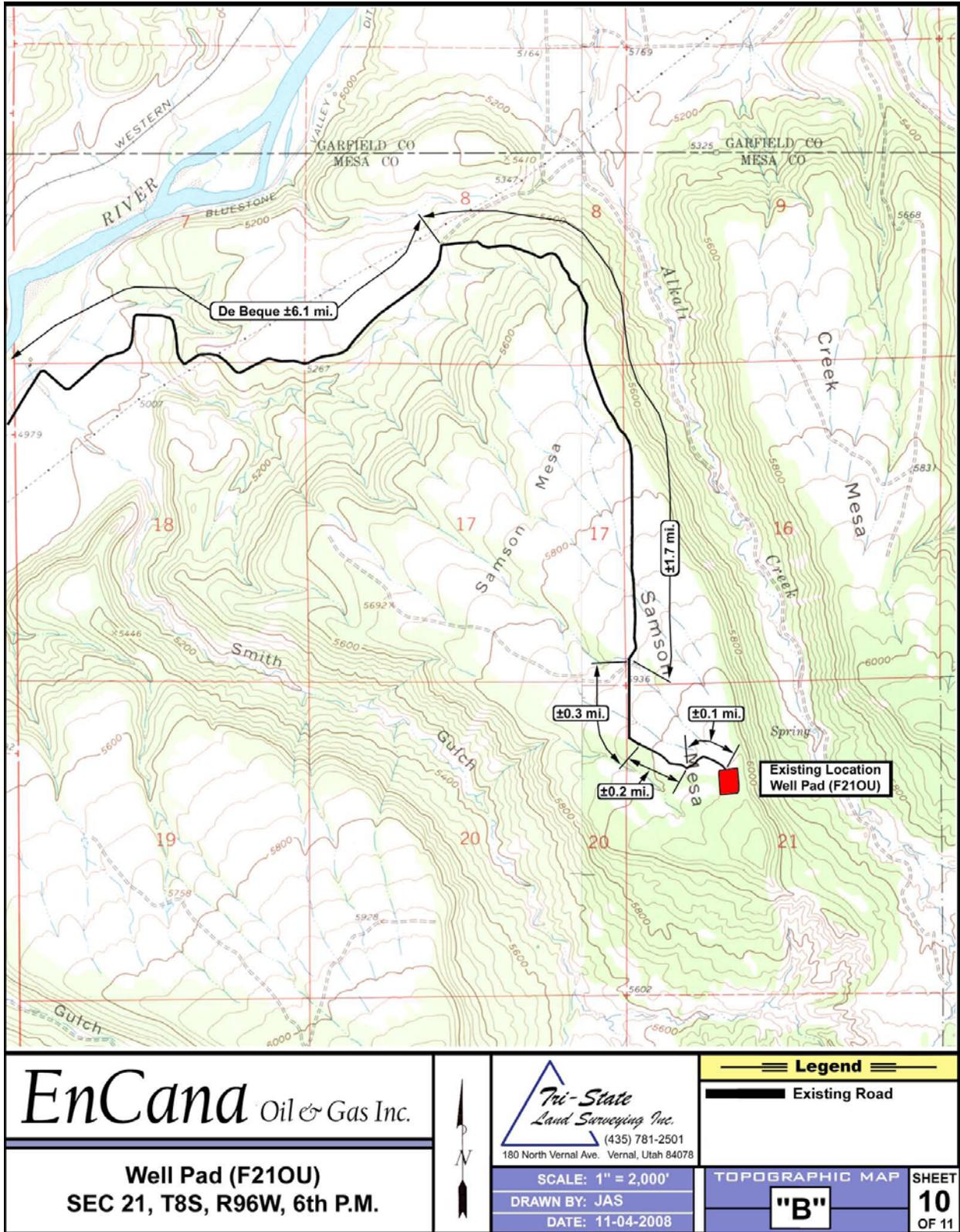
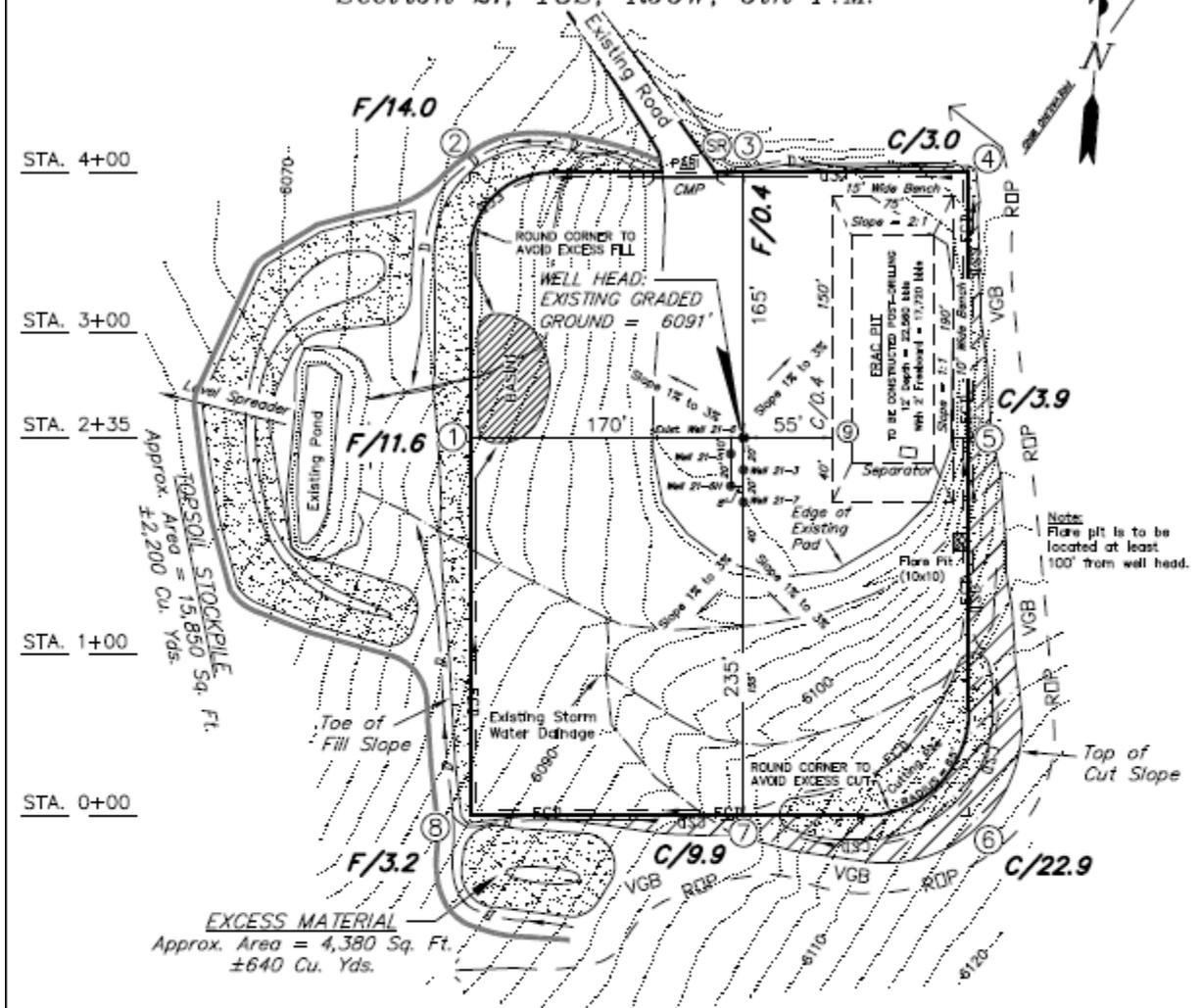


Figure 1. Project Location Map

ENCANA OIL & GAS (USA) INC

WELL PAD (F210U)
Section 21, T8S, R96W, 6th P.M.



EXCESS MATERIAL
Approx. Area = 4,380 Sq. Ft.
±640 Cu. Yds.

Note:
Flare pit is to be
located at least
100' from well head.

NOTES:

- (1) Slope Track and/or Terrace All Slopes and Piles
- (2) Erosion Control & Seed Topsoil Stockpile
- (3) Erosion Control & Seed Outside Slopes of Stockpiles
- (4) Slope away from Substructure Areas 1% to 3% to Flow Control Ditch on Entire Pad
- (5) When Possible the Cut and Fill Slopes Directly Behind the Proposed Production Equipment Should be Reclaimed with 3:1 Slopes and Topsoil Spread During Pad Construction.
- (6) BMP Selection and Position may Change Depending on Actual Conditions Encountered During the Construction Process.
- (7) All CMP's Shall have Inlet and Outlet Protection.
- (8) All BMP's to be constructed to Encana Oil & Gas (USA) Inc. BMP Manual's Specifications

NOTE:

The topsoil & waste material area is calculated as being mounds containing 2,840 cubic yards of dirt (a 15% fluff factor is included). The mound areas are calculated with push slopes of 2.5:1 & fall slopes of 2.5:1.

LEGEND:

- PARI = PAD/ACCESS ROAD INTERFACE
- SR = SEDIMENT RESERVOIR
- ST = SEDIMENT TRAP
- R.O.P. = RUN-ON PROTECTION
- = PERIMETER CONTROL (WATTLES)
- CSD = CUT SLOPE DIVERSION (BERM TOE OF CUT SLOPE)
- D = FILL DIVERSION TO SEDIMENT TRAP
- VGB = VEGETATION BUFFER (UNDISTURBED LAND INSIDE PC)
- FCD = FLOW CONTROL DITCH
- CDM = CHECK DAM

SURVEYED BY: C.D.S.	DATE SURVEYED: 10-20-08
DRAWN BY: F.T.M.	DATE DRAWN: 10-24-08
SCALE: 1" = 60'	REVISED:

Tri State (435) 781-2501
Land Surveying, Inc.
180 NORTH VERNAL AVE VERNAL, UTAH 84078

SHEET 4 OF 11

Figure 2. Pad Layout with Expanded Disturbance Area

DOWNHOLE CONDITIONS OF APPROVAL
Applications for Permit to Drill

Company/Operator: EnCana Oil & Gas (USA) Inc.

Surface Location: SENW, Section 21, Township 8 South, Range 96 West, 6th P.M.

<u>Well Name</u>	<u>Well No.</u>	<u>Bottomhole Location</u>	<u>Lease</u>
Orchard Unit	21-6H (F21OU)	SENW Sec. 21, T. 8S, R. 96W.	COC-64191

1. Twenty-four hours *prior* to (a) spudding, (b) conducting BOPE tests, (c) running casing strings, and (d) within twenty-four hours *after* spudding, the GSEO shall be notified. One of the following GSEO's inspectors shall be notified by phone: Steve Ficklin at 970-947-5213, Julie King shall at 970-947-5239, and Todd Sieber at 970-947-5220.
2. A GSEO petroleum engineer shall be contacted for a verbal approval prior to commencing remedial work, plugging operations on newly drilled boreholes, changes within the drilling plan, changes or variances to the BOPE, deviating from conditions of approval, and conducting other operations not specified within the APD. Please contact Will Howell at 970-947-5221 (office) or 970-319-5837 for verbal approvals. As a secondary contact, Dane Geyer at 970-947-5229 (office) or 970-589-6887 (cell) for verbal approvals.
3. If a well control issue arises (e.g. kick, blowout, or water flow), casing failure occurs, or an increase in bradenhead pressure occurs during fracturing operations, Will Howell shall be notified within 24 hours from the time of the event.
4. The BOPE shall be tested and conform to Onshore Order #2 for a **5M** system.
5. A casinghead rated to 5,000 psi or greater shall be utilized.
6. An electrical/mechanical mud monitoring equipment shall be functional prior to drilling out the surface casing shoe. As a minimum, this shall include: a trip tank, pit volume totalizer, stroke counter, and flow sensor.
7. Gas detecting equipment shall be installed in the mud return system, prior to drilling out the surface casing shoe, and hydrocarbon gas shall be monitored for pore pressure changes.
8. A gas buster shall be functional and all flare lines effectively anchored in place, prior to drilling out the next shoe. The discharge of the flare lines shall be a minimum of 100' from the well head and targeted at bends. The panic line shall be a separate line (not open inside the buffer tank) and effectively anchored. All lines shall be downwind of the prevailing wind direction and directed into a flare pit, which cannot be the reserve pit. The flare system shall use an automatic ignition. Where noncombustible gas is likely or expected to be vented, the system shall be provided supplemental fuel for ignition and maintain a continuous flare.
9. The intermediate casing shall be tested to the equivalent of 11 ppg mud system (+/-5026 psi).
10. Prior to commencing fracturing operations, the production casing shall be tested to the maximum anticipated surface fracture pressure and held for 15 minutes. If leak-off is found, Will Howell shall be notified within 24 hours of the failed test, but prior to proceeding with fracturing operations. The test shall be charted and set to a time increment as to take up no less than a quarter of the chart per test. The chart shall be submitted with the well completion report.
11. As a minimum, cement shall be brought to 200' above the Mesaverde. Prior to commencing

- fracturing operations, a CBL shall be run (from TD to 200' above the TOC) and an electronic copy submitted to the GSEO. If the TOC is lower than required or the cement sheath of poor quality, then, within 48 hours from running the CBL and prior to commencing fracturing operations, a GSEO petroleum engineer shall be notified for further instruction.
12. Submit the (a) mud logger's log/drilling log (e.g. Pason disc), (b) driller's event log/operations summary report, (c) production test volumes, (d) directional survey, and (e) Formation Integrity Test results with the well completion report to: Glenwood Springs Field Office, 2300 River Frontage Rd; Silt, CO 81652; Attn: Will Howell. Please contact Will Howell at 970-947-5221 (office) or 970-319-5837 for clarification.
 13. After the surface casing is cemented, a leak-off test will be performed on the first well drilled in accordance with OOGO No. 2; Sec. III, B.1. i. in order to make sure the surface casing is set in a competent formation. Submit the results from the test via email (william_howell@blm.gov) or Glenwood Springs Field Office, 2300 River Frontage Rd; Silt, CO 81652 Attn: Will Howell on the first well drilled on the pad.
 14. Surface casing will be set to -1500 feet in a competent formation to insure well integrity. While 10% of measured depth (-1240 ft) surface casing is the normal requirement, this extra casing will insure well integrity.

**SURFACE USE CONDITIONS OF APPROVAL
DOI-BLM-CO-N040-2009-0079-SCX**

1. Startup Notification. The operator shall notify the BLM representative at least at 48 hours prior to initiation of construction.
2. Application of GAP COAs. Standard Conditions of Approval outlined in Appendix D (pp. D-13 through D-24) of the Orchard II Master Development Plan will apply and remain in full force and effect.
3. Production Facility Placement and Paint Color. The final location of frac pits, separators, and storage tanks will be determined after the pad has been constructed. The paint color to be used on all surface facilities including the metal containment rings surrounding the tank battery and pipeline risers shall be Shale Green (5Y 4/2).
4. Dust Abatement. The operator shall implement dust abatement measures as needed to prevent fugitive dust from vehicular traffic, equipment operations, or wind events. The authorized officer may direct the operator to change the level and type of treatment (watering or application of various dust agents, surfactants, and road surfacing material) if dust abatement measures are observed to be insufficient to prevent fugitive dust.
5. Reclamation. The goals, objectives, timelines, measures, and monitoring methods for final reclamation of oil and gas disturbances are described in Appendix I (Surface Reclamation) of the 1998 Draft Supplemental EIS (DSEIS). Specific measures to follow during interim and temporary (pre-interim) reclamation are described below.
 - a. Deadline for Temporary Seeding and Interim Reclamation. Topsoil storage piles, stormwater control features, and cut-and-fill slopes shall undergo temporary seeding to stabilize the material and minimize weed infestations within 30 days following completion of construction. Interim reclamation to reduce a well pad to the maximum size needed for production shall be completed within 6 months following completion of the last well planned for the pad.

Both of these deadlines are subject to being extended upon approval of the authorized officer based on season, timing limitations, or other constraints on a case-by-case basis.
 - b. Topsoil Stripping, Storage, and Replacement. Topsoil shall be stripped following removal of vegetation during construction of well pads, pipelines, roads, or other surface facilities. This shall include, at a minimum, the upper 6 inches of soil. Any additional topsoil present at the site, such as indicated by color or texture, shall also be stripped. The authorized officer may specify a stripping depth during the onsite visit. The stripped topsoil shall be stored separately from subsoil or other excavated material and replaced prior to final seedbed preparation.
 - c. Seedbed Preparation. For cut-and-fill slopes, initial seedbed preparation shall consist of backfilling and recontouring to achieve the configuration specified in the reclamation plan. For compacted areas, initial seedbed preparation shall include ripping to a minimum depth of 18 inches, with a maximum furrow spacing of 2 feet. Where practicable, ripping shall be conducted in two passes at perpendicular directions. Following final contouring, the backfilled or ripped surfaces shall be covered evenly with topsoil.

Final seedbed preparation shall consist of scarifying (raking or harrowing) the spread topsoil prior to seeding. If more than one season has elapsed between final seedbed preparation and seeding, and if the area is to be broadcast-seeded or hydroseeded, this step shall be repeated no more than 1 day prior to seeding to break up any crust that has formed.

Seedbed preparation is not required for topsoil storage piles or other areas of temporary seeding.

Requests for use of soil amendments, including basic product information, shall be submitted to the BLM for approval.

- d. Seed Mixes. A seed mix consistent with BLM standards in terms of species and seeding rate for the specific habitat type shall be used on all BLM lands affected by the project (see Attachments 1 and 2 of the letter provided to operators dated May 1, 2008). Note that temporary seeding allows use of a seed mix containing sterile hybrid non-native species in addition to native perennial species.

For private surfaces, the menu-based seed mixes are recommended, but the surface landowner has ultimate authority over the seed mix to be used in reclamation. The seed shall contain no noxious, prohibited, or restricted weed seeds and shall contain no more than 0.5 percent by weight of other weed seeds. Seed may contain up to 2.0 percent of "other crop" seed by weight, including the seed of other agronomic crops and native plants; however, a lower percentage of other crop seed is recommended. Seed tags or other official documentation shall be submitted to the BLM Glenwood Springs Energy Office Ecologist at least 14 days before the date of proposed seeding for acceptance. Seed that does not meet the above criteria shall not be applied to public lands.

- e. Seeding Procedures. Seeding shall be conducted no more than 24 hours following completion of final seedbed preparation.

Where practicable, seed shall be installed by drill-seeding to a depth of 0.25 to 0.5 inch. Where drill-seeding is impracticable, seed may be installed by broadcast-seeding at twice the drill-seeding rate, followed by raking or harrowing to provide 0.25 to 0.5 inch of soil cover. Hydroseeding and hydromulching may be used in temporary seeding or in areas where drill-seeding or broadcast-seeding/raking are impracticable. Hydroseeding and hydromulching must be conducted in two separate applications to ensure adequate contact of seeds with the soil.

If interim revegetation is unsuccessful, the operator shall implement subsequent reseeding until interim reclamation standards are met. Requirements for reseeding of unsuccessful temporary seeding will be considered on a case-by-case basis.

- f. Mulch. Mulch shall be applied within 24 hours following completion of seeding. In areas of interim reclamation that used drill-seeding or broadcast-seeding/raking, mulch shall consist of crimping certified weed-free straw or certified weed-free native grass hay into the soil. Hydromulching shall be used in areas of interim reclamation where crimping is impracticable, in areas of interim reclamation that were hydroseeded, and in areas of temporary seeding regardless of seeding method.

NOTE: Mulch is not required in areas where erosion potential mandates use of a biodegradable erosion-control blanket (straw matting).

- g. Erosion Control. Cut-and-fill slopes shall be protected against erosion with the use of water bars, lateral furrows, or other measures approved by the authorized officer. Biodegradable matting, bales, or wattles of weed-free straw or weed-free native grass hay, or well-anchored fabric silt fence shall be used on cut-and-fill slopes and along drainages to protect against soil erosion. Additional BMPs shall be employed as necessary to reduce erosion and offsite transport of sediment.
 - h. Site Protection. The pad shall be fenced to BLM standards to exclude livestock grazing for the first two growing seasons or until seeded species are firmly established, whichever comes later. The seeded species will be considered firmly established when at least 50 percent of the new plants are producing seed. The authorized officer will approve the type of fencing.
 - i. Monitoring. The operator shall conduct annual monitoring surveys of all sites categorized as “operator reclamation in progress” and shall submit an annual monitoring report of these sites to the authorized officer by **December 31** of each year. The monitoring program shall use the four Reclamation Categories defined in Appendix I of the 1998 DSEIS to assess progress toward reclamation objectives. The annual report shall document whether attainment of reclamation objectives appears likely. If one or more objectives appear unlikely to be achieved, the report shall identify appropriate corrective actions. Upon review and approval of the report by the BLM, the operator shall be responsible for implementing the corrective actions or other measures specified by the authorized officer.
6. Weed Control. The operator shall regularly monitor and promptly control noxious weeds or other undesirable plant species as set forth in the Glenwood Springs Energy Office *Noxious and Invasive Weed Management Plan for Oil and Gas Operators*, dated March 2007. A Pesticide Use Proposal (PUP) must be approved by the BLM prior to the use of herbicides. Annual weed monitoring reports shall be submitted by **December 31**.
 7. Migratory Birds. It shall be the responsibility of the operator to comply with the Migratory Bird Treaty Act (MBTA) with respect to “take” of migratory bird species. Under the MBTA, “take” means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The operator shall prevent use by migratory birds of any pit containing fluids associated with oil or gas operations—including but not limited to reserve pits, produced water pits, frac-water pits, cuttings trenches (if covered by water/fluid), and evaporation pits. Fluids in these pits may pose a risk to migratory birds (e.g., waterfowl, shorebirds, wading birds, songbirds, and raptors) as a result of ingestion, absorption through the skin, or interference with buoyancy and temperature regulation. Several established methods to prevent bird access are known to be effective, such as netting or bird-balls. However, the USFWS has determined that the use of flagging is ineffective in deterring birds from using ponds or pits and provides no assurance of compliance with the MBTA. Regardless of the method used, it should be employed as soon as practicable after the pit has begun receiving liquids. At a minimum, the method shall be in place within 24 hours following the placement of fluids into a pit. Because of high toxicity to birds, oil slicks and oil sheens should immediately be skimmed off the surface of any pit that is not netted. The most effective way to eliminate risk to migratory birds is prompt drainage, closure, and reclamation of pits, which is strongly encouraged. All mortality or injury to species protected by the MBTA shall be reported immediately to the BLM project lead and to the U.S. Fish and Wildlife Service. For further assistance, contact the USFWS Biologist assigned to the Glenwood Springs Energy Office at 970-947-5219 and visit <http://www.fws.gov/mountain-prairie/contaminants/oilpits.htm>.

8. Paleontological Resources. All persons associated with operations under this authorization shall be informed that any objects or sites of paleontological or scientific value, such as vertebrate or scientifically important invertebrate fossils, shall not be damaged, destroyed, removed, moved, or disturbed. If in connection with operations under this authorization any of the above resources are encountered the operator shall immediately suspend all activities in the immediate vicinity of the discovery that might further disturb such materials and notify the BLM authorized officer of the findings. The discovery must be protected until notified to proceed by the BLM authorized officer.

Where feasible, the operator shall suspend ground-disturbing activities at the discovery site and immediately notify the BLM authorized officer of any finds. The BLM authorized officer will, as soon as feasible, have a BLM-permitted paleontologist check out the find and record and collect it if warranted. If ground-disturbing activities cannot be immediately suspended, the operator shall work around or set the discovery aside in a safe place to be accessed by the BLM-permitted paleontologist.

9. Cultural Education/Discovery. All persons in the area who are associated with this project shall be informed that if anyone is found disturbing historic, archaeological, or scientific resources, including collecting artifacts, the person or persons will be subject to prosecution.

Pursuant to 43 CFR 10.4(g), the BLM authorized officer shall be notified by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4 (c) and (d), activities shall stop in the vicinity of the discovery, and the discovery shall be protected for 30 days or until notified by the BLM authorized officer to proceed.

If in connection with operations under this contract, the operator, its contractors, their subcontractors, or the employees of any of them discovers, encounters, or becomes aware of any objects or sites of cultural value or scientific interest such as historic ruins or prehistoric ruins, graves or grave markers, fossils, or artifacts, the operator shall immediately suspend all operations in the vicinity of the cultural resource and shall notify the BLM authorized officer of the findings (16 USC 470h-3, 36 CFR 800.112). Operations may resume at the discovery site upon receipt of written instructions and authorization by the BLM authorized officer. Approval to proceed will be based upon evaluation of the resource. Evaluation shall be by a qualified professional selected by the BLM authorized officer from a Federal agency insofar as practicable. When not practicable, the operator shall bear the cost of the services of a non-Federal professional.

Within five working days, the BLM authorized officer will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places
- what mitigation measures the holder will likely have to undertake before the site can be used (assuming that *in-situ* preservation is not necessary)
- the timeframe for the BLM authorized officer to complete an expedited review under 36 CFR 800.11, or any agreements in lieu thereof, to confirm through the SHPO State Historic Preservation Officer that the findings of the BLM authorized officer are correct and that mitigation is appropriate

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 cleared of resources and the exposed materials are recorded and stabilized. Otherwise, the operator shall 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.

Antiquities, historic ruins, prehistoric ruins, and other cultural or paleontological objects of scientific interest that are outside the authorization boundaries but potentially affected, either directly or indirectly, by the proposed action shall also be included in this evaluation or mitigation. Impacts that occur to such resources as a result of the authorized activities shall be mitigated at the operator's cost, including the cost of consultation with Native American groups.

Any person who, without a permit, injures, destroys, excavates, appropriates or removes any 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).

10. Raptor Nesting. Raptor nest surveys conducted for this pad on 25 March 2009 did not result in location of raptor nest structures within 0.25 mile of a well pad or 0.125 mile of an access road, pipeline, or other surface facility. Therefore, a Raptor Nesting Timing Limitation COA is not attached to this APD. Although BLM considers surveys conducted for a NEPA Environmental Assessment to be valid for 5 years, new nests may be built and occupied between the initial surveys and project implementation. To ensure compliance with the Migratory Bird Treaty Act, the operator should schedule construction or drilling activities to begin outside the raptor nesting season (February 1 to August 15) if practicable. If initiation of construction, drilling, or completion activities during these dates cannot be avoided, the operator is responsible for complying with the Migratory Bird Treaty Act, which prohibits the "take" of birds or active nests (those containing eggs or young), including nest failure caused by noise and human activity.
11. Road Maintenance. Roads shall be crowned, ditched, surfaced, drained with culverts and/or water dips, and constructed to BLM Gold Book standards. Initial gravel application shall be a minimum of 6 inches. The operator shall provide timely year-round road maintenance and cleanup on the access roads. A regular schedule for maintenance shall include, but not be limited to, blading, ditch and culvert cleaning, road surface replacement, and dust abatement. When rutting within the traveled way becomes greater than 6 inches, blading and/or gravelling shall be conducted as approved by the authorized officer.
12. Drainage Crossings and Culverts. Construction activities at perennial, intermittent, and ephemeral drainage crossings (e.g. burying pipelines, installing culverts) shall be timed to avoid high flow conditions. Construction that disturbs any flowing stream shall utilize either a piped stream diversion or a coffer dam and pump to divert flow around the disturbed area.

Culverts at drainage crossings shall be designed and installed to pass a 25-year or greater storm event. On perennial and intermittent streams, culverts shall be designed to allow for passage of aquatic biota. The minimum culvert diameter in any installation for a drainage crossing or road drainage shall be 24 inches. Crossings of drainages deemed to be jurisdictional waters of the U.S. pursuant to Section 404 of the Clean Water Act may require additional culvert design capacity. Due to the flashy nature of area drainages and anticipated culvert maintenance, the U.S. Army Corps of Engineers recommends designing drainage crossings for the 100-year event. Contact the USACE Colorado/Gunnison Basin Regulatory Office at 970-243-1199 x16.

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

13. Jurisdictional Waters of the U.S. The operator shall obtain appropriate permits from the U.S. Army Corps of Engineers 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. Contact the USACE Colorado/Gunnison Basin Regulatory Office, U.S. Army Corps of Engineers, at 970-243-1199 x16.
14. Wetlands and Riparian Zones. The operator shall restore temporarily disturbed wetlands or riparian areas. The operator shall consult with the BLM Glenwood Springs Energy Office to determine appropriate mitigation, including verification of native plant species to be used in restoration.
15. Protection of Big Game Winter Range. Where big game winter range areas have been identified and lease stipulations do not apply, no construction, drilling or completion activities shall occur during a Timing Limitation (TL) period from **January 1 to March 1** annually. To further reduce impacts to wintering big game, remote sensing should be used for production monitoring, and unavoidable monitoring or maintenance activities should be conducted between 9 a.m. and 3 p.m., to the extent practicable. These additional recommendations apply to the period from December 1 to April 30. Contact Jeff Cook, Glenwood Springs Energy Office Wildlife Biologist, at 970-947-5231 or jeffrey_cook@blm.gov.
16. Support Facilities for Well Injection. All proposed injection well support facilities (including pump house, generator and storage tanks) shall be located within the existing working area of the pad, preferably the northeast quadrant of the pad. Operator shall submit Sundry Notice detailing the size, type and location of planned support facilities for the planned water well injection operations at the F21OU pad.