

CONSENT ITEM #	
OR	
ACTION AGENDA ITEM #	P2a

ITEM DATE: August 28, 2012	ITEM TIME: 5:00 p.m.
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FROM:	Chris Brookshire, Routt County Planning
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TODAY'S DATE:	August 22, 2012
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AGENDA ITEM DESCRIPTION:	Shell/SWEPI LP PP2011-026 Gnat Hill #1-29 Special Use Permit for Oil and Gas Exploration and Production Attachments: <ul style="list-style-type: none"> • Routt County Planning Commission minutes 8.2.12 • Letter from P. Patton/Shell dated 8.2.12 • Email from Dr. Tom Myers dated 8.16.12 • Suggested revised condition language for Condition #15 (2) • Emails from Rodger Steen dated 8.5.12; 8.7.12 & 8.14.12 • Memo from Mike Zopf, RCEH Director dated 8.21.12 • Letter from CAVY dated 8.14.12 • Email from P Patton 8.21.12 re: Excel Pipeline
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CHECK ONE THAT APPLIES TO YOUR ITEM:
<input checked="" type="checkbox"/> ACTION ITEM
<input type="checkbox"/> DIRECTION
<input type="checkbox"/> INFORMATION

I. DESCRIBE THE REQUEST OR ISSUE:
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Special Use Permit for Oil and gas Exploration and Production, located approximately 8 miles southwest of Hayden, CO on the north side of CR 65

II. RECOMMENDED ACTION:

Approve, Deny or Table

III. DESCRIBE FISCAL IMPACTS (VARIATION TO BUDGET): N/A
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IV. IMPACTS OF A REGIONAL NATURE OR ON OTHER JURISDICTIONS (IDENTIFY ANY COMMUNICATIONS ON THIS ITEM):

See background information (V)

ROUTT COUNTY BOARD OF COUNTY COMMISSIONERS

AGENDA COMMUNICATION FORM

V. BACKGROUND INFORMATION:

On August 2, 2012 the Planning Commission recommended approval of the SUP subject to conditions.

During this hearing a letter from P. Patten/Shell dated 8.2.12 was submitted requesting changes to Condition #15 (2). Planning Staff and the Planning Commission were not comfortable with accepting these changes having no time to review the letter and directed staff to review the language within the letter prior to the Board of Commissioners. The Planning Commission did accept the suggestion from Shell to place two monitoring wells instead of the suggested one well in the staff report.

Staff referred the 8.2.12 Shell letter and the 7.18.12 memorandum to Brenda Clark, P.E. describing the baseline groundwater monitoring program to Dr. Tom Myers. He has reviewed this letter and has submitted suggested changes. The email from Dr. Myers and a revised Condition 15 (2) is attached.

During the Planning Commission meeting Mr. Rodger Steen read a suggested change to the conditions. It was requested that Mr. Steen submit the language to Planning staff for review before the BCC hearing (attached). The 8.5.12 email paragraph three (3) address noise limits. Shell's narrative (page 35 of the staff report) addresses this. A suggested revision to Condition #50 is listed below.

Suggested changes to air quality requirement were also submitted by Mr. Steen. Michael Zopf, Director of the Routt County Environmental Health Department has submitted a memo in response to these emails. Please see the attached memo dated 8.21.12.

Also attached is a letter from CAVY dated 8.14.12 with regard to noise limits on oil and gas operations. The letter is requesting that all oil and gas applications conform to the Residential/Agriculture/Rural designation for noise requirements under COGCC Rule 802. This letter is not specific to this application, but as with all applications noise levels are reviewed on a case-by-case basis. The concerns of this letter will be used in future reviews and brought up during new site visits. At this time, Shell has agreed to comply with the Residential/Agriculture/Rural designation except during activities of drilling and completion in which they will comply with the Light Industrial standard.

Wildlife restrictions have been suggested that require hospital grade mufflers to be used after drilling operation cease and there will be operation/drilling restrictions during times of wildlife concerns. These requirements will mitigate noise concerns after drilling operations.

There is an existing gas pipeline located north of the proposed well pad. During the Planning Commission meeting it was asked if the owners of the pipeline had any concerns with the application. Staff has received an email from P. Patton dated 8.21.12 explaining that there should be no conflicts with this pipeline (see attached email).

ROUTT COUNTY BOARD OF COUNTY COMMISSIONERS
AGENDA COMMUNICATION FORM

VI. LEGAL ISSUES:
VII. CONFLICTS OR ENVIRONMENTAL ISSUES:
VIII. SUMMARY AND OTHER OPTIONS:
<p>Suggested Condition #50 – The Permittee shall conform to the noise abatement procedures and standards as set forth in COGCC Rule 802. The Permittee has submitted within their narrative that they will comply with the noise limits for Residential/Agricultural/Rural standards except during activities of drilling and completions, which will comply with the Light Industrial standards.</p> <p>See attached suggested changes to Condition #15 (2) and suggested changes to Condition # 21as recommended by Michael Zopf, Routt County Environmental Health Director.</p>

ROUTT COUNTY PLANNING COMMISSION

DRAFT MINUTES

AUGUST 2, 2012

The regular meeting of the Routt County Planning Commission was called to order at 6:00 p.m. with the following members present: Chairman Jay Gallagher and Commissioners John Ayer, Dick Klumker, Andrew Benjamin, Brita Horn, Sandi Gibson, Steve Warnke, John Merrill and alternates Brian Arel and Alan Goldich. Commissioner Donna Hellyer was absent. Planning Director Chad Phillips and staff planner Chris Brookshire also attended. Sarah Katherman recorded the meeting and prepared the minutes.

ACTIVITY: PP2011-026
PETITIONER: SWEPI LP (Shell)
PETITION: Special Use Permit for Oil & Gas Exploration and Production; well name: Gnat Hill 1-29
LOCATION: NW1/4 NE1/4 Section 32, T6N R89W; located approximately 8 miles southwest of Hayden on the north side of CR 65

Mr. Matt Holman, the exploration project manager for the petitioner, stated that Shell Oil operates under a set of five groups of “aspirational goals” that provide a framework for protecting water, air, wildlife and the communities in which the company operates. He said that it is his job and his duty to adhere to these sets of principles, which go beyond the regulations put forth by the COGCC or other regulatory bodies. He stated that SWEPI had held four well-attended community meetings so far, and said that there would be more.

Mr. Holman reviewed Shell’s operating principles that relate to safety, groundwater, air quality, footprint and community. He emphasized that the Gnat Hill well would not be fracked and would not employ any open pit systems. He also emphasized the importance of using well-trained personnel. He reviewed the baseline water testing program Shell is proposing for the site and noted that the site is very isolated and far from residential development. Mr. Holman stated that no operations would be conducted unless it is provable that the targeted formation is isolated from all groundwater sources. Regarding air quality monitoring, Mr. Holman reviewed the plan to install two air quality monitoring devices in Routt and Moffat Counties, and added that he would be working with Environmental Health Director Mike Zopf on this project. Because the well is exploratory no large scale product gathering system is being considered at this time. Mr. Holman said that the company looks for opportunities to hire locally.

Mr. Holman presented the list of 13 conditions that Shell had agreed upon in conjunction with the Community Alliance of the Yampa Valley (CAYV), noting that the conditions represent the outgrowth of community engagement. He stated that these conditions are in addition to the conditions required by the County, the state, the federal government and the Colorado Division of Parks and Wildlife (CDPW). He stated that the proposed well would establish a track record for judging compliance, and added that in the future the language of conditions would be adjusted to

suit the particular location and its characteristics. Mr. Holman reviewed a map and indicated the location of the Gnat Hill site.

Ms. Brookshire referred to page 13 of the staff report for an explanation of how standard Conditions 15 and 16 had changed after the current application had been submitted. She stated that because there are no seeps, springs or water wells within one mile of the proposed site suggested Condition 15 (1) does not apply to this petition and could be removed. She stated that due to the changes that had been made to the standard conditions after the application had been submitted, Shell had submitted a revised Groundwater Monitoring Program. Suggested Condition 15 (2) included in the staff report has been revised again to reflect this program and revisions made by the Board of County Commissioners to Shell's Dawson Creek 1-25 well permit. Suggested Conditions 15 and 16 have both been approved by County Attorney John Merrill.

Ms. Brookshire noted that Attachment 5, the Mitigation Plan beginning on page 34 of the staff report, mentions Condition 49 regarding noise mitigation. Due to renumbering, the condition discussed is now Condition 50. Ms. Brookshire added that the proposed VOC recapture equipment proposed in the project plan had been inadvertently omitted from suggested Condition 4. She read the sentence that should be added as a new bullet point under Condition 4.

In response to a question from Commissioner Ayer regarding the relationship between the conditions of approval and the applicant's project plan, Ms. Brookshire explained that the permit approval is for exactly what is in the project plan. The permittee is not allowed to do anything that is not specified in the project plan.

Ms. Brookshire stated that there is an existing natural gas line near the site and that staff is looking for a clarification regarding whether the petitioner has approval to be drilling so close to the gas line. Mr. Peter Patten, representing the petitioner, stated that he would provide an update on this issue.

Ms. Brookshire stated that no additional comments had been received regarding the petition. She stated that she had contact the state regarding the use of the state highway to access the site from the west. No permit is needed for the use of the highway other than the standard over-weight, over-length permit.

Commissioner Arel asked if all well permits would now be required to have water monitoring wells. Ms., Brookshire stated that they would as the conditions regarding this issue have been revised since February.

In response to a question from Commissioner Horn regarding why fire trucks are not required to be on site for this drilling operation, Ms. Brookshire stated that the fire trucks were required at the Quicksilver site because of the butane fracking. This well is not being fracked.

Commissioner Warnke asked why the well is being drilled at an angle. Mr. Holman explained that the target Niobrara formation is more than 1400 ft. thick and that more data can be gathered from the formation if the well bore is angled. In response to a question regarding why the well will not be fracked, Mr. Holman stated that because drilling without fracking is less intrusive there is the benefit of reducing the community's concern if the well can be successful without fracking. He said

that they are testing this method on this particular well. He stated that trying to reduce the number of variables to be assessed in an exploratory well is important for proper analysis. He added that the method of fracking is particular to the individual well site.

Commissioner Arel asked how deep the water monitoring wells would be. Ms. Brookshire referred to the cross-section provided on page 56 of staff report. Commissioner Goldich noted that the memo dated August 2, 2012 with proposed revisions to suggested Condition 15 (2) states that the wells will sample the “unconfined aquifer in the weathered Lewis Formation regolith and the first confirmed water zone expected to be present as a sand zone in the lower reaches of the Lewis Formation.” Mr. Holman stated that the unconfined aquifer is above bedrock, but where that quifer zone is cannot be known until the well is drilled. He noted the variable depth of water wells in the vicinity. In response to a question from Commissioner Arel, Mr. Holman stated that they always drill monitoring wells to establish baseline data.

Commissioner Arel asked if the well would be constructed differently because it is not being fracked. Mr. Holman explained that there are differences in the grade of steel used and the type of pipe used in wells that are not fracked.

Commissioner Arel asked about winter road maintenance. Mr. Tommie Criddle with Shell stated that they are working through this issue with the Road & Bridge Department at this time, and that all winter maintenance will be done by Shell.

In response to a question from Commissioner Arel regarding staff monitoring of oil and gas wells, Ms. Brookshire stated that she visits the sites, and if there are concerns will visit them more than once. She stated that if there are concerns that are above and beyond the County permit, she contacts the COGCC inspector. If the inspector has visited a site prior to the staff visit, the inspector will inform staff if the operation appears to be in conformance. She stated that a permit has been approved for Shell’s Dawson Creek 1-25 well and that they hope to begin drilling on it in the middle of August.

Commissioner Klumker noted that several of the suggested conditions were redundant and should not be required. He cited suggested Condition 26 regarding the recommendations made by the CDPW. He stated that elements of suggested Condition 26 are repeated in Sections 9.2.a, 9.6.2 c, etc. as well as suggested Conditions 37 – 44 and have already been approved or are already included in the plan. He added that suggested Condition 26 relinquishes the County’s power to the CDPW. Ms. Brookshire stated that these conditions are recommended by the CDPW and are also included in the permit issued by the COGCC for the proposed well. She noted that the Section 9 cited on pages 9 – 14 of the staff report is part of the Zoning Regulations and is not the same as conditions of approval. The Zoning Regulations provide the basis for the conditions of approval. Mr. Phillips stated that suggested Condition 26, like many conditions of all permits the County issues, is based on the recommendations of a referral agency. He noted that the County does not have wildlife experts on its staff and so relies of the state agencies for expertise. Ms. Brookshire said that when she visits a site, she generally does so with representatives of the applicant, the COGCC and the CDPW, and that the group reviews wildlife maps and discusses the issues together. She stated that she would have recommended these same conditions whether the CDPW had or not. Commissioner Klumker stated that the wildlife could take care of itself and that

these conditions are not needed, regardless of what the CDPW says. He stated that protecting wildlife in general should be included as a condition, but that the specifics should not be.

Chairman Gallagher stated that the specific elements of suggested Condition 26 are included in the permit issued by the state at the recommendation of the CDPW. Commissioner Ayer offered that it is the choice of the County to accept the recommendations of the CDPW or not. He stated that by including the recommendations as conditions of approval the County is exercising its authority to impose these conditions on the applicant. He added that the CDPW does not have the authority to impose conditions of approval on its own. Commissioner Arel said that by including the conditions in the County permit, the County is able to address any issues itself rather than appealing to the state if problems arise. Commissioner Ayer stated that the Oil and Gas Working Group was adamant that the conditions of approval on oil and gas permits be very specific in order to ensure that the residents of Routt County know that the County government is addressing their concerns.

Commissioner Goldich asked Mr. Holman to explain the air quality monitoring equipment that Shell will be installing. Mr. Holman stated that Brenda Clark, the petitioner's expert on environmental issues, had requested the ozone monitoring equipment, but that he does not have the specifics on the equipment or where exactly they will be located at this time. He stated that the much of the data that is gathered will be shared with the County and that he will be working with Environmental Health Director Mike Zopf to coordinate with the study of the entire air shed.

Public Comment

Mr. Roger Steen, representing the CAYV, reviewed that the group had met with representatives of Shell to discuss its concerns regarding the impacts of oil and gas development in Routt County. He stated that Shell had addressed all the group's concerns to some degree. He suggested that this agreement should be the model for other oil and gas companies operating in the County. Mr. Steen suggested that the agreement between Shell and the CAYV had resulted in a better set of conditions of approval for the permit. He stated that he would like to add the following phrase to the applicant's statement in the project plan regarding air quality (page 37 of the staff report) that would incorporate self-compliance monitoring of VOCs: "Shell will certify compliance with these County-only air quality requirements including scanning for and minimizing VOC leaks, at least annually." Mr. Steen stated that Mr. Zopf has seen this done at other operations.

Seeing no further comment, Chairman Gallagher closed public comment.

Chairman Gallagher asked if Planning Commission has the authority to amend the project operating plan of the applicant, noting that the recommendation was not for a condition of approval. Ms. Brookshire stated that is difficult to thoroughly analyze last minute suggestions. She offered that Mr. Steen could submit the suggestion to staff for consideration prior to the Board of County Commissioners' hearing.

Commissioner Benjamin asked if the VOC issue would not be covered under suggested Condition 54. Chairman Gallagher offered that suggested Condition 54 should remain as is and that the new material should be evaluated by staff. In response to a question from Commissioner Arel, Mr. Holman stated that VOCs are not regulated by the COGCC.

Regarding suggested Condition 15 (2) Commissioner Benjamin stated that the water monitoring well was recommended for the Camilletti site because of its specific location and was never intended to apply to all wells regardless of their location. He suggested that water monitoring wells may not be appropriate for all proposed oil and gas wells. Chairman Gallagher agreed that this topic should be discussed. Commissioner Klumker added that suggested Condition 15 (1) does not apply to this well.

MOTION

Commissioner Goldich moved to recommend approval of the Special Use Permit for Oil & Gas Exploration and Production with the following findings of fact:

1. The proposal with the following conditions meets the guidelines of the Routt County Master Plan and is in compliance with Sections 4, 5, 6, 8 and 9 of the Routt County Zoning Regulations.
2. The Special Use Permit approval with the following conditions will not adversely affect the public health, safety and welfare.
3. The proposal with the following conditions is compatible with the immediately adjacent and neighborhood properties.

This approval is subject to the following conditions:

1. This Special Use Permit (SUP) shall expire within the timeframes set forth as follows:
 - a. One (1) year after date of approval if Permittee does not commence drilling and was granted a Permit-to-Drill by the Colorado Oil and Gas Conservation Commission (COGCC) using only COGCC Form 2.
 - b. Two (2) years after date of approval if Permittee does not commence drilling and was granted a Permit-to-Drill by COGCC using COGCC Form 2 and 2A.
 - c. Three (3) years after date of approval if Permittee does not commence construction operations on a COGCC approved oil and gas location using COGCC Form 2A.
 - d. Upon expiration of Permittee's COGCC permit.
2. This SUP is contingent upon compliance with the applicable provisions of the Routt County Zoning Regulations (RCZR) including but not limited to Sections 5, 6, 8 and 9. By signing this SUP, Permittee acknowledges that he or she fully read and understands the standards and mitigation techniques described in the RCZR and this SUP and shall abide by same.
3. The conditions herein shall apply to the Permittee and any employee, subcontractor, or representative that acts on behalf of Permittee or under the auspices of this SUP.
4. This SUP is limited to uses, facilities, and operations for the Permitted Operation (Operation or Operations) as presented in the Approved Project Plan (APP) as follows, including adherence to those specific Best Management Practices and technology as referenced in the approved project plan:

Overview

- Well pad approximately 2.5 acres
- Access road: 213'
- Vertical drill to approximately 3,100 feet and then slant drill to a TVD 8,590, the surface, intermediate and production casing will meet or exceed COGCC minimum requirements
- Stimulation/fracking operations are not proposed.
- On-site gas flare
- Closed loop drilling system
- Artificial Lift system
- No reserve pits other than the cuttings pit.
- Employees will be bused to and from the site; no on-site man camps will be utilized
- There will be approximately 20 employees at the site throughout the construction, drilling and completion phases that will live in self-contained trailer as shown on the Typical Rig Layout submitted in the application.
- Parking will be at the well pad. There will be no parking on C.R. 65.
- The Shell shall install, maintain and operate equipment to reduce VOC emissions by 95%.

Operation plan

Operation plan consists of Drilling, Completion and Production. No fracking operations proposed

No fracking operations are proposed

5. This SUP is contingent upon Permittee obtaining and complying with any required federal, state and other local permits and the Permittee shall comply with all federal, state, and local laws. Permittee shall notify the Local Governmental Designee (LGD) should the Permittee have any required permit denied, revoked, or suspended. Denial, revocation, or suspension of any required permit shall be grounds for possible revocation of this SUP.
6. Prior to the issuance of this SUP, the Permittee shall provide evidence of liability insurance in the amount of no less than \$1,000,000 per occurrence with either unlimited aggregate or a policy endorsement requiring notice to Routt County of all claims made. Routt County shall be named as an additional insured on the policy. The Certificate of Liability Insurance shall include all permit numbers associated with the Operation.
7. Permittee shall furnish a bond to Routt County in the amount of \$25,000 to guarantee Permittee's performance of the requirements and conditions of this SUP not regulated by COGCC.
8. The Permittee shall be assessed an annual review fee pursuant to the Routt County Planning Department's Fee Schedule for the life of this SUP. Additional fees may be assessed based on hourly staff time which exceeds the time allotted for the annual review.
9. This SUP shall not be issued until all fees have been paid in full. Failure to pay fees may result in revocation of this SUP.

10. Transfer of this SUP may occur only after a statement has been filed with the Planning Director by the transferee guaranteeing that they will comply with the terms and conditions of this SUP. Bonds, insurance certificates, or other security required by this SUP shall also be filed with the Planning Director by the transferee prior to transfer to assure Operations will be conducted as specified. Any proposal to change the terms and conditions of this SUP upon transfer or transfer request shall require a new permit.
11. Routt County may investigate any credible allegation of non-compliance with this SUP. Upon finding that an alleged violation has occurred, and where said violation also amounts to a violation of COGCC rules, Routt County shall provide notice of the alleged violation to the COGCC pursuant to the procedures in COGCC Rule 522. To the extent that an alleged violation violates a condition of approval of this SUP, violates any of the applicable requirements of the RCZR or creates significant negative impacts inconsistent with the representations made by the Permittee during the original approval process, the Amendment of Revocation of Approval process may be undertaken following the procedures listed in Section 3.2.11 and 3.2.12 of the RCZR.
12. In the event that Routt County commences an action to enforce or interpret this SUP, the substantially prevailing party shall be entitled to recover its costs in such action including, without limitation, attorney fees.
13. Permittee shall comply with the terms of the Emergency Response Plan developed by Permittee in consultation with the Routt County Department of Environmental Health (RCDEH), the Routt County Emergency Manager, the Routt County Sheriff, the Routt County Communications Center, the local fire district, and the Colorado State Forest Service (Emergency Consultants). Permittee shall amend the Emergency Response Plan if needed and as required by COGCC rules or the Routt County Emergency Manager. At a minimum, the Emergency Response Plan shall address spill or release response, emergency signage, site access maps, on-site fire suppression equipment, wildfire hazard recommendations, storage of hazardous materials, transportation of hazardous materials, and notification requirements concerning spills or releases, transportation of hazardous materials and wastes, and on-site chemicals/materials.
14. Costs associated with any emergency response on the part of Routt County to an adverse condition or event that results from Operations or Permittee's conduct (or that of an employee or subcontractor) shall be reimbursed to Routt County by Permittee within thirty (30) days of receiving notice of services provided and the costs associated therewith from Routt County

Monitoring Well:

- 15(2). Permittee shall install at least two (2) dedicated groundwater monitoring well or monitoring well cluster within 300 feet of the site boundary. The number of wells, their specific locations, and their depths shall be determined by studies of the subsurface geology, gradients, groundwater depth, and flow direction performed by Permittee and submitted to the LGD prior to issuance of this SUP. The monitoring well shall be constructed in

accordance with Colorado Division of Water Resource requirements. The monitoring well shall have the ability to sample each substantial flow zone separately, with separate screens for each. Substantial flow zones shall be identified by lithologic logging during drilling and observations of flow entering the borehole supplemented by geophysical logs including caliper and resistance logs. The separate screens shall either be part of a multiport sampling capability designed to allow the separate sampling of each substantial flow zone, nested wells (multiple tubes or casings in a single borehole), or with a well cluster with sufficient wells with individual screens for each productive zone; if a well cluster is used, the screen depths must not overlap. The monitoring well flow zone(s) shall be sampled and tested according to the Colorado Oil and Gas Association Voluntary Baseline Groundwater Quality Sampling Program dated November 15, 2011 (COGA Program), except as described in e. below. Additionally, the following standards and procedures shall be followed:

- a. Baseline water sampling of the monitoring well shall be completed prior to drilling of the oil or gas well and shall continue monthly until conclusion of completion activities. Drilling of the oil or gas well may commence after confirmation has been received from (i) the party responsible for collection of the samples that the water samples were collected properly; and (ii) the testing facility that the water samples were preserved and transported appropriately, that chain of custody has been secured, that the samples have not exceeded analytical hold times, and that no contamination of the samples due to the collection process has been detected.
- b. Water Sources shall be sampled quarterly for one (1) year after the baseline water sampling described above ceases. If a previously undetected constituent is detected or if the fluctuation of inorganics varies from the baseline sample (or baseline fluctuation if more than one baseline sample is obtained) by more than twenty-five percent (25%), Permittee and Routt County shall confer within thirty (30) days and collaborate, with each party's hydrologic expert if necessary, to determine an appropriate sampling frequency and term going forward. If the parties cannot reach an agreement as to such frequency and term, Routt County's determination shall prevail and Permittee shall abide by said determination. If no such "trigger points" arise after one (1) year, the sampling frequency may, at the option of Permittee, be reduced to an annual basis. Water sampling may, at the option of Permittee, terminate after plugging and abandonment of the oil or gas well or twenty (20) years after well development, whichever is longer.
- c. Water samples shall be collected by an independent third party (a party other than the Permittee) using standard operating procedures and standards as described in the COGA Program. A copy of all records produced during water sampling, including but not limited to unedited field notes, calibration logs, photographs/videos, global positioning system, chain of custody, shall be provided to the LGD and COGCC within thirty (30) days of collection.
- d. Water sample analysis shall be performed by a testing facility accredited by the National Environmental Laboratory Accreditation Program. Qualification records and certifications shall be provided to the LGD. Results of laboratory analysis shall be provided by the testing facility directly to the LGD and surface owner, if different than the Permittee. A written explanation and interpretation of the test results, including the

identification of any trends, shall also be provided by the testing facility or a qualified third party within thirty (30) days of the availability of the laboratory analysis.

- e. Water samples shall be tested for the constituents listed in Table 1 of the COGA Program with the addition of the following constituents: effervescence, TPH-GRO, TPH-DRO, Lower Explosive Limit, arsenic, barium, cadmium, chromium (total) copper, lead, mercury, silver, carbonate/bicarbonate, cation-anion balance, fluorine/fluoride, hardness, methylene blue active substances, and silica.
16. If post base-line water sample testing indicates any abnormalities or contamination in the Tested for Constituents listed in Table 1 of the COGA program and as listed in Condition #15 (1) e. and #15 (2) e. that may be attributed to oil/gas operations, the Permittee shall immediately notify COGCC and LGD and take immediate corrective action to contain any contaminant(s) that are not naturally occurring and mitigate the damage to any affected waters to contaminant levels found in the initial baseline testing.
 17. If water is to be discharged, it shall be discharged in accordance with the Water Quality Control Act and COGCC rules. Permittee shall notify the LGD at least four (4) weeks in advance of such discharge and provide the Colorado discharge permit number as well as a topographic map showing the location of the discharge outfall as well as the haul route.
 18. Permittee shall obtain a permit from RCDEH for sewage and greywater systems prior to installation in accordance with existing and applicable Colorado Department of Public Health and Environment (CDPHE) regulations.

Air Quality

19. Permittee shall be in compliance with CDPHE, Air Quality Control Commission, Regulation No. 2 (Odor Emission), 5 C.C.R. 1001-4 Section A and COGCC Rule 805.
20. Open burning of slash is prohibited unless absolutely necessary and only with the approval of RCDEH, the local Fire District, and CDPHE, if required.
21. Any gas escaping from the well during any phase of operation shall be captured to the extent reasonably practicable and otherwise consistent with COGCC Rules 317, 805, and 912, or conducted to a safe distance from the well site and flared or otherwise combusted. The Permittee shall notify the local emergency dispatch as provided by the LGD of any such flaring. Such notice shall be given prior to the flaring if the flaring can be reasonably anticipated, and in all other cases as soon as possible but in no event more than two (2) hours after the flaring occurs.
22. Dust control shall be applied as needed to the private access road during construction and use of the access road. If dust complaints are received along CR 65, the Permittee will work with the Routt County Road and Bridge Department to address dust mitigation at Permittee's expense.

Wildlife

23. Tanks, overhead wire, fences, pole tops and other facilities or structures shall be designed so they do not provide perches or nests for raptors, crows, and ravens. Raptor perch deterrents shall also be installed.
24. If the well goes to production, the Permittee shall take reasonable measures to reduce the noise to surrounding wildlife. This may include, but not be limited to, hospital grade mufflers for compressors, pump jacks or other motors necessary to run operations at the site and upward-pointing mufflers to dissipate potential vibration.
25. The operator will work with the DPW to establish drilling operations that mitigate disturbance to hunting operations, wildlife management and Hunting for Wildlife Operations.
26. The following recommendations of the Colorado Division of Parks and Wildlife (CDPW) shall be followed:
 - a. Pad construction and drilling will occur outside of the greater sage-grouse and sharp-tailed breeding and nesting period (March 1 – July 30).
 - b. Petitioner agrees to conduct drilling activities – reentry for additional wells outside the period of March 1 to July 30.
 - c. Conduct post-development well site visitations to between the hours of 10:00 a.m. and 3:00 p.m. and reduce well site visitation between March 1 and July 30.
 - d. Petitioner will use hospital grade mufflers for compressors, pump jacks or the motors necessary to run operations at the site as applicable – if compressors, pump jacks, etc. are necessary. Mufflers will be pointed upward to dissipate potential vibration.
 - e. Conduct post-development well site visitations to between the hours of 10:00 a.m. and 3:00 p.m. and reduce well site visitations between December 1 and April 15 in elk winter concentration areas.
 - f. CPW is open to the idea of flexibility/amending the elk winter concentration time stipulations in order to protect sage and sharp-tailed grouse habitat and leking activities. On-going and future discussion between CPW and the petitioner will be necessary to determine if the elk time stipulation can be amended for this site.
 - g. Establish company guidelines to minimize wildlife mortality from vehicle collisions on roads.
 - h. Prior to development, establish baseline vegetation condition and inventory and to provide a basis for post-development habitat restoration.
 - i. Gate single-purpose road and restrict general public access to reduce traffic disruptions to wildlife.
 - j. Close and immediately reclaim all roads that are redundant, not used regularly, or have been abandoned to the maximum extent possible to minimize disturbance and habitat fragmentation.
 - k. Avoid aggressive non-native grasses and shrubs in habitat restoration. We recommend against revegetation with aggressive grasses such as crested

- wheatgrass, smooth brome, or intermediate wheatgrass because these grasses out-complete with species and do not provide good wildlife habitat.
- l. Reclaim disturbed area with native shrubs, grasses and forbs appropriate to the ecological site disturbed. A list of recommended species may be requested from the USDA NRCS office in Steamboat Springs, or from CPW.
 - m. Interim reclamation should be done as soon as possible after the drilling is finished. This would allow the pad to be reclaimed and provide some habitat to wildlife using the area. During reclamation livestock should be excluded until such time that proper reclamation is achieved.
 - n. Restore appropriate sagebrush species or subspecies on disturbed sagebrush sites. Use locally collected seed to reseed where possible.
 - o. Pit and trash receptacle will be fenced to prevent entrance by wildlife.
 - p. Any open pit will include fencing and bird netting.
 - q. Noxious weeds will be controlled as necessary.
 - r. Bear proof receptacles will be utilized for food related trash.
 - s. Noxious weed control conducted, beginning from site development through reclamation.

Visual Impacts

27. To the extent practicable, technically feasible, and consistent with safe operations, all exterior lighting shall be downcast and opaquely shielded with the exception of the drilling rig.
28. To the extent practicable and technically feasible, a flare shroud, or other device serving the purpose of concealing a flare, shall be used to reduce the visibility of flaring to neighboring properties, residences, and public roadways.
29. Equipment used for Production Operations will not be visible from adjacent or surrounding residences, or will be mitigated to the extent economically practicable and technically feasible to reduce visual impacts.

Access and Traffic

30. Overweight and over length permits for vehicles shall be obtained from the Routt County Road and Bridge Director prior to the use of such vehicles.
31. All haul roads that are public roads must have adequate signage at intersections and at any other locations that may require signage or additional signage as required by the Routt County Road and Bridge Department.
32. Access permits shall be obtained to all access roads to be built or improved which intersect Routt County roads.
33. Routt County has the authority to close any county road at its sole discretion if damage to the road may occur by its use. To the extent that a road closure may affect Permittee's

operations, Routt County will cooperate with Permittee to allow operations to be continued in a safe and practicable stopping point.

34. Routt County roads shall not be completely blocked at any time. If traffic regulation is deemed necessary, the Permittee shall notify the Routt County Road and Bridge Director, or designee thereof, in advance (if possible), who may then require:
 - a. The Permittee or Permittee's contractor/sub-contractor to place traffic control signage along haul routes and at intersections as specified by the Routt County Road and Bridge Director and at Permittee's expense; and
 - b. Flaggers to be placed at the intersections of affected county roads as specified by the Routt County Road and Bridge Director and at Permittee's expense; and
 - c. The Permittee or Permittee's contractor/sub-contractor to supplement regular dust control efforts by application of dust palliative, as approved by the Routt County Road and Bridge Director and RCDEH and at Permittee's expense.
35. Directional signs, no less than three (3) and no more than six (6) square feet in size, shall be provided during any drilling or recompletion operation, by the Permittee. Such signs shall be at locations sufficient to advise emergency crews where drilling or recompletion is taking place. At a minimum, such locations shall include: (1) the first point of intersection of a public road and the rig access road and (2) thereafter at each intersection of the rig access route. The Permittee shall also notify the Routt County Sheriff's Office of the Site and its access point.
36. Permittee shall comply with the following recommendations concerning road improvements and maintenance:
 - a. Permittee shall limit Routt County road traffic to County Roads (CR) 65 in the case of CR 65, traffic shall be limited to that portion of the road between Routt / Moffat County Line and the private, drill pad access road.
 - b. The portion of CR 65 affected by this SUP requires the following improvements prior to commencement:
 - i. Placement of class 6 aggregate base course materials in two locations prior to work commencement: 10 inches for 2.8 miles 22' wide and three inches for 0.8 miles 22' wide. (Class 5 materials can be substituted for Class 6 material)
 - ii. Road Repair needed prior to work commencement: Soft spot MM 2.9, Slide Area MM 3.0, Culvert MM 3.1, Slide Area MM 3.3, Culvert MM 3.5.
 - iii. Additional placement of the same materials as needed to ensure that an adequate crown is maintained in the road. Routt County will engage a third-party contractor, via its bid process, to make the above improvements. Permittee shall be required to enter into a reimbursement agreement with Routt County for payment of the contractor. Upon signing the reimbursement agreement,

permittee shall deposit an amount equal to the estimated costs of the improvements with the Routt County Treasurer.

- iv. Ongoing Culvert maintenance and repairs as needed to sustain road integrity.
- d. All trucks and equipment accessing from CR 65 shall be able to exit and be located on private property and off of County road right of way before encountering a fence, gate or cattle guard. At a minimum, the distance from the County road right of way to any gate, fence or cattle guard shall be 1.5 times of the length of the longest vehicle
- e. Permittee shall provide and post advance warning signs of truck traffic turning from and entering upon Highway 40 during the importation and exportation of drilling equipment to the Site. Types and placement of signs shall be in conformance with the Model Traffic Code and shall be coordinated with CDOT.
- f. The Permittee shall be assessed Road and Bridge staff costs directly associated with the project. Payment of the assessment shall be due and owing upon receipt.
- g. Routt County roads affected by this SUP will be inspected by the Routt County Road and Bridge Department at intervals determined by same. Any road damage shall be repaired by a third-party contractor as selected by the Routt County Road and Bridge Department and on a schedule determined by same. Permittee shall solely bear the costs of repairs.
- h. Permittee shall maintain county roads affected by this SUP during the life of the Operations. Maintenance shall be determined by the Routt County Road and Bridge Department in its sole discretion and at Permittee's expense. Maintenance may include grading and graveling roadways, sweeping or cleaning access points, and application of a dust palliative as approved by the Routt County Road and Bridge Director and RCDEH.

Reclamation and Weeds

- 37. Permittee shall strictly adhere to all federal and state regulatory standards for reclamation.
- 38. All disturbed surfaces affected by drilling or subsequent operations, except areas reasonably needed for production operations or for subsequent drilling operations to be commenced within twelve (12) months, shall be reclaimed as early and as nearly as practicable to their original condition or their final land use as designated by the surface owner and shall be maintained to control dust and minimize erosion to the extent practicable.
- 39. Drill pits shall be reclaimed in conformance with COGCC Rule 905 and Rule 1003.
- 40. When the well is completed for production, all disturbed areas no longer needed will be restored and revegetated as soon as practicable and in conformance with COGCC Rule 1003.
- 41. During drilling, production, and reclamation operations, all disturbed areas and surrounding agricultural and residential lands shall be kept as free of all undesirable plant species

designated to be noxious weeds as practicable. Weed control measures shall be conducted in compliance with the Colorado Noxious Weed Act and COGCC Rule 1003.

42. The interim reclamation completion notice (COGCC Form 4 and attachments) required by COGCC Rule 1003 shall be submitted to the LGD upon completion.
43. Upon plugging and abandonment of the well, all debris and surface equipment shall be removed within three (3) months. All disturbed surfaces shall be reclaimed as early and as nearly as practicable to their original condition or their final land use as designated by the surface owner and pursuant to COGCC Rule 1004.
44. For the purposes of the revegetation requirements set forth herein, Permittee shall work with the local Natural Resources Conservation Service, the County Extension Service, and the landowner to determine the appropriate types and quantities of application materials.

Miscellaneous On-Site Issues

45. Any land survey monuments shall be recorded in the Colorado Land Survey Monument Records prior to commencement of operations, and if removed, shall be replaced following reclamation.
46. Permittee shall follow the COGCC requirements for initial and ongoing site security and safety measures. Such requirements shall adequately address security fencing, the control of fire hazards, equipment specifications, structural stabilization and anchoring, and other relevant safety precautions.
47. Fences of the type and at the locations recommended by the CDPW and agreed to by the surface owner, if different than Permittee, and listed as a condition in the COGCC Form 2A, shall be installed immediately after drilling to protect domestic animals and wildlife. Permittee shall also adhere to the requirements of COGCC Rule 1002.
48. No pets or firearms shall be allowed on the Property at any time.
49. The Permittee shall protect and maintain flows of all affected irrigation ditches.
50. Permittee shall conform to the noise abatement procedures and standards as set forth in COGCC Rule 802.
51. All equipment and housing units used during drilling and completion operations must be removed from the site immediately after such operations are complete.
52. The Permittee shall prevent erosion on any private access roads used by Permittee as well as the pad site in accordance with all requirements of its CDPHE storm water permit.
53. The Permittee shall have complied with construction or alteration notification requirements of the Federal Aviation Administration and provided further notice to the Routt County Planning

Department of same. The Permittee shall comply with any further filings or requirements set forth by the Federal Aviation Administration and/or the Yampa Valley Regional Airport prior to the issuance of this SUP.

Hazardous and Waste Materials

54. All tanks or hazardous materials containment areas shall comply with COGCC Rules 604, 902, and 904. Tanks and containment areas shall be inspected at least every thirty (30) days and the results of such inspections shall be reported to the LGD by Permittee within five (5) days.
55. No junk, trash, or inoperative vehicles shall be disposed of or stored on the Site as defined by the APP.
56. On-Site toilets shall meet minimum CDPHE requirements for sanitary/sanitation facilities.
57. Fuel, flammable materials, or hazardous materials shall be kept in a safe area and shall be stored in accordance with state requirements as well as the Emergency Response Plan. An inventory of such materials shall be supplied to the Routt County Emergency Manager prior to issuance of this SUP consistent with regulations of the COGCC and CDPHE.
58. Solid waste, excess drilling fluids and water from on-site pits shall be transported to an approved disposal site. The Routt County Emergency Manager and local fire district shall be notified in advance of such transport. The notice shall include the type of material being transported, the intended route, dates, and times. If waste materials are hazardous according to state or federal definitions, the wastes must be disposed of in an approved hazardous waste disposal site and records of such disposal will be available for review on site.

Reporting

59. In addition to COGCC Rule 305, Permittee shall notify the LGD in advance of all drilling and completion dates, drilling rig arrival and removal, name of the drilling company, and the drilling rig number. Notification shall occur at least 48 hours in advance of drilling or completion.
60. Permittee shall notify the LGD of any written or verbal notice of violations or citations issued to Permittee by COGCC, CDPHE, or any other regulatory agency, and the next action to be taken by such agency within 24 hours of notice of same.

Commissioner Arel seconded the motion.

Discussion and Friendly Amendments

Commissioner Warnke asked how the language suggested in the memo dated August 2, 2012 fits into the conditions of approval. Chairman Gallagher stated that the motion had been made with the conditions as suggested by staff in the staff report. Commissioner Goldich amended his motion to strike Condition 15 (2) and replace it with the language contained in the memo. Commissioner Warnke asked staff to comment on the language of the memo. Ms. Brookshire stated that because

the memo had only been received from the petitioner at tonight's meeting, she had not had a chance to evaluate it. She stated that Assistant County Attorney Erik Knaus had reviewed the suggested conditions contained in the staff report, including Condition 15 (2) prior to the meeting. She stated that she likes that Shell is proposing to drill two monitoring wells, but because she does not know where these wells are to be located or the depth to which they will be drilled she is not certain that enough details have been provided. Mr. Phillips stated that he would like the petitioner to explain the reason for the proposed change in language.

Mr. Holman read the language of suggested Condition 15 (2) and stated that he would be fine with this language if that is what Planning Commission prefers. He referred to pages 45 – 51 of the staff report which pertain the water monitoring issue. He stated that the proposed language of Condition 15 (2) is redundant because much of what it specifies has already been done.

Chairman Gallagher suggested restoring the language of 15 (2) to that contained in the staff report in order to allow staff time to thoroughly evaluate the language of the memo prior to the Board of County Commissioners' hearing. Commissioner Goldich rescinded his amendment and proposed restoring the language of 15 (2) that that stated in the staff report. Commissioner Ayer suggested that "at least two" should be added to the language of 15 (2).

Mr. Holman read the language included in the memo, noting that until the water wells are drilled they do not know how deep they will be. He stated that the memo specifies the aquifer to be tested, whereas the suggested language of 15 (2) does not include this specificity. Commissioner Ayer stated that the reason to retain the language suggested in the staff report is to allow staff time to evaluate it prior to the Board of County Commissioners' hearing, when it can be modified if that seems appropriate.

Commissioner Horn asked if Planning Commission should be altering the language of the template that has been reviewed and approved. She offered that maintaining consistency across well permits was important. Commissioner Ayer stated that the conditions of approval should be specific to the site. Commissioner Goldich asked if the petitioner should amend the project plan to include the language printed in red on the memo. Ms. Brookshire said that it is the testing information that she is uncertain about and suggested that it might be appropriate to have this language reviewed by the water quality consultant, Dr. Meyers.

Commissioner Goldich amended Condition 15 (2) to include the phrase "at least two." This change is reflected in the conditions listed above.

Commissioner Klumker stated that it would be inappropriate to include the language regarding VOC capture unless Planning Commission understands why this is necessary. Chairman Gallagher noted that the use of VOC capturing equipment is included in the project plan. Ms. Brookshire reiterated that the VOC capture was inadvertently omitted from suggested Condition 4.

Mr. Holman explained that VOCs (volatile organic compounds) are emissions from hydrocarbon products. He stated that all of these that can be captured should be. He described the process of capturing the VOCs in typical oil and gas development. Mr. Holman said that what he doesn't know much about is ozone monitoring, which is not included in the conditions. The VOC capture is well known in the industry and is included in the project plan.

Commissioner Merrill asked if the ozone monitoring and other aspects of air quality monitoring would be subject to a separate motion. Chairman Gallagher clarified that all conditions of approval would be included in a single motion. Commissioner Merrill asked if there was sufficient information to include the ozone monitoring in the motion for the SUP. Mr. Phillips stated that Environmental Health Director Mike Zopf was trying to put together an RFP for two ozone monitors as part of a future regional monitoring plan. Chairman Gallagher stated that the ozone monitoring is not currently included in the conditions of approval.

The motion carried 8 – 1 with the Chair voting yes.

Commissioner Klumker stated that he voted to deny the petition because he does not believe Condition 26 should be included.

ADMINISTRATOR'S REPORT

Mr. Phillips reviewed the upcoming Planning Commission agendas. He announced that this would be Commissioner Goldich's last Planning Commission meeting as he will be joining staff as a Planning Technician.

In response to a question from Commissioner Klumker, Mr. Phillips stated that staff has not heard from Quicksilver, but that Ms. Brookshire is preparing to issue the permit.

Commissioner Ayer stated that he has some ideas regarding how to improve the process of reviewing oil and gas applications through changes in the timing and strengthening the conditions of approval through changes to the Zoning Regulations. He said that he also has some thoughts regarding the requirements for oil fields rather than individual wells. Commissioner Ayer proposed holding a Planning Commission worksession to discuss these issues. He said that he would like Planning Commission to take a leadership role in the oil and gas issue.

Commissioner Klumker asked about the purpose of Shell's agreement with the CAYV. Several Commissioners offered that the agreement was a demonstration of Shell's willingness to work with the community. Commissioner Klumker suggested that CAYV was attempting to step in as regulatory agency. Commissioner Ayer stated his appreciation for CAYV's making the effort to do additional research and make suggestions to improve the conditions of approval. Commissioner Gibson added that they bring expertise in certain areas unavailable to staff or Planning Commission. Commissioner Merrill remarked on how little the COGCC seemed to know about air quality monitoring.

In response to a question from Commissioner Merrill, Mr. Phillips stated that no information regarding production from the wells in Routt County has been posted on the COGCC website. He noted that no official reported is required until the product leaves the well site.

Mr. Phillips said that the Board of County Commissioners wants to begin the discussion of potential socio-economic impacts of oil and gas development. Commissioner Benjamin suggested that Planning Commission hold a joint meeting with the Board. Mr. Phillip stated that he work on

scheduling such a meeting. He added that he would add a discussion of the issues raised by Commissioner Ayer to the agenda for the August 16th meeting.

Commissioner Klumker asked about a well being drilled south of Hayden. Mr. Phillips said that staff had received a complaint from the Hidden Springs homeowners' association saying that a water well in vicinity of an existing oil well was producing black water. Mr. Phillips explained that he had visited the site and had issued a Cease and Desist Order on the oil well operation. He stated that a mechanical integrity test was being performed on the oil well, which as allowed to be completed at the recommendation of the COGCC inspector, but that because the permit for the well had not been transferred to the new company working on the well they would not be allowed to do further work on it. Mr. Phillips stated that the ownership of the well is being contested and that no permit would be issued until the matter of ownership has been settled.

The meeting was adjourned at 8:00 p.m.



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associates, inc.

Development & Land Planning Consultants

◆ Project Management ◆ Site Design ◆ Government Approvals
2145 Resort Drive Suite 110 Steamboat Springs Colorado 80487 (970) 871-9111

MEMORANDUM

TO: Routt County Planning Commissioners and Planning Staff
FROM: Peter Patten, Patten Associates, Inc.
RE: Gnat Hill #1-29 Special Use Permit/Suggested Revisions to Conditions of Approval
DATE: August 2, 2012

Shell/SWEPI LP proposes the following revisions to the Conditions of Approval found in the Staff Report for the Gnat Hill #1-29 Special Use Permit:

COA#15(1): Delete. This COA does not apply to this permit – there are no existing wells with ½ mile.

COA#15(2): Revise as follows (new language in red):

Monitoring Well:

15(2). The Permittee will construct two (2) dedicated monitoring wells within 300 feet downgradient of the well pad. The proposed monitoring wells (SEPCO-GNAT HILL #1-29-6N89W29-TUTTLE A & B) will be constructed as two separate wells capable of providing representative groundwater samples from the unconfined aquifer in the weathered Lewis Formation regolith and from the first confined water zone expected to be present as a sand zone in the lower reaches of the Lewis Formation, respectively. Permittee shall install at least one (1) dedicated groundwater monitoring well or monitoring well cluster within 300 feet of the site boundary. The number of wells, their specific locations, and their depths shall be determined by studies of the subsurface geology, gradients, groundwater depth, and flow direction performed by Permittee and submitted to the LGD prior to issuance of this SUP. The monitoring well shall be constructed in accordance with Colorado Division of Water Resource requirements. The monitoring well shall have the ability to sample each substantial flow zone separately, with separate screens for each. Substantial flow zones shall be identified by lithologic logging during drilling and observations of flow entering the borehole supplemented by geophysical logs including caliper and resistance logs. The separate screens shall either be part of a multiport sampling capability designed to allow the separate sampling of each substantial flow zone, nested wells (multiple tubes or casings in a single borehole), or with a well cluster with sufficient wells with individual screens for each productive zone; if a well cluster is used, the screen depths must not overlap. The monitoring well flow zone(s) shall be sampled and tested according to the Colorado Oil and Gas Association Voluntary Baseline Groundwater Quality Sampling

Memo to PC/Gnat Hill COA Revisions	August 2, 2012	1
 PATTEN associates, inc. Development & Land Planning Consultants		
First Financial Center (970) 871-9111	2145 Resort Drive Suite 110 www.pattenassociates.com	Steamboat Springs, CO 80487 ppatten @pattenassociates.com

Program dated November 15, 2011 (COGA Program), except as described in e. below. Additionally, the following standards and procedures shall be followed:

- a. No revisions
- b. ~~Water Sources~~ **The monitoring wells** shall be sampled quarterly for one (1) year after the baseline water sampling described above ceases. If a previously undetected constituent is detected or if the fluctuation of inorganics varies from the baseline sample (or baseline fluctuation if more than one baseline sample is obtained) by more than twenty-five percent (25%), Permittee and Routt County shall confer within thirty (30) days **to discuss the issue and** ~~and collaborate, with each party's hydrologic expert if necessary, to determine an appropriate sampling frequency and term going forward. If the parties cannot reach an agreement as to such frequency and term, Routt County's determination shall prevail and Permittee shall abide by said determination.~~ If no such "trigger points" arise after one (1) year, the sampling frequency may, at the option of Permittee, be reduced to an annual basis. Water sampling may, at the option of Permittee, terminate after plugging and abandonment of the oil or gas well or twenty (20) years after well development, whichever is longer.

Note: no proposed revisions to sections 15(2) c, d, or e.



Chris Brookshire

From: Tom Myers [tom_myers@charter.net]
Sent: Thursday, August 16, 2012 4:19 PM
To: Chris Brookshire
Cc: Chad Phillips
Subject: RE: Gnat Hill (Shell)

Chris,
As you requested, I have quickly reviewed the new language proposed for the Gnat Hill project monitoring wells. The overall proposal appears similar to the Dawson Creek SUP on which I prepared an email to Chad Phillips on July 24. It is similar geology, including the Lewis Formation as the uppermost formation. The points in that email are still relevant, including that about not fracking the well. I recommend the same language regarding installing a deeper monitoring well be included if the plan changes to include fracking.

It is consistent with our previous language regarding multiport sampling capability to install a well cluster instead, as long as the screens not overlap (to prevent cross contamination of aquifer layers). However, the proposed language regarding well screens is unclear and I recommend a few changes. Regarding the unconfined aquifer monitoring well, I recommend changing "unconfined aquifer in the weathered Lewis Formation regolith" to "unconfined aquifer in the weathered Lewis Formation regolith or weathered Lewis Formation shale". I recommend this because it is not clear whether the water table occurs in the regolith or in the shale, based on the statement in the July 18 Clark memorandum that indicates the water table aquifer exists in either the regolith or the fractures on the upper surface of the Lewis Shale (Clark memo, p 4 of 13).

The proposed language would also require a screen over the "first confined water zone expected to be present as a sand zone in the lower reaches of the Lewis Formation". The intent of requiring wells screened to monitor deeper zones is to sample flow paths that are separate from the water table aquifer. The proposed language would not assure this objective. The July 18 Clark memorandum indicates that nearby groundwater wells "access sand lenses or shallow bedrock fractures" (Clark memo, p 4 of 13). These appear to be separate from the water table in the regolith or upper surface fractures in the quote above. I recommend you change the "first confined ..." as quoted above to the following:

"the uppermost fracture zone or sand lense encountered in Lewis Shale that is clearly separated from the water table aquifer. To assure the zones are separate, there should be a section of unfractured formation between the water table aquifer and fracture or sand zone. The screen should either span the zone or be centered over the most transmissive portion but shall not exceed 15 feet in length. The lower portion of the screen for the unconfined aquifer and the upper portion of the screen for the fracture or sand zone shall not overlap."

I recommend the screens not overlap to remove the possibility of the screens causing contamination from one layer from reaching the other layer. I recommend the 15 feet of screen over the most transmissive portion to maximize the potential for sampling most quickly a contaminant moving through the zone.

I hope this is clear and works for you. I'll be out of town Friday 8/17 but in the office on Monday 8/20 if you have any questions.

Best,
Tom

Tom Myers PhD
Hydrologic Consultant
Reno NV
775-530-1483
tom_myers@charter.net

Suggested Revision of Condition # 15(2) Gnat Hill #1-29

Based on 8.2.12 letter from Shell; 8/16/12 email from Dr. Myers

Revised by Planning staff and reviewed by County Attorney

Note: Changes have been made to the first paragraph to include the suggestion by Dr. Myers to use language to include the possibility of changes if fracking is proposed. The second paragraph includes Dr. Myers suggestions. There are minor changes to 'b' that include the redline suggestions by Shell, but the remaining language of the condition has no changes. There are no changes to #15 (2) a, d and e.

Monitoring Well:

15 (2). This condition is based on Permittee's APP as it relates to no anticipation of hydraulic fracturing. If the Permittee's plans change to include hydraulic fracturing of the production well, this SUP must be modified to include a deep monitoring well situated further downgradient from the production well, at a site to be determined and designed to monitor all productive zones based on a study of a hydrologic expert. As the APP currently stands, this condition is as follows:

The Permittee will construct two (2) dedicated monitoring wells within 300 feet down gradient of the well pad. The proposed monitoring wells (SEPCO-GNAT Hill #1-29-6NR89W29-TUTTLE A & B) will be constructed as two separate wells capable of providing representative groundwater samples from the unconfined aquifer in the weathered Lewis Formation regolith or weathered Lewis Formation Shale and from the uppermost fracture zone or sand lens encountered in Lewis Shale that is clearly separated from the water table aquifer. To assure the zones are separate, there should be a section of unfractured formation between the water table aquifer and fracture or sand zone. The screen should either span the zone or be centered over the most transmissive portion but shall not exceed 15 feet in length. The lower portion of the screen for the unconfined aquifer and the upper portion of the screen for the fracture or sand zone shall not overlap. The monitoring well shall be constructed in accordance with the Colorado Division of Water Resource requirements. The monitoring well flow zone(s) shall be sampled and tested according to the Colorado Oil and Gas Association Voluntary Baseline Groundwater Quality Sampling Program dated November 15, 2011 (COGA Program), except as described in e. below. Additionally, the following standard and procedures shall be followed:

- a. Baseline water sampling of the monitoring well shall be completed prior to drilling of the oil or gas well and shall continue monthly until conclusion of completion activities. Drilling of the oil or gas well may commence after confirmation has been received from (i) the party responsible for collection of the samples that the water samples were collected properly; and (ii) the testing facility that the water samples were preserved and transported appropriately, that chain of custody has been secured, that the samples have not exceeded analytical hold times, and that no contamination of the samples due to the collection process has been detected.
- b. The monitoring wells shall be sample quarterly for one (1) year after the baseline water sampling described above ceases. If a previously undetected constituent is detected or if the fluctuation of inorganics varies from the baseline sample (or baseline fluctuation if more than one baseline sample is obtained) by more than twenty five percent (25%), Permittee and Routt County shall confer within thirty (30) days to discuss the issue and collaborate, with each party's hydrologic expert if necessary, to determine an appropriate sampling frequency and term going forward. If the parties cannot reach an agreement as to such frequency and term, Routt County's determination shall prevail and Permittee shall abide by said determination. If no such "trigger points" arise after

one (1) year, the sampling frequency may, at the option of Permittee, be reduced to an annual basis. Water sampling may, at the option of Permittee, terminate after plugging and abandonment of the oil or gas well or twenty (20) year after well development, whichever is longer.

- c. Water samples shall be collected by an independent third party (a party other than the Permittee) using standard operating procedures and standards as described in the COGA Program. A copy of all records produced during water sampling, including but not limited to unedited field notes, calibration logs, photographs/videos, global positioning system, chain of custody, shall be provided to the LGD and COGCC within thirty (30) days of collection.
- d. Water sample analysis shall be performed by a testing facility accredited by the National Environmental Laboratory Accreditation Program. Qualification records and certifications shall be provided to the LGD. Results of laboratory analysis shall be provided by the testing facility directly to the LGD and surface owner, if different than the Permittee. A written explanation and interpretation of the test results, including the identification of any trends, shall also be provided by the testing facility or a qualified third party within thirty (30) days of the availability of the laboratory analysis.
- e. Water samples shall be tested for the constituents listed in Table 1 of the COGA Program with the addition of the following constituents: effervescence, TPH-GRO, TPH-DRO, Lower Explosive Limit, arsenic, barium, cadmium, chromium (total) copper, lead, mercury, silver, carbonate/bicarbonate, cation-anion balance, fluorine/fluoride, hardness, methylene blue active substances, and silica.

Chris Brookshire

From: Rodger G Steen [rgsteen@airsci.com]
Sent: Sunday, August 05, 2012 3:54 PM
To: Chris Brookshire
Cc: Chad Phillips; Matt Holman; Tommie.Criddle@shell.com; Tim Rowse; Paul Stettner
Subject: CAYV Suggestions for SWEPI Gnat Hill SUP

Chris,

As we have stated several times, we don't want to be duplicative or unnecessarily complicating. We are making suggestions of language and location for the language in the SUP, but if you have a better way of capturing the impact minimization commitments, go with it. Our interest is in making these as formal commitments in the SUP, and further to develop language that would eventually transfer to future permits for other operators. The following commitment is not in the SWEPI application or narrative. CAYV is asking that it be add, and SWEPI has verbally agreed to it:

"Shell will certify compliance with these county-only air quality requirements, and the certification will include a scanning for and repair of VOC leaks at least annually." I suggest that this be added as a third paragraph under Noise and Air on page 3 of 75. Let me know if I need to specifically propose this to the Commissioners.

Additionally, we suggest alternate language for the noise paragraph on this page 3 of 75, to capture all of the commitments that SWEPI has made in its narrative: : "According to the narrative, the petitioner has agreed to suggested COA #50 and additionally to comply with the noise limits provided in COGCC Rule 802 (c) for Residential / Agricultural / Rural designation. Applying this category of noise levels to this site will reduce maximum noise levels by 15 dB (A), except during the activities of drilling and completions, which will comply with the Light Industrial standards as set forth in COGCC Rule 802 (c)."

Thanks for your assistance here, as always....

Rodger

Rodger Steen
970-870-6570 - home
303-807-8024 - cell

Chris Brookshire

From: Rodger G Steen [rgsteen@airsci.com]
Sent: Tuesday, August 07, 2012 9:48 AM
To: Chris Brookshire
Cc: Chad Phillips; Tim Rowse
Subject: CAYV proposed template air quality condition #21
Attachments: CAYV Air Cond 20120801BG.docx; ATT00001.htm

Chris, CAYV proposes the attached Conditions 21 for all O&G permits after Gnat Hill is issued. So, presumably that would mean starting with Continental, to be heard in front of the PC Sept 20. When you read this you will note that it assumes the Gnat Hill air conditions will become part of their SUP including the edits we requested in an e-mail to you a few days ago. So, this condition would be meaningful only after the Gnat Hill SUP is issued.

We have worked with an attorney to make this defensible and non-preemptable and are comfortable that it would serve to limit air emissions essentially to levels required on the east slope, and to introduce the concept of self-monitoring of compliance.

We understand that Air Resource Specialists is providing something soon - and we are hoping that it can be easily integrated into this condition structure.

Rodger

Rodger Steen
970-870-6570 - home
303-807-8024 - cell

Aug 7
email
attachment
from R. Steen

**Proposed Routt County SUP Air Condition 21
August 6, 2012**

Emissions of criteria air pollutants from all Routt County sources that are a part of oil and gas exploration, development or production projects ("Oil and Gas Operations" shall be controlled to minimize impacts to human health, hydrocarbon odors, and tropospheric ozone concentrations.

a. Prior to commencing any construction, applicant shall prepare and obtain approval from the Routt County Department of Health and Environment (RCDHE) of an Air Emission Control and Compliance Demonstration Plan (AECCDP) that will identify all of the sources of emissions associated with the Oil and Gas Operations, and methods proposed to control the emissions in addition to those methods required by the Colorado Air Quality Control Commission. At a minimum, sources shall comply with the EPA Oil and Gas New Source Performance Standards (40 CFR Part 60).

b. The AECCDP shall include proposed methods and schedule for demonstrating to RCDHP compliance with the proposed emission controls.

c. The applicant shall be responsible for costs of air quality experts, if any, retained by the County to review the proposed AECCDP.

The applicant may use any of the following pre-approved AECCDPs.

1. Control and compliance demonstration methods listed in the Shell Gnat Hill Special Use Permit.
2. (none others approved at this time)

Chris Brookshire

From: Rodger G Steen [rgsteen@airsci.com]
Sent: Tuesday, August 14, 2012 4:35 PM
To: Chad Phillips
Cc: Chris Brookshire
Subject: edit to proposed Condition 21
Attachments: CAYV Air Cond 20120814.pdf; ATT00001.htm

Chad, I would like to add a complete reference to Code of Federal Regulations in our proposed Condition 21. If you can't modify at this date, I will deal with it later.

Rodger

Rodger Steen
970-870-6570 - home
303-807-8024 - cell

Aug 14
email
attachment
from R. Steen

Proposed Routt County SUP Air Condition 21 August 14, 2012

Emissions of criteria air pollutants from all Routt County sources that are a part of oil and gas exploration, development or production projects ("Oil and Gas Operations") shall be controlled to minimize impacts to human health, hydrocarbon odors, and tropospheric ozone concentrations.

a. Prior to commencing any construction, applicant shall prepare and obtain approval from the Routt County Department of Health and Environment (RCDHE) of an Air Emission Control and Compliance Demonstration Plan (AECCDP) that will identify all of the sources of emissions associated with the Oil and Gas Operations, and methods proposed to control the emissions in addition to those methods required by the Colorado Air Quality Control Commission. At a minimum, sources shall comply with the EPA Oil and Gas New Source Performance Standards (40 CFR Part 60, Subpart OOOO, finalized and signed April 17, 2012).

b. The AECCDP shall include proposed methods and schedule for demonstrating to RCDHP compliance with the proposed emission controls.

c. The applicant shall be responsible for costs of air quality experts, if any, retained by the County to review the proposed AECCDP.


The applicant may use any of the following pre-approved AECCDPs.

1. Control and compliance demonstration methods listed in the Shell Gnat Hill Special Use Permit.
2. (none others approved at this time)



ROUTT COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH

Memorandum

To: Chris Brookshire, Routt County Planning Department
From: Michael Zopf, Routt County Department of Environmental Health 
Subject: CAYV Suggestions for SWEPI Gnat Hill SUP
Date: August 21, 2012

Thank you for forwarding the recommendations of the Community Alliance of the Yampa Valley regarding the SWEPI Gnat Hill Special Use Permit (SUP). I have reviewed the CAYV proposed SUP air condition 21. As you know, Routt County's air consultant has not completed their review and recommendations to Routt County regarding the potential development of local air regulations. In the meantime, I find the CAYV recommendations to be reasonable and relatively straight forward. I have outlined below my recommended wording of this proposed condition which I believe captures the intent of the CAYV recommendations.

Prior to commencing construction activities related to any oil and gas exploration, development or production project, applicant shall prepare and submit a report to the Local Government Designee (LGD) that;

- Identifies all of the potential sources of air emissions associated with the project.
- Provides an estimate of the quantity of emissions expected for each source, and
- The methods proposed to control and minimize emissions from each source.

The applicant shall also provide an inspection and maintenance plan for its facilities that shall include at a minimum;

- Periodic visual inspection of all facilities and an annual inspection with a FLIR type infrared camera or other approved inspection technique designed to detect VOC leaks.

A written copy of all inspection results shall be periodically provided to the LGD by the operator or his/her designee. The applicant shall also provide copies of all APEN's (air pollutant emission notices) that the applicant files with the Colorado Air Pollution Control Division (APCD). Additionally, the applicant shall provide the LGD with copies of all air emission permit applications submitted to the Colorado Air Pollution Control Division and any and all correspondence from the APCD regarding that agency's review of such applications. Copies of all inspection reports or records provided to the applicant/operator shall be also provided to the LGD within fourteen (14) days of receiving such reports.

You will note that I have provided the LGD as the appropriate contact for all correspondence related to this issue. Routt County Environmental Health will be able to assist with a review of these materials. However, I believe it's important to keep the line of communication coming through the LGD to be consistent with existing state and county procedures.

Thank you for your consideration of these comments.



"To help preserve the natural environment of the Yampa Valley, enhance the quality of human life, retain the unique character of our community and to build a sustainable society in harmony with nature."

Routt County Board of Commissioners
522 Lincoln Avenue, Box 773598
Steamboat Springs, CO 80477
August 14, 2012

Re: Request to Commissioners to capture the available noise limits on oil and gas operations

Commissioners:

One component of the current Routt County economy is its rural and quiet environment. People come here for its rural / ranch character, for fishing, camping, biking, car touring, and other outdoor experiences, all of which include a quiet environment. The county has the opportunity during the COGCC permitting process of every O&G operation to request a land designation of "**Residential / Agriculture / Rural**" which has the lowest noise impact allowances for normal operations, i.e. 55 db (A) 7:00 am – 7:00 pm, and 50 db (A) 7:00 pm – 7:00 am, for O&G operations under the COGCC rules. Under COGCC Rule 802 (b), Routt County LGD can request this designation for all its lands on which there is proposed O&G activity in Routt County. There is ample allowance under the COGCC rules, which are attached, for higher levels of noise during drilling and maintenance activities. These **Residential / Agriculture / Rural** noise limits are easy to meet with current-technology extraction equipment.

Community Alliance of the Yampa Valley (CAYV) asks that the Routt County Board of Commissioners direct our LGD, during the COGCC permitting process, to request that all our county lands be considered "Residential / Agriculture / Rural" so that county residents receive that level of noise protection from O&G operations.

Respectfully Submitted,

A handwritten signature in blue ink, appearing to read "Tim Rowse".

CAYV Board

Tim Rowse, President; Rodger Steen; Paul Stettner; Jack White; Rich Levy; Cam Bunn; Steve Aigner

COGCC Rules, Section 802. NOISE ABATEMENT

a. The goal of this rule is to identify noise sources related to oil and gas operations that impact surrounding landowners and to implement cost-effective and technically-feasible mitigation measures to bring oil and gas facilities into compliance with the allowable noise levels identified in subsection c. Operators should be aware that noise control is most effectively addressed at the siting and design phase, especially with respect to centralized compression and other downstream “gas facilities” (see definition in the 100 Series of these rules).

b. Oil and gas operations at any well site, production facility, or gas facility shall comply with the following maximum permissible noise levels. Operations involving pipeline or gas facility installation or maintenance, the use of a drilling rig, completion rig, workover rig, or stimulation is subject to the maximum permissible noise levels for industrial zones. The type of land use of the surrounding area shall be determined by the Commission in consultation with the local governmental designee taking into consideration any applicable zoning or other local land use designation.

c. In the hours between 7:00 a.m. and the next 7:00 p.m. the noise levels permitted below may be increased ten (10) db(A) for a period not to exceed fifteen (15) minutes in any one (1) hour period. The allowable noise level for periodic, impulsive or shrill noises is reduced by five (5) db(A) from the levels shown.

ZONE	7:00 am to next 7:00 pm	7:00 pm to next 7:00 am
Residential/Agricultural/Rural	55 db(A)	50 db(A)
Commercial	60 db(A)	55 db(A)
Light industrial	70 db(A)	65 db(A)
Industrial	80 db(A)	75 db(A)

In remote locations, where there is no reasonably proximate occupied structure or designated outside activity area, the light industrial standard may be applicable. Pursuant to Commission inspection or upon receiving a complaint from a nearby property owner or local governmental designee regarding noise related to oil and gas operations. As of April 1, 2009 the Commission shall conduct an onsite investigation and take sound measurements as prescribed herein.

The following provide guidance for the measurement of sound levels and assignment of points of compliance for oil and gas operations:

- (1) Sound levels shall be measured at a distance of three hundred and fifty (350) feet from the noise source. At the request of the complainant, the sound level shall also be measured at a point beyond three hundred fifty (350) feet that the complainant believes is more representative of the noise impact. If an oil and gas well site, production facility, or gas facility is installed closer than three hundred fifty (350) feet from an existing occupied structure, sound levels shall be measured at a point twenty-five (25) feet from the structure towards the noise source. Noise levels from oil

and gas facilities located on surface property owned, leased, or otherwise controlled by the operator shall be measured at three hundred and fifty (350) feet or at the property line, whichever is greater. In situations where measurement of noise levels at three hundred and fifty (350) feet is impractical or unrepresentative due to topography, the measurement may be taken at a lesser distance and extrapolated to a 350-foot equivalent using the following formula:

$$\text{db(A) DISTANCE 2} = \text{db(A) DISTANCE 1} - 20 \times \log_{10} (\text{distance 2}/\text{distance 1})$$

(2) Sound level meters shall be equipped with wind screens, and readings shall be taken when the wind velocity at the time and place of measurement is not more than five (5) miles per hour.

(3) Sound level measurements shall be taken four (4) feet above ground level.

(4) Sound levels shall be determined by averaging minute-by-minute measurements made over a minimum fifteen (15) minute sample duration if practicable. The sample shall be taken under conditions that are representative of the noise experienced by the complainant (e.g., at night, morning, evening, or during special weather conditions).

(5) In all sound level measurements, the existing ambient noise level from all other sources in the encompassing environment at the time and place of such sound level measurement shall be considered to determine the contribution to the sound level by the oil and gas operation(s).

d. In situations where the complaint or Commission onsite inspection indicates that low frequency noise is a component of the problem, the Commission shall obtain a sound level measurement twenty-five (25) feet from the exterior wall of the residence or occupied structure nearest to the noise source, using a noise meter calibrated to the db(C) scale. If this reading exceeds 65 db(C), the Commission shall require the operator to obtain a low frequency noise impact analysis by a qualified sound expert, including identification of any reasonable control measures available to mitigate such low frequency noise impact. Such study shall be provided to the Commission for consideration and possible action.

e. Exhaust from all engines, motors, coolers and other mechanized equipment shall be vented in a direction away from all building units.

f. All facilities within four hundred (400) feet of building units with engines or motors which are not electrically operated shall be equipped with quiet design mufflers or equivalent. All mufflers shall be properly installed and maintained in proper working order.

Chris Brookshire

From: Peter Patten [ppatten@pattenassociates.com]
Sent: Tuesday, August 21, 2012 11:42 AM
To: Chris Brookshire
Cc: Hersch.Breen@shell.com; Travis.Sour@shell.com; 'Matt Holman'
Subject: Gnat Hill SUP: Excel Energy Company email stating no problem with pipeline proximity to well pad

Chris: As discussed today, here is the email (in quotations) below from Al Morganfield with Excel Energy Company confirming there are no issues with their pipeline and the Gnat Hill well pad. Thanks, Peter



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ASSOCIATES, INC.
Development & Land Planning Consultants

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Denver, Colorado 80231
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Fax: 303.755.8811
www.pattenassociates.com

“Hersch,

I just heard back from engineering this afternoon. They do not see any conflicts with the PSCo facilities and your project.

Al

**Al Morganfield, SR/WA, PLS
Xcel Energy | Responsible by Nature
Contract Agent, Right of Way & Permits
1123 W. 3rd Ave. Denver, CO 80223
303-571-3115, or 303-506-9981 (c), FAX 571-3824 al.morganfield@xcelenergy.com
amorganfield@lonetreeenergy.com Xcelenergy.com Please consider the Environment before printing this e-mail.
Public Service Company of Colorado, an Xcel Energy Company”**