



Application for Permit to Drill

APD Package Report

Date Printed:

APD ID:	Well Status:
APD Received Date:	Well Name:
Operator:	Well Number:

APD Package Report Contents

- Form 3160-3
- Operator Certification Report
- Application Report
- Application Attachments
 - Well Plat: 1 file(s)
- Drilling Plan Report
- Drilling Plan Attachments
 - Blowout Prevention Choke Diagram Attachment: 1 file(s)
 - Blowout Prevention BOP Diagram Attachment: 1 file(s)
 - Casing Design Assumptions and Worksheet(s): 2 file(s)
 - Proposed horizontal/directional/multi-lateral plan submission: 4 file(s)
- SUPO Report
- SUPO Attachments
 - New Road Map: 1 file(s)
 - Access turnout map: 1 file(s)
 - Production Facilities map: 1 file(s)
 - Water source and transportation map: 1 file(s)
 - Ancillary Facilities attachment: 1 file(s)
 - Well Site Layout Diagram: 2 file(s)
 - Other SUPO Attachment: 7 file(s)
- PWD Report
- PWD Attachments
 - None
- Bond Report
- Bond Attachments
 - None

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No.
1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator		8. Lease Name and Well No.
3a. Address	3b. Phone No. (include area code)	9. API Well No.
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		10. Field and Pool, or Exploratory
14. Distance in miles and direction from nearest town or post office*		11. Sec., T. R. M. or Blk. and Survey or Area
		12. County or Parish
		13. State
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
24. Attachments		

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Well plat certified by a registered surveyor. 2. A Drilling Plan. 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | <ol style="list-style-type: none"> 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). 5. Operator certification. 6. Such other site specific information and/or plans as may be requested by the BLM. |
|---|---|

25. Signature	Name (Printed/Typed)	Date
Title		
Approved by (Signature)	Name (Printed/Typed)	Date
Title		Office

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.



INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM connects this information to an evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Connection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Additional Operator Remarks

Location of Well

0. SHL: NENW / 892 FNL / 1826 FWL / TWSP: 8N / RANGE: 80W / SECTION: 28 / LAT: 40.64153 / LONG: -106.3813 (TVD: 0 feet, MD: 0 feet)

PPP: NENW / 792 FNL / 1420 FWL / TWSP: 8N / RANGE: 80W / SECTION: 28 / LAT: 40.64181 / LONG: -106.38276 (TVD: 7984 feet, MD: 8290 feet)

BHL: NENW / 10 FNL / 1319 FWL / TWSP: 8N / RANGE: 80W / SECTION: 16 / LAT: 40.67276 / LONG: -106.38319 (TVD: 7787 feet, MD: 19567 feet)

BLM Point of Contact

Name: Kelly Elliott

Title: Natural Resource Specialist

Phone: (970) 724-3015

Email: kaelliott@blm.gov

CONFIDENTIAL

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

CONFIDENTIAL

**Sandridge PRU High Point 0880 S28
11-28H33, 11-28H16, 4-28H16, and 4-28H33**

Site Specific Surface COAs

1. All disturbed federal portions of land (interim reclamation) will be promptly (at the first appropriate seeding window between September 1 and March 30) seeded with recommended Native Seed Mix **Table 1**. If an alternate date of seeding is requested, contact the designated Natural Resource Specialist/Realty Specialist (depending on area being seeded) prior to seeding for approval. Seed mixture rates are Pure Live Seed (PLS) pounds per acre. Drill seeding is the preferred method of application and drill seeding depth shall be no greater than ½ inch. If drill seeding cannot be accomplished, seed should be broadcast at double the rate used for drill seeding and harrowed or raked into the soil. Final reclamation of the well pad, pipeline, power line and road will be completed using the reclamation practices and seed mixes recommended at that time.

Table 1. Recommended Native Seed Mix for all Federal Portions of Reclamation on High Point 0880 Well Pad and Associated Infrastructures.

Common Name	Scientific Name	Application Rate (lbs PLS/acre)*
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata ssp. inermis</i>	3
Idaho fescue	<i>Festuca idahoensis</i>	2
Nevada bluegrass	<i>Poa nevadensis</i>	2
Thickspike wheatgrass	<i>Agropyron dasystachyum</i>	3
Prairie lupine	<i>Lupinus Lepidus</i>	1
Sulphur Flower Buckwheat	<i>Eriogonum umbellatum</i>	1.5
Western yarrow	<i>Achillea millefolium</i>	0.5

2. GRSG-TL-46e: No surface disturbing or disruptive activities are authorized within 4 miles from active leks during lekking, nesting, and early brood-rearing from March 1 to July 15 to minimize disturbance, displacement, or mortality to greater sage-grouse.

Criteria*:

- Location of proposed lease activities in relation to critical GRSG habitat areas as identified by factors, including, but not limited to, average male lek attendance and/or important seasonal habitat
- An evaluation of the potential threats from proposed lease activities that may affect the local population as compared to benefits that could be accomplished through compensatory or off-site mitigation
- An evaluation of the proposed lease activities, including design features, in relation to the site-specific terrain and habitat features. For example, within 4

miles from a lek, local terrain features such as ridges and ravines may reduce the habitat importance and shield nearby habitat from disruptive factors. This is particularly likely in Colorado MZ 17, which has an atypical GRSG habitat featuring benches with GRSG habitat interspersed with steep ravines.

To authorize an activity based on the criteria above, the environmental record of review must show no significant direct disturbance, displacement, or mortality of GRSG.

3. The operator will minimize the temporary noise levels of well operations during drilling, completions, re-completions, workovers, or similar activities to a maximum permissible noise level of 70 decibels or less measured 350 feet (4 feet above ground level) from the source to reduce disturbance to greater sage-grouse.
4. To prevent long term impacts associated with noise, sound producing equipment (such as compressors or pump jacks) must be equipped with a hospital grade muffler or similar device which limits sound emissions to 55 decibels or less measured 350 feet (4 feet above ground level) from the source.
5. A full reclamation bond specific to the site (in accordance with MD MR-14 [GRSG RMPA 2015]) is required for the High Point 0880 well pad and access road. This bond will be necessary prior to the construction of the High Point 0880 well pad and access road. Therefore, operator must submit an estimated cost to fully reclaim the location within 30-days of the APD's approval. Once the estimate is received, the BLM will review the information and provide the operator with the necessary bond amount to ensure bonds are sufficient. The bond is required to cover all overhead and contracting costs anticipated to be incurred by the BLM to result in full restoration of the lands to the condition it was found prior to disturbance.
6. LEASE NOTICE CO-LN-1: Migratory Bird Nesting Habitat – Avoid or minimize disruption of migratory bird nesting activity by siting or prioritizing vegetation clearing, facility construction, and concentrated operational activities (such as drilling, completion, utility installation) in order to avoid the involvement of higher value migratory bird habitats, especially during the core migratory bird nesting season (May 15 to July 15).
7. KFO-TL-3: Big Game Crucial Winter Range (Severe Winter Range and Winter Concentration Areas) No surface use is allowed from December 1 to April 30 in mapped crucial winter habitat. EXCEPTION --The Field Manager may grant an exception if an environmental analysis indicates that the Proposed Action can be conditioned so as not to interfere with habitat function or compromise animal condition within the project vicinity. An exception may also be granted if the proponent, the BLM, and the CPW negotiate compensation that will satisfactorily offset anticipated impacts to big game production or habitat condition; or an agreement can be reached where by a COGCC wildlife mitigation plan can be accommodated consistent with established RMP objectives and decisions. An exception may also be granted for actions intended to enhance the long-term utility for availability of suitable habitat.
8. The operator will utilize low-profile tanks or create berms to reduce potential visual impacts from well pad infrastructure to Traditional Cultural Properties (TCPs).

Approval Date: 06/16/2020

9. All long-term above-ground structures will be painted and maintained Shale Green from the BLM “Supplemental Environmental Colors” chart to blend with the natural color of the landscape background.

**Sandridge PRU High Point 0880 S28
11-28H33, 11-28H16, 4-28H16, and 4-28H33**

Standard Surface COAs

1. The Operator will submit a Sundry Notice a minimum of 48-hours prior to commencing construction and/or reclamation work.
2. Notify Craig Interagency Dispatch (970-826-5037) in the event of any fire.
 - a. The reporting party will inform the dispatch center of fire location, size, status, smoke color, aspect, fuel type, and provide their contact information.
 - b. The reporting party, or a representative of, should remain nearby, in a safe location, in order to make contact with incoming fire resources to expedite actions taken towards an appropriate management response.
 - c. The applicant and contractors will not engage in any fire suppression activities outside the approved project area. Accidental ignitions caused by welding, cutting, grinding, etc. will be suppressed by the applicant only if employee safety is not endangered and if the fire can be safely contained using hand tools and portable hand pumps. If chemical fire extinguishers are used the applicant must notify incoming fire resources on extinguisher type and the location of use.
 - d. Natural ignitions caused by lightning will be managed by Federal fire personnel. If a natural ignition occurs within the approved project area, the fire may be initially contained by the applicant only if employee safety is not endangered. The use of heavy equipment for fire suppression is prohibited, unless authorized by the Field Office Manager.

A.1. Wildlife

3. In the event a producing well is established, all new production equipment which has open-vent exhaust systems, such as heater treaters, separators, dehydration units, and flare stacks, will be designed and constructed to prevent birds and bats from entering or nesting in or on such units, and to the extent practical, to discourage birds from perching on the exhaust stacks.
4. The operator will prevent access to facilities that store or are expected to store fluids which may pose a risk to such birds and bats (e.g., toxicity, compromised insulation, drowning). Features that prevent access to such fluids must be in place and functional within 24 hours of installation and will remain effective until such features are removed or incapable of storing fluids. Deterrence methods may include netting or other alternative methods that effectively prevent use and that meet BLM approval. All lethal and non-lethal events that involve migratory birds will be reported to the BLM Authorized Officer immediately.
5. Open pipeline trenches should be inspected daily to reduce the potential for wildlife and livestock to become trapped should they fall into a trench. If an animal has fallen into the trench, the Authorized Officer will be notified immediately.

A.2. Paleontological Resources

6. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for disturbing or collecting vertebrate fossils, collecting large amounts of petrified wood (over 25lbs./day, up to 250lbs./year), or collecting fossils for commercial purposes on public lands.
7. If any paleontological resources are discovered as a result of operations under this authorization, the operator or any of his agents must stop work immediately at that site, immediately contact the Authorized Officer, and make every effort to protect the site from further impacts, including looting, erosion, or other human or natural damage. Work may not resume at that location until approved by the Authorized Officer. The BLM or designated paleontologist will evaluate the discovery and take action to protect or remove the resource within 10 working days. Within 10 days, the operator will be allowed to continue construction through the site, or will be given the choice of either (a) following the Paleontology Coordinator's instructions for stabilizing the fossil resource in place and avoiding further disturbance to the fossil resource, or (b) following the Paleontology Coordinator's instructions for mitigating impacts to the fossil resource prior to continuing construction through the project area.

A.3. Cultural Resources

8. The applicant is responsible for informing all persons who are associated with the project that they will be subject to prosecution for knowingly disturbing archaeological sites or for collecting artifacts.
9. If any archaeological materials are discovered as a result of operations under this authorization, activity in the vicinity of the discovery will cease, and the BLM WRFO Archaeologist will be notified immediately. Work may not resume at that location until approved by the Authorized Officer. The applicant will make every effort to protect the site from further impacts including looting, erosion, or other human or natural damage until BLM determines a treatment approach, and the treatment is completed. Unless previously determined in treatment plans or agreements, BLM will evaluate the cultural resources and, in consultation with the State Historic Preservation Office (SHPO), select the appropriate mitigation option within 48 hours of the discovery. The applicant, under guidance of the BLM, will implement the mitigation in a timely manner. The process will be fully documented in reports, site forms, maps, drawings, and photographs. The BLM will forward documentation to the SHPO for review and concurrence.
10. Pursuant to 43 CFR 10.4(g), the applicant must notify the Authorized Officer, by telephone and 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), the operator must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the Authorized Officer. Colorado Statute CRS 24-80-1302 must be adhered to upon the identification of suspected human skeletal remains and associated funerary items on Colorado State and private lands. The applicant will immediately notify the coroner of the county wherein the remains are located as well as the sheriff, police chief, or land managing agency official.

A.4. Invasive, Noxious, and Non-Native Species

11. All vehicles and construction equipment will be cleaned using compressed air or high-pressure water spraying equipment prior to use to reduce the potential for introduction of invasive, noxious weeds or other undesirable non-native species. The wash/blow down will concentrate on tracks, feet, or tires and on the undercarriage, with special emphasis on axles, frame, cross members, motor mounts, and on underneath steps, running boards, and front bumper/brush guard assemblies. Operator will dispose of solid wastes collected from the cleaning station.
12. All seed, straw, mulch, or other vegetative material to be used on BLM lands will comply with United States Department of Agriculture (USDA) state noxious weed seed requirements and must be certified by a qualified Federal, State, or county office as free of noxious weeds. Any seed lot with test results showing presence of State of Colorado A or B list species will be rejected in its entirety and a new tested lot will be used instead.
13. All sites will be monitored and treated for noxious weeds for the life of the project until Final Abandonment has been approved by the BLM. Monitoring will be conducted annually during the growing season to determine the presence of any State-listed noxious weeds. Noxious weeds that have been identified during monitoring will be promptly treated and controlled.
14. Pesticide Use Proposals (PUPs) must be submitted to and approved by the BLM before applying herbicides on BLM lands. The PUP will include target weed species, the herbicides to be used, application rates and timeframes, estimated acres to be treated, as well as maps depicting the areas to be treated and known locations of weeds. The KFO recommends that all PUPs be submitted the year anticipating herbicide application.

A.5. Waste

15. When drilling to set the surface casing, drilling fluid will be composed only of fresh water, bentonite, and/or a benign lost circulation material that does not pose a risk of harm to human health or the environment (e.g., cedar bark, shredded cane stalks, mineral fiber and hair, mica flakes, ground and sized limestone or marble, wood, nut hulls, corncobs, or cotton hulls).
16. All substances that pose a risk of harm to human health or the environment will be stored in appropriate containers. Fluids that pose a risk of harm to human health or the environment, including but not limited to oil, condensate, and/or produced water, must be stored in appropriate containers and in secondary containment systems at 110 percent of the largest vessel's capacity. Secondary fluid containment systems, including but not limited to tank batteries must be lined with a minimum 24 mil impermeable liner.
17. As a reasonable and prudent lessee/operator in the oil and gas industry, acting in good faith, all lessees/operators and right-of-way holders will report all emissions or releases that may pose a risk of harm to human health or the environment, regardless of a substance's status as exempt or nonexempt and regardless of fault, to the BLM WRFO by phone at 970-878-3800 or by email to BLM_CO_WR_NRS@blm.gov.
18. As a reasonable and prudent lessees/operator and/or right-of-way holder in the oil and gas industry, acting in good faith, all lessees/operators and right-of-way holders will provide for the immediate clean-up and testing of air, water (surface and/or ground) and soils contaminated by the emission or release of any substance that may pose a risk of

harm to human health or the environment, regardless of that substance's status as exempt or non-exempt. Where the lessee/operator or right-of-way holder fails, refuses or neglects to provide for the immediate clean-up and testing of air, water (surface and/or ground) and soils contaminated by the emission or release of any quantity of a substance that poses a risk of harm to human health or the environment, the BLM WRFO may take measures to clean-up and test air, water (surface and/or ground) and soils at the lessee/operator's expense. Such action will not relieve the lessee/operator of any liability or responsibility.

A.6. Range Management

19. The operator must coordinate with the livestock grazing permittee (Levis Land Co. Inc.) authorized to graze livestock within the project area a minimum of 72 hours prior to drilling activities associated with this permit. Livestock grazing permittee contact information may be found at www.blm.gov/ras/ or by contacting the appropriate BLM Field Office. The operator will provide the grazing permittee the location, nature, and extent of the anticipated activity being completed.
20. Any range improvement projects such as fences, water developments, cattleguards, gates, or other livestock handling/distribution facilities that are damaged or destroyed either directly or indirectly as a result of implementation of the Proposed Action will be promptly repaired or replaced by the applicant to restore pre-disturbance functionality. If the operator damages any range improvement project(s) the operator will notify the Authorized Officer and identify the actions taken to repair the feature(s).

A.7. Reclamation Procedures

▪ *Interim Reclamation*

21. To reduce erosion and reduce the risk of weed establishment, interim reclamation will be initiated when either there are no drilling activities expected on the pad for the next six months or there has been no activity on the pad within the last six months, regardless of whether or not there are outstanding approved APDs.
22. In order to inspect and operate the well or complete workover operations, it may be necessary to drive, park, and operate equipment on restored, interim vegetation within the previously disturbed area. Damage to soils and interim vegetation will be repaired and reclaimed following use. To prevent soil compaction, under some situations, such as the presence of moist, clay soils, the vegetation and topsoil will be removed prior to workover operations and restored and reclaimed following workover operations.

▪ *Final Reclamation*

23. Final abandonment of pipelines and flow lines will involve flushing, capping, and properly disposing of any fluids in the lines. All surface lines and any lines that are buried close to the surface that may become exposed in the foreseeable future due to water or wind erosion, soil movement, or anticipated subsequent use, must be removed. Deeply buried lines may remain in place unless otherwise directed by the Authorized Officer.

▪ ***Monitoring and Final Abandonment Approval***

24. All seed tags will be submitted via Sundry Notice (SN) to the designated Natural Resource Specialist within 14 calendar days from the time the seeding activities have ended. The SN will include the purpose of the seeding activity (i.e., seeding well pad, cut and fill slopes, seeding pipeline corridor, etc.). In addition, the SN will include the pipeline, well(s) or well pad number associated with the seeding activity, if applicable, the name of the contractor that performed the work, his/her phone number, the method used to apply the seed (e.g., broadcast, hydro-seeded, drilled), whether the seeding activity represents interim or final reclamation, the total acres seeded, an attached map that clearly identifies all disturbed areas that were seeded, and the date the seed was applied.
25. Each year by March 1st, Sandridge Energy Inc. will submit a Reclamation Status Report to the WRFO via the most current BLM approved data management system that includes the pipeline name and/or well number, API number, legal description, UTM coordinates, project description (e.g., well pad, pipeline, etc.), reclamation status (e.g., interim or final), whether the well pad and/or pipeline has been re-vegetated and/or re-contoured, date seeded, photos of the reclaimed site, acres seeded, seeding method (e.g., broadcast, drilled, hydro-seeded, etc.), and contact information for the person responsible for developing the report. The report will include maps showing each point, polygon (e.g., well pad), and/or polyline (e.g., road, pipeline) feature that was included in the report. The data must be submitted in UTM Zone 13N, NAD 83, in units of meters. In addition, scanned copies of seed tags that accompanied the seed bags will be included with the report. Internal and external review of the WRFO Reclamation Status Report and the process used to acquire the necessary information will be conducted annually, and new information or changes in the reporting process will be incorporated into the report.
26. Sandridge Energy Inc. will be responsible for ensuring that all disturbance GIS and reclamation data will be submitted via White River Data Management System (WRDMS) which can be accessed at <https://my.usgs.gov/wrfo/>

A.8. Reclamation Performance Standards

▪ ***Interim Reclamation Standard***

27. Disturbed areas not needed for long-term production operations or vehicle travel have been recontoured, protected from erosion, and revegetated with a self-sustaining, vigorous, diverse, native (or otherwise approved) plant community sufficient to minimize visual impacts, provide forage, stabilize soils, and impede the invasion of noxious weeds.

▪ ***Final Reclamation Standard***

28. Permanent vegetative cover will be accomplished if the basal cover of perennial species, adapted to the area, is at least 90 percent of the basal cover of the undisturbed vegetation of adjoining land or the potential basal cover as defined in adjacent undisturbed areas.
29. Diversity will be accomplished if at least 2 perennial genera and 3 perennial species that are adapted to the area make up the basal cover of the reclaimed area in precipitation zones 13 inches or less. One species will not make up more than 50 percent of the perennial vegetation by basal cover.
30. Self-regeneration and adaptation to the area will be evident if the plant community is in good vigor, there is evidence of successful reproduction, and the species are those commonly found in the area.
31. Surface stability will be accomplished if soil movement as measured by deposits around obstacles, depths of truncated areas, and height of pedestalling, is not greater than 0.3 inch and if erosion channels (rills, gullies, etc.) are less than 1 inch in depth and at intervals greater than 10 feet. If this standard is not met by the end of the second growing season, two alternatives exist depending on the severity of the erosion:
 - a. If erosion were greater than two (2) times the allowable amount, corrective action would have to be taken by the responsible company at that time;
 - b. If erosion is less than or equal to two (2) times the allowable amount, and it is determined the erosion occurred during vegetative establishment and the site may become stable, no corrective action would be required at that time. Another measurement would be performed a year later to determine if stability standards had been met. If the original measurements have not increased by more than the allowed standard, the standard would be considered met. However, if the increase were greater than the allowed standard, corrective action would be required.
 - c. Subsurface stability (mass wasting event) is of concern if disturbance has included excavation over 4 ft in depth and greater than 10,000 square ft in area on slopes 35 percent and greater, or on any erosion-prone slope. When these conditions occur, length of liability for reclamation and final abandonment will continue for 10 years following re-contouring to original contour or for such time that climatic patterns provide 2 consecutive years in which measurable precipitation totals at least 120 percent of average from October 1 through September 30, as measured by data averaged from nearby regional weather stations. The Authorized Officer may waive this stipulation, or portions of it.

Such waiver will be documented and justified when not applicable, or when objectives are accomplished through another metho

Sandridge Energy, PRU High Point 0880, Drilling Conditions of Approval
March 12th, 2020

The drilling plan of the APD will be supplemented as follows:

1. All operations, unless a variance has been granted in writing by the Authorized Officer, must be conducted in accordance with 43 CFR PART 3160 - Onshore Oil and Gas Operations, Onshore Oil and Gas Order No.1; Approval of Operations on Onshore Federal and Indian Oil and Gas Leases; and Onshore Oil and Gas Order No. 2; Drilling Operations. If air or mist drilling is used, operations must be in accordance with Onshore Oil and Gas Order No. 2; Drilling Operations, Part E; Special Drilling Operations.
2. Approval is based on a **5M BOPE** utilized after setting surface casing. All components, **including the annular preventer**, shall be rated to this pressure rating. The BOPE shall be installed, tested, and operated in conformance with Onshore Order No. 2 for a 5M system.
3. Centralizers required on surface casing per Onshore Order No. 2.III.B.1.f. Surface casing shall have centralizers on the bottom 3 joints of the casing (a minimum of 1 centralizer per joint, starting with the shoe joint).
4. The operator is responsible for the actions of his subcontractors. A copy of the approved APD must be on location during construction, drilling, and completion operations.
5. Major deviations from the drilling plan require prior approval from the Authorized Officer. The operator shall verbally notify either the petroleum engineer or petroleum engineering technician 24 hours prior to the following operations to provide notice of:
 - a. Well spud (Breaking ground for drilling surface casing)
 - b. Running and cementing of all casing strings
 - c. Pressure testing of BOPE or any casing string
 - d. Commencing completion operations

A written sundry notice of the well spud must be submitted within five (5) working days.

6. All BOPE tests will be done by a tester and not by the rig pumps. The tests will include a low-pressure test of 250 psi for five minutes prior to initiating the high-pressure tests discussed in Onshore Order No. 2

Approval Date: 06/16/2020

Sandridge Energy, PRU High Point 0880, Drilling Conditions of Approval
March 12th, 2020

7. No "new" hardband drill pipe abrasive to casing will be rotated inside the surface casing unless it can be shown to be casing friendly in the manufacturer's specifications. Hardband drill pipe will be considered new until it has been run at least once.
8. The WRFO shall be contacted for 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. 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, the authorize office shall be notified within 24 hours from the time of the event.
9. Drilling muds with chlorides testing in excess of 3,000 ppm or those containing hydrocarbons shall not be used in drilling operations until after the surface casing has been set. When drilling to set the surface casing, drilling fluid will be composed only of fresh water, bentonite and/or a benign lost circulation material – that is a lost circulation material that does not pose a threat to human health or the environment, e.g. cedar bark, shredded cane stalks, mineral fiber and hair, mica flakes, ground and sized limestone or marble, wood, nut hulls, corncobs, or cotton hulls.
10. During surface cementing operations, should cement not be circulated to surface the WRFO shall be verbally notified as soon as reasonably possible. A log acceptable to the WRFO shall be run to determine the top of cement prior to commencing remedial cementing operations. If cement is circulated to surface and subsequently falls back, top job(s) will be performed until cement remains at surface.
11. Due to the extensive lost circulation problems that are being encountered in the Piceance Basin during drilling operations from surface to total depth (TD), and given that all usable water zones, potential productive zones, and lost circulation zones shall be protected and/or isolated per Onshore Order #2, the WRFO requires sufficient volumes of cement be pumped to meet these requirements. Cement tops behind production casing will be verified by an acceptable log to ensure compliance with this Order. **We require cement to be run a minimum of 200' above the shoe of the previous casing string.**
12. Chronologic drilling progress reports must be sent directly to the BLM WRFO on a daily basis, either electronically or by fax (970-878-3805) to the Petroleum Engineer, Supervisor Petroleum Engineering Technician, and/or other designated petroleum engineering technicians until the well is drilled to total depth.
13. All drill cuttings shall be contained in a pit on the pad of the well being drilled or hauled to an approved disposal site. All pits shall always maintain a minimum of two feet of free board.

Sandridge Energy, PRU High Point 0880, Drilling Conditions of Approval
March 12th, 2020

14. For foam and ultralight cement jobs that are performed in cementing the intermediate or production strings, the operator will wait at least 36 hours for cement to harden before running a specialized log capable of reading pipe cement bond and verifying tops of cement. The WRFO shall be verbally notified prior to running such specialized log with enough advance notice to allow a representative from this office to witness. Logs showing pipe cement bond and tops of cement for intermediate and production cement jobs will be forwarded to the BLM.
15. The completion report, Form 3160-4, shall be filed within 30 days of completion of operations and submitted prior to, or along with the first production notice.
16. The WRFO requires the measurement of individual gas, oil (condensate) and water production streams at the wellhead, unless otherwise approved in advance by the BLM. The sales point for natural gas will be at the wellhead. All meters will be calibrated in place prior to any deliveries. The WRFO will be provided with a date and time for the initial meter calibration and all future meter proving and calibration schedules with enough advance notice (24 hours minimum) to allow a representative from this office to witness. A copy of the meter proving and calibration reports will be submitted to the WRFO. Oil will be sold from secured tanks on location, unless otherwise approved in advance by the BLM.
17. The APD shall be valid for 2 years from the date of approval unless an extension is granted by the authorized office.
18. Approval to flare is granted while drilling and testing.
19. A communitization agreement will be required if the well does not receive a unit-paying determination.

Sandridge Energy, PRU High Point 0880, Drilling Conditions of Approval
March 12th, 2020

The Bureau of Land Management, White River Field Office address is:
220 E. Market St.
Meeker, CO 81641
(970) 878-3800

WRFO CONTACTS:

Petroleum Engineering Technicians:

Justin Wilson	Work Phone	(970) 878-3825	jrwilson@blm.gov
	Cell Phone	(970) 942-7042	

Erika Miller	Work Phone	(970) 878-3808	emiller@blm.gov
	Cell Phone	(970) 296-0850	

Supervisory Petroleum Engineering Technician:

Bud Thompson	Work Phone	(970) 878-3828	blthomps@blm.gov
	Cell Phone	(970) 942-7040	

Petroleum Engineer:

Kenneth Rennick	Work Phone	(970) 878-3846	krennick@blm.gov
-----------------	------------	----------------	------------------



Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Alex Rizzo

Signed on: 09/10/2019

Title: Regulatory Biologist

Street Address: 123 Robert S Kerr Ave

City: Oklahoma City

State: OK

Zip: 73102

Phone: (405)429-5813

Email address: arizzo@sandridgeenergy.com

Field Representative

Representative Name:

Street Address:

City:

State:

Zip:

Phone:

Email address:

APD ID: 10400047165

Submission Date: 09/16/2019

Highlighted data reflects the most recent changes

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - General

APD ID: 10400047165

Tie to previous NOS? N

Submission Date: 09/16/2019

BLM Office: CRAIG

User: Alex Rizzo

Title: Regulatory Biologist

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: COC065607

Lease Acres: 1800

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? YES

Federal or Indian agreement: FEDERAL

Agreement number: COC075018X

Agreement name:

Keep application confidential? Y

Permitting Agent? NO

APD Operator: SANDRIDGE EXPLORATION & PRODUCTION LLC

Operator letter of designation:

Operator Info

Operator Organization Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Operator Address: 123 Robert S Kerr Ave

Zip: 73102

Operator PO Box:

Operator City: Oklahoma City **State:** OK

Operator Phone: (405)753-5500

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NEW

Master SUPO name: PRU High Point S28

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

Well API Number:

Field/Pool or Exploratory? Exploratory

Field Name:

Pool Name:

Is the proposed well in an area containing other mineral resources? NATURAL GAS,OIL

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

Is the proposed well in an area containing other mineral resources? NATURAL GAS,OIL

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** N **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name: High Point **Number:** S28

Well Class: HORIZONTAL

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: EXPLORATORY (WILDCAT)

Describe sub-type:

Distance to town: 10.5 Miles

Distance to nearest well: 20 FT

Distance to lease line: 0 FT

Reservoir well spacing assigned acres Measurement: 160 Acres

Well plat: PRU_High_Point_0880_4_28H16_PLATS_20190916082657.pdf

Well work start Date: 08/15/2020

Duration: 60 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number:

Reference Datum: GROUND LEVEL

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
SHL Leg #1	892	FNL	1826	FWL	8N	80W	28	Aliquot NENW	40.64153	-106.3813	JACKSON	COLORADO	SIXTH PRIN	F	COC065607	8196	0	0	Y
KOP Leg #1	1276	FNL	1453	FWL	8N	80W	28	Aliquot NENW	40.64048	-106.38263	JACKSON	COLORADO	SIXTH PRIN	F	COC065607	718	7501	7478	Y
PPP Leg #1-1	792	FNL	1420	FWL	8N	80W	28	Aliquot NENW	40.64181	-106.38276	JACKSON	COLORADO	SIXTH PRIN	F	COC065607	212	8290	7984	Y

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
EXIT Leg #1	0	FNL	1380	FWL	8N	80W	16	Aliquot SESW	40.658258	-106.383091	JACKSON	COLORADO	SIXTH PRIN	S	STATE	318	14362	7878	Y
BHL Leg #1	10	FNL	1319	FWL	8N	80W	16	Aliquot NENW	40.67276	-106.38319	JACKSON	COLORADO	SIXTH PRIN	S	STATE	409	19567	7787	Y

DIRECTIONS:
 FROM WALDEN, CO. GO SOUTH ON COLORADO HIGHWAY 14,
 (SIGN FOR STEAMBOAT SPRINGS/KREMMLING) 9.5 MILES,
 LEFT ON ACCESS ROAD, 0.81 MILES TO SITE.
 TOTAL DISTANCE FROM WALDEN, CO. 10.3 +/-

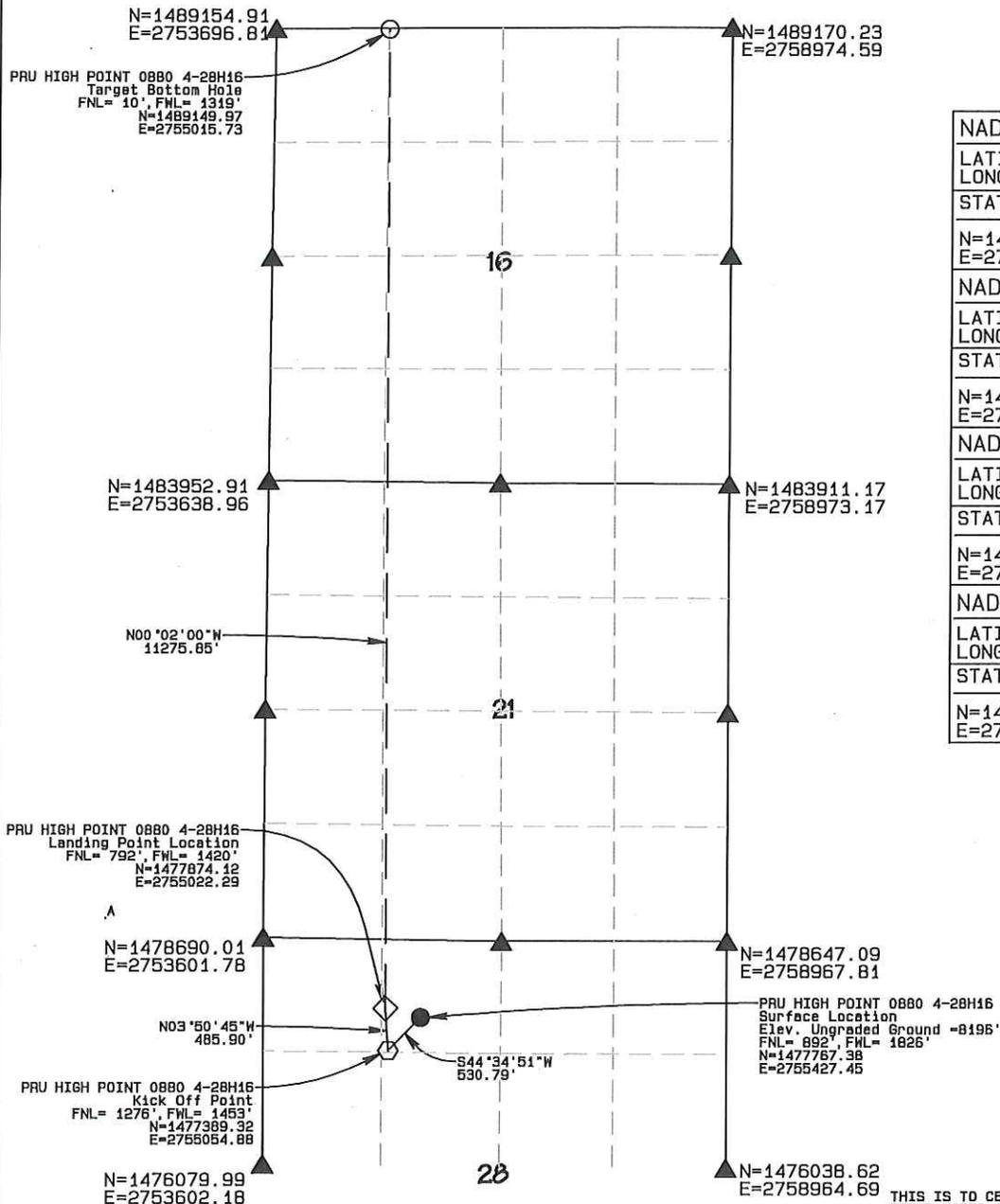
C.O.G.C.C. EXISTING WELLS

LETTER	WELL NAME	STATUS	PLANNED FOOTAGES	SECTION
A	Peteraon Ridge 1-20H	Producing	219' FSL 1820' FEL	20
B	PRU 0880 2-29H17	Drilling	87' FSL 2204' FEL	29
C	PRU 0880 6-29H17	Drilling	87' FSL 2189' FEL	29
D	Patriot 0880 12-32H5	Drilling	89' FSL 2169' FEL	29
E	Patriot 0880 13-32H5	Drilling	90' FSL 2149' FEL	29
F	Patriot 0880 14-32H5	Drilling	91' FSL 2129' FEL	29
G	Patriot 0880 15-32H5	Drilling	92' FSL 2109' FEL	29

LEGEND

- 90° SYMBOL
- SECTION CORNER
- PROPOSED WELLHEAD
- TARGET BOTTOM HOLE
- LANDING POINT
- KICK OFF POINT
- FEDERAL LEASE LINE
- STATE LEASE LINE

T8N, R80W, 6th P.M.



NAD 83 (SURFACE LOCATION)
LATITUDE=40.64153°N LONGITUDE=106.38130°W
STATE PLANE NAD 83 (CO. NORTH)
N=1477767.38 E=2755427.45
NAD 83 (KICK OFF POINT)
LATITUDE=40.64048°N LONGITUDE=106.38263°W
STATE PLANE NAD 83 (CO. NORTH)
N=1477389.32 E=2755054.88
NAD 83 (LANDING POINT)
LATITUDE=40.64181°N LONGITUDE=106.38276°W
STATE PLANE NAD 83 (CO. NORTH)
N=1477874.12 E=2755022.29
NAD 83 (TARGET BOTTOM HOLE)
LATITUDE=40.67276°N LONGITUDE=106.38319°W
STATE PLANE NAD 83 (CO. NORTH)
N=1489149.97 E=2755015.73

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM
 FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER
 SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE
 BEST OF MY KNOWLEDGE AND BELIEF.



SandRidge Exploration & Production, LLC.

PRU HIGH POINT 0880 4-28H16
 WELL LOCATION PLAT - EXHIBIT
 shown in the NE1/4NW1/4 of Section 28, T8N, R80W,
 6th P.M., Jackson County, Colorado.

BASIS OF BEARINGS:

US STATE PLANE 1983
 CO NORTH 0501 GRID

PDOP=1.202

BASIS OF ELEVATION

NAVDSB Computed using GEOID12B as measured
 using a combination of Static and Kinematic GPS
 based on an OPUS Solution Report.

SUBSURFACE LOCATIONS PROVIDED BY
 SandRidge Exploration & Production, LLC.
 NOT FIELD VERIFIED

1" = 2000'

NORTH PARK ENGINEERING &
 CONSULTING, INC.

P.O. BOX 395
 WALDEN, CO 80480
 (970) 723-3725

DATE OF FIELD WORK: MAY 24, 2019	DRAWING COMPLETION: SEPT 10, 2019
SURVEYED BY: LEVI KURTZER	DRAWN BY: ALEX LANTON, TONY HILLIARD
CHECKED BY: RANDALL MILLER	

T8N, R80W, 6th P.M.

SandRidge Exploration & Production, LLC

GLO BRASS CAP
1938
N=1489952.91
E=2753638.96

GLO BRASS CAP
1938
N=1489925.87
E=2756320.75

GLO BRASS CAP
1938
N=1483914.17
E=2758973.17

GLO BRASS CAP
1938
N=1481317.13
E=2753615.86

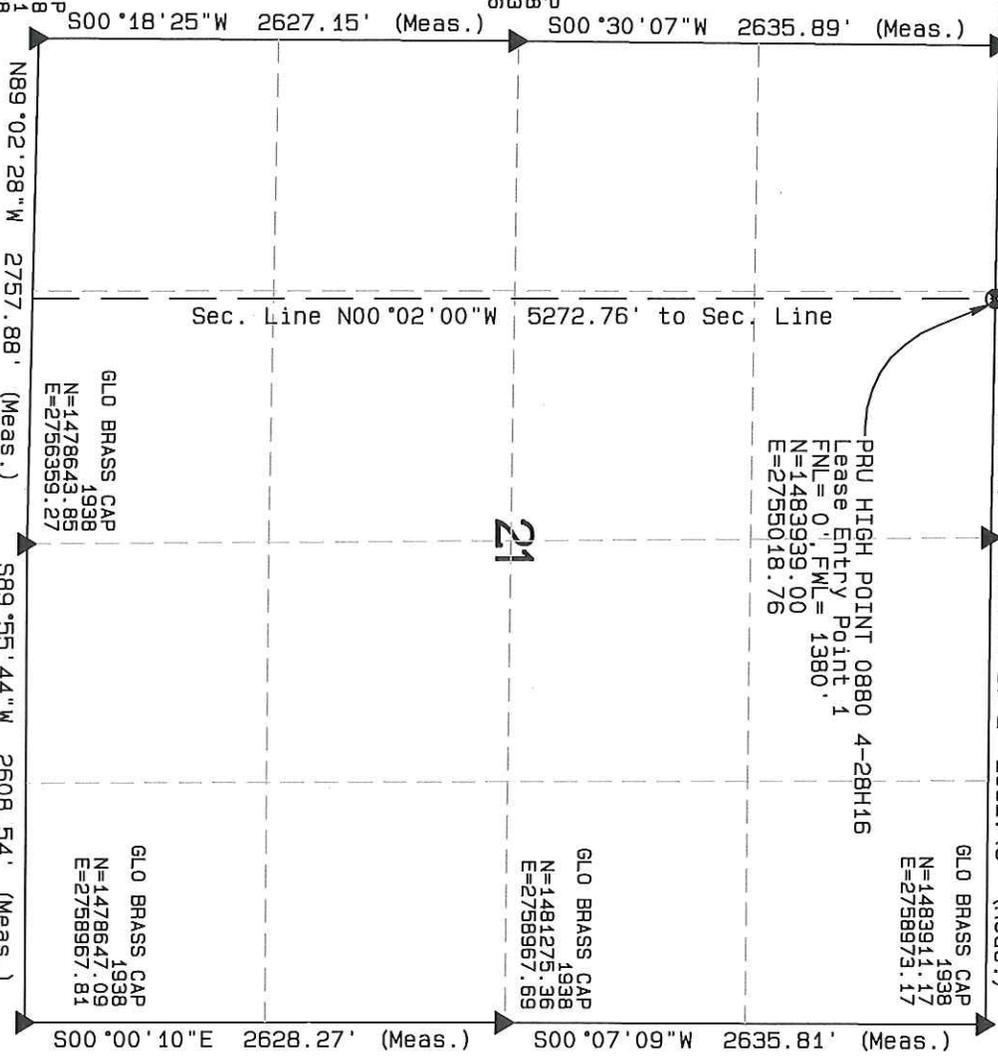
GLO BRASS CAP
1938
N=1478643.85
E=2756359.27

GLO BRASS CAP
1938
N=1481275.36
E=2758967.69

GLO BRASS CAP
1938
N=1478690.01
E=2753601.78

GLO BRASS CAP
1938
N=1478643.85
E=2756359.27

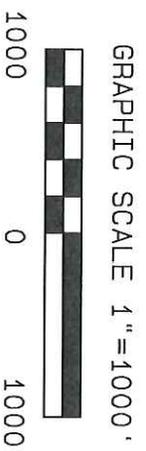
GLO BRASS CAP
1938
N=1478647.09
E=2758967.81



INTERMEDIATE SECTION
PRU HIGH POINT 0880 4-28H16 located as shown in the E1/2W1/2 of Section 21, T8N, R80W, 6th P.M. Jackson County, Colorado.

BASIS OF BEARINGS:
US STATE PLANE 1983
CO NORTH 0501 GRID

BASIS OF ELEVATION
NAVD88 Computed using GEOID12B as measured using a combination of Static and Kinematic GPS based on an OPUS Solution Report.



LEGEND

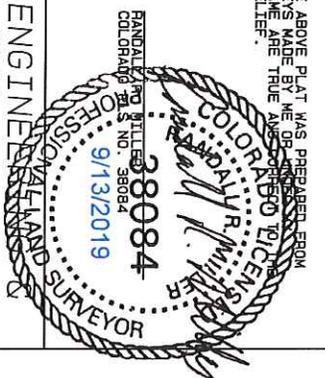
- FOUND CORNER
- PROPOSED WELL
- PROPOSED KOP
- PROPOSED LPL
- PROPOSED BHL



NAD 83 (KICK OFF POINT)	NAD 83 (SURFACE LOCATION)
LATITUDE=40.64048°N LONGITUDE=106.38263°W	LATITUDE=40.64153°N LONGITUDE=106.38130°W
NAD 83 (TARGET BOTTOM HOLE)	NAD 83 (LANDING POINT LOCATION)
LATITUDE=40.67276°N LONGITUDE=106.38319°W	LATITUDE=40.64181°N LONGITUDE=106.38276°W

NORTH PARK ENGINEERING AND CONSULTING, INC.

P.O. BOX 395
WALDEN, CO 80480
(970) 723-3725



THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR ASSISTANTS IN THE BEST OF MY KNOWLEDGE AND BELIEF.

DATE OF FIELD WORK: MAY 24, 2019 DRAWING COMPLETION: SEPT 11, 2019
 DRAWN BY: ALEX LAMTOR, TONY HILLIARD
 CHECKED BY: RANDALL MILLER
 SURVEYED BY: LEVI KUNTZER

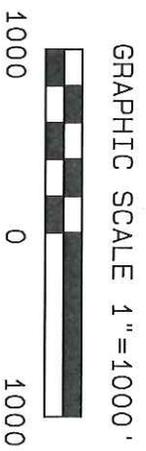
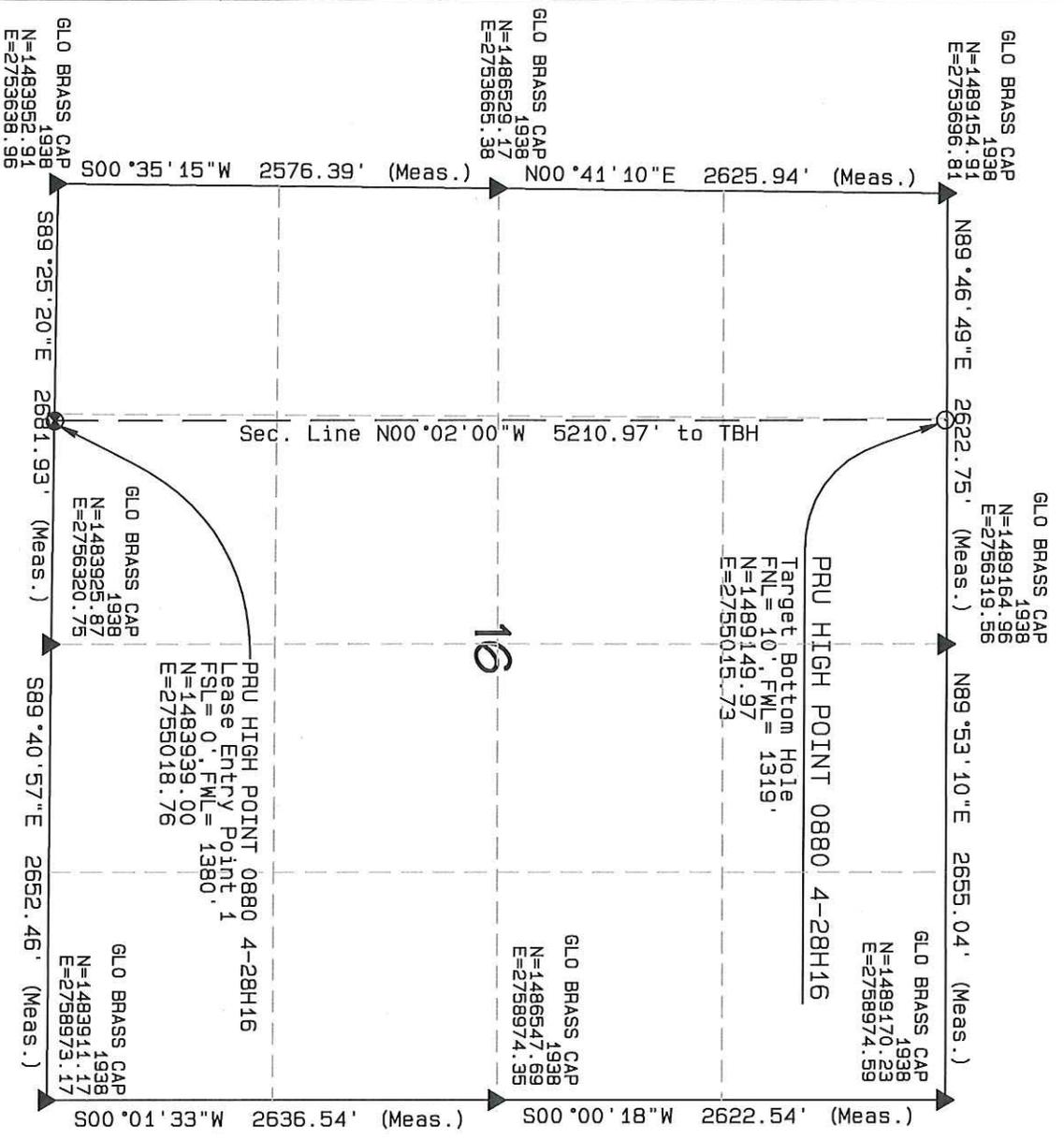
T8N, R80W, 6th P.M.

SandRidge Exploration & Production, LLC

TARGET BOTTOM HOLE
 PRU HIGH POINT 0880 4-28H16 located as shown in the NE1/4NW1/4 of Section 16, T8N, R80W, 6th P.M., Jackson County, Colorado.

BASIS OF BEARINGS:
 US STATE PLANE 1983
 CO NORTH 0501 GRID

BASIS OF ELEVATION
 NAVD88 Computed using GEOID12B as measured using a combination of Static and Kinematic GPS based on an OPUS Solution Report.



LEGEND

- ▲ FOUND CORNER
- PROPOSED WELL
- PROPOSED KOP
- ◇ PROPOSED LPL
- PROPOSED BHL

NAD 83 (KICK OFF POINT)	NAD 83 (SURFACE LOCATION)
LATITUDE=40.64048°N LONGITUDE=106.38263°W	LATITUDE=40.64153°N LONGITUDE=106.38130°W
NAD 83 (TARGET BOTTOM HOLE)	NAD 83 (LANDING POINT LOCATION)
LATITUDE=40.67276°N LONGITUDE=106.38319°W	LATITUDE=40.64181°N LONGITUDE=106.38276°W

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM THE FIELD NOTES OF ACTUAL SURVEYS MADE BY ME AND MY ASSISTANT IN THE BEST OF MY KNOWLEDGE AND BELIEF.



NORTH PARK ENGINEERING & CONSULTING, INC.

P.O. BOX 395
 WALDEN, CO 80480
 (970) 723-3725

DATE OF FIELD WORK: MAY 24, 2019 DRAWING COMPLETION: SEPT 14, 2019

SURVEYED BY: LEVI KUNTZER
 DRAWN BY: ALEX LAMTON, TONY HILLIARD
 CHECKED BY: RANDALL MILLER

APD ID: 10400047165

Submission Date: 09/16/2019

Highlighted data reflects the most recent changes

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
533407	LANCE	0	4090	4100	SANDSTONE	USEABLE WATER	N
533408	FOX HILLS	-4120	4120	4150	SANDSTONE	NATURAL GAS, OIL	N
533409	UNKNOWN	-5650	5650	5700	SHALE	NATURAL GAS, OIL	N
533410	UNKNOWN	-6140	6140	6200	SANDSTONE, SILTSTONE	NATURAL GAS	N
533411	PIERRE B	-6460	6460	6500	SANDSTONE, SHALE	NATURAL GAS	N
533412	NIOBRARA	-7770	7770	7825	MARL, SHALE, SILTSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M

Rating Depth: 10000

Equipment: All well control equipment shall be in accordance with onshore order #2 for 5M systems. Minimum specifications: 1) 5000 psi blind rams 2) 5000 psi pipe rams 3) 5000 psi annular. Auxillary equipment to be used: 1) upper kelly cock with handle available. 2) stabbing valve 3) rotating head. Choke manifold will include appropriate valves and adjustable chokes. Kill line will have 1 choke valve

Requesting Variance? NO

Variance request:

Testing Procedure: Ram type preventers will be pressure tested to full working pressure utilizing a tester and a test plug at: 1) initial installation 2) whenever any seal subject to test pressure is broken, 3) following related repairs 4) 30 day intervals. Annular preventer will be pressure tested to 50 % of the rated working pressure. All pressure tests shall be maintained at least 10 minutes or until provisions of test are met, whichever is longer. Annular preventers shall be functionally operated at least weekly. Pipe and Blind rams shall be activated each trip. a BOPE pit level drill will be conducted weekly for each drilling crew. All test and drills will be recorded in the drilling log. The accumulator will have sufficient capacity to open the HCR valve, close all rams plus the annular preventer, and retain 200 PSI above precharged pressure without the use of closing unit pumps. The system will have 2 independent power sources to close the preventers in accordance with 5M system requirements. Remote controls shall be readily accessible to the driller. Master controls shall be at accumulator.

Choke Diagram Attachment:

10M_Choke_Configuration_20190910122559.pdf

BOP Diagram Attachment:

Cyclone_5m_BOP_Rig_33_Sandridge_2018_20190910122605.pdf

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

10M_Choke_Configuration_20190910122559.pdf

Cyclone_5m_BOP_Rig_33_Sandridge_2018_20190910122605.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	12.25	9.625	NEW	API	N	0	2400	0	2400	8196	5796	2400	J-55	36	LT&C	1.25	1	DRY	1.6	DRY	1
2	PRODUCTION	8.75	5.5	NEW	API	N	0	19567	0	7787	0	409	19567	P-110	20	OTHER - BK	1.25	1	DRY	1.6	DRY	1.6

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

PRU_High_Point_0880_4_28H16_20200108140012.pdf

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

Casing Attachments

Casing ID: 2 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

PRU_High_Point_0880_4_28H16_20200108140027.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	2400	507	2.17	12	1101		Class C	Retarder, Fluid Loss & LCM based as needed
SURFACE	Tail		0	2400	166	1.75	13	290		Class C	Retarder, Fluid Loss & LCM based as needed
PRODUCTION	Lead		0	1956 7	1062	2.23	12	2369		Class H	Retarder, Fluid Loss & LCM based as needed
PRODUCTION	Tail		0	1956 7	2309	1.65	13	3810		Class H	Retarder, Fluid Loss & LCM based as needed

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient quantities of mud material will be maintained on site or be readily accessible for the purpose of assuring well control SPR will be recorded on daily drilling report after mudding up

Describe the mud monitoring system utilized: Electronic / mechanical mud monitoring equipment will be utilized and will include a pit volume totalizer (PVT), stroke counter, and flow sensor as a minimum.

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	2400	SPUD MUD	8.4	9							
0	1956 7	OIL-BASED MUD	8.6	9.2							

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

MWD and Gamme

List of open and cased hole logs run in the well:

GAMMA RAY LOG, MEASUREMENT WHILE DRILLING,

Coring operation description for the well:

None planned

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 3563

Anticipated Surface Pressure: 1806

Anticipated Bottom Hole Temperature(F): 214

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? NO

Hydrogen sulfide drilling operations plan:

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

QES__PRU_High_Point_0880_4_28H16__1_20200309074749.pdf

QES__PRU_High_Point_0880_4_28H16__2_20200309074757.pdf

QES__PRU_High_Point_0880_4_28H16__3_20200309074803.pdf

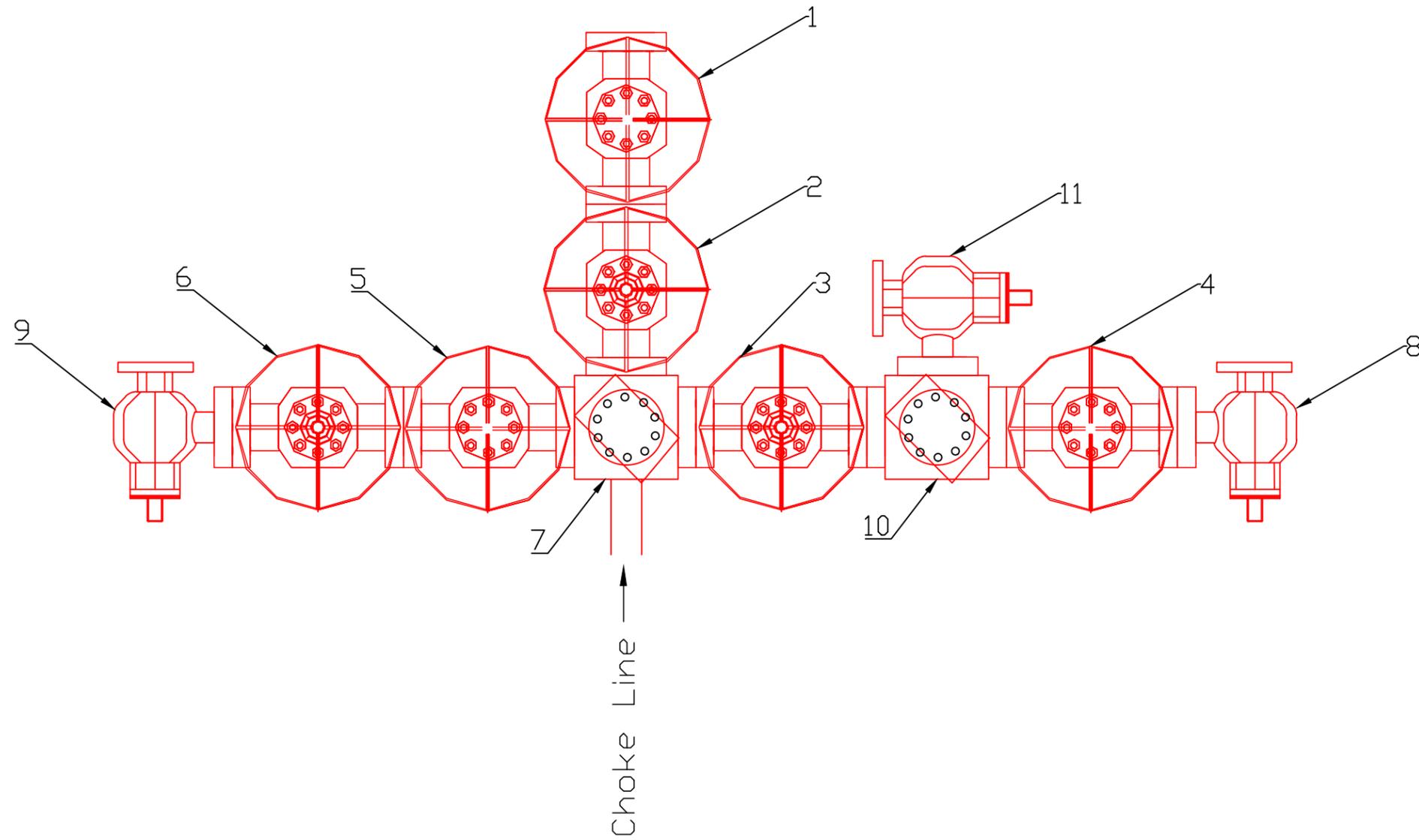
PRU_High_Point_0880_4_28H16_20200309074825.xlsx

Other proposed operations facets description:

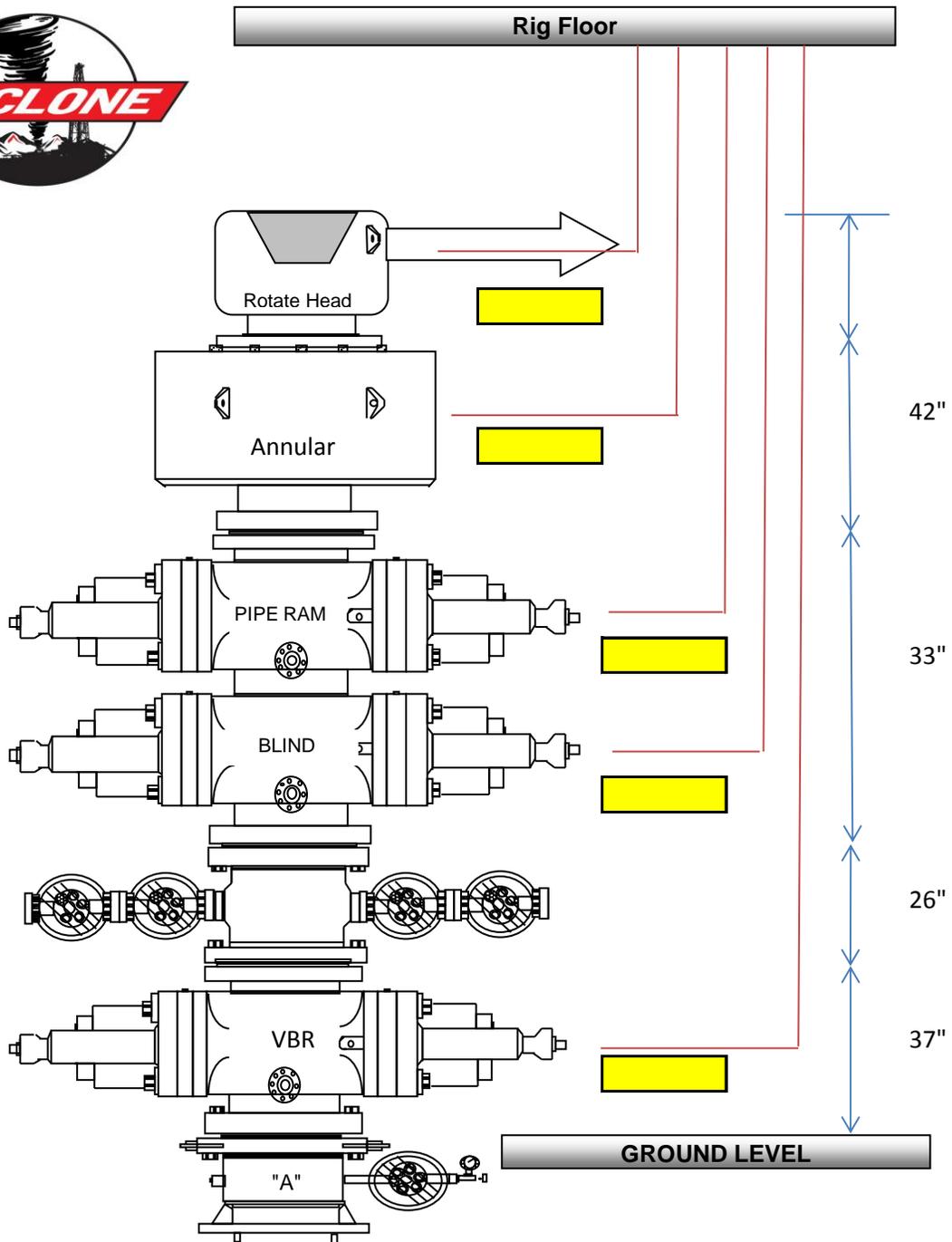
Other proposed operations facets attachment:

Other Variance attachment:

CONFIDENTIAL



10M BOP CHOKE CONFIGURATION	
#1	10M Gate Valve
#2	10M Gate Valve
#3	10M Gate Valve
#4	10M Gate Valve
#5	10M Gate Valve
#6	10M Gate Valve
#7	10M Valve With Pressure Gauge
#8	10M Manual Choke
#9	10M Hydraulic Choke
#10	10M Valve
#11	10M Manual Choke



Rig 33			
Annular	11"	5M	
Dbl Gate	11"	5M	
Spool	11"	5M	
Single	11"		
Rt Head			Rental
HCR	3"	5M	
Kill	2"	5M	Check valve
Choke	3"	5M	



PRU High Point 4-28H16
Sec 28 T8N R80W - Surface Location
Sec 16 T8N R80W - Bottom Hole Location

Drilling Plan

1 ESTIMATED TOPS OF IMPORTANT GEOLOGIC MARKERS & ANTICIPATED WATER, OIL, GAS OR MINERAL FORMATIONS:

Vertical

Formation	TVD (ft)	Hydrocarbon/Water Bearing
Lance	4090	-
Fox Hills	4120	-
Sussex	5650	-
Shannon	6140	-
Lower Pierre	6460	-
Niobrara	7770	Oil & Gas

Horizontal

Section	MD (ft)	TVD (ft)	Oil&Gas/H2O
KOP	7501	7478	Oil&Gas
Niobrara	7817	7770	Oil&Gas
Land Pt	8290	7984	Oil&Gas
TD	19567	7787	Oil&Gas

All shows of fresh water and hydrocarbons will be adequately protected and reported.

2 PRESSURE CONTROL EQUIPMENT:

All well control equipment shall be in accordance with Onshore Order #2 for 5M systems.

The minimum specifications for pressure control equipment that will be provided are included on the attached schematic diagram showing size and pressure ratings

- 5000 psi Blind Rams
- 5000 psi Pipe Rams
- 5000 psi Annular

Auxiliary equipment to be used:

- Upper Kelly Cock with handle available
- Stabbing Valve
- Rotating Head

The choke manifold will include appropriate valves and adjustable chokes. The kill line will have one check valve.

Ram type preventers will be pressure tested to full working pressure (utilizing a tester and a test plug) at:

- Initial Installation

- Whenever any seal subject to test pressure is broken
- Following related repairs
- 30 day interval

The annular preventer will be pressure tested to 50 percent of the rated working

All pressure tests shall be maintained at least 10 minutes or until provisions of test are met, whichever is longer.

Annular preventers shall be functionally operated at least weekly.

Pipe and blind rams shall be activated each trip.

A BOPE pit level drill will be conducted weekly for each drilling crew.

All test and drills will be recorded in the drilling log.

The accumulator will have sufficient capacity to open the HCR valve, close all rams plus the annular preventer, and retain 200 psi above pre-charged pressure without the use of closing unit pumps. The system will have two independent power sources to close the preventers in accordance with 5M system requirements outlined in Onshore Order #2.

Remote controls shall be readily accessible to the driller Master controls shall be at

3 CASING & CEMENTING PROGRAM

A. Casing Program

Section	MD (ft)	Hole OD (in)	Csg Size (in)	Grade	Weight	Thread	Burst (psi)	Collapse (psi)
Surface	2400	12 1/4	9 5/8	J55	36#	LTC	3520	2020
Production	19567	8 3/4	5 1/2	P110	20#	BK	12640	11100

B. Cement Program

Section	TOC	Lead Sks	Lead Ft ³	Lead Class	Lead Density	Lead Ft ³ /sk	Tail Sks	Tail Ft ³	Tail Class	Tail Class	Tail Ft ³ /sk
Surface	0	507	1101	C	12.5	2.17	166	290	C	13.5	1.75
Production	0	1062	2369	H	12	2.23	2309	3810	H	13.5	1.65

Additives: Retarder, Fluid Loss & LCM based as needed

4 DRILLING FLUIDS PROGRAM

Section	Type	Weight (ppg)	Vis	pH	Water Loss (cc)	Remarks
Surface	Spud	8.4-9	30-80	8-11	NC	WBM
Production	OBM	8.6-9.2	40-70	8-10	< 8	OBM

NC = No Control

Sufficient quantities of mud material will be maintained on site or be readily accessible for the purpose of assuring well control SPR will be recorded on daily drilling report after mudding up Electronic / mechanical mud monitoring equipment will be utilized and will include a pit volume totalizer (PVT), stroke counter, and flow sensor as a minimum.

5 EVALUATION PROGRAM

Logs (w/ Drilling): MWD & Gamma Ray
Open Hole Logs: None Planned
Cores: None Planned
DSTs: None Planned

6 ABNORMAL CONDITIONS

No anticipated abnormal pressures or temperatures expected to be encountered. No hydrogen sulfide expected.

Anticipated Bottomhole Pressure: 3563 psi

7 OTHER INFORMATION

The anticipated starting date and duration of the drilling and completion operations will

Start Date Upon Approval

Duration 60 days



PRU High Point 4-28H16
Sec 28 T8N R80W - Surface Location
Sec 16 T8N R80W - Bottom Hole Location

Drilling Plan

1 ESTIMATED TOPS OF IMPORTANT GEOLOGIC MARKERS & ANTICIPATED WATER, OIL, GAS OR MINERAL FORMATIONS:

Vertical

Formation	TVD (ft)	Hydrocarbon/Water Bearing
Lance	4090	-
Fox Hills	4120	-
Sussex	5650	-
Shannon	6140	-
Lower Pierre	6460	-
Niobrara	7770	Oil & Gas

Horizontal

Section	MD (ft)	TVD (ft)	Oil&Gas/H2O
KOP	7501	7478	Oil&Gas
Niobrara	7817	7770	Oil&Gas
Land Pt	8290	7984	Oil&Gas
TD	19567	7787	Oil&Gas

All shows of fresh water and hydrocarbons will be adequately protected and reported.

2 PRESSURE CONTROL EQUIPMENT:

All well control equipment shall be in accordance with Onshore Order #2 for 5M systems.

The minimum specifications for pressure control equipment that will be provided are included on the attached schematic diagram showing size and pressure ratings

- 5000 psi Blind Rams
- 5000 psi Pipe Rams
- 5000 psi Annular

Auxiliary equipment to be used:

- Upper Kelly Cock with handle available
- Stabbing Valve
- Rotating Head

The choke manifold will include appropriate valves and adjustable chokes. The kill line will have one check valve.

Ram type preventers will be pressure tested to full working pressure (utilizing a tester and a test plug) at:

- Initial Installation

- Whenever any seal subject to test pressure is broken
- Following related repairs
- 30 day interval

The annular preventer will be pressure tested to 50 percent of the rated working

All pressure tests shall be maintained at least 10 minutes or until provisions of test are met, whichever is longer.

Annular preventers shall be functionally operated at least weekly.

Pipe and blind rams shall be activated each trip.

A BOPE pit level drill will be conducted weekly for each drilling crew.

All test and drills will be recorded in the drilling log.

The accumulator will have sufficient capacity to open the HCR valve, close all rams plus the annular preventer, and retain 200 psi above pre-charged pressure without the use of closing unit pumps. The system will have two independent power sources to close the preventers in accordance with 5M system requirements outlined in Onshore Order #2.

Remote controls shall be readily accessible to the driller Master controls shall be at

3 CASING & CEMENTING PROGRAM

A. Casing Program

Section	MD (ft)	Hole OD (in)	Csg Size (in)	Grade	Weight	Thread	Burst (psi)	Collapse (psi)
Surface	2400	12 1/4	9 5/8	J55	36#	LTC	3520	2020
Production	19567	8 3/4	5 1/2	P110	20#	BK	12640	11100

B. Cement Program

Section	TOC	Lead Skis	Lead Ft ³	Lead Class	Lead Density	Lead Ft ³ /sk	Tail Skis	Tail Ft ³	Tail Class	Tail Class	Tail Ft ³ /sk
Surface	0	507	1101	C	12.5	2.17	166	290	C	13.5	1.75
Production	0	1062	2369	H	12	2.23	2309	3810	H	13.5	1.65

Additives: Retarder, Fluid Loss & LCM based as needed

4 DRILLING FLUIDS PROGRAM

Section	Type	Weight (ppg)	Vis	pH	Water Loss (cc)	Remarks
Surface	Spud	8.4-9	30-80	8-11	NC	WBM
Production	OBM	8.6-9.2	40-70	8-10	< 8	OBM

NC = No Control

Sufficient quantities of mud material will be maintained on site or be readily accessible for the purpose of assuring well control SPR will be recorded on daily drilling report after mudding up Electronic / mechanical mud monitoring equipment will be utilized and will include a pit volume totalizer (PVT), stroke counter, and flow sensor as a minimum.

5 EVALUATION PROGRAM

Logs (w/ Drilling): MWD & Gamma Ray
Open Hole Logs: None Planned
Cores: None Planned
DSTs: None Planned

6 ABNORMAL CONDITIONS

No anticipated abnormal pressures or temperatures expected to be encountered. No hydrogen sulfide expected.

Anticipated Bottomhole Pressure: 3563 psi

7 OTHER INFORMATION

The anticipated starting date and duration of the drilling and completion operations will

Start Date Upon Approval

Duration 60 days



SandRidge Energy

Jackson County, Colorado

Sec 28, T8N, R80W

PRU High Point 0880 4-28H16

Wellbore #1

Plan: Permit #1

QES Well Planning Report

21 August, 2019



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Company:	SandRidge Energy	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Project:	Jackson County, Colorado	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site:	Sec 28, T8N, R80W	North Reference:	Grid
Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit #1		

Project	Jackson County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	Sec 28, T8N, R80W				
Site Position:		Northing:	1,477,784.47 usft	Latitude:	40° 38' 29.682 N
From:	Map	Easting:	2,755,437.85 usft	Longitude:	106° 22' 52.546 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.57 °

Well	PRU High Point 0880 4-28H16					
Well Position	+N/-S	-17.1 usft	Northing:	1,477,767.38 usft	Latitude:	40° 38' 29.512 N
	+E/-W	-10.4 usft	Easting:	2,755,427.45 usft	Longitude:	106° 22' 52.679 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	8,196.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/21/2019	8.97	66.67	52,094.00000000

Design	Permit #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	359.97

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,654.9	5.10	224.58	1,654.6	-8.1	-8.0	2.00	2.00	0.00	224.58	
7,501.0	5.10	224.58	7,477.6	-378.1	-372.6	0.00	0.00	0.00	0.00	
8,289.6	91.00	359.97	7,984.1	106.7	-405.2	12.00	10.89	17.17	135.21	LP - PRU HP 0880
19,567.1	91.00	359.97	7,787.3	11,382.6	-411.7	0.00	0.00	0.00	0.00	PBHL - PRU HP 08

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Company:	SandRidge Energy	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Project:	Jackson County, Colorado	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site:	Sec 28, T8N, R80W	North Reference:	Grid
Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP (Build 2° / 100')									
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	2.00	224.58	1,500.0	-1.2	-1.2	-1.2	2.00	2.00	0.00
1,600.0	4.00	224.58	1,599.8	-5.0	-4.9	-5.0	2.00	2.00	0.00
EOB @ 5.10° Inc. / 224.58° Azm									
1,654.9	5.10	224.58	1,654.6	-8.1	-8.0	-8.1	2.00	2.00	0.00
1,700.0	5.10	224.58	1,699.5	-10.9	-10.8	-10.9	0.00	0.00	0.00
1,800.0	5.10	224.58	1,799.1	-17.3	-17.0	-17.2	0.00	0.00	0.00
1,900.0	5.10	224.58	1,898.7	-23.6	-23.2	-23.6	0.00	0.00	0.00
2,000.0	5.10	224.58	1,998.3	-29.9	-29.5	-29.9	0.00	0.00	0.00
2,100.0	5.10	224.58	2,097.9	-36.2	-35.7	-36.2	0.00	0.00	0.00
2,200.0	5.10	224.58	2,197.5	-42.6	-42.0	-42.5	0.00	0.00	0.00
2,300.0	5.10	224.58	2,297.1	-48.9	-48.2	-48.9	0.00	0.00	0.00
2,400.0	5.10	224.58	2,396.7	-55.2	-54.4	-55.2	0.00	0.00	0.00
2,500.0	5.10	224.58	2,496.3	-61.6	-60.7	-61.5	0.00	0.00	0.00
2,600.0	5.10	224.58	2,595.9	-67.9	-66.9	-67.9	0.00	0.00	0.00
2,700.0	5.10	224.58	2,695.5	-74.2	-73.1	-74.2	0.00	0.00	0.00
2,800.0	5.10	224.58	2,795.1	-80.5	-79.4	-80.5	0.00	0.00	0.00
2,900.0	5.10	224.58	2,894.7	-86.9	-85.6	-86.8	0.00	0.00	0.00
3,000.0	5.10	224.58	2,994.3	-93.2	-91.8	-93.2	0.00	0.00	0.00
3,100.0	5.10	224.58	3,093.9	-99.5	-98.1	-99.5	0.00	0.00	0.00
3,200.0	5.10	224.58	3,193.6	-105.9	-104.3	-105.8	0.00	0.00	0.00
3,300.0	5.10	224.58	3,293.2	-112.2	-110.6	-112.1	0.00	0.00	0.00
3,400.0	5.10	224.58	3,392.8	-118.5	-116.8	-118.5	0.00	0.00	0.00
3,500.0	5.10	224.58	3,492.4	-124.8	-123.0	-124.8	0.00	0.00	0.00
3,600.0	5.10	224.58	3,592.0	-131.2	-129.3	-131.1	0.00	0.00	0.00
3,700.0	5.10	224.58	3,691.6	-137.5	-135.5	-137.4	0.00	0.00	0.00
3,800.0	5.10	224.58	3,791.2	-143.8	-141.7	-143.8	0.00	0.00	0.00
3,900.0	5.10	224.58	3,890.8	-150.2	-148.0	-150.1	0.00	0.00	0.00
4,000.0	5.10	224.58	3,990.4	-156.5	-154.2	-156.4	0.00	0.00	0.00
4,100.0	5.10	224.58	4,090.0	-162.8	-160.5	-162.7	0.00	0.00	0.00
4,200.0	5.10	224.58	4,189.6	-169.1	-166.7	-169.1	0.00	0.00	0.00
4,300.0	5.10	224.58	4,289.2	-175.5	-172.9	-175.4	0.00	0.00	0.00
4,400.0	5.10	224.58	4,388.8	-181.8	-179.2	-181.7	0.00	0.00	0.00
4,500.0	5.10	224.58	4,488.4	-188.1	-185.4	-188.0	0.00	0.00	0.00
4,600.0	5.10	224.58	4,588.0	-194.5	-191.6	-194.4	0.00	0.00	0.00
4,700.0	5.10	224.58	4,687.6	-200.8	-197.9	-200.7	0.00	0.00	0.00
4,800.0	5.10	224.58	4,787.2	-207.1	-204.1	-207.0	0.00	0.00	0.00
4,900.0	5.10	224.58	4,886.8	-213.4	-210.3	-213.3	0.00	0.00	0.00
5,000.0	5.10	224.58	4,986.4	-219.8	-216.6	-219.7	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Company:	SandRidge Energy	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Project:	Jackson County, Colorado	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site:	Sec 28, T8N, R80W	North Reference:	Grid
Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,100.0	5.10	224.58	5,086.0	-226.1	-222.8	-226.0	0.00	0.00	0.00	
5,200.0	5.10	224.58	5,185.6	-232.4	-229.1	-232.3	0.00	0.00	0.00	
5,300.0	5.10	224.58	5,285.2	-238.8	-235.3	-238.6	0.00	0.00	0.00	
5,400.0	5.10	224.58	5,384.8	-245.1	-241.5	-245.0	0.00	0.00	0.00	
5,500.0	5.10	224.58	5,484.5	-251.4	-247.8	-251.3	0.00	0.00	0.00	
5,600.0	5.10	224.58	5,584.1	-257.8	-254.0	-257.6	0.00	0.00	0.00	
5,700.0	5.10	224.58	5,683.7	-264.1	-260.2	-263.9	0.00	0.00	0.00	
5,800.0	5.10	224.58	5,783.3	-270.4	-266.5	-270.3	0.00	0.00	0.00	
5,900.0	5.10	224.58	5,882.9	-276.7	-272.7	-276.6	0.00	0.00	0.00	
6,000.0	5.10	224.58	5,982.5	-283.1	-279.0	-282.9	0.00	0.00	0.00	
6,100.0	5.10	224.58	6,082.1	-289.4	-285.2	-289.2	0.00	0.00	0.00	
6,200.0	5.10	224.58	6,181.7	-295.7	-291.4	-295.6	0.00	0.00	0.00	
6,300.0	5.10	224.58	6,281.3	-302.1	-297.7	-301.9	0.00	0.00	0.00	
6,400.0	5.10	224.58	6,380.9	-308.4	-303.9	-308.2	0.00	0.00	0.00	
6,500.0	5.10	224.58	6,480.5	-314.7	-310.1	-314.5	0.00	0.00	0.00	
6,600.0	5.10	224.58	6,580.1	-321.0	-316.4	-320.9	0.00	0.00	0.00	
6,700.0	5.10	224.58	6,679.7	-327.4	-322.6	-327.2	0.00	0.00	0.00	
6,800.0	5.10	224.58	6,779.3	-333.7	-328.9	-333.5	0.00	0.00	0.00	
6,900.0	5.10	224.58	6,878.9	-340.0	-335.1	-339.9	0.00	0.00	0.00	
7,000.0	5.10	224.58	6,978.5	-346.4	-341.3	-346.2	0.00	0.00	0.00	
7,100.0	5.10	224.58	7,078.1	-352.7	-347.6	-352.5	0.00	0.00	0.00	
7,200.0	5.10	224.58	7,177.7	-359.0	-353.8	-358.8	0.00	0.00	0.00	
7,300.0	5.10	224.58	7,277.3	-365.3	-360.0	-365.2	0.00	0.00	0.00	
7,400.0	5.10	224.58	7,376.9	-371.7	-366.3	-371.5	0.00	0.00	0.00	
Build 12° / 100'										
7,501.0	5.10	224.58	7,477.6	-378.1	-372.6	-377.9	0.00	0.00	0.00	
7,525.0	3.67	258.15	7,501.5	-379.0	-374.1	-378.8	12.00	-5.97	140.05	
7,550.0	4.24	302.06	7,526.4	-378.7	-375.6	-378.5	12.00	2.29	175.64	
7,575.0	6.36	325.66	7,551.3	-377.0	-377.2	-376.8	12.00	8.49	94.38	
7,600.0	9.00	336.56	7,576.1	-374.1	-378.8	-373.9	12.00	10.54	43.61	
7,625.0	11.81	342.44	7,600.7	-369.9	-380.3	-369.7	12.00	11.24	23.51	
7,650.0	14.69	346.06	7,625.0	-364.3	-381.8	-364.1	12.00	11.54	14.48	
7,675.0	17.61	348.51	7,649.0	-357.6	-383.4	-357.4	12.00	11.69	9.79	
7,700.0	20.56	350.28	7,672.6	-349.5	-384.9	-349.3	12.00	11.78	7.07	
7,725.0	23.51	351.62	7,695.8	-340.3	-386.3	-340.1	12.00	11.83	5.36	
7,750.0	26.48	352.67	7,718.5	-329.8	-387.8	-329.6	12.00	11.87	4.22	
7,775.0	29.45	353.53	7,740.5	-318.2	-389.2	-317.9	12.00	11.89	3.42	
7,800.0	32.43	354.24	7,762.0	-305.4	-390.5	-305.2	12.00	11.91	2.85	
7,825.0	35.41	354.84	7,782.7	-291.5	-391.9	-291.3	12.00	11.92	2.42	
7,850.0	38.40	355.36	7,802.7	-276.5	-393.1	-276.3	12.00	11.93	2.09	
7,875.0	41.38	355.82	7,821.9	-260.5	-394.4	-260.3	12.00	11.94	1.83	
7,900.0	44.37	356.23	7,840.2	-243.6	-395.5	-243.4	12.00	11.95	1.62	
7,925.0	47.36	356.59	7,857.6	-225.7	-396.7	-225.5	12.00	11.95	1.46	
7,950.0	50.35	356.92	7,874.1	-206.9	-397.7	-206.7	12.00	11.96	1.33	
7,975.0	53.34	357.23	7,889.5	-187.3	-398.7	-187.0	12.00	11.96	1.22	
8,000.0	56.33	357.51	7,903.9	-166.8	-399.7	-166.6	12.00	11.96	1.12	
8,025.0	59.32	357.77	7,917.2	-145.7	-400.5	-145.5	12.00	11.97	1.05	
8,050.0	62.31	358.02	7,929.4	-123.9	-401.3	-123.7	12.00	11.97	0.99	
8,075.0	65.31	358.25	7,940.4	-101.5	-402.1	-101.3	12.00	11.97	0.93	
8,100.0	68.30	358.47	7,950.3	-78.5	-402.7	-78.3	12.00	11.97	0.89	
8,125.0	71.29	358.69	7,958.9	-55.1	-403.3	-54.8	12.00	11.97	0.85	
8,150.0	74.29	358.89	7,966.3	-31.2	-403.8	-31.0	12.00	11.97	0.82	
8,175.0	77.28	359.09	7,972.5	-6.9	-404.2	-6.7	12.00	11.97	0.80	
8,200.0	80.27	359.29	7,977.3	17.6	-404.6	17.8	12.00	11.98	0.78	

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Company:	SandRidge Energy	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Project:	Jackson County, Colorado	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site:	Sec 28, T8N, R80W	North Reference:	Grid
Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,225.0	83.27	359.48	7,980.9	42.3	-404.8	42.5	12.00	11.98	0.77
8,250.0	86.26	359.67	7,983.2	67.2	-405.0	67.4	12.00	11.98	0.76
8,275.0	89.26	359.86	7,984.2	92.2	-405.1	92.4	12.00	11.98	0.75
EOB @ 91.00° Inc. / 359.97° Azm									
8,289.6	91.00	359.97	7,984.1	106.7	-405.2	107.0	12.00	11.98	0.75
8,300.0	91.00	359.97	7,984.0	117.2	-405.2	117.4	0.00	0.00	0.00
8,400.0	91.00	359.97	7,982.2	217.2	-405.2	217.4	0.00	0.00	0.00
8,500.0	91.00	359.97	7,980.5	317.1	-405.3	317.4	0.00	0.00	0.00
8,600.0	91.00	359.97	7,978.7	417.1	-405.3	417.3	0.00	0.00	0.00
8,700.0	91.00	359.97	7,977.0	517.1	-405.4	517.3	0.00	0.00	0.00
8,800.0	91.00	359.97	7,975.2	617.1	-405.5	617.3	0.00	0.00	0.00
8,900.0	91.00	359.97	7,973.5	717.1	-405.5	717.3	0.00	0.00	0.00
9,000.0	91.00	359.97	7,971.7	817.1	-405.6	817.3	0.00	0.00	0.00
9,100.0	91.00	359.97	7,970.0	917.1	-405.6	917.3	0.00	0.00	0.00
9,200.0	91.00	359.97	7,968.2	1,017.0	-405.7	1,017.2	0.00	0.00	0.00
9,300.0	91.00	359.97	7,966.5	1,117.0	-405.7	1,117.2	0.00	0.00	0.00
9,400.0	91.00	359.97	7,964.8	1,217.0	-405.8	1,217.2	0.00	0.00	0.00
9,500.0	91.00	359.97	7,963.0	1,317.0	-405.9	1,317.2	0.00	0.00	0.00
9,600.0	91.00	359.97	7,961.3	1,417.0	-405.9	1,417.2	0.00	0.00	0.00
9,700.0	91.00	359.97	7,959.5	1,517.0	-406.0	1,517.2	0.00	0.00	0.00
9,800.0	91.00	359.97	7,957.8	1,616.9	-406.0	1,617.2	0.00	0.00	0.00
9,900.0	91.00	359.97	7,956.0	1,716.9	-406.1	1,717.1	0.00	0.00	0.00
10,000.0	91.00	359.97	7,954.3	1,816.9	-406.2	1,817.1	0.00	0.00	0.00
10,100.0	91.00	359.97	7,952.5	1,916.9	-406.2	1,917.1	0.00	0.00	0.00
10,200.0	91.00	359.97	7,950.8	2,016.9	-406.3	2,017.1	0.00	0.00	0.00
10,300.0	91.00	359.97	7,949.0	2,116.9	-406.3	2,117.1	0.00	0.00	0.00
10,400.0	91.00	359.97	7,947.3	2,216.9	-406.4	2,217.1	0.00	0.00	0.00
10,500.0	91.00	359.97	7,945.6	2,316.8	-406.4	2,317.0	0.00	0.00	0.00
10,600.0	91.00	359.97	7,943.8	2,416.8	-406.5	2,417.0	0.00	0.00	0.00
10,700.0	91.00	359.97	7,942.1	2,516.8	-406.6	2,517.0	0.00	0.00	0.00
10,800.0	91.00	359.97	7,940.3	2,616.8	-406.6	2,617.0	0.00	0.00	0.00
10,900.0	91.00	359.97	7,938.6	2,716.8	-406.7	2,717.0	0.00	0.00	0.00
11,000.0	91.00	359.97	7,936.8	2,816.8	-406.7	2,817.0	0.00	0.00	0.00
11,100.0	91.00	359.97	7,935.1	2,916.7	-406.8	2,917.0	0.00	0.00	0.00
11,200.0	91.00	359.97	7,933.3	3,016.7	-406.9	3,016.9	0.00	0.00	0.00
11,300.0	91.00	359.97	7,931.6	3,116.7	-406.9	3,116.9	0.00	0.00	0.00
11,400.0	91.00	359.97	7,929.9	3,216.7	-407.0	3,216.9	0.00	0.00	0.00
11,500.0	91.00	359.97	7,928.1	3,316.7	-407.0	3,316.9	0.00	0.00	0.00
11,600.0	91.00	359.97	7,926.4	3,416.7	-407.1	3,416.9	0.00	0.00	0.00
11,700.0	91.00	359.97	7,924.6	3,516.7	-407.1	3,516.9	0.00	0.00	0.00
11,800.0	91.00	359.97	7,922.9	3,616.6	-407.2	3,616.9	0.00	0.00	0.00
11,900.0	91.00	359.97	7,921.1	3,716.6	-407.3	3,716.8	0.00	0.00	0.00
12,000.0	91.00	359.97	7,919.4	3,816.6	-407.3	3,816.8	0.00	0.00	0.00
12,100.0	91.00	359.97	7,917.6	3,916.6	-407.4	3,916.8	0.00	0.00	0.00
12,200.0	91.00	359.97	7,915.9	4,016.6	-407.4	4,016.8	0.00	0.00	0.00
12,300.0	91.00	359.97	7,914.1	4,116.6	-407.5	4,116.8	0.00	0.00	0.00
12,400.0	91.00	359.97	7,912.4	4,216.5	-407.6	4,216.8	0.00	0.00	0.00
12,500.0	91.00	359.97	7,910.7	4,316.5	-407.6	4,316.7	0.00	0.00	0.00
12,600.0	91.00	359.97	7,908.9	4,416.5	-407.7	4,416.7	0.00	0.00	0.00
12,700.0	91.00	359.97	7,907.2	4,516.5	-407.7	4,516.7	0.00	0.00	0.00
12,800.0	91.00	359.97	7,905.4	4,616.5	-407.8	4,616.7	0.00	0.00	0.00
12,900.0	91.00	359.97	7,903.7	4,716.5	-407.8	4,716.7	0.00	0.00	0.00
13,000.0	91.00	359.97	7,901.9	4,816.5	-407.9	4,816.7	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Company:	SandRidge Energy	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Project:	Jackson County, Colorado	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site:	Sec 28, T8N, R80W	North Reference:	Grid
Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
13,100.0	91.00	359.97	7,900.2	4,916.4	-408.0	4,916.7	0.00	0.00	0.00	
13,200.0	91.00	359.97	7,898.4	5,016.4	-408.0	5,016.6	0.00	0.00	0.00	
13,300.0	91.00	359.97	7,896.7	5,116.4	-408.1	5,116.6	0.00	0.00	0.00	
13,400.0	91.00	359.97	7,895.0	5,216.4	-408.1	5,216.6	0.00	0.00	0.00	
13,500.0	91.00	359.97	7,893.2	5,316.4	-408.2	5,316.6	0.00	0.00	0.00	
13,600.0	91.00	359.97	7,891.5	5,416.4	-408.3	5,416.6	0.00	0.00	0.00	
13,700.0	91.00	359.97	7,889.7	5,516.3	-408.3	5,516.6	0.00	0.00	0.00	
13,800.0	91.00	359.97	7,888.0	5,616.3	-408.4	5,616.5	0.00	0.00	0.00	
13,900.0	91.00	359.97	7,886.2	5,716.3	-408.4	5,716.5	0.00	0.00	0.00	
14,000.0	91.00	359.97	7,884.5	5,816.3	-408.5	5,816.5	0.00	0.00	0.00	
14,100.0	91.00	359.97	7,882.7	5,916.3	-408.5	5,916.5	0.00	0.00	0.00	
14,200.0	91.00	359.97	7,881.0	6,016.3	-408.6	6,016.5	0.00	0.00	0.00	
14,300.0	91.00	359.97	7,879.2	6,116.3	-408.7	6,116.5	0.00	0.00	0.00	
14,400.0	91.00	359.97	7,877.5	6,216.2	-408.7	6,216.5	0.00	0.00	0.00	
14,500.0	91.00	359.97	7,875.8	6,316.2	-408.8	6,316.4	0.00	0.00	0.00	
14,600.0	91.00	359.97	7,874.0	6,416.2	-408.8	6,416.4	0.00	0.00	0.00	
14,700.0	91.00	359.97	7,872.3	6,516.2	-408.9	6,516.4	0.00	0.00	0.00	
14,800.0	91.00	359.97	7,870.5	6,616.2	-408.9	6,616.4	0.00	0.00	0.00	
14,900.0	91.00	359.97	7,868.8	6,716.2	-409.0	6,716.4	0.00	0.00	0.00	
15,000.0	91.00	359.97	7,867.0	6,816.2	-409.1	6,816.4	0.00	0.00	0.00	
15,100.0	91.00	359.97	7,865.3	6,916.1	-409.1	6,916.3	0.00	0.00	0.00	
15,200.0	91.00	359.97	7,863.5	7,016.1	-409.2	7,016.3	0.00	0.00	0.00	
15,300.0	91.00	359.97	7,861.8	7,116.1	-409.2	7,116.3	0.00	0.00	0.00	
15,400.0	91.00	359.97	7,860.0	7,216.1	-409.3	7,216.3	0.00	0.00	0.00	
15,500.0	91.00	359.97	7,858.3	7,316.1	-409.4	7,316.3	0.00	0.00	0.00	
15,600.0	91.00	359.97	7,856.6	7,416.1	-409.4	7,416.3	0.00	0.00	0.00	
15,700.0	91.00	359.97	7,854.8	7,516.0	-409.5	7,516.3	0.00	0.00	0.00	
15,800.0	91.00	359.97	7,853.1	7,616.0	-409.5	7,616.2	0.00	0.00	0.00	
15,900.0	91.00	359.97	7,851.3	7,716.0	-409.6	7,716.2	0.00	0.00	0.00	
16,000.0	91.00	359.97	7,849.6	7,816.0	-409.6	7,816.2	0.00	0.00	0.00	
16,100.0	91.00	359.97	7,847.8	7,916.0	-409.7	7,916.2	0.00	0.00	0.00	
16,200.0	91.00	359.97	7,846.1	8,016.0	-409.8	8,016.2	0.00	0.00	0.00	
16,300.0	91.00	359.97	7,844.3	8,116.0	-409.8	8,116.2	0.00	0.00	0.00	
16,400.0	91.00	359.97	7,842.6	8,215.9	-409.9	8,216.2	0.00	0.00	0.00	
16,500.0	91.00	359.97	7,840.9	8,315.9	-409.9	8,316.1	0.00	0.00	0.00	
16,600.0	91.00	359.97	7,839.1	8,415.9	-410.0	8,416.1	0.00	0.00	0.00	
16,700.0	91.00	359.97	7,837.4	8,515.9	-410.1	8,516.1	0.00	0.00	0.00	
16,800.0	91.00	359.97	7,835.6	8,615.9	-410.1	8,616.1	0.00	0.00	0.00	
16,900.0	91.00	359.97	7,833.9	8,715.9	-410.2	8,716.1	0.00	0.00	0.00	
17,000.0	91.00	359.97	7,832.1	8,815.8	-410.2	8,816.1	0.00	0.00	0.00	
17,100.0	91.00	359.97	7,830.4	8,915.8	-410.3	8,916.0	0.00	0.00	0.00	
17,200.0	91.00	359.97	7,828.6	9,015.8	-410.3	9,016.0	0.00	0.00	0.00	
17,300.0	91.00	359.97	7,826.9	9,115.8	-410.4	9,116.0	0.00	0.00	0.00	
17,400.0	91.00	359.97	7,825.1	9,215.8	-410.5	9,216.0	0.00	0.00	0.00	
17,500.0	91.00	359.97	7,823.4	9,315.8	-410.5	9,316.0	0.00	0.00	0.00	
17,600.0	91.00	359.97	7,821.7	9,415.8	-410.6	9,416.0	0.00	0.00	0.00	
17,700.0	91.00	359.97	7,819.9	9,515.7	-410.6	9,516.0	0.00	0.00	0.00	
17,800.0	91.00	359.97	7,818.2	9,615.7	-410.7	9,615.9	0.00	0.00	0.00	
17,900.0	91.00	359.97	7,816.4	9,715.7	-410.8	9,715.9	0.00	0.00	0.00	
18,000.0	91.00	359.97	7,814.7	9,815.7	-410.8	9,815.9	0.00	0.00	0.00	
18,100.0	91.00	359.97	7,812.9	9,915.7	-410.9	9,915.9	0.00	0.00	0.00	
18,200.0	91.00	359.97	7,811.2	10,015.7	-410.9	10,015.9	0.00	0.00	0.00	
18,300.0	91.00	359.97	7,809.4	10,115.6	-411.0	10,115.9	0.00	0.00	0.00	
18,400.0	91.00	359.97	7,807.7	10,215.6	-411.0	10,215.8	0.00	0.00	0.00	

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Company:	SandRidge Energy	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Project:	Jackson County, Colorado	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site:	Sec 28, T8N, R80W	North Reference:	Grid
Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
18,500.0	91.00	359.97	7,806.0	10,315.6	-411.1	10,315.8	0.00	0.00	0.00
18,600.0	91.00	359.97	7,804.2	10,415.6	-411.2	10,415.8	0.00	0.00	0.00
18,700.0	91.00	359.97	7,802.5	10,515.6	-411.2	10,515.8	0.00	0.00	0.00
18,800.0	91.00	359.97	7,800.7	10,615.6	-411.3	10,615.8	0.00	0.00	0.00
18,900.0	91.00	359.97	7,799.0	10,715.6	-411.3	10,715.8	0.00	0.00	0.00
19,000.0	91.00	359.97	7,797.2	10,815.5	-411.4	10,815.8	0.00	0.00	0.00
19,100.0	91.00	359.97	7,795.5	10,915.5	-411.5	10,915.7	0.00	0.00	0.00
19,200.0	91.00	359.97	7,793.7	11,015.5	-411.5	11,015.7	0.00	0.00	0.00
19,300.0	91.00	359.97	7,792.0	11,115.5	-411.6	11,115.7	0.00	0.00	0.00
19,400.0	91.00	359.97	7,790.2	11,215.5	-411.6	11,215.7	0.00	0.00	0.00
19,500.0	91.00	359.97	7,788.5	11,315.5	-411.7	11,315.7	0.00	0.00	0.00
TD @ 19567.1' MD / 7787.3' TVD									
19,567.1	91.00	359.97	7,787.3	11,382.6	-411.7	11,382.8	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL - PRU HP 0880 - plan hits target center - Point	0.00	0.00	7,787.3	11,382.6	-411.7	1,489,149.97	2,755,015.73	40° 40' 21.942 N	106° 22' 59.490 W
LP - PRU HP 0880 4-; - plan hits target center - Point	0.00	360.00	7,984.1	106.7	-405.2	1,477,874.12	2,755,022.29	40° 38' 30.527 N	106° 22' 57.948 W

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment	
1,400.0	1,400.0	0.0	0.0	KOP (Build 2° / 100')	
1,654.9	1,654.6	-8.1	-8.0	EOB @ 5.10° Inc. / 224.58° Azm	
7,501.0	7,477.6	-378.1	-372.6	Build 12° / 100'	
8,289.6	7,984.1	106.7	-405.2	EOB @ 91.00° Inc. / 359.97° Azm	
19,567.1	7,787.3	11,382.6	-411.7	TD @ 19567.1' MD / 7787.3' TVD	

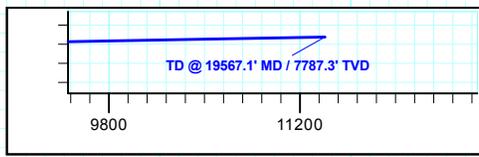
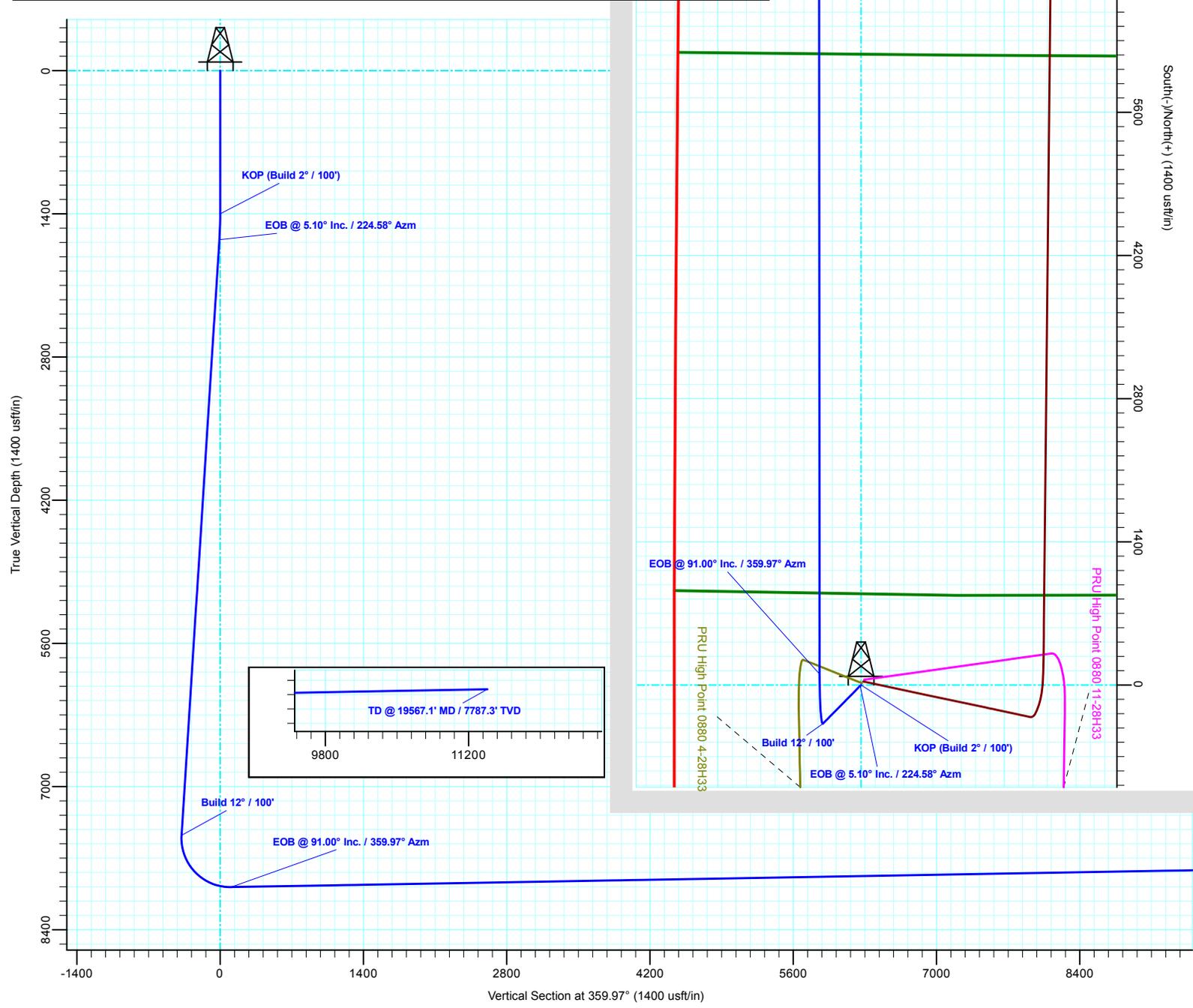
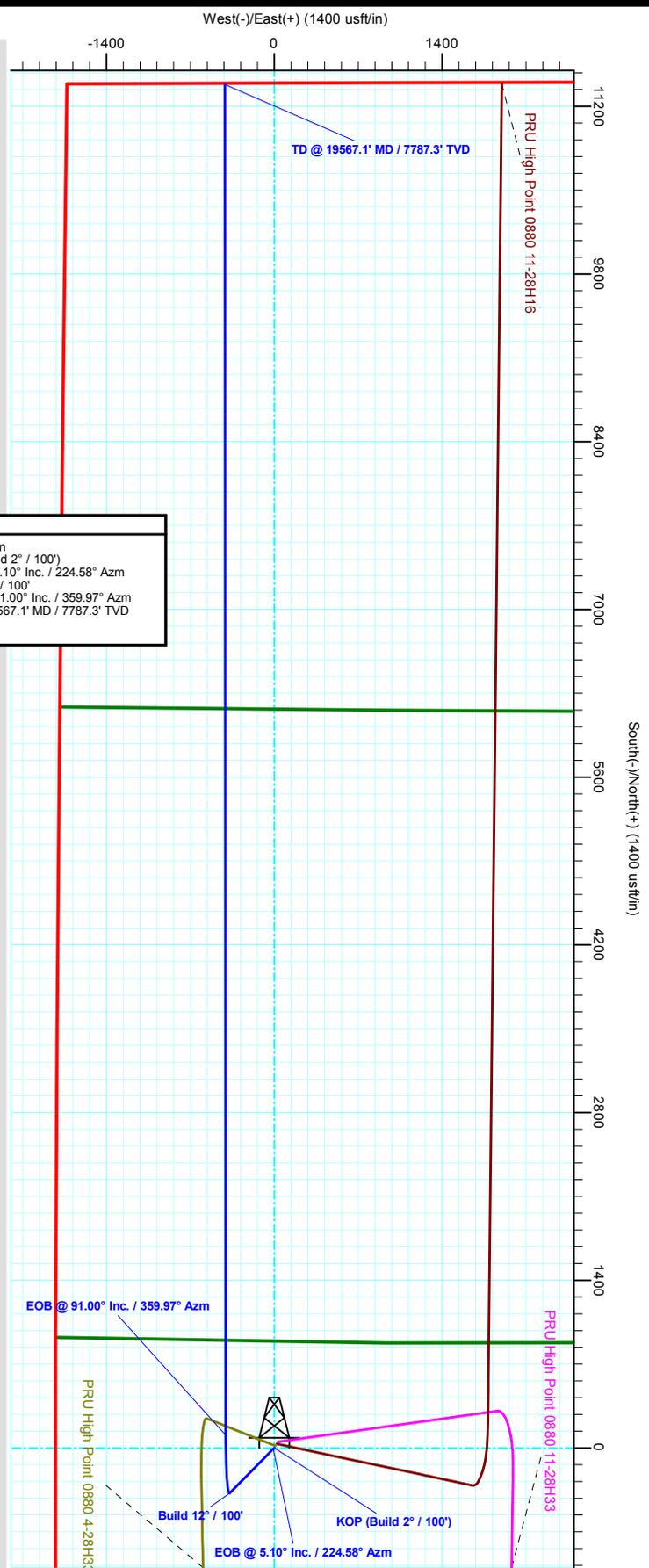


WELL DETAILS: PRU High Point 0880 4-28H16

8196.0						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.0	0.0	1477767.38	2755427.45	40° 38' 29.512 N	106° 22' 52.679 W	

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
1400.0	0.00	0.00	1400.0	0.0	0.0	0.0	0.0	KOP (Build 2° / 100')
1654.9	5.10	224.58	1654.6	-8.1	-8.0	-8.1	11.3	EOB @ 5.10° Inc. / 224.58° Azm
7501.0	5.10	224.58	7477.6	-378.1	-372.6	-377.9	530.8	Build 12° / 100'
8289.6	91.00	359.97	7984.1	106.7	-405.2	107.0	1022.4	EOB @ 91.00° Inc. / 359.97° Azm
19567.1	91.00	359.97	7787.3	11382.6	-411.7	11382.8	12298.2	TD @ 19567.1' MD / 7787.3' TVD





SandRidge Energy

**Jackson County, Colorado
Sec 28, T8N, R80W
PRU High Point 0880 4-28H16**

**Wellbore #1
Permit #1**

QES Anticollision Report

21 August, 2019



Company:	SandRidge Energy	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Project:	Jackson County, Colorado	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Reference Site:	Sec 28, T8N, R80W	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Permit #1	Offset TVD Reference:	Reference Datum

Reference	Permit #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0 us	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 8/21/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	19,567.1	Permit #1 (Wellbore #1)	MWD	OWSG MWD - Standard

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Summary						
Offset Well - Wellbore - Design						
Sec 28, T8N, R80W						
PRU High Point 0880 11-28H16 - Wellbore #1 - Permit #	916.0	918.0	40.0	33.9	6.533	CC
PRU High Point 0880 11-28H16 - Wellbore #1 - Permit #	1,100.0	1,101.5	40.6	33.2	5.469	ES
PRU High Point 0880 11-28H16 - Wellbore #1 - Permit #	1,200.0	1,200.7	42.9	34.7	5.276	SF
PRU High Point 0880 11-28H33 - Wellbore #1 - Permit #	1,315.6	1,318.6	60.0	51.0	6.673	CC
PRU High Point 0880 11-28H33 - Wellbore #1 - Permit #	1,400.0	1,403.0	60.0	50.4	6.253	ES
PRU High Point 0880 11-28H33 - Wellbore #1 - Permit #	1,500.0	1,501.5	62.9	52.6	6.115	SF
PRU High Point 0880 4-28H33 - Wellbore #1 - Permit #1	1,400.0	1,401.0	20.0	10.4	2.086	CC, ES, SF

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Reference (usft)	Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning	
0.0	0.0	2.0	0.0	0.0	0.0	31.32	34.2	20.8	40.0				
100.0	100.0	102.0	100.0	0.1	0.1	31.32	34.2	20.8	40.0	39.7	146.813		
200.0	200.0	202.0	200.0	0.5	0.5	31.32	34.2	20.8	40.0	39.0	40.427		
300.0	300.0	302.0	300.0	0.8	0.9	31.32	34.2	20.8	40.0	38.3	23.441		
400.0	400.0	402.0	400.0	1.2	1.2	31.32	34.2	20.8	40.0	37.6	16.506		
500.0	500.0	502.0	500.0	1.6	1.6	31.32	34.2	20.8	40.0	36.9	12.737		
600.0	600.0	602.0	600.0	1.9	1.9	31.32	34.2	20.8	40.0	36.1	10.370		
700.0	700.0	702.0	700.0	2.3	2.3	31.32	34.2	20.8	40.0	35.4	8.744		
800.0	800.0	802.0	800.0	2.6	2.6	31.32	34.2	20.8	40.0	34.7	7.560		
900.0	900.0	902.0	900.0	3.0	3.0	31.32	34.2	20.8	40.0	34.0	6.657		
916.0	916.0	918.0	916.0	3.1	3.1	31.32	34.2	20.8	40.0	33.9	6.533	CC	
1,000.0	1,000.0	1,002.0	1,000.0	3.4	3.4	31.32	34.2	20.8	40.0	33.3	5.948		
1,100.0	1,100.0	1,101.5	1,099.5	3.7	3.7	33.71	33.8	22.5	40.6	33.2	5.469	ES	
1,200.0	1,200.0	1,200.7	1,198.6	4.1	4.1	40.23	32.7	27.7	42.9	34.7	5.276	SF	
1,300.0	1,300.0	1,300.0	1,297.5	4.4	4.4	49.46	30.9	36.1	47.6	38.8	5.397		
1,400.0	1,400.0	1,397.6	1,394.3	4.8	4.8	59.21	28.4	47.7	55.9	46.4	5.879		
1,500.0	1,500.0	1,494.5	1,490.1	5.1	5.1	-157.10	25.3	62.4	69.7	59.5	6.864		
1,600.0	1,599.8	1,589.8	1,583.7	5.5	5.5	-151.55	21.6	80.0	90.4	79.6	8.385		
1,654.9	1,654.6	1,641.2	1,633.9	5.7	5.7	-149.47	19.3	90.7	104.4	93.3	9.390		
1,700.0	1,699.5	1,683.0	1,674.6	5.8	5.9	-148.19	17.3	100.1	117.0	105.7	10.270		
1,800.0	1,799.1	1,777.1	1,765.8	6.1	6.3	-145.84	12.5	122.6	146.6	134.6	12.173		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Project:	Jackson County, Colorado	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Reference Site:	Sec 28, T8N, R80W	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Permit #1	Offset TVD Reference:	Reference Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Reference (usft)	Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Centre +E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning	
1,900.0	1,898.7	1,872.5	1,858.2	6.5	6.8	-144.23	7.6	145.7	176.5	163.8	13.871		
2,000.0	1,998.3	1,967.8	1,950.5	6.9	7.2	-143.09	2.7	168.8	206.5	193.1	15.393		
2,100.0	2,097.9	2,063.1	2,042.9	7.2	7.7	-142.23	-2.2	191.8	236.5	222.4	16.761		
2,200.0	2,197.5	2,158.4	2,135.3	7.6	8.2	-141.57	-7.1	214.9	266.6	251.8	17.996		
2,300.0	2,297.1	2,253.8	2,227.6	7.9	8.7	-141.05	-12.0	237.9	296.7	281.2	19.114		
2,400.0	2,396.7	2,349.1	2,320.0	8.3	9.2	-140.62	-16.9	261.0	326.9	310.6	20.129		
2,500.0	2,496.3	2,444.4	2,412.4	8.7	9.7	-140.26	-21.8	284.1	357.0	340.1	21.055		
2,600.0	2,595.9	2,539.8	2,504.7	9.0	10.2	-139.96	-26.7	307.1	387.2	369.5	21.903		
2,700.0	2,695.5	2,635.1	2,597.1	9.4	10.7	-139.70	-31.6	330.2	417.3	398.9	22.680		
2,800.0	2,795.1	2,730.4	2,689.5	9.8	11.2	-139.47	-36.5	353.2	447.5	428.4	23.396		
2,900.0	2,894.7	2,825.7	2,781.8	10.2	11.7	-139.28	-41.4	376.3	477.7	457.8	24.057		
3,000.0	2,994.3	2,921.1	2,874.2	10.5	12.2	-139.11	-46.3	399.3	507.8	487.3	24.668		
3,100.0	3,093.9	3,016.4	2,966.6	10.9	12.7	-138.95	-51.2	422.4	538.0	516.7	25.236		
3,200.0	3,193.6	3,111.7	3,058.9	11.3	13.2	-138.82	-56.1	445.5	568.2	546.1	25.764		
3,300.0	3,293.2	3,207.1	3,151.3	11.7	13.7	-138.70	-61.0	468.5	598.4	575.6	26.256		
3,400.0	3,392.8	3,302.4	3,243.7	12.1	14.3	-138.58	-65.9	491.6	628.6	605.0	26.716		
3,500.0	3,492.4	3,397.7	3,336.0	12.4	14.8	-138.48	-70.8	514.6	658.8	634.5	27.146		
3,600.0	3,592.0	3,493.0	3,428.4	12.8	15.3	-138.39	-75.7	537.7	689.0	664.0	27.550		
3,700.0	3,691.6	3,588.4	3,520.8	13.2	15.8	-138.31	-80.6	560.8	719.2	693.4	27.930		
3,800.0	3,791.2	3,683.7	3,613.1	13.6	16.4	-138.23	-85.5	583.8	749.3	722.9	28.287		
3,900.0	3,890.8	3,779.0	3,705.5	14.0	16.9	-138.16	-90.4	606.9	779.5	752.3	28.624		
4,000.0	3,990.4	3,874.3	3,797.9	14.3	17.4	-138.09	-95.3	629.9	809.7	781.8	28.942		
4,100.0	4,090.0	3,969.7	3,890.2	14.7	18.0	-138.03	-100.3	653.0	839.9	811.2	29.242		
4,200.0	4,189.6	4,065.0	3,982.6	15.1	18.5	-137.97	-105.2	676.0	870.1	840.7	29.527		
4,300.0	4,289.2	4,160.3	4,075.0	15.5	19.0	-137.92	-110.1	699.1	900.3	870.1	29.797		
4,400.0	4,388.8	4,255.7	4,167.3	15.9	19.5	-137.87	-115.0	722.2	930.5	899.6	30.054		
4,500.0	4,488.4	4,351.0	4,259.7	16.3	20.1	-137.82	-119.9	745.2	960.7	929.0	30.297		
4,600.0	4,588.0	4,446.3	4,352.1	16.7	20.6	-137.78	-124.8	768.3	990.9	958.5	30.529		
4,700.0	4,687.6	4,541.6	4,444.4	17.0	21.1	-137.74	-129.7	791.3	1,021.1	987.9	30.750		
4,800.0	4,787.2	4,637.0	4,536.8	17.4	21.7	-137.70	-134.6	814.4	1,051.3	1,017.4	30.961		
4,900.0	4,886.8	4,732.3	4,629.2	17.8	22.2	-137.66	-139.5	837.5	1,081.5	1,046.8	31.162		
5,000.0	4,986.4	4,827.6	4,721.5	18.2	22.7	-137.63	-144.4	860.5	1,111.8	1,076.3	31.355		
5,100.0	5,086.0	4,923.0	4,813.9	18.6	23.3	-137.60	-149.3	883.6	1,142.0	1,105.7	31.539		
5,200.0	5,185.6	5,018.3	4,906.3	19.0	23.8	-137.56	-154.2	906.6	1,172.2	1,135.2	31.715		
5,300.0	5,285.2	5,113.6	4,998.6	19.4	24.3	-137.54	-159.1	929.7	1,202.4	1,164.7	31.884		
5,400.0	5,384.8	5,208.9	5,091.0	19.7	24.9	-137.51	-164.0	952.7	1,232.6	1,194.1	32.046		
5,500.0	5,484.5	5,304.3	5,183.4	20.1	25.4	-137.48	-168.9	975.8	1,262.8	1,223.6	32.201		
5,600.0	5,584.1	5,399.6	5,275.7	20.5	25.9	-137.45	-173.8	998.9	1,293.0	1,253.0	32.350		
5,700.0	5,683.7	5,494.9	5,368.1	20.9	26.5	-137.43	-178.7	1,021.9	1,323.2	1,282.5	32.494		
5,800.0	5,783.3	5,590.2	5,460.5	21.3	27.0	-137.41	-183.6	1,045.0	1,353.4	1,311.9	32.632		
5,900.0	5,882.9	5,685.6	5,552.8	21.7	27.5	-137.38	-188.5	1,068.0	1,383.6	1,341.4	32.765		
6,000.0	5,982.5	5,780.9	5,645.2	22.1	28.1	-137.36	-193.4	1,091.1	1,413.8	1,370.8	32.892		
6,100.0	6,082.1	5,876.2	5,737.6	22.5	28.6	-137.34	-198.3	1,114.2	1,444.0	1,400.3	33.016		
6,200.0	6,181.7	5,971.6	5,829.9	22.8	29.2	-137.32	-203.2	1,137.2	1,474.2	1,429.7	33.135		
6,300.0	6,281.3	6,066.9	5,922.3	23.2	29.7	-137.30	-208.1	1,160.3	1,504.4	1,459.2	33.249		
6,400.0	6,380.9	6,162.2	6,014.7	23.6	30.2	-137.29	-213.0	1,183.3	1,534.6	1,488.6	33.360		
6,500.0	6,480.5	6,257.5	6,107.1	24.0	30.8	-137.27	-217.9	1,206.4	1,564.8	1,518.1	33.467		
6,600.0	6,580.1	6,352.9	6,199.4	24.4	31.3	-137.25	-222.8	1,229.4	1,595.0	1,547.5	33.570		
6,700.0	6,679.7	6,448.2	6,291.8	24.8	31.8	-137.24	-227.7	1,252.5	1,625.2	1,577.0	33.670		
6,800.0	6,779.3	6,543.5	6,384.2	25.2	32.4	-137.22	-232.6	1,275.6	1,655.5	1,606.4	33.767		
6,900.0	6,878.9	6,638.8	6,476.5	25.6	32.9	-137.21	-237.5	1,298.6	1,685.7	1,635.9	33.860		
7,000.0	6,978.5	6,734.2	6,568.9	26.0	33.5	-137.19	-242.4	1,321.7	1,715.9	1,665.3	33.951		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Project:	Jackson County, Colorado	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Reference Site:	Sec 28, T8N, R80W	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Permit #1	Offset TVD Reference:	Reference Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Reference (usft)	Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning		
7,100.0	7,078.1	6,829.5	6,661.3	26.3	34.0	-137.18	-247.3	1,344.7	1,746.1	1,694.8	34.039		
7,200.0	7,177.7	6,924.8	6,753.6	26.7	34.5	-137.16	-252.2	1,367.8	1,776.3	1,724.2	34.124		
7,300.0	7,277.3	7,020.2	6,846.0	27.1	35.1	-137.15	-257.1	1,390.9	1,806.5	1,753.7	34.206		
7,400.0	7,376.9	7,115.5	6,938.4	27.5	35.6	-137.14	-262.0	1,413.9	1,836.7	1,783.1	34.286		
7,501.0	7,477.6	7,211.8	7,031.7	27.9	36.1	-137.13	-267.0	1,437.2	1,867.2	1,812.9	34.365		
7,525.0	7,501.5	7,234.6	7,053.8	28.0	36.3	-171.49	-268.2	1,442.7	1,874.4	1,819.9	34.385		
7,550.0	7,526.4	7,258.4	7,076.8	28.1	36.4	143.82	-269.4	1,448.5	1,881.9	1,827.2	34.410		
7,575.0	7,551.3	7,282.1	7,099.8	28.2	36.5	119.50	-270.6	1,454.2	1,889.3	1,834.4	34.440		
7,600.0	7,576.1	7,305.6	7,122.5	28.2	36.7	107.92	-271.8	1,459.9	1,896.5	1,841.5	34.473		
7,625.0	7,600.7	7,328.8	7,145.0	28.3	36.8	101.42	-273.0	1,465.5	1,903.7	1,848.5	34.509		
7,650.0	7,625.0	7,351.7	7,167.2	28.4	36.9	97.23	-274.2	1,471.1	1,910.7	1,855.4	34.547		
7,675.0	7,649.0	7,374.3	7,189.1	28.4	37.1	94.27	-275.4	1,476.5	1,917.7	1,862.2	34.589		
7,700.0	7,672.6	7,396.4	7,210.5	28.5	37.2	92.03	-276.5	1,481.9	1,924.5	1,868.9	34.632		
7,725.0	7,695.8	7,418.0	7,231.5	28.6	37.3	90.26	-277.6	1,487.1	1,931.1	1,875.4	34.679		
7,750.0	7,718.5	7,439.1	7,251.9	28.6	37.4	88.81	-278.7	1,492.2	1,937.7	1,881.9	34.727		
7,775.0	7,740.5	7,459.5	7,271.7	28.6	37.5	87.60	-279.7	1,497.1	1,944.1	1,888.2	34.778		
7,800.0	7,762.0	7,479.3	7,290.9	28.7	37.7	86.57	-280.8	1,501.9	1,950.4	1,894.4	34.831		
7,825.0	7,782.7	7,498.4	7,309.3	28.7	37.8	85.67	-281.7	1,506.5	1,956.5	1,900.5	34.887		
7,850.0	7,802.7	7,516.7	7,327.1	28.8	37.9	84.88	-282.7	1,511.0	1,962.6	1,906.4	34.944		
7,875.0	7,821.9	7,534.1	7,344.0	28.8	38.0	84.17	-283.6	1,515.2	1,968.6	1,912.3	35.003		
7,900.0	7,840.2	7,550.7	7,360.1	28.8	38.1	83.52	-284.4	1,519.2	1,974.4	1,918.1	35.064		
7,925.0	7,857.6	7,566.4	7,375.2	28.8	38.1	82.93	-285.2	1,523.0	1,980.2	1,923.9	35.127		
7,950.0	7,874.1	7,581.1	7,389.5	28.8	38.2	82.37	-286.0	1,526.5	1,985.9	1,929.5	35.190		
7,975.0	7,889.5	7,594.8	7,402.8	28.9	38.3	81.84	-286.7	1,529.9	1,991.5	1,935.1	35.255		
8,000.0	7,903.9	7,607.5	7,415.1	28.9	38.4	81.33	-287.3	1,532.9	1,997.1	1,940.6	35.321		
8,025.0	7,917.2	7,619.1	7,426.3	28.9	38.4	80.83	-287.9	1,535.7	2,002.6	1,946.0	35.388		
8,050.0	7,929.4	7,629.6	7,436.5	28.9	38.5	80.34	-288.5	1,538.3	2,008.0	1,951.4	35.455		
8,075.0	7,940.4	7,638.9	7,445.5	28.9	38.6	79.85	-289.0	1,540.5	2,013.4	1,956.7	35.523		
8,100.0	7,950.3	7,647.1	7,453.5	28.9	38.6	79.35	-289.4	1,542.5	2,018.7	1,962.0	35.591		
8,125.0	7,958.9	7,654.2	7,460.3	28.9	38.6	78.85	-289.8	1,544.2	2,024.0	1,967.2	35.658		
8,150.0	7,966.3	7,660.0	7,465.9	28.9	38.7	78.33	-290.0	1,545.6	2,029.2	1,972.4	35.725		
8,175.0	7,972.5	7,664.6	7,470.4	28.9	38.7	77.81	-290.3	1,546.7	2,034.4	1,977.5	35.792		
8,200.0	7,977.3	7,667.9	7,473.6	28.9	38.7	77.26	-290.5	1,547.5	2,039.5	1,982.6	35.858		
8,225.0	7,980.9	7,670.1	7,475.7	28.9	38.7	76.71	-290.6	1,548.1	2,044.5	1,987.6	35.923		
8,250.0	7,983.2	7,671.0	7,476.6	28.9	38.7	76.14	-290.6	1,548.3	2,049.4	1,992.5	35.987		
8,275.0	7,984.2	7,670.6	7,476.2	28.9	38.7	75.56	-290.6	1,548.2	2,054.3	1,997.3	36.050		
8,289.6	7,984.1	7,669.8	7,475.5	29.0	38.7	75.21	-290.6	1,548.0	2,057.0	2,000.0	36.085		
8,300.0	7,984.0	7,669.1	7,474.8	29.0	38.7	75.19	-290.5	1,547.8	2,059.0	2,002.0	36.110		
8,400.0	7,982.2	7,662.2	7,468.1	29.3	38.7	75.00	-290.2	1,546.2	2,080.8	2,023.5	36.345		
8,500.0	7,980.5	7,655.4	7,461.5	29.8	38.6	74.80	-289.8	1,544.5	2,107.0	2,049.4	36.586		
8,600.0	7,978.7	7,648.6	7,454.9	30.4	38.6	74.61	-289.5	1,542.9	2,137.6	2,079.5	36.838		
8,700.0	7,977.0	7,641.7	7,448.2	31.0	38.6	74.42	-289.1	1,541.2	2,172.3	2,113.7	37.107		
8,800.0	7,975.2	7,634.9	7,441.6	31.8	38.5	74.22	-288.8	1,539.5	2,211.0	2,151.8	37.400		
8,900.0	7,973.5	7,627.1	7,437.0	32.6	43.8	100.41	701.6	1,788.3	2,230.7	2,165.1	34.029		
9,000.0	7,971.7	7,621.7	7,437.3	33.5	44.1	100.41	801.6	1,789.3	2,231.7	2,164.6	33.243		
9,100.0	7,970.0	7,621.7	7,437.3	34.5	44.5	100.40	901.5	1,790.3	2,232.8	2,163.9	32.427		
9,200.0	7,968.2	7,621.6	7,437.1	35.5	45.0	100.40	1,001.5	1,791.4	2,233.9	2,163.2	31.590		
9,300.0	7,966.5	7,621.6	7,437.1	36.6	45.6	100.39	1,101.5	1,792.4	2,234.9	2,162.2	30.744		
9,400.0	7,964.8	7,621.6	7,437.1	37.7	46.2	100.39	1,201.5	1,793.4	2,236.0	2,161.2	29.898		
9,500.0	7,963.0	7,621.6	7,437.1	38.9	46.9	100.38	1,301.4	1,794.5	2,237.1	2,160.1	29.059		
9,600.0	7,961.3	7,621.6	7,437.1	40.2	47.7	100.38	1,401.4	1,795.5	2,238.1	2,158.9	28.232		
9,700.0	7,959.5	7,621.6	7,437.1	41.4	48.6	100.37	1,501.4	1,796.5	2,239.2	2,157.6	27.422		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Project:	Jackson County, Colorado	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Reference Site:	Sec 28, T8N, R80W	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Permit #1	Offset TVD Reference:	Reference Datum

Offset Design												Sec 28, T8N, R80W - PRU High Point 0880 11-28H16 - Wellbore #1 - Permit #1	Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Reference (usft)	Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Offset Wellbore Centre +E-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning		
9,800.0	7,957.8	10,321.6	8,361.3	42.7	49.5	100.37	1,601.4	1,797.5	2,240.3	2,156.2	26.633			
9,900.0	7,956.0	10,421.6	8,359.6	44.1	50.5	100.36	1,701.3	1,798.6	2,241.3	2,154.7	25.867			
10,000.0	7,954.3	10,521.6	8,357.8	45.4	51.5	100.36	1,801.3	1,799.6	2,242.4	2,153.2	25.125			
10,100.0	7,952.5	10,621.6	8,356.1	46.8	52.6	100.35	1,901.3	1,800.6	2,243.5	2,151.6	24.409			
10,200.0	7,950.8	10,721.6	8,354.4	48.3	53.8	100.35	2,001.3	1,801.6	2,244.5	2,149.9	23.719			
10,300.0	7,949.0	10,821.6	8,352.6	49.7	55.0	100.34	2,101.2	1,802.7	2,245.6	2,148.2	23.055			
10,400.0	7,947.3	10,921.6	8,350.9	51.2	56.2	100.34	2,201.2	1,803.7	2,246.7	2,146.5	22.418			
10,500.0	7,945.6	11,021.6	8,349.1	52.7	57.4	100.33	2,301.2	1,804.7	2,247.7	2,144.7	21.806			
10,600.0	7,943.8	11,121.6	8,347.4	54.2	58.7	100.33	2,401.1	1,805.7	2,248.8	2,142.8	21.220			
10,700.0	7,942.1	11,221.6	8,345.6	55.7	60.1	100.32	2,501.1	1,806.8	2,249.9	2,141.0	20.657			
10,800.0	7,940.3	11,321.6	8,343.9	57.2	61.4	100.32	2,601.1	1,807.8	2,250.9	2,139.1	20.118			
10,900.0	7,938.6	11,421.5	8,342.1	58.8	62.8	100.31	2,701.1	1,808.8	2,252.0	2,137.1	19.602			
11,000.0	7,936.8	11,521.5	8,340.4	60.4	64.2	100.31	2,801.0	1,809.9	2,253.1	2,135.2	19.107			
11,100.0	7,935.1	11,621.5	8,338.6	61.9	65.6	100.30	2,901.0	1,810.9	2,254.2	2,133.2	18.633			
11,200.0	7,933.3	11,721.5	8,336.9	63.5	67.0	100.30	3,001.0	1,811.9	2,255.2	2,131.2	18.178			
11,300.0	7,931.6	11,821.5	8,335.2	65.1	68.5	100.29	3,101.0	1,812.9	2,256.3	2,129.1	17.743			
11,400.0	7,929.9	11,921.5	8,333.4	66.7	69.9	100.29	3,200.9	1,814.0	2,257.4	2,127.1	17.325			
11,500.0	7,928.1	12,021.5	8,331.7	68.3	71.4	100.28	3,300.9	1,815.0	2,258.4	2,125.0	16.924			
11,600.0	7,926.4	12,121.5	8,329.9	70.0	72.9	100.28	3,400.9	1,816.0	2,259.5	2,122.9	16.540			
11,700.0	7,924.6	12,221.5	8,328.2	71.6	74.4	100.28	3,500.9	1,817.0	2,260.6	2,120.8	16.171			
11,800.0	7,922.9	12,321.5	8,326.4	73.2	75.9	100.27	3,600.8	1,818.1	2,261.6	2,118.6	15.817			
11,900.0	7,921.1	12,421.5	8,324.7	74.9	77.5	100.27	3,700.8	1,819.1	2,262.7	2,116.5	15.477			
12,000.0	7,919.4	12,521.5	8,322.9	76.5	79.0	100.26	3,800.8	1,820.1	2,263.8	2,114.3	15.149			
12,100.0	7,917.6	12,621.5	8,321.2	78.2	80.6	100.26	3,900.8	1,821.1	2,264.8	2,112.2	14.835			
12,200.0	7,915.9	12,721.5	8,319.5	79.9	82.1	100.25	4,000.7	1,822.2	2,265.9	2,110.0	14.532			
12,300.0	7,914.1	12,821.5	8,317.7	81.5	83.7	100.25	4,100.7	1,823.2	2,267.0	2,107.8	14.241			
12,400.0	7,912.4	12,921.5	8,316.0	83.2	85.3	100.24	4,200.7	1,824.2	2,268.0	2,105.6	13.960			
12,500.0	7,910.7	13,021.5	8,314.2	84.9	86.9	100.24	4,300.6	1,825.3	2,269.1	2,103.3	13.690			
12,600.0	7,908.9	13,121.4	8,312.5	86.6	88.5	100.23	4,400.6	1,826.3	2,270.2	2,101.1	13.429			
12,700.0	7,907.2	13,221.4	8,310.7	88.3	90.1	100.23	4,500.6	1,827.3	2,271.2	2,098.9	13.178			
12,800.0	7,905.4	13,321.4	8,309.0	89.9	91.7	100.22	4,600.6	1,828.3	2,272.3	2,096.6	12.935			
12,900.0	7,903.7	13,421.4	8,307.2	91.6	93.3	100.22	4,700.5	1,829.4	2,273.4	2,094.4	12.701			
13,000.0	7,901.9	13,521.4	8,305.5	93.3	95.0	100.21	4,800.5	1,830.4	2,274.4	2,092.1	12.475			
13,100.0	7,900.2	13,621.4	8,303.8	95.0	96.6	100.21	4,900.5	1,831.4	2,275.5	2,089.8	12.257			
13,200.0	7,898.4	13,721.4	8,302.0	96.7	98.2	100.20	5,000.5	1,832.4	2,276.6	2,087.6	12.046			
13,300.0	7,896.7	13,821.4	8,300.3	98.4	99.9	100.20	5,100.4	1,833.5	2,277.6	2,085.3	11.841			
13,400.0	7,895.0	13,921.4	8,298.5	100.2	101.5	100.19	5,200.4	1,834.5	2,278.7	2,083.0	11.644			
13,500.0	7,893.2	14,021.4	8,296.8	101.9	103.2	100.19	5,300.4	1,835.5	2,279.8	2,080.7	11.452			
13,600.0	7,891.5	14,121.4	8,295.0	103.6	104.8	100.18	5,400.4	1,836.5	2,280.8	2,078.4	11.267			
13,700.0	7,889.7	14,221.4	8,293.3	105.3	106.5	100.18	5,500.3	1,837.6	2,281.9	2,076.1	11.088			
13,800.0	7,888.0	14,321.4	8,291.5	107.0	108.1	100.17	5,600.3	1,838.6	2,283.0	2,073.8	10.914			
13,900.0	7,886.2	14,421.4	8,289.8	108.7	109.8	100.17	5,700.3	1,839.6	2,284.0	2,071.5	10.745			
14,000.0	7,884.5	14,521.4	8,288.0	110.5	111.5	100.16	5,800.2	1,840.7	2,285.1	2,069.2	10.581			
14,100.0	7,882.7	14,621.4	8,286.3	112.2	113.1	100.16	5,900.2	1,841.7	2,286.2	2,066.8	10.423			
14,200.0	7,881.0	14,721.4	8,284.6	113.9	114.8	100.15	6,000.2	1,842.7	2,287.2	2,064.5	10.268			
14,300.0	7,879.2	14,821.3	8,282.8	115.6	116.5	100.15	6,100.2	1,843.7	2,288.3	2,062.2	10.119			
14,400.0	7,877.5	14,921.3	8,281.1	117.4	118.2	100.14	6,200.1	1,844.8	2,289.4	2,059.8	9.973			
14,500.0	7,875.8	15,021.3	8,279.3	119.1	119.9	100.14	6,300.1	1,845.8	2,290.5	2,057.5	9.832			
14,600.0	7,874.0	15,121.3	8,277.6	120.8	121.6	100.13	6,400.1	1,846.8	2,291.5	2,055.2	9.695			
14,700.0	7,872.3	15,221.3	8,275.8	122.6	123.2	100.13	6,500.1	1,847.8	2,292.6	2,052.8	9.561			
14,800.0	7,870.5	15,321.3	8,274.1	124.3	124.9	100.13	6,600.0	1,848.9	2,293.7	2,050.5	9.431			
14,900.0	7,868.8	15,421.3	8,272.3	126.1	126.6	100.12	6,700.0	1,849.9	2,294.7	2,048.1	9.305			

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Project:	Jackson County, Colorado	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Reference Site:	Sec 28, T8N, R80W	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Permit #1	Offset TVD Reference:	Reference Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Reference (usft)	Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Centre +E-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning	
15,000.0	7,867.0	15,521.3	8,270.6	127.8	128.3	100.12	6,800.0	1,850.9	2,295.8	2,045.7	9.181		
15,100.0	7,865.3	15,621.3	8,268.9	129.5	130.0	100.11	6,900.0	1,851.9	2,296.9	2,043.4	9.061		
15,200.0	7,863.5	15,721.3	8,267.1	131.3	131.7	100.11	6,999.9	1,853.0	2,297.9	2,041.0	8.945		
15,300.0	7,861.8	15,821.3	8,265.4	133.0	133.4	100.10	7,099.9	1,854.0	2,299.0	2,038.7	8.831		
15,400.0	7,860.0	15,921.3	8,263.6	134.8	135.1	100.10	7,199.9	1,855.0	2,300.1	2,036.3	8.720		
15,500.0	7,858.3	16,021.3	8,261.9	136.5	136.9	100.09	7,299.9	1,856.1	2,301.1	2,033.9	8.612		
15,600.0	7,856.6	16,121.3	8,260.1	138.3	138.6	100.09	7,399.8	1,857.1	2,302.2	2,031.6	8.506		
15,700.0	7,854.8	16,221.3	8,258.4	140.0	140.3	100.08	7,499.8	1,858.1	2,303.3	2,029.2	8.403		
15,800.0	7,853.1	16,321.3	8,256.6	141.8	142.0	100.08	7,599.8	1,859.1	2,304.3	2,026.8	8.303		
15,900.0	7,851.3	16,421.3	8,254.9	143.5	143.7	100.07	7,699.7	1,860.2	2,305.4	2,024.4	8.205		
16,000.0	7,849.6	16,521.2	8,253.2	145.3	145.4	100.07	7,799.7	1,861.2	2,306.5	2,022.0	8.109		
16,100.0	7,847.8	16,621.2	8,251.4	147.0	147.1	100.06	7,899.7	1,862.2	2,307.5	2,019.7	8.016		
16,200.0	7,846.1	16,721.2	8,249.7	148.8	148.9	100.06	7,999.7	1,863.2	2,308.6	2,017.3	7.924		
16,300.0	7,844.3	16,821.2	8,247.9	150.5	150.6	100.05	8,099.6	1,864.3	2,309.7	2,014.9	7.835		
16,400.0	7,842.6	16,921.2	8,246.2	152.3	152.3	100.05	8,199.6	1,865.3	2,310.7	2,012.5	7.748		
16,500.0	7,840.9	17,021.2	8,244.4	154.0	154.0	100.04	8,299.6	1,866.3	2,311.8	2,010.1	7.662		
16,600.0	7,839.1	17,121.2	8,242.7	155.8	155.8	100.04	8,399.6	1,867.3	2,312.9	2,007.7	7.579		
16,700.0	7,837.4	17,221.2	8,240.9	157.5	157.5	100.04	8,499.5	1,868.4	2,314.0	2,005.3	7.498		
16,800.0	7,835.6	17,321.2	8,239.2	159.3	159.2	100.03	8,599.5	1,869.4	2,315.0	2,002.9	7.418		
16,900.0	7,833.9	17,421.2	8,237.4	161.0	160.9	100.03	8,699.5	1,870.4	2,316.1	2,000.5	7.340		
17,000.0	7,832.1	17,521.2	8,235.7	162.8	162.7	100.02	8,799.5	1,871.5	2,317.2	1,998.1	7.263		
17,100.0	7,830.4	17,621.2	8,234.0	164.6	164.4	100.02	8,899.4	1,872.5	2,318.2	1,995.7	7.189		
17,200.0	7,828.6	17,721.2	8,232.2	166.3	166.1	100.01	8,999.4	1,873.5	2,319.3	1,993.3	7.115		
17,300.0	7,826.9	17,821.2	8,230.5	168.1	167.9	100.01	9,099.4	1,874.5	2,320.4	1,990.9	7.044		
17,400.0	7,825.1	17,921.2	8,228.7	169.8	169.6	100.00	9,199.4	1,875.6	2,321.4	1,988.5	6.973		
17,500.0	7,823.4	18,021.2	8,227.0	171.6	171.3	100.00	9,299.3	1,876.6	2,322.5	1,986.1	6.905		
17,600.0	7,821.7	18,121.2	8,225.2	173.4	173.1	99.99	9,399.3	1,877.6	2,323.6	1,983.7	6.837		
17,700.0	7,819.9	18,221.1	8,223.5	175.1	174.8	99.99	9,499.3	1,878.6	2,324.6	1,981.3	6.771		
17,800.0	7,818.2	18,321.1	8,221.7	176.9	176.6	99.98	9,599.2	1,879.7	2,325.7	1,978.9	6.706		
17,900.0	7,816.4	18,421.1	8,220.0	178.6	178.3	99.98	9,699.2	1,880.7	2,326.8	1,976.5	6.643		
18,000.0	7,814.7	18,521.1	8,218.3	180.4	180.0	99.98	9,799.2	1,881.7	2,327.8	1,974.1	6.581		
18,100.0	7,812.9	18,621.1	8,216.5	182.2	181.8	99.97	9,899.2	1,882.7	2,328.9	1,971.7	6.519		
18,200.0	7,811.2	18,721.1	8,214.8	183.9	183.5	99.97	9,999.1	1,883.8	2,330.0	1,969.3	6.459		
18,300.0	7,809.4	18,821.1	8,213.0	185.7	185.3	99.96	10,099.1	1,884.8	2,331.0	1,966.9	6.401		
18,400.0	7,807.7	18,921.1	8,211.3	187.5	187.0	99.96	10,199.1	1,885.8	2,332.1	1,964.4	6.343		
18,500.0	7,806.0	19,021.1	8,209.5	189.2	188.7	99.95	10,299.1	1,886.9	2,333.2	1,962.0	6.286		
18,600.0	7,804.2	19,121.1	8,207.8	191.0	190.5	99.95	10,399.0	1,887.9	2,334.3	1,959.6	6.231		
18,700.0	7,802.5	19,221.1	8,206.0	192.8	192.2	99.94	10,499.0	1,888.9	2,335.3	1,957.2	6.176		
18,800.0	7,800.7	19,321.1	8,204.3	194.5	194.0	99.94	10,599.0	1,889.9	2,336.4	1,954.8	6.122		
18,900.0	7,799.0	19,421.1	8,202.6	196.3	195.7	99.93	10,699.0	1,891.0	2,337.5	1,952.4	6.070		
19,000.0	7,797.2	19,521.1	8,200.8	198.1	197.5	99.93	10,798.9	1,892.0	2,338.5	1,949.9	6.018		
19,100.0	7,795.5	19,621.1	8,199.1	199.8	199.2	99.92	10,898.9	1,893.0	2,339.6	1,947.5	5.967		
19,200.0	7,793.7	19,721.1	8,197.3	201.6	201.0	99.92	10,998.9	1,894.0	2,340.7	1,945.1	5.917		
19,300.0	7,792.0	19,821.1	8,195.6	203.4	202.7	99.92	11,098.9	1,895.1	2,341.7	1,942.7	5.868		
19,400.0	7,790.2	19,921.0	8,193.8	205.1	204.5	99.91	11,198.8	1,896.1	2,342.8	1,940.3	5.820		
19,500.0	7,788.5	20,021.0	8,192.1	206.9	206.2	99.91	11,298.8	1,897.1	2,343.9	1,937.8	5.773		
19,567.1	7,787.3	20,088.2	8,190.9	208.1	207.4	99.90	11,365.9	1,897.8	2,344.6	1,936.2	5.741		
19,567.5	7,787.3	20,088.6	8,190.9	208.1	207.4	99.90	11,366.3	1,897.8	2,344.6	1,936.2	5.741		

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Project:	Jackson County, Colorado	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Reference Site:	Sec 28, T8N, R80W	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Permit #1	Offset TVD Reference:	Reference Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Reference (usft)	Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Offset Wellbore Centre +E-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning	
0.0	0.0	3.0	0.0	0.0	0.0	31.32	51.3	31.2	60.0				
100.0	100.0	103.0	100.0	0.1	0.1	31.32	51.3	31.2	60.0	59.7	217.385		
200.0	200.0	203.0	200.0	0.5	0.5	31.32	51.3	31.2	60.0	59.0	60.428		
300.0	300.0	303.0	300.0	0.8	0.9	31.32	51.3	31.2	60.0	58.3	35.092		
400.0	400.0	403.0	400.0	1.2	1.2	31.32	51.3	31.2	60.0	57.6	24.725		
500.0	500.0	503.0	500.0	1.6	1.6	31.32	51.3	31.2	60.0	56.9	19.086		
600.0	600.0	603.0	600.0	1.9	1.9	31.32	51.3	31.2	60.0	56.1	15.542		
700.0	700.0	703.0	700.0	2.3	2.3	31.32	51.3	31.2	60.0	55.4	13.108		
800.0	800.0	803.0	800.0	2.6	2.7	31.32	51.3	31.2	60.0	54.7	11.333		
900.0	900.0	903.0	900.0	3.0	3.0	31.32	51.3	31.2	60.0	54.0	9.981		
1,000.0	1,000.0	1,003.0	1,000.0	3.4	3.4	31.32	51.3	31.2	60.0	53.3	8.918		
1,100.0	1,100.0	1,103.0	1,100.0	3.7	3.7	31.32	51.3	31.2	60.0	52.6	8.059		
1,200.0	1,200.0	1,203.0	1,200.0	4.1	4.1	31.32	51.3	31.2	60.0	51.8	7.351		
1,300.0	1,300.0	1,303.0	1,300.0	4.4	4.4	31.32	51.3	31.2	60.0	51.1	6.758		
1,315.6	1,315.6	1,318.6	1,315.6	4.5	4.5	31.32	51.3	31.2	60.0	51.0	6.673	CC	
1,400.0	1,400.0	1,403.0	1,400.0	4.8	4.8	31.32	51.3	31.2	60.0	50.4	6.253	ES	
1,500.0	1,500.0	1,501.5	1,498.5	5.1	5.1	168.36	51.5	33.0	62.9	52.6	6.115	SF	
1,600.0	1,599.8	1,600.0	1,596.8	5.5	5.5	172.31	52.2	38.1	71.6	60.7	6.540		
1,654.9	1,654.6	1,652.7	1,649.4	5.7	5.7	174.86	52.8	42.2	79.1	67.8	6.990		
1,700.0	1,699.5	1,696.2	1,692.7	5.8	5.8	176.99	53.4	46.3	86.3	74.7	7.435		
1,800.0	1,799.1	1,791.7	1,787.5	6.1	6.2	-178.61	55.0	57.7	104.5	92.3	8.537		
1,900.0	1,898.7	1,886.0	1,880.6	6.5	6.5	-174.75	57.0	71.9	126.0	113.1	9.787		
2,000.0	1,998.3	1,978.7	1,971.7	6.9	6.9	-171.45	59.4	88.9	150.6	137.1	11.171		
2,100.0	2,097.9	2,069.7	2,060.7	7.2	7.3	-168.65	62.1	108.4	178.4	164.3	12.674		
2,200.0	2,197.5	2,159.0	2,147.2	7.6	7.6	-166.28	65.2	130.2	209.2	194.6	14.282		
2,300.0	2,297.1	2,247.3	2,232.0	7.9	8.0	-164.26	68.6	154.3	243.0	227.8	15.967		
2,400.0	2,396.7	2,340.7	2,321.4	8.3	8.5	-162.55	72.3	180.9	278.1	262.2	17.497		
2,500.0	2,496.3	2,434.0	2,410.9	8.7	9.0	-161.22	76.1	207.5	313.3	296.7	18.905		
2,600.0	2,595.9	2,527.4	2,500.3	9.0	9.4	-160.16	79.8	234.1	348.7	331.4	20.202		
2,700.0	2,695.5	2,620.8	2,589.7	9.4	9.9	-159.29	83.6	260.7	384.1	366.1	21.399		
2,800.0	2,795.1	2,714.1	2,679.1	9.8	10.4	-158.57	87.3	287.2	419.6	400.9	22.505		
2,900.0	2,894.7	2,807.5	2,768.6	10.2	10.9	-157.96	91.1	313.8	455.1	435.8	23.529		
3,000.0	2,994.3	2,900.9	2,858.0	10.5	11.5	-157.44	94.8	340.4	490.7	470.6	24.479		
3,100.0	3,093.9	2,994.2	2,947.4	10.9	12.0	-156.99	98.5	367.0	526.3	505.6	25.363		
3,200.0	3,193.6	3,087.6	3,036.8	11.3	12.5	-156.60	102.3	393.6	561.9	540.5	26.186		
3,300.0	3,293.2	3,181.0	3,126.3	11.7	13.0	-156.25	106.0	420.2	597.6	575.4	26.955		
3,400.0	3,392.8	3,274.4	3,215.7	12.1	13.6	-155.94	109.8	446.7	633.3	610.4	27.674		
3,500.0	3,492.4	3,367.7	3,305.1	12.4	14.1	-155.67	113.5	473.3	669.0	645.4	28.348		
3,600.0	3,592.0	3,461.1	3,394.6	12.8	14.7	-155.42	117.3	499.9	704.7	680.3	28.981		
3,700.0	3,691.6	3,554.5	3,484.0	13.2	15.2	-155.20	121.0	526.5	740.4	715.3	29.575		
3,800.0	3,791.2	3,647.8	3,573.4	13.6	15.7	-155.00	124.7	553.1	776.1	750.3	30.135		
3,900.0	3,890.8	3,741.2	3,662.8	14.0	16.3	-154.81	128.5	579.6	811.8	785.3	30.663		
4,000.0	3,990.4	3,834.6	3,752.3	14.3	16.9	-154.64	132.2	606.2	847.5	820.3	31.162		
4,100.0	4,090.0	3,927.9	3,841.7	14.7	17.4	-154.49	136.0	632.8	883.3	855.4	31.634		
4,200.0	4,189.6	4,021.3	3,931.1	15.1	18.0	-154.35	139.7	659.4	919.0	890.4	32.081		
4,300.0	4,289.2	4,114.7	4,020.6	15.5	18.5	-154.21	143.5	686.0	954.8	925.4	32.505		
4,400.0	4,388.8	4,208.1	4,110.0	15.9	19.1	-154.09	147.2	712.6	990.5	960.4	32.908		
4,500.0	4,488.4	4,301.4	4,199.4	16.3	19.7	-153.98	150.9	739.1	1,026.3	995.5	33.290		
4,600.0	4,588.0	4,394.8	4,288.8	16.7	20.2	-153.87	154.7	765.7	1,062.0	1,030.5	33.654		
4,700.0	4,687.6	4,488.2	4,378.3	17.0	20.8	-153.77	158.4	792.3	1,097.8	1,065.5	34.001		
4,800.0	4,787.2	4,581.5	4,467.7	17.4	21.3	-153.68	162.2	818.9	1,133.6	1,100.5	34.332		
4,900.0	4,886.8	4,674.9	4,557.1	17.8	21.9	-153.59	165.9	845.5	1,169.3	1,135.6	34.648		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Project:	Jackson County, Colorado	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Reference Site:	Sec 28, T8N, R80W	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Permit #1	Offset TVD Reference:	Reference Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Reference (usft)	Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Offset Wellbore Centre +E-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning	
5,000.0	4,986.4	4,768.3	4,646.6	18.2	22.5	-153.51	169.6	872.0	1,205.1	1,170.6	34.949		
5,100.0	5,086.0	4,861.6	4,736.0	18.6	23.1	-153.43	173.4	898.6	1,240.9	1,205.7	35.238		
5,200.0	5,185.6	4,955.0	4,825.4	19.0	23.6	-153.35	177.1	925.2	1,276.7	1,240.7	35.514		
5,300.0	5,285.2	5,048.4	4,914.8	19.4	24.2	-153.28	180.9	951.8	1,312.4	1,275.7	35.779		
5,400.0	5,384.8	5,141.8	5,004.3	19.7	24.8	-153.22	184.6	978.4	1,348.2	1,310.8	36.032		
5,500.0	5,484.5	5,235.1	5,093.7	20.1	25.3	-153.16	188.4	1,004.9	1,384.0	1,345.8	36.276		
5,600.0	5,584.1	5,328.5	5,183.1	20.5	25.9	-153.10	192.1	1,031.5	1,419.8	1,380.9	36.510		
5,700.0	5,683.7	5,421.9	5,272.5	20.9	26.5	-153.04	195.8	1,058.1	1,455.5	1,415.9	36.734		
5,800.0	5,783.3	5,515.2	5,362.0	21.3	27.1	-152.99	199.6	1,084.7	1,491.3	1,451.0	36.950		
5,900.0	5,882.9	5,608.6	5,451.4	21.7	27.6	-152.94	203.3	1,111.3	1,527.1	1,486.0	37.158		
6,000.0	5,982.5	5,702.0	5,540.8	22.1	28.2	-152.89	207.1	1,137.9	1,562.9	1,521.1	37.358		
6,100.0	6,082.1	5,795.3	5,630.3	22.5	28.8	-152.84	210.8	1,164.4	1,598.7	1,556.1	37.551		
6,200.0	6,181.7	5,888.7	5,719.7	22.8	29.4	-152.80	214.6	1,191.0	1,634.5	1,591.2	37.737		
6,300.0	6,281.3	5,982.1	5,809.1	23.2	29.9	-152.75	218.3	1,217.6	1,670.3	1,626.2	37.916		
6,400.0	6,380.9	6,075.5	5,898.5	23.6	30.5	-152.71	222.0	1,244.2	1,706.0	1,661.3	38.089		
6,500.0	6,480.5	6,168.8	5,988.0	24.0	31.1	-152.67	225.8	1,270.8	1,741.8	1,696.3	38.257		
6,600.0	6,580.1	6,262.2	6,077.4	24.4	31.7	-152.64	229.5	1,297.3	1,777.6	1,731.4	38.418		
6,700.0	6,679.7	6,355.6	6,166.8	24.8	32.2	-152.60	233.3	1,323.9	1,813.4	1,766.4	38.574		
6,800.0	6,779.3	6,448.9	6,256.3	25.2	32.8	-152.57	237.0	1,350.5	1,849.2	1,801.4	38.725		
6,900.0	6,878.9	6,542.3	6,345.7	25.6	33.4	-152.53	240.8	1,377.1	1,885.0	1,836.5	38.871		
7,000.0	6,978.5	6,635.7	6,435.1	26.0	34.0	-152.50	244.5	1,403.7	1,920.8	1,871.5	39.012		
7,100.0	7,078.1	6,729.0	6,524.5	26.3	34.5	-152.47	248.2	1,430.3	1,956.6	1,906.6	39.149		
7,200.0	7,177.7	6,822.4	6,614.0	26.7	35.1	-152.44	252.0	1,456.8	1,992.4	1,941.6	39.282		
7,300.0	7,277.3	6,915.8	6,703.4	27.1	35.7	-152.41	255.7	1,483.4	2,028.2	1,976.7	39.410		
7,400.0	7,376.9	7,009.2	6,792.8	27.5	36.3	-152.38	259.5	1,510.0	2,064.0	2,011.8	39.535		
7,501.0	7,477.6	7,103.5	6,883.2	27.9	36.9	-152.36	263.3	1,536.9	2,100.1	2,047.2	39.657		
7,525.0	7,501.5	7,125.9	6,904.7	28.0	37.0	173.16	264.2	1,543.2	2,108.5	2,055.4	39.684		
7,550.0	7,526.4	7,149.4	6,927.1	28.1	37.1	128.39	265.1	1,549.9	2,116.9	2,063.6	39.710		
7,575.0	7,551.3	7,172.8	6,949.6	28.2	37.3	104.04	266.0	1,556.6	2,124.9	2,071.4	39.733		
7,600.0	7,576.1	7,196.2	6,972.0	28.2	37.4	92.46	267.0	1,563.3	2,132.4	2,078.8	39.753		
7,625.0	7,600.7	7,219.5	6,994.3	28.3	37.6	86.00	267.9	1,569.9	2,139.5	2,085.7	39.768		
7,650.0	7,625.0	7,242.6	7,016.4	28.4	37.7	81.89	268.8	1,576.5	2,146.2	2,092.3	39.779		
7,675.0	7,649.0	7,265.4	7,038.3	28.4	37.9	79.04	269.7	1,583.0	2,152.4	2,098.3	39.786		
7,700.0	7,672.6	7,288.0	7,059.9	28.5	38.0	76.95	270.6	1,589.4	2,158.2	2,103.9	39.789		
7,725.0	7,695.8	7,310.1	7,081.1	28.6	38.1	75.37	271.5	1,595.7	2,163.5	2,109.1	39.788		
7,750.0	7,718.5	7,331.8	7,101.9	28.6	38.3	74.14	272.4	1,601.9	2,168.3	2,113.8	39.782		
7,775.0	7,740.5	7,353.0	7,122.2	28.6	38.4	73.19	273.3	1,607.9	2,172.6	2,118.0	39.773		
7,800.0	7,762.0	7,373.7	7,142.0	28.7	38.5	72.44	274.1	1,613.8	2,176.6	2,121.8	39.759		
7,825.0	7,782.7	7,393.7	7,161.2	28.7	38.7	71.87	274.9	1,619.5	2,180.0	2,125.2	39.741		
7,850.0	7,802.7	7,413.1	7,179.7	28.8	38.8	71.44	275.7	1,625.0	2,183.1	2,128.1	39.719		
7,875.0	7,821.9	7,431.8	7,197.6	28.8	38.9	71.12	276.4	1,630.3	2,185.7	2,130.7	39.693		
7,900.0	7,840.2	7,449.7	7,214.7	28.8	39.0	70.91	277.1	1,635.4	2,188.0	2,132.8	39.663		
7,925.0	7,857.6	7,466.7	7,231.1	28.8	39.1	70.78	277.8	1,640.3	2,189.8	2,134.5	39.628		
7,950.0	7,874.1	7,483.0	7,246.6	28.8	39.2	70.72	278.5	1,644.9	2,191.2	2,135.9	39.589		
7,975.0	7,889.5	7,498.2	7,261.3	28.9	39.3	70.73	279.1	1,649.2	2,192.3	2,136.9	39.546		
8,000.0	7,903.9	7,512.6	7,275.0	28.9	39.4	70.79	279.6	1,653.3	2,193.1	2,137.6	39.499		
8,025.0	7,917.2	7,525.9	7,287.8	28.9	39.5	70.90	280.2	1,657.1	2,193.5	2,137.9	39.447		
8,050.0	7,929.4	7,538.3	7,299.6	28.9	39.6	71.05	280.7	1,660.6	2,193.6	2,138.0	39.391		
8,075.0	7,940.4	7,549.5	7,310.4	28.9	39.6	71.23	281.1	1,663.8	2,193.5	2,137.7	39.330		
8,100.0	7,950.3	7,559.7	7,320.1	28.9	39.7	71.43	281.5	1,666.7	2,193.0	2,137.2	39.265		
8,125.0	7,958.9	7,568.7	7,328.8	28.9	39.7	71.65	281.9	1,669.3	2,192.3	2,136.4	39.196		
8,150.0	7,966.3	7,576.6	7,336.3	28.9	39.8	71.89	282.2	1,671.5	2,191.4	2,135.4	39.123		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Project:	Jackson County, Colorado	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Reference Site:	Sec 28, T8N, R80W	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Permit #1	Offset TVD Reference:	Reference Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Reference (usft)	Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Offset Wellbore Centre +E-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning	
8,175.0	7,972.5	7,583.3	7,342.8	28.9	39.8	72.14	282.5	1,673.5	2,190.2	2,134.1	39.046		
8,200.0	7,977.3	7,588.9	7,348.1	28.9	39.9	72.40	282.7	1,675.0	2,188.9	2,132.7	38.965		
8,225.0	7,980.9	7,593.2	7,352.2	28.9	39.9	72.66	282.9	1,676.3	2,187.3	2,131.0	38.880		
8,250.0	7,983.2	7,596.4	7,355.2	28.9	39.9	72.93	283.0	1,677.2	2,185.5	2,129.2	38.792		
8,275.0	7,984.2	7,598.3	7,357.1	28.9	39.9	73.19	283.1	1,677.7	2,183.6	2,127.1	38.700		
8,289.6	7,984.1	7,598.8	7,357.6	29.0	39.9	73.34	283.1	1,677.9	2,182.4	2,125.9	38.645		
8,300.0	7,984.0	7,599.1	7,357.8	29.0	39.9	73.35	283.1	1,677.9	2,181.5	2,125.0	38.605		
8,400.0	7,982.2	7,601.4	7,360.0	29.3	39.9	73.41	283.2	1,678.6	2,175.7	2,118.8	38.209		
8,475.7	7,980.9	7,603.1	7,361.7	29.7	40.0	73.45	283.3	1,679.1	2,174.4	2,117.0	37.899		
8,500.0	7,980.5	7,603.7	7,362.3	29.8	40.0	73.47	283.3	1,679.3	2,174.5	2,117.0	37.808		
8,600.0	7,978.7	7,606.0	7,364.5	30.4	40.0	73.53	283.4	1,679.9	2,177.9	2,119.7	37.411		
8,700.0	7,977.0	7,608.3	7,366.7	31.0	40.0	73.59	283.5	1,680.6	2,185.9	2,126.9	37.030		
8,800.0	7,975.2	7,610.7	7,368.9	31.8	40.0	73.65	283.6	1,681.2	2,198.4	2,138.5	36.675		
8,900.0	7,973.5	7,613.0	7,371.2	32.6	40.0	73.71	283.7	1,681.9	2,215.4	2,154.5	36.357		
9,000.0	7,971.7	7,615.3	7,373.4	33.5	40.0	73.77	283.8	1,682.6	2,236.7	2,174.7	36.085		
9,100.0	7,970.0	7,617.6	7,375.6	34.5	40.0	73.84	283.9	1,683.2	2,262.2	2,199.1	35.866		
9,200.0	7,968.2	7,619.9	7,377.8	35.5	40.1	73.90	284.0	1,683.9	2,291.8	2,227.6	35.705		
9,300.0	7,966.5	7,622.3	7,380.0	36.6	40.1	73.96	284.0	1,684.5	2,325.3	2,260.0	35.606		
9,400.0	7,964.8	7,624.6	7,382.3	37.7	40.1	74.02	284.1	1,685.2	2,362.6	2,296.2	35.570		
9,500.0	7,963.0	7,626.9	7,384.5	38.9	40.1	74.08	284.2	1,685.9	2,403.5	2,335.9	35.597		
9,600.0	7,961.3	7,629.2	7,386.7	40.2	40.1	74.14	284.3	1,686.5	2,447.7	2,379.1	35.688		
9,700.0	7,959.5	7,631.5	7,388.9	41.4	40.1	74.20	284.4	1,687.2	2,495.2	2,425.6	35.840		
9,800.0	7,957.8	7,633.9	7,391.2	42.7	40.2	74.26	284.5	1,687.8	2,545.7	2,475.1	36.050		
9,900.0	7,956.0	7,636.2	7,393.4	44.1	40.2	74.32	284.6	1,688.5	2,599.1	2,527.6	36.317		
10,000.0	7,954.3	7,638.5	7,395.6	45.4	40.2	74.39	284.7	1,689.2	2,655.2	2,582.7	36.638		
10,100.0	7,952.5	7,640.8	7,397.8	46.8	40.2	74.45	284.8	1,689.8	2,713.8	2,640.5	37.009		
10,200.0	7,950.8	7,643.1	7,400.0	48.3	40.2	74.51	284.9	1,690.5	2,774.8	2,700.7	37.427		
10,300.0	7,949.0	7,645.5	7,402.3	49.7	40.2	74.57	285.0	1,691.1	2,838.0	2,763.1	37.889		
10,400.0	7,947.3	7,647.8	7,404.5	51.2	40.2	74.63	285.1	1,691.8	2,903.3	2,827.6	38.392		
10,500.0	7,945.6	7,650.1	7,406.7	52.7	40.3	74.69	285.2	1,692.5	2,970.4	2,894.1	38.933		
10,600.0	7,943.8	7,652.4	7,408.9	54.2	40.3	74.75	285.3	1,693.1	3,039.4	2,962.5	39.510		
10,700.0	7,942.1	7,654.7	7,411.1	55.7	40.3	74.81	285.3	1,693.8	3,110.1	3,032.6	40.120		
10,800.0	7,940.3	7,657.1	7,413.4	57.2	40.3	74.87	285.4	1,694.4	3,182.4	3,104.3	40.761		
10,900.0	7,938.6	7,659.4	7,415.6	58.8	40.3	74.93	285.5	1,695.1	3,256.1	3,177.5	41.429		
11,000.0	7,936.8	7,661.7	7,417.8	60.4	40.3	75.00	285.6	1,695.8	3,331.1	3,252.1	42.125		
11,100.0	7,935.1	7,664.0	7,420.0	61.9	40.3	75.06	285.7	1,696.4	3,407.5	3,328.0	42.844		
11,200.0	7,933.3	7,666.3	7,422.3	63.5	40.4	75.12	285.8	1,697.1	3,485.1	3,405.1	43.586		
11,300.0	7,931.6	7,668.7	7,424.5	65.1	40.4	75.18	285.9	1,697.7	3,563.7	3,483.4	44.349		
11,400.0	7,929.9	7,671.0	7,426.7	66.7	40.4	75.24	286.0	1,698.4	3,643.5	3,562.7	45.131		
11,500.0	7,928.1	7,673.3	7,428.9	68.3	40.4	75.30	286.1	1,699.1	3,724.2	3,643.1	45.931		
11,600.0	7,926.4	7,675.6	7,431.1	70.0	40.4	75.36	286.2	1,699.7	3,805.8	3,724.4	46.748		
11,700.0	7,924.6	7,677.9	7,433.4	71.6	40.4	75.42	286.3	1,700.4	3,888.2	3,806.5	47.580		
11,800.0	7,922.9	7,680.3	7,435.6	73.2	40.4	75.48	286.4	1,701.1	3,971.5	3,889.5	48.426		
11,900.0	7,921.1	7,682.6	7,437.8	74.9	40.5	75.55	286.5	1,701.7	4,055.5	3,973.2	49.286		
12,000.0	7,919.4	7,684.9	7,440.0	76.5	40.5	75.61	286.6	1,702.4	4,140.3	4,057.7	50.158		
12,100.0	7,917.6	7,687.2	7,442.3	78.2	40.5	75.67	286.6	1,703.0	4,225.7	4,142.9	51.041		
12,200.0	7,915.9	7,689.5	7,444.5	79.9	40.5	75.73	286.7	1,703.7	4,311.7	4,228.7	51.936		
12,300.0	7,914.1	7,691.9	7,446.7	81.5	40.5	75.79	286.8	1,704.4	4,398.3	4,315.1	52.839		
12,400.0	7,912.4	7,694.2	7,448.9	83.2	40.5	75.85	286.9	1,705.0	4,485.5	4,402.0	53.753		
12,500.0	7,910.7	7,696.5	7,451.1	84.9	40.5	75.91	287.0	1,705.7	4,573.2	4,489.5	54.674		
12,600.0	7,908.9	7,698.8	7,453.4	86.6	40.6	75.97	287.1	1,706.3	4,661.4	4,577.6	55.604		
12,700.0	7,907.2	7,701.1	7,455.6	88.3	40.6	76.03	287.2	1,707.0	4,750.0	4,666.0	56.541		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Project:	Jackson County, Colorado	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Reference Site:	Sec 28, T8N, R80W	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Permit #1	Offset TVD Reference:	Reference Datum

Offset Design											Sec 28, T8N, R80W - PRU High Point 0880 11-28H33 - Wellbore #1 - Permit #1	Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Reference (usft)	Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Offset Wellbore Centre +E-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning	
12,800.0	7,905.4	7,703.5	7,457.8	89.9	40.6	76.09	287.3	1,707.7	4,839.1	4,755.0	57.485		
12,900.0	7,903.7	7,705.8	7,460.0	91.6	40.6	76.16	287.4	1,708.3	4,928.7	4,844.3	58.435		
13,000.0	7,901.9	7,708.1	7,462.2	93.3	40.6	76.22	287.5	1,709.0	5,018.6	4,934.1	59.391		
13,100.0	7,900.2	7,710.4	7,464.5	95.0	40.6	76.28	287.6	1,709.6	5,108.9	5,024.2	60.352		
13,200.0	7,898.4	7,712.7	7,466.7	96.7	40.6	76.34	287.7	1,710.3	5,199.5	5,114.7	61.319		
13,300.0	7,896.7	7,715.0	7,468.9	98.4	40.7	76.40	287.8	1,711.0	5,290.5	5,205.5	62.290		
13,400.0	7,895.0	7,717.4	7,471.1	100.2	40.7	76.46	287.9	1,711.6	5,381.8	5,296.7	63.266		
13,500.0	7,893.2	7,719.7	7,473.4	101.9	40.7	76.52	288.0	1,712.3	5,473.4	5,388.2	64.246		
13,600.0	7,891.5	7,722.0	7,475.6	103.6	40.7	76.58	288.0	1,712.9	5,565.3	5,479.9	65.229		
13,700.0	7,889.7	7,724.3	7,477.8	105.3	40.7	76.64	288.1	1,713.6	5,657.4	5,572.0	66.216		
13,800.0	7,888.0	7,726.6	7,480.0	107.0	40.7	76.70	288.2	1,714.3	5,749.8	5,664.3	67.206		
13,900.0	7,886.2	7,729.0	7,482.2	108.7	40.7	76.76	288.3	1,714.9	5,842.5	5,756.8	68.199		
14,000.0	7,884.5	7,731.3	7,484.5	110.5	40.8	76.83	288.4	1,715.6	5,935.4	5,849.6	69.195		
14,100.0	7,882.7	7,733.6	7,486.7	112.2	40.8	76.89	288.5	1,716.2	6,028.6	5,942.7	70.193		
14,200.0	7,881.0	7,735.9	7,488.9	113.9	40.8	76.95	288.6	1,716.9	6,121.9	6,035.9	71.193		
14,300.0	7,879.2	7,738.2	7,491.1	115.6	40.8	77.01	288.7	1,717.6	6,215.5	6,129.4	72.196		
14,400.0	7,877.5	7,740.6	7,493.4	117.4	40.8	77.07	288.8	1,718.2	6,309.2	6,223.0	73.200		
14,500.0	7,875.8	7,742.9	7,495.6	119.1	40.8	77.13	288.9	1,718.9	6,403.2	6,316.9	74.206		
14,600.0	7,874.0	7,745.2	7,497.8	120.8	40.8	77.19	289.0	1,719.5	6,497.3	6,410.9	75.214		
14,700.0	7,872.3	7,747.5	7,500.0	122.6	40.9	77.25	289.1	1,720.2	6,591.6	6,505.1	76.222		
14,800.0	7,870.5	7,749.8	7,502.2	124.3	40.9	77.31	289.2	1,720.9	6,686.0	6,599.5	77.232		
14,900.0	7,868.8	7,752.2	7,504.5	126.1	40.9	77.37	289.3	1,721.5	6,780.6	6,694.0	78.243		
15,000.0	7,867.0	7,754.5	7,506.7	127.8	40.9	77.43	289.3	1,722.2	6,875.4	6,788.7	79.255		
15,100.0	7,865.3	7,756.8	7,508.9	129.5	40.9	77.50	289.4	1,722.8	6,970.3	6,883.5	80.268		
15,200.0	7,863.5	7,759.1	7,511.1	131.3	40.9	77.56	289.5	1,723.5	7,065.4	6,978.5	81.282		
15,300.0	7,861.8	7,761.4	7,513.4	133.0	40.9	77.62	289.6	1,724.2	7,160.6	7,073.6	82.295		
15,400.0	7,860.0	7,763.8	7,515.6	134.8	41.0	77.68	289.7	1,724.8	7,255.9	7,168.8	83.310		
15,500.0	7,858.3	7,766.1	7,517.8	136.5	41.0	77.74	289.8	1,725.5	7,351.3	7,264.1	84.324		
15,600.0	7,856.6	7,768.4	7,520.0	138.3	41.0	77.80	289.9	1,726.1	7,446.9	7,359.6	85.339		
15,700.0	7,854.8	7,770.7	7,522.2	140.0	41.0	77.86	290.0	1,726.8	7,542.6	7,455.2	86.354		
15,800.0	7,853.1	7,773.0	7,524.5	141.8	41.0	77.92	290.1	1,727.5	7,638.3	7,550.9	87.369		
15,900.0	7,851.3	7,775.4	7,526.7	143.5	41.0	77.98	290.2	1,728.1	7,734.2	7,646.7	88.384		
16,000.0	7,849.6	7,777.7	7,528.9	145.3	41.0	78.04	290.3	1,728.8	7,830.2	7,742.6	89.399		
16,100.0	7,847.8	7,780.0	7,531.1	147.0	41.1	78.10	290.4	1,729.4	7,926.3	7,838.6	90.414		
16,200.0	7,846.1	7,782.3	7,533.3	148.8	41.1	78.16	290.5	1,730.1	8,022.5	7,934.7	91.428		
16,300.0	7,844.3	7,784.6	7,535.6	150.5	41.1	78.22	290.6	1,730.8	8,118.8	8,030.9	92.442		
16,400.0	7,842.6	7,787.0	7,537.8	152.3	41.1	78.28	290.6	1,731.4	8,215.1	8,127.2	93.455		
16,500.0	7,840.9	7,789.3	7,540.0	154.0	41.1	78.35	290.7	1,732.1	8,311.6	8,223.6	94.468		
16,600.0	7,839.1	7,791.6	7,542.2	155.8	41.1	78.41	290.8	1,732.8	8,408.1	8,320.0	95.480		
16,700.0	7,837.4	7,793.9	7,544.5	157.5	41.1	78.47	290.9	1,733.4	8,504.7	8,416.6	96.492		
16,800.0	7,835.6	7,796.2	7,546.7	159.3	41.2	78.53	291.0	1,734.1	8,601.4	8,513.2	97.502		
16,900.0	7,833.9	7,798.6	7,548.9	161.0	41.2	78.59	291.1	1,734.7	8,698.2	8,609.9	98.513		
17,000.0	7,832.1	7,800.9	7,551.1	162.8	41.2	78.65	291.2	1,735.4	8,795.0	8,706.6	99.522		
17,100.0	7,830.4	7,803.2	7,553.3	164.6	41.2	78.71	291.3	1,736.1	8,891.9	8,803.5	100.530		
17,200.0	7,828.6	7,805.5	7,555.6	166.3	41.2	78.77	291.4	1,736.7	8,988.9	8,900.4	101.538		
17,300.0	7,826.9	7,807.8	7,557.8	168.1	41.2	78.83	291.5	1,737.4	9,085.9	8,997.3	102.544		
17,400.0	7,825.1	7,810.2	7,560.0	169.8	41.2	78.89	291.6	1,738.0	9,183.0	9,094.3	103.549		
17,500.0	7,823.4	7,812.5	7,562.2	171.6	41.3	78.95	291.7	1,738.7	9,280.2	9,191.4	104.554		
17,600.0	7,821.7	7,814.8	7,564.5	173.4	41.3	79.01	291.8	1,739.4	9,377.4	9,288.6	105.557		
17,700.0	7,819.9	7,817.1	7,566.7	175.1	41.3	79.07	291.9	1,740.0	9,474.7	9,385.8	106.559		
17,800.0	7,818.2	7,819.4	7,568.9	176.9	41.3	79.13	291.9	1,740.7	9,572.0	9,483.0	107.559		
17,900.0	7,816.4	7,821.8	7,571.1	178.6	41.3	79.19	292.0	1,741.3	9,669.4	9,580.3	108.559		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Project:	Jackson County, Colorado	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Reference Site:	Sec 28, T8N, R80W	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Permit #1	Offset TVD Reference:	Reference Datum

Offset Design	Sec 28, T8N, R80W - PRU High Point 0880 11-28H33 - Wellbore #1 - Permit #1										Offset Site Error:	0.0 usft
Survey Program:	0-MWD										Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Reference (usft)	Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore +N-S (usft)	Centre +E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning
18,000.0	7,814.7	7,824.1	7,573.3	180.4	41.3	79.25	292.1	1,742.0	9,766.8	9,677.7	109.557	
18,100.0	7,812.9	7,826.4	7,575.6	182.2	41.3	79.31	292.2	1,742.7	9,864.3	9,775.1	110.554	
18,200.0	7,811.2	7,828.7	7,577.8	183.9	41.4	79.37	292.3	1,743.3	9,961.9	9,872.6	111.549	

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Project:	Jackson County, Colorado	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Reference Site:	Sec 28, T8N, R80W	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Permit #1	Offset TVD Reference:	Reference Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Reference (usft)	Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Offset Wellbore Centre +E-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning	
0.0	0.0	1.0	0.0	0.0	0.0	31.32	17.1	10.4	20.0				
100.0	100.0	101.0	100.0	0.1	0.1	31.32	17.1	10.4	20.0	19.7	74.411		
200.0	200.0	201.0	200.0	0.5	0.5	31.32	17.1	10.4	20.0	19.0	20.294		
300.0	300.0	301.0	300.0	0.8	0.9	31.32	17.1	10.4	20.0	18.3	11.749		
400.0	400.0	401.0	400.0	1.2	1.2	31.32	17.1	10.4	20.0	17.6	8.268		
500.0	500.0	501.0	500.0	1.6	1.6	31.32	17.1	10.4	20.0	16.9	6.378		
600.0	600.0	601.0	600.0	1.9	1.9	31.32	17.1	10.4	20.0	16.2	5.191		
700.0	700.0	701.0	700.0	2.3	2.3	31.32	17.1	10.4	20.0	15.4	4.377		
800.0	800.0	801.0	800.0	2.6	2.6	31.32	17.1	10.4	20.0	14.7	3.784		
900.0	900.0	901.0	900.0	3.0	3.0	31.32	17.1	10.4	20.0	14.0	3.332		
1,000.0	1,000.0	1,001.0	1,000.0	3.4	3.4	31.32	17.1	10.4	20.0	13.3	2.976		
1,100.0	1,100.0	1,101.0	1,100.0	3.7	3.7	31.32	17.1	10.4	20.0	12.6	2.690		
1,200.0	1,200.0	1,201.0	1,200.0	4.1	4.1	31.32	17.1	10.4	20.0	11.9	2.453		
1,300.0	1,300.0	1,301.0	1,300.0	4.4	4.4	31.32	17.1	10.4	20.0	11.1	2.255		
1,400.0	1,400.0	1,401.0	1,400.0	4.8	4.8	31.32	17.1	10.4	20.0	10.4	2.086	CC, ES, SF	
1,500.0	1,500.0	1,501.0	1,500.0	5.1	5.2	167.79	17.1	10.4	21.7	11.4	2.109		
1,600.0	1,599.8	1,600.8	1,599.8	5.5	5.5	170.14	17.1	10.4	26.8	15.9	2.445		
1,654.9	1,654.6	1,655.6	1,654.6	5.7	5.7	171.50	17.1	10.4	31.1	19.8	2.741		
1,700.0	1,699.5	1,700.5	1,699.5	5.8	5.9	172.46	17.1	10.4	35.1	23.4	3.008		
1,800.0	1,799.1	1,800.1	1,799.1	6.1	6.2	173.98	17.1	10.4	43.9	31.6	3.553		
1,900.0	1,898.7	1,899.7	1,898.7	6.5	6.6	174.99	17.1	10.4	52.8	39.7	4.041		
2,000.0	1,998.3	1,999.3	1,998.3	6.9	6.9	175.71	17.1	10.4	61.6	47.9	4.480		
2,100.0	2,097.9	2,099.7	2,098.6	7.2	7.3	174.91	17.7	8.8	70.0	55.5	4.839		
2,200.0	2,197.5	2,200.0	2,198.9	7.6	7.6	171.79	19.7	3.9	77.3	62.2	5.103		
2,300.0	2,297.1	2,300.2	2,298.6	7.9	8.0	166.88	22.9	-4.2	84.2	68.4	5.311		
2,400.0	2,396.7	2,399.7	2,397.5	8.3	8.4	161.08	27.1	-14.8	91.4	74.8	5.516		
2,500.0	2,496.3	2,499.0	2,496.1	8.7	8.7	156.05	31.4	-25.5	99.4	82.1	5.748		
2,600.0	2,595.9	2,598.3	2,594.8	9.0	9.1	151.79	35.7	-36.2	108.0	90.0	5.996		
2,700.0	2,695.5	2,697.6	2,693.4	9.4	9.5	148.18	40.0	-47.0	117.2	98.4	6.250		
2,800.0	2,795.1	2,797.0	2,792.1	9.8	9.8	145.09	44.3	-57.7	126.7	107.2	6.504		
2,900.0	2,894.7	2,896.3	2,890.7	10.2	10.2	142.45	48.6	-68.4	136.6	116.4	6.754		
3,000.0	2,994.3	2,995.6	2,989.4	10.5	10.6	140.16	52.8	-79.2	146.7	125.7	6.997		
3,100.0	3,093.9	3,095.0	3,088.0	10.9	11.0	138.17	57.1	-89.9	157.0	135.3	7.232		
3,200.0	3,193.6	3,194.3	3,186.7	11.3	11.3	136.42	61.4	-100.6	167.5	145.0	7.459		
3,300.0	3,293.2	3,293.6	3,285.3	11.7	11.7	134.88	65.7	-111.4	178.1	154.9	7.675		
3,400.0	3,392.8	3,392.9	3,384.0	12.1	12.1	133.52	70.0	-122.1	188.8	164.8	7.883		
3,500.0	3,492.4	3,492.3	3,482.6	12.4	12.5	132.30	74.3	-132.8	199.6	174.9	8.081		
3,600.0	3,592.0	3,591.6	3,581.3	12.8	12.9	131.21	78.6	-143.6	210.5	185.0	8.270		
3,700.0	3,691.6	3,690.9	3,680.0	13.2	13.3	130.22	82.8	-154.3	221.4	195.2	8.451		
3,800.0	3,791.2	3,790.3	3,778.6	13.6	13.6	129.33	87.1	-165.0	232.5	205.5	8.623		
3,900.0	3,890.8	3,889.6	3,877.3	14.0	14.0	128.52	91.4	-175.8	243.5	215.8	8.787		
4,000.0	3,990.4	3,988.9	3,975.9	14.3	14.4	127.78	95.7	-186.5	254.7	226.2	8.944		
4,100.0	4,090.0	4,088.2	4,074.6	14.7	14.8	127.10	100.0	-197.3	265.8	236.6	9.094		
4,200.0	4,189.6	4,187.6	4,173.2	15.1	15.2	126.48	104.3	-208.0	277.0	247.0	9.237		
4,300.0	4,289.2	4,286.9	4,271.9	15.5	15.6	125.90	108.5	-218.7	288.2	257.5	9.373		
4,400.0	4,388.8	4,386.2	4,370.5	15.9	16.0	125.37	112.8	-229.5	299.5	267.9	9.504		
4,500.0	4,488.4	4,485.6	4,469.2	16.3	16.4	124.88	117.1	-240.2	310.7	278.5	9.629		
4,600.0	4,588.0	4,584.9	4,567.8	16.7	16.8	124.42	121.4	-250.9	322.0	289.0	9.749		
4,700.0	4,687.6	4,684.2	4,666.5	17.0	17.2	123.99	125.7	-261.7	333.3	299.5	9.864		
4,800.0	4,787.2	4,783.5	4,765.2	17.4	17.6	123.59	130.0	-272.4	344.6	310.1	9.974		
4,900.0	4,886.8	4,882.9	4,863.8	17.8	18.0	123.22	134.3	-283.1	356.0	320.7	10.080		
5,000.0	4,986.4	4,982.2	4,962.5	18.2	18.4	122.86	138.5	-293.9	367.3	331.3	10.181		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Project:	Jackson County, Colorado	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Reference Site:	Sec 28, T8N, R80W	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Permit #1	Offset TVD Reference:	Reference Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Reference (usft)	Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning	
5,100.0	5,086.0	5,081.5	5,061.1	18.6	18.8	122.53	142.8	-304.6	378.7	341.9	10.279		
5,200.0	5,185.6	5,180.9	5,159.8	19.0	19.2	122.22	147.1	-315.3	390.1	352.5	10.372		
5,300.0	5,285.2	5,280.2	5,258.4	19.4	19.6	121.93	151.4	-326.1	401.5	363.1	10.463		
5,400.0	5,384.8	5,379.5	5,357.1	19.7	20.0	121.65	155.7	-336.8	412.9	373.7	10.549		
5,500.0	5,484.5	5,478.9	5,455.7	20.1	20.4	121.39	160.0	-347.5	424.3	384.4	10.633		
5,600.0	5,584.1	5,578.2	5,554.4	20.5	20.8	121.14	164.2	-358.3	435.7	395.0	10.714		
5,700.0	5,683.7	5,677.5	5,653.0	20.9	21.2	120.91	168.5	-369.0	447.1	405.7	10.791		
5,800.0	5,783.3	5,776.8	5,751.7	21.3	21.5	120.68	172.8	-379.7	458.6	416.4	10.866		
5,900.0	5,882.9	5,876.2	5,850.3	21.7	21.9	120.47	177.1	-390.5	470.0	427.0	10.939		
6,000.0	5,982.5	5,975.5	5,949.0	22.1	22.3	120.27	181.4	-401.2	481.4	437.7	11.009		
6,100.0	6,082.1	6,074.8	6,047.7	22.5	22.7	120.07	185.7	-412.0	492.9	448.4	11.076		
6,200.0	6,181.7	6,174.2	6,146.3	22.8	23.1	119.89	190.0	-422.7	504.3	459.1	11.142		
6,300.0	6,281.3	6,273.5	6,245.0	23.2	23.5	119.71	194.2	-433.4	515.8	469.8	11.205		
6,400.0	6,380.9	6,372.8	6,343.6	23.6	23.9	119.54	198.5	-444.2	527.3	480.5	11.266		
6,500.0	6,480.5	6,472.1	6,442.3	24.0	24.3	119.38	202.8	-454.9	538.7	491.2	11.325		
6,600.0	6,580.1	6,571.5	6,540.9	24.4	24.7	119.22	207.1	-465.6	550.2	501.9	11.383		
6,700.0	6,679.7	6,670.8	6,639.6	24.8	25.2	119.08	211.4	-476.4	561.7	512.6	11.438		
6,800.0	6,779.3	6,770.1	6,738.2	25.2	25.6	118.93	215.7	-487.1	573.2	523.3	11.492		
6,900.0	6,878.9	6,869.5	6,836.9	25.6	26.0	118.80	220.0	-497.8	584.7	534.0	11.545		
7,000.0	6,978.5	6,968.8	6,935.5	26.0	26.4	118.66	224.2	-508.6	596.1	544.7	11.596		
7,100.0	7,078.1	7,068.1	7,034.2	26.3	26.8	118.54	228.5	-519.3	607.6	555.5	11.645		
7,200.0	7,177.7	7,167.4	7,132.8	26.7	27.2	118.41	232.8	-530.0	619.1	566.2	11.693		
7,300.0	7,277.3	7,266.8	7,231.5	27.1	27.6	118.30	237.1	-540.8	630.6	576.9	11.739		
7,400.0	7,376.9	7,366.2	7,331.5	27.5	28.0	118.18	241.4	-551.6	642.1	587.6	11.784		
7,501.0	7,477.6	7,466.5	7,431.5	27.9	28.4	118.07	245.7	-562.4	653.6	598.3	11.829		
7,525.0	7,501.5	7,490.5	7,455.0	28.0	28.5	117.96	250.0	-573.2	665.1	609.0	11.874		
7,550.0	7,526.4	7,515.0	7,480.0	28.1	28.6	117.85	254.3	-584.0	676.6	619.7	11.919		
7,575.0	7,551.3	7,540.0	7,505.0	28.2	28.7	117.74	258.6	-594.8	688.1	630.4	11.964		
7,600.0	7,576.1	7,564.5	7,529.5	28.3	28.8	117.63	262.9	-605.6	699.6	641.1	12.009		
7,625.0	7,600.7	7,589.0	7,554.0	28.3	28.9	117.52	267.2	-616.4	711.1	651.8	12.054		
7,650.0	7,625.0	7,613.5	7,579.0	28.4	29.0	117.41	271.5	-627.2	722.6	662.5	12.099		
7,675.0	7,649.0	7,637.5	7,602.0	28.4	29.1	117.30	275.8	-638.0	734.1	673.2	12.144		
7,700.0	7,672.6	7,661.0	7,626.0	28.5	29.2	117.19	280.1	-648.8	745.6	683.9	12.189		
7,725.0	7,695.8	7,684.0	7,649.0	28.6	29.3	117.08	284.4	-659.6	757.1	694.6	12.234		
7,750.0	7,718.5	7,706.5	7,674.0	28.6	29.4	116.97	288.7	-670.4	768.6	705.3	12.279		
7,775.0	7,740.5	7,728.5	7,692.0	28.6	29.5	116.86	293.0	-681.2	780.1	716.0	12.324		
7,800.0	7,762.0	7,750.0	7,716.0	28.7	29.6	116.75	297.3	-692.0	791.6	726.7	12.369		
7,825.0	7,782.7	7,770.5	7,737.0	28.7	29.7	116.64	301.6	-702.8	803.1	737.4	12.414		
7,850.0	7,802.7	7,790.5	7,757.0	28.8	29.8	116.53	305.9	-713.6	814.6	748.1	12.459		
7,875.0	7,821.9	7,809.5	7,778.0	28.8	29.9	116.42	310.2	-724.4	826.1	758.8	12.504		
7,900.0	7,840.2	7,827.5	7,796.0	28.8	30.0	116.31	314.5	-735.2	837.6	769.5	12.549		
7,925.0	7,857.6	7,845.0	7,813.0	28.8	30.1	116.20	318.8	-746.0	849.1	780.2	12.594		
7,950.0	7,874.1	7,861.5	7,830.0	28.8	30.2	116.09	323.1	-756.8	860.6	790.9	12.639		
7,975.0	7,889.5	7,876.5	7,847.0	28.9	30.3	115.98	327.4	-767.6	872.1	801.6	12.684		
8,000.0	7,903.9	7,890.5	7,864.0	28.9	30.4	115.87	331.7	-778.4	883.6	812.3	12.729		
8,025.0	7,917.2	7,903.5	7,881.0	28.9	30.5	115.76	336.0	-789.2	895.1	823.0	12.774		
8,050.0	7,929.4	7,915.5	7,893.0	28.9	30.6	115.65	340.3	-800.0	906.6	833.7	12.819		
8,075.0	7,940.4	7,926.5	7,904.0	28.9	30.7	115.54	344.6	-810.8	918.1	844.4	12.864		
8,078.5	7,941.9	7,927.5	7,905.0	28.9	30.8	115.43	348.9	-821.6	929.6	855.1	12.909		
8,100.0	7,950.3	7,936.5	7,916.0	28.9	30.9	115.32	353.2	-832.4	941.1	865.8	12.954		
8,125.0	7,958.9	7,944.5	7,927.0	28.9	31.0	115.21	357.5	-843.2	952.6	876.5	12.999		
8,150.0	7,966.3	7,951.5	7,938.0	28.9	31.1	115.10	361.8	-854.0	964.1	887.2	13.044		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Project:	Jackson County, Colorado	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Reference Site:	Sec 28, T8N, R80W	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Permit #1	Offset TVD Reference:	Reference Datum

Offset Design											Offset Site Error:	0.0 usft
Survey Program: 0-MWD											Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Reference (usft)	Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Offset Wellbore Centre +E-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
8,175.0	7,972.5	8,055.4	7,905.6	28.9	29.7	-73.50	-31.6	-608.0	215.9	160.2	3.877	
8,200.0	7,977.3	8,037.5	7,897.9	28.9	29.7	-70.22	-15.5	-607.5	220.4	165.3	4.002	
8,225.0	7,980.9	8,019.9	7,889.7	28.9	29.7	-67.03	0.0	-606.9	225.7	171.3	4.145	
8,250.0	7,983.2	8,002.6	7,881.1	28.9	29.7	-63.95	15.0	-606.3	231.6	177.8	4.300	
8,275.0	7,984.2	7,985.5	7,872.1	28.9	29.7	-60.99	29.5	-605.6	238.1	184.7	4.462	
8,289.6	7,984.1	7,975.0	7,866.3	29.0	29.7	-59.25	38.3	-605.2	242.1	189.0	4.562	
8,300.0	7,984.0	7,968.7	7,862.7	29.0	29.6	-58.48	43.5	-604.9	245.0	192.1	4.629	
8,400.0	7,982.2	7,908.5	7,825.3	29.3	29.6	-51.03	90.5	-601.8	281.7	229.9	5.439	
8,500.0	7,980.5	7,859.2	7,790.5	29.8	29.5	-45.05	125.2	-598.8	332.2	280.6	6.431	
8,600.0	7,978.7	7,818.8	7,759.4	30.4	29.4	-40.44	150.9	-596.0	394.1	341.9	7.547	
8,700.0	7,977.0	7,785.6	7,732.4	31.0	29.4	-36.91	169.9	-593.4	464.5	411.4	8.756	
8,800.0	7,975.2	7,758.1	7,709.0	31.8	29.3	-34.19	184.3	-591.2	541.1	487.2	10.044	
8,900.0	7,973.5	7,735.0	7,688.8	32.6	29.2	-32.07	195.2	-589.3	622.2	567.6	11.395	
9,000.0	7,971.7	7,715.5	7,671.3	33.5	29.2	-30.37	203.7	-587.5	706.8	651.6	12.798	
9,100.0	7,970.0	7,700.0	7,657.1	34.5	29.2	-29.10	209.9	-586.1	794.0	738.2	14.237	
9,200.0	7,968.2	7,684.4	7,642.8	35.5	29.1	-27.87	215.7	-584.7	883.2	827.1	15.724	
9,300.0	7,966.5	7,675.0	7,634.0	36.6	29.1	-27.16	219.0	-583.8	974.0	917.5	17.218	
9,400.0	7,964.8	7,661.0	7,620.8	37.7	29.1	-26.14	223.6	-582.5	1,066.1	1,009.3	18.766	
9,500.0	7,963.0	7,650.0	7,610.4	38.9	29.0	-25.37	226.8	-581.4	1,159.1	1,102.1	20.323	
9,600.0	7,961.3	7,650.0	7,610.4	40.2	29.0	-25.37	226.8	-581.4	1,253.1	1,195.8	21.856	
9,700.0	7,959.5	7,635.0	7,596.0	41.4	29.0	-24.36	230.9	-580.0	1,347.7	1,290.3	23.467	
9,800.0	7,957.8	7,625.0	7,586.4	42.7	28.9	-23.72	233.4	-579.0	1,442.9	1,385.4	25.073	
9,900.0	7,956.0	7,625.0	7,586.4	44.1	28.9	-23.72	233.4	-579.0	1,538.6	1,480.9	26.651	
10,000.0	7,954.3	7,625.0	7,586.4	45.4	28.9	-23.72	233.4	-579.0	1,634.8	1,576.9	28.242	
10,100.0	7,952.5	7,611.0	7,572.8	46.8	28.9	-22.85	236.5	-577.6	1,731.2	1,673.3	29.891	
10,200.0	7,950.8	7,600.0	7,562.1	48.3	28.9	-22.20	238.7	-576.5	1,828.1	1,770.1	31.538	
10,300.0	7,949.0	7,600.0	7,562.1	49.7	28.9	-22.20	238.7	-576.5	1,925.1	1,867.0	33.150	
10,400.0	7,947.3	7,600.0	7,562.1	51.2	28.9	-22.20	238.7	-576.5	2,022.4	1,964.3	34.768	
10,500.0	7,945.6	7,600.0	7,562.1	52.7	28.9	-22.20	238.7	-576.5	2,120.0	2,061.8	36.392	
10,600.0	7,943.8	7,600.0	7,562.1	54.2	28.9	-22.20	238.7	-576.5	2,217.8	2,159.5	38.020	
10,700.0	7,942.1	7,587.7	7,550.0	55.7	28.8	-21.49	240.9	-575.2	2,315.6	2,257.3	39.691	
10,800.0	7,940.3	7,575.0	7,537.5	57.2	28.8	-20.79	242.8	-573.9	2,413.8	2,355.4	41.369	
10,900.0	7,938.6	7,575.0	7,537.5	58.8	28.8	-20.79	242.8	-573.9	2,511.9	2,453.5	43.002	
11,000.0	7,936.8	7,575.0	7,537.5	60.4	28.8	-20.79	242.8	-573.9	2,610.1	2,551.7	44.638	
11,100.0	7,935.1	7,575.0	7,537.5	61.9	28.8	-20.79	242.8	-573.9	2,708.5	2,650.0	46.275	
11,200.0	7,933.3	7,575.0	7,537.5	63.5	28.8	-20.79	242.8	-573.9	2,807.0	2,748.5	47.914	
11,300.0	7,931.6	7,575.0	7,537.5	65.1	28.8	-20.79	242.8	-573.9	2,905.6	2,847.0	49.553	
11,400.0	7,929.9	7,575.0	7,537.5	66.7	28.8	-20.79	242.8	-573.9	3,004.3	2,945.7	51.193	
11,500.0	7,928.1	7,575.0	7,537.5	68.3	28.8	-20.79	242.8	-573.9	3,103.1	3,044.4	52.833	
11,600.0	7,926.4	7,575.0	7,537.5	70.0	28.8	-20.79	242.8	-573.9	3,202.0	3,143.2	54.473	
11,700.0	7,924.6	7,575.0	7,537.5	71.6	28.8	-20.79	242.8	-573.9	3,300.9	3,242.1	56.112	
11,800.0	7,922.9	7,563.4	7,526.1	73.2	28.7	-20.18	244.2	-572.7	3,399.7	3,340.9	57.788	
11,900.0	7,921.1	7,561.9	7,524.6	74.9	28.7	-20.10	244.4	-572.5	3,498.7	3,439.9	59.430	
12,000.0	7,919.4	7,550.0	7,512.8	76.5	28.7	-19.50	245.5	-571.3	3,597.9	3,539.0	61.110	
12,100.0	7,917.6	7,550.0	7,512.8	78.2	28.7	-19.50	245.5	-571.3	3,697.0	3,638.1	62.745	
12,200.0	7,915.9	7,550.0	7,512.8	79.9	28.7	-19.50	245.5	-571.3	3,796.1	3,737.1	64.378	
12,300.0	7,914.1	7,550.0	7,512.8	81.5	28.7	-19.50	245.5	-571.3	3,895.3	3,836.3	66.009	
12,400.0	7,912.4	7,550.0	7,512.8	83.2	28.7	-19.50	245.5	-571.3	3,994.5	3,935.4	67.639	
12,500.0	7,910.7	7,550.0	7,512.8	84.9	28.7	-19.50	245.5	-571.3	4,093.7	4,034.6	69.268	
12,600.0	7,908.9	7,550.0	7,512.8	86.6	28.7	-19.50	245.5	-571.3	4,193.0	4,133.8	70.894	
12,700.0	7,907.2	7,550.0	7,512.8	88.3	28.7	-19.50	245.5	-571.3	4,292.3	4,233.1	72.518	
12,800.0	7,905.4	7,550.0	7,512.8	89.9	28.7	-19.50	245.5	-571.3	4,391.6	4,332.4	74.140	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Project:	Jackson County, Colorado	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Reference Site:	Sec 28, T8N, R80W	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Permit #1	Offset TVD Reference:	Reference Datum

Offset Design												Offset Site Error:	0.0 usft	
Survey Program: 0-MWD												Offset Well Error:	0.0 usft	
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Reference (usft)	Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Offset Wellbore Centre +E-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning		
12,900.0	7,903.7	7,550.0	7,512.8	91.6	28.7	-19.50	245.5	-571.3	4,491.0	4,431.7	75.760			
13,000.0	7,901.9	7,550.0	7,512.8	93.3	28.7	-19.50	245.5	-571.3	4,590.4	4,531.1	77.377			
13,100.0	7,900.2	7,550.0	7,512.8	95.0	28.7	-19.50	245.5	-571.3	4,689.8	4,630.5	78.992			
13,200.0	7,898.4	7,550.0	7,512.8	96.7	28.7	-19.50	245.5	-571.3	4,789.3	4,729.9	80.604			
13,300.0	7,896.7	7,550.0	7,512.8	98.4	28.7	-19.50	245.5	-571.3	4,888.7	4,829.3	82.213			
13,400.0	7,895.0	7,550.0	7,512.8	100.2	28.7	-19.50	245.5	-571.3	4,988.2	4,928.7	83.820			
13,500.0	7,893.2	7,550.0	7,512.8	101.9	28.7	-19.50	245.5	-571.3	5,087.7	5,028.2	85.424			
13,600.0	7,891.5	7,550.0	7,512.8	103.6	28.7	-19.50	245.5	-571.3	5,187.3	5,127.7	87.024			
13,700.0	7,889.7	7,550.0	7,512.8	105.3	28.7	-19.50	245.5	-571.3	5,286.8	5,227.2	88.622			
13,800.0	7,888.0	7,550.0	7,512.8	107.0	28.7	-19.50	245.5	-571.3	5,386.4	5,326.7	90.217			
13,900.0	7,886.2	7,550.0	7,512.8	108.7	28.7	-19.50	245.5	-571.3	5,486.0	5,426.2	91.808			
14,000.0	7,884.5	7,550.0	7,512.8	110.5	28.7	-19.50	245.5	-571.3	5,585.6	5,525.8	93.396			
14,100.0	7,882.7	7,550.0	7,512.8	112.2	28.7	-19.50	245.5	-571.3	5,685.2	5,625.3	94.981			
14,200.0	7,881.0	7,550.0	7,512.8	113.9	28.7	-19.50	245.5	-571.3	5,784.8	5,724.9	96.562			
14,300.0	7,879.2	7,550.0	7,512.8	115.6	28.7	-19.50	245.5	-571.3	5,884.4	5,824.5	98.140			
14,400.0	7,877.5	7,550.0	7,512.8	117.4	28.7	-19.50	245.5	-571.3	5,984.1	5,924.1	99.715			
14,500.0	7,875.8	7,538.2	7,501.1	119.1	28.6	-18.93	246.3	-570.1	6,083.6	6,023.6	101.338			
14,600.0	7,874.0	7,537.6	7,500.5	120.8	28.6	-18.90	246.4	-570.0	6,183.2	6,123.2	102.908			
14,700.0	7,872.3	7,537.1	7,500.0	122.6	28.6	-18.88	246.4	-569.9	6,282.9	6,222.8	104.474			
14,800.0	7,870.5	7,525.0	7,488.0	124.3	28.6	-18.32	246.9	-568.7	6,382.7	6,322.6	106.094			
14,900.0	7,868.8	7,525.0	7,488.0	126.1	28.6	-18.32	246.9	-568.7	6,482.4	6,422.2	107.651			
15,000.0	7,867.0	7,525.0	7,488.0	127.8	28.6	-18.32	246.9	-568.7	6,582.1	6,521.8	109.204			
15,100.0	7,865.3	7,525.0	7,488.0	129.5	28.6	-18.32	246.9	-568.7	6,681.8	6,621.5	110.753			
15,200.0	7,863.5	7,525.0	7,488.0	131.3	28.6	-18.32	246.9	-568.7	6,781.5	6,721.1	112.298			
15,300.0	7,861.8	7,525.0	7,488.0	133.0	28.6	-18.32	246.9	-568.7	6,881.2	6,820.7	113.839			
15,400.0	7,860.0	7,525.0	7,488.0	134.8	28.6	-18.32	246.9	-568.7	6,980.9	6,920.4	115.376			
15,500.0	7,858.3	7,525.0	7,488.0	136.5	28.6	-18.32	246.9	-568.7	7,080.6	7,020.1	116.909			
15,600.0	7,856.6	7,525.0	7,488.0	138.3	28.6	-18.32	246.9	-568.7	7,180.4	7,119.7	118.438			
15,700.0	7,854.8	7,525.0	7,488.0	140.0	28.6	-18.32	246.9	-568.7	7,280.1	7,219.4	119.963			
15,800.0	7,853.1	7,525.0	7,488.0	141.8	28.6	-18.32	246.9	-568.7	7,379.9	7,319.1	121.484			
15,900.0	7,851.3	7,525.0	7,488.0	143.5	28.6	-18.32	246.9	-568.7	7,479.6	7,418.8	123.000			
16,000.0	7,849.6	7,525.0	7,488.0	145.3	28.6	-18.32	246.9	-568.7	7,579.4	7,518.5	124.512			
16,100.0	7,847.8	7,525.0	7,488.0	147.0	28.6	-18.32	246.9	-568.7	7,679.1	7,618.2	126.020			
16,200.0	7,846.1	7,525.0	7,488.0	148.8	28.6	-18.32	246.9	-568.7	7,778.9	7,717.9	127.524			
16,300.0	7,844.3	7,525.0	7,488.0	150.5	28.6	-18.32	246.9	-568.7	7,878.7	7,817.6	129.023			
16,400.0	7,842.6	7,525.0	7,488.0	152.3	28.6	-18.32	246.9	-568.7	7,978.5	7,917.4	130.518			
16,500.0	7,840.9	7,525.0	7,488.0	154.0	28.6	-18.32	246.9	-568.7	8,078.3	8,017.1	132.008			
16,600.0	7,839.1	7,525.0	7,488.0	155.8	28.6	-18.32	246.9	-568.7	8,178.1	8,116.8	133.494			
16,700.0	7,837.4	7,525.0	7,488.0	157.5	28.6	-18.32	246.9	-568.7	8,277.9	8,216.5	134.976			
16,800.0	7,835.6	7,525.0	7,488.0	159.3	28.6	-18.32	246.9	-568.7	8,377.7	8,316.3	136.453			
16,900.0	7,833.9	7,525.0	7,488.0	161.0	28.6	-18.32	246.9	-568.7	8,477.5	8,416.0	137.925			
17,000.0	7,832.1	7,525.0	7,488.0	162.8	28.6	-18.32	246.9	-568.7	8,577.3	8,515.8	139.393			
17,100.0	7,830.4	7,525.0	7,488.0	164.6	28.6	-18.32	246.9	-568.7	8,677.1	8,615.5	140.856			
17,200.0	7,828.6	7,525.0	7,488.0	166.3	28.6	-18.32	246.9	-568.7	8,776.9	8,715.3	142.315			
17,300.0	7,826.9	7,525.0	7,488.0	168.1	28.6	-18.32	246.9	-568.7	8,876.8	8,815.0	143.769			
17,400.0	7,825.1	7,525.0	7,488.0	169.8	28.6	-18.32	246.9	-568.7	8,976.6	8,914.8	145.219			
17,500.0	7,823.4	7,525.0	7,488.0	171.6	28.6	-18.32	246.9	-568.7	9,076.4	9,014.5	146.664			
17,600.0	7,821.7	7,525.0	7,488.0	173.4	28.6	-18.32	246.9	-568.7	9,176.3	9,114.3	148.104			
17,700.0	7,819.9	7,525.0	7,488.0	175.1	28.6	-18.32	246.9	-568.7	9,276.1	9,214.1	149.540			
17,800.0	7,818.2	7,525.0	7,488.0	176.9	28.6	-18.32	246.9	-568.7	9,376.0	9,313.8	150.970			
17,900.0	7,816.4	7,525.0	7,488.0	178.6	28.6	-18.32	246.9	-568.7	9,475.8	9,413.6	152.397			
18,000.0	7,814.7	7,525.0	7,488.0	180.4	28.6	-18.32	246.9	-568.7	9,575.7	9,513.4	153.818			

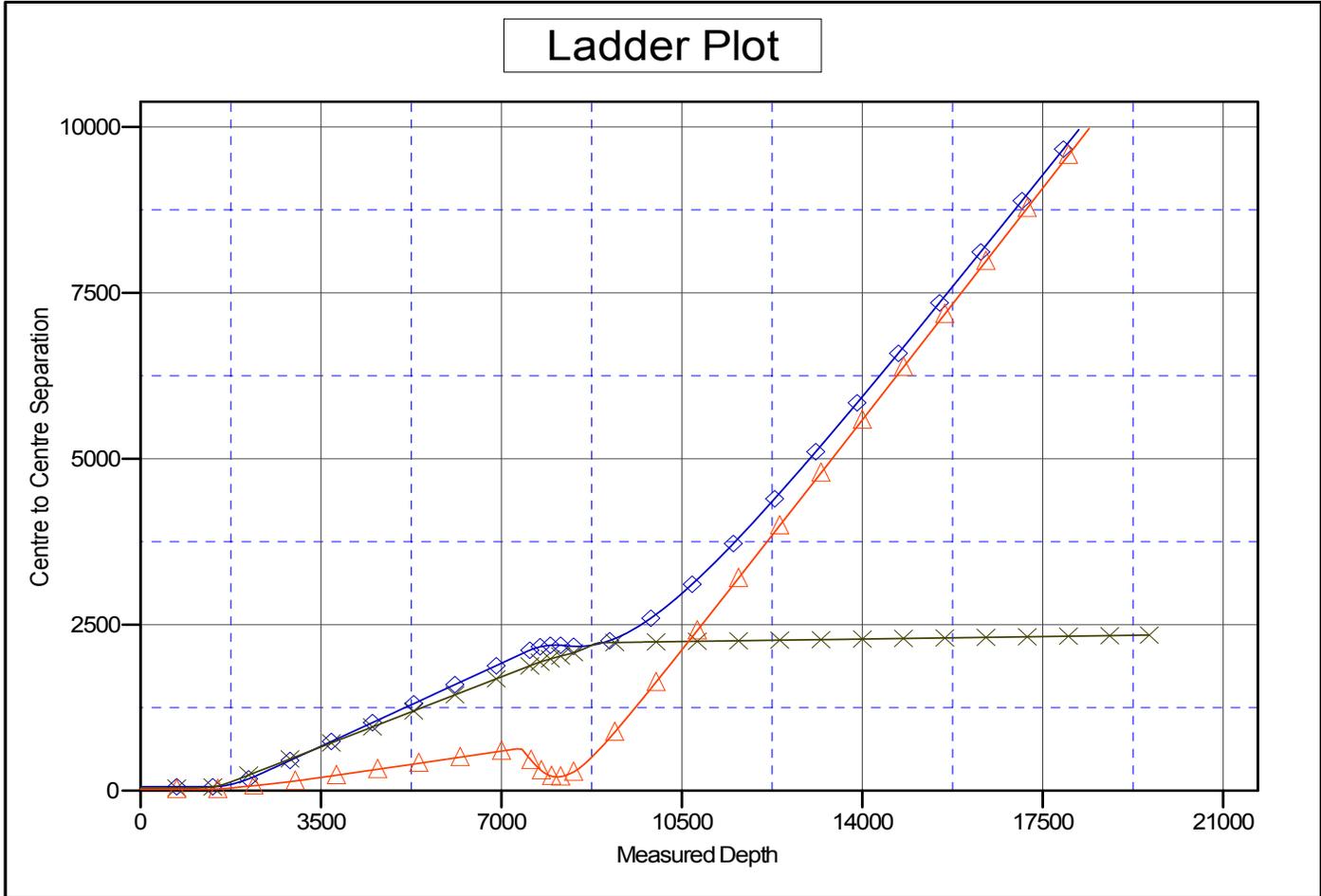
CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Project:	Jackson County, Colorado	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Reference Site:	Sec 28, T8N, R80W	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Permit #1	Offset TVD Reference:	Reference Datum

Offset Design Sec 28, T8N, R80W - PRU High Point 0880 4-28H33 - Wellbore #1 - Permit #1 Rev.1											Offset Site Error:	0.0 usft
Survey Program: 0-MWD											Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Reference (usft)	Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore +N-S (usft)	Centre +E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning
18,100.0	7,812.9	7,525.0	7,488.0	182.2	28.6	-18.32	246.9	-568.7	9,675.5	9,613.2	155.235	
18,200.0	7,811.2	7,525.0	7,488.0	183.9	28.6	-18.32	246.9	-568.7	9,775.4	9,713.0	156.646	
18,300.0	7,809.4	7,525.0	7,488.0	185.7	28.6	-18.32	246.9	-568.7	9,875.2	9,812.7	158.053	
18,400.0	7,807.7	7,525.0	7,488.0	187.5	28.6	-18.32	246.9	-568.7	9,975.1	9,912.5	159.456	

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Project:	Jackson County, Colorado	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Reference Site:	Sec 28, T8N, R80W	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Permit #1	Offset TVD Reference:	Reference Datum

Reference Depths are relative to RKB @ 8222.0usft (Cyclone #33) Coordinates are relative to: PRU High Point 0880 4-28H16
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
 Central Meridian is 105° 30' 0.000 W Grid Convergence at Surface is: -0.57°

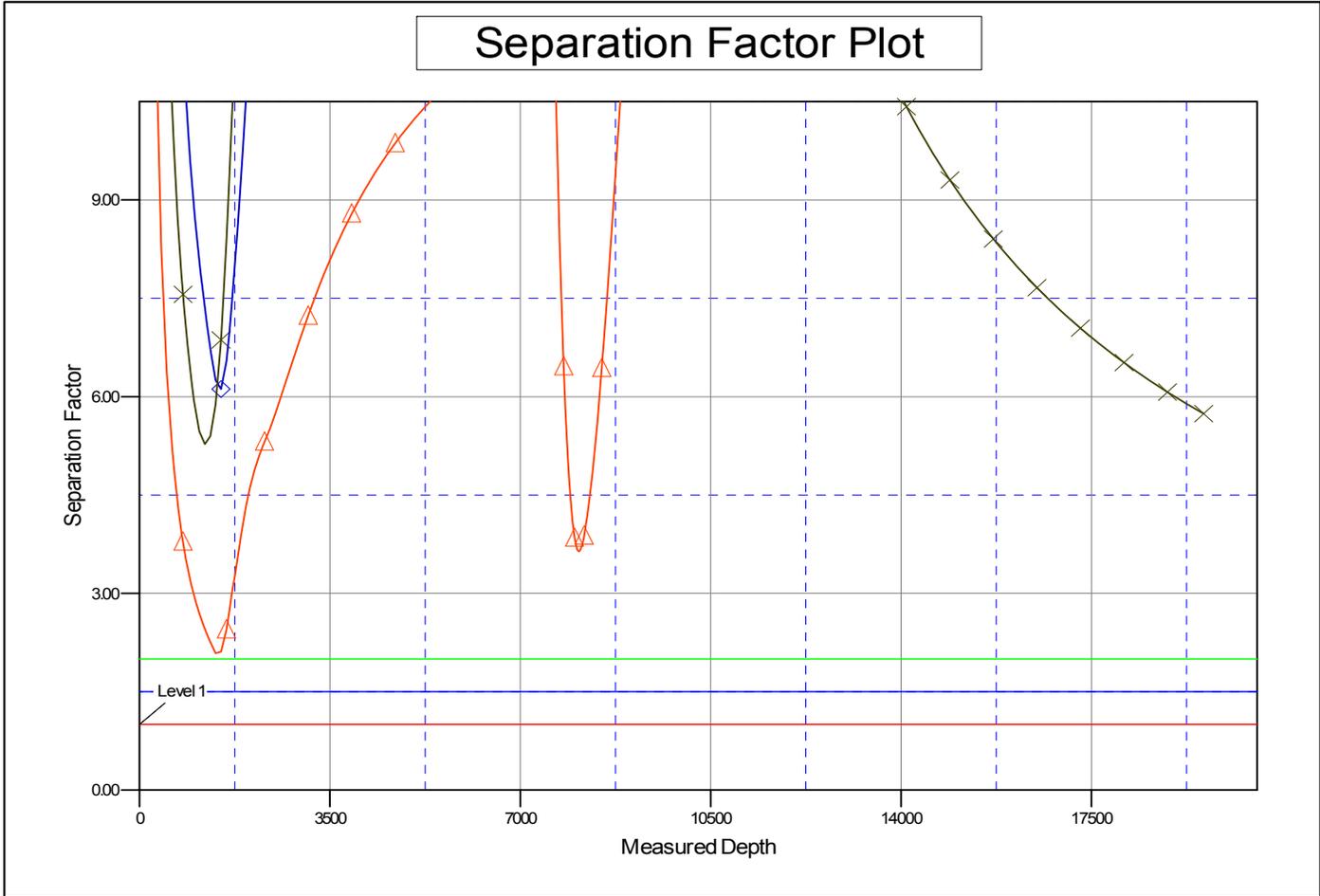


LEGEND

0 11-28H33, Wellbore #1, Permit #1 VO ✕ PRU High Point 0880 11-28H16, Wellbore #1, Permit #1 VO ▲ PRU High Point 0880 4-28H33, Wellbore #1, Permit #1 VO

Company:	SandRidge Energy	Local Co-ordinate Reference:	Well PRU High Point 0880 4-28H16
Project:	Jackson County, Colorado	TVD Reference:	RKB @ 8222.0usft (Cyclone #33)
Reference Site:	Sec 28, T8N, R80W	MD Reference:	RKB @ 8222.0usft (Cyclone #33)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	PRU High Point 0880 4-28H16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Permit #1	Offset TVD Reference:	Reference Datum

Reference Depths are relative to RKB @ 8222.0usft (Cyclone #33) Coordinates are relative to: PRU High Point 0880 4-28H16
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
 Central Meridian is 105° 30' 0.000 W Grid Convergence at Surface is: -0.57°



LEGEND

- 0 11-28H33, Wellbore #1, Permit #1 V0 ✕ PRU High Point 0880 11-28H16, Wellbore #1, Permit #1 V0 ▲ PRU High Point 0880 4-28H33, Wellbore #1, Permit #1 V0



PRU High Point 4-28H16
 Sec 28 T8N R80W - Surface Location
 Sec 16 T8N R80W - Bottom Hole Location

Drilling Plan

1 ESTIMATED TOPS OF IMPORTANT GEOLOGIC MARKERS & ANTICIPATED WATER, OIL, GAS OR MINERAL FORMATIONS:

Vertical

Formation	TVD (ft)	Hydrocarbon/Water Bearing
Lance	4090	-
Fox Hills	4120	-
Sussex	5650	-
Shannon	6140	-
Lower Pierre	6460	-
Niobrara	7770	Oil & Gas

Horizontal

Section	MD (ft)	TVD (ft)	Oil&Gas/H2O
KOP	7501	7478	Oil&Gas
Niobrara	7817	7770	Oil&Gas
Land Pt	8290	7984	Oil&Gas
TD	19567	7787	Oil&Gas

All shows of fresh water and hydrocarbons will be adequately protected and reported.

2 PRESSURE CONTROL EQUIPMENT:

All well control equipment shall be in accordance with Onshore Order #2 for 5M systems.

The minimum specifications for pressure control equipment that will be provided are included on the attached schematic diagram showing size and pressure ratings

- 5000 psi Blind Rams
- 5000 psi Pipe Rams
- 5000 psi Annular

Auxiliary equipment to be used:

- Upper Kelly Cock with handle available
- Stabbing Valve
- Rotating Head

The choke manifold will include appropriate valves and adjustable chokes. The kill line will have one check valve.

Ram type preventers will be pressure tested to full working pressure (utilizing a tester and a test plug) at:

- Initial Installation
- Whenever any seal subject to test pressure is broken

- Following related repairs
- 30 day interval

pressure

All pressure tests shall be maintained at least 10 minutes or until provisions of test are met, whichever is longer.

Annular preventers shall be functionally operated at least weekly.

Pipe and blind rams shall be activated each trip.

A BOPE pit level drill will be conducted weekly for each drilling crew.

All test and drills will be recorded in the drilling log.

The accumulator will have sufficient capacity to open the HCR valve, close all rams plus the annular preventer, and retain 200 psi above pre-charged pressure without the use of closing unit pumps. The system will have two independent power sources to close the preventers in accordance with 5M system requirements outlined in Onshore Order #2.

Remote controls shall be readily accessible to the driller master controls shall be at the accumulator

3 CASING & CEMENTING PROGRAM

A. Casing Program

Section	MD (ft)	Hole OD (in)	Csg Size (in)	Grade	Weight	Thread	Burst (psi)	Collapse (psi)
Surface	2400	12 1/4	9 5/8	J55	36#	LTC	3520	2020
Production	19567	8 3/4	5 1/2	P110	20#	BK	12640	11100

B. Cement Program

Section	TOC	Lead Skis	Lead Ft ³	Lead Class	Lead Density	Lead Ft ³ /sk	Tail Skis	Tail Ft ³	Tail Class	Tail Class	Tail Ft ³ /sk
Surface	0	507	1101	C	12.5	2.17	166	290	C	13.5	1.75
Production	0	1062	2369	H	12	2.23	2309	3810	H	13.5	1.65

Additives: Retarder, Fluid Loss & LCM based as needed

4 DRILLING FLUIDS PROGRAM

Section	Type	Weight (ppg)	Vis	pH	Water Loss (cc)	Remarks
Surface	Spud	8.4-9	30-80	8-11	NC	WBM
Production	OBM	8.6-9.2	40-70	8-10	< 8	OBM

NC = No Control

Sufficient quantities of mud material will be maintained on site or be readily accessible for the purpose of assuring well control SPR will be recorded on daily drilling report after mudding up Electronic / mechanical mud monitoring equipment will be utilized and will include a pit volume totalizer (PVT), stroke counter, and flow sensor as a minimum.

5 EVALUATION PROGRAM

Logs (w/ Drilling): MWD & Gamma Ray
 Open Hole Logs: None Planned

Cores: None Planned
DSTs: None Planned

6 ABNORMAL CONDITIONS

No anticipated abnormal pressures or temperatures expected to be encountered. No hydrogen sulfide expected.

Anticipated Bottomhole Pressure: 3563 psi

7 OTHER INFORMATION

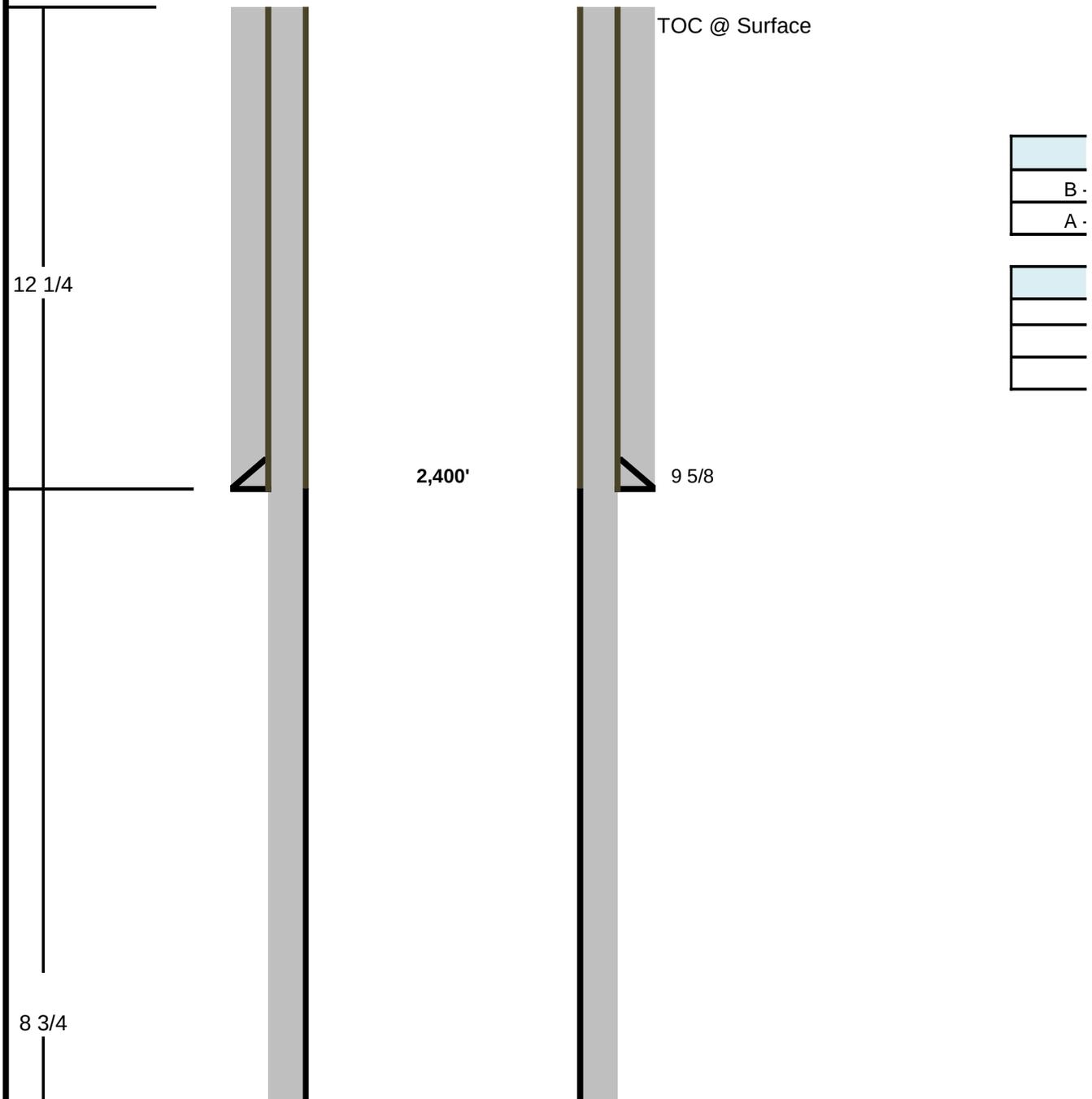
The anticipated starting date and duration of the drilling and completion operations will be as follows:

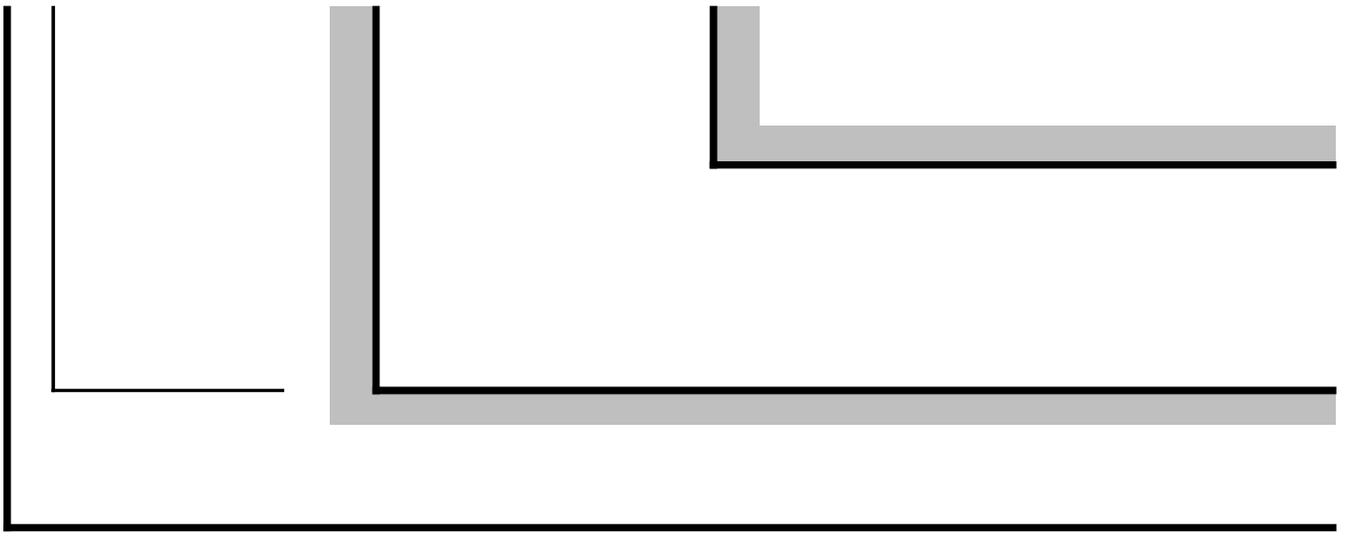
Start Date Upon Approval

Duration 60 days

Well: PRU High Point 4-28H16
Field: North Park
County: Jackson, Colorado
Surface: Sec 28 T8N R80W
PBHL: Sec 16 T8N R80W
GL: 8,196'

KB: 8,222'







Wellhead Equipment	
· Section	11" 5M x 7 1/16" 5M
· Section	9 5/8" SOW x 11" 5M

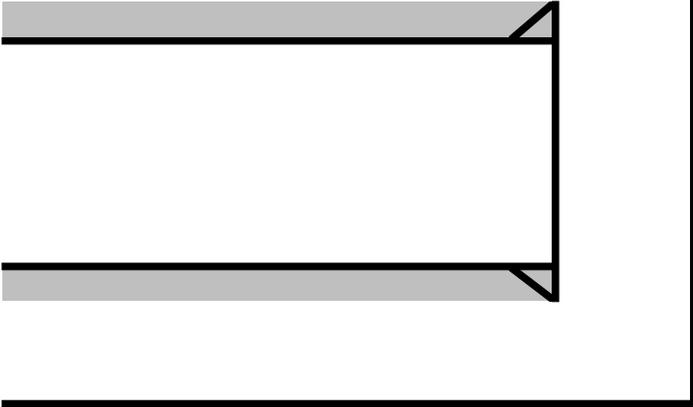
Tubular Detail						
	Size	Wt	Grade	Conn	From	To
Surface	9 5/8	36#	J55	LTC	0	2400'
Prod	5 1/2	20#	P110	BK	0	19567'

Logging Program			
	Detail	From	To
	Gamma Ray	KOP	TD

Directional Plan		
Section	MD	TVD
KOP	7501	7478
NIO	7817	7770
LP	8290	7984
TD	19567	7787

Directional Plan		
Form	TVD	Oil&Gas/H2O
Lance	4090	-
Fox Hills	4120	-
Sussex	5650	-
Shannon	6140	-
Lower Pierre	6460	-
Niobrara	7770	Oil & Gas

5 1/2 @ 19567'



Header Information	measured depth (ft)	inclination (°)	azimuth (°)	true vertical depth (ft)
Operator Name	0	0	0	0
SandRidge Exploration & Production LLC	100	0	0	100
Operator Number	200	0	0	200
10598	300	0	0	300
Well Name and Number	400	0	0	400
PRU High Point 4-28H16	500	0	0	500
API Number (if available)	600	0	0	600
	700	0	0	700
Location: QQ SEC TWP RGE	800	0	0	800
Sec 28 T8N R80W	900	0	0	900
Citing Type: Planned or Actual	1000	0	0	1000
Planned	1100	0	0	1100
Deviation Indicator	1200	0	0	1200
	1300	0	0	1300
North Reference	1400	0	0	1400
	1500	2	225	1500
End Type	1600	4	225	1600
	1655	5	225	1655
	1700	5	225	1699
	1800	5	225	1799
	1900	5	225	1899
	2000	5	225	1998
	2100	5	225	2098
	2200	5	225	2198
	2300	5	225	2297
	2400	5	225	2397
	2500	5	225	2496
	2600	5	225	2596
	2700	5	225	2696
	2800	5	225	2795
	2900	5	225	2895
	3000	5	225	2994
	3100	5	225	3094
	3200	5	225	3194
	3300	5	225	3293
	3400	5	225	3393
	3500	5	225	3492
	3600	5	225	3592
	3700	5	225	3692
	3800	5	225	3791
	3900	5	225	3891
	4000	5	225	3990
	4100	5	225	4090
	4200	5	225	4190
	4300	5	225	4289
	4400	5	225	4389
	4500	5	225	4488
	4600	5	225	4588
	4700	5	225	4688
	4800	5	225	4787
	4900	5	225	4887
	5000	5	225	4986
	5100	5	225	5086

5200	5	225	5186
5300	5	225	5285
5400	5	225	5385
5500	5	225	5484
5600	5	225	5584
5700	5	225	5684
5800	5	225	5783
5900	5	225	5883
6000	5	225	5982
6100	5	225	6082
6200	5	225	6182
6300	5	225	6281
6400	5	225	6381
6500	5	225	6480
6600	5	225	6580
6700	5	225	6680
6800	5	225	6779
6900	5	225	6879
7000	5	225	6979
7100	5	225	7078
7200	5	225	7178
7300	5	225	7277
7400	5	225	7377
7501	5	225	7478
7525	4	258	7501
7550	4	302	7526
7575	6	326	7551
7600	9	337	7576
7625	12	342	7601
7650	15	346	7625
7675	18	349	7649
7700	21	350	7673
7725	24	352	7696
7750	26	353	7718
7775	29	354	7741
7800	32	354	7762
7825	35	355	7783
7850	38	355	7803
7875	41	356	7822
7900	44	356	7840
7925	47	357	7858
7950	50	357	7874
7975	53	357	7890
8000	56	358	7904
8025	59	358	7917
8050	62	358	7929
8075	65	358	7940
8100	68	358	7950
8125	71	359	7959
8150	74	359	7966
8175	77	359	7972
8200	80	359	7977
8225	83	359	7981
8250	86	360	7983
8275	89	360	7984
8290	91	360	7984

8300	91	360	7984
8400	91	360	7982
8500	91	360	7980
8600	91	360	7979
8700	91	360	7977
8800	91	360	7975
8900	91	360	7973
9000	91	360	7972
9100	91	360	7970
9200	91	360	7968
9300	91	360	7966
9400	91	360	7965
9500	91	360	7963
9600	91	360	7961
9700	91	360	7960
9800	91	360	7958
9900	91	360	7956
10000	91	360	7954
10100	91	360	7953
10200	91	360	7951
10300	91	360	7949
10400	91	360	7947
10500	91	360	7946
10600	91	360	7944
10700	91	360	7942
10800	91	360	7940
10900	91	360	7939
11000	91	360	7937
11100	91	360	7935
11200	91	360	7933
11300	91	360	7932
11400	91	360	7930
11500	91	360	7928
11600	91	360	7926
11700	91	360	7925
11800	91	360	7923
11900	91	360	7921
12000	91	360	7919
12100	91	360	7918
12200	91	360	7916
12300	91	360	7914
12400	91	360	7912
12500	91	360	7911
12600	91	360	7909
12700	91	360	7907
12800	91	360	7905
12900	91	360	7904
13000	91	360	7902
13100	91	360	7900
13200	91	360	7898
13300	91	360	7897
13400	91	360	7895
13500	91	360	7893
13600	91	360	7891
13700	91	360	7890
13800	91	360	7888

13900	91	360	7886
14000	91	360	7884
14100	91	360	7883
14200	91	360	7881
14300	91	360	7879
14400	91	360	7878
14500	91	360	7876
14600	91	360	7874
14700	91	360	7872
14800	91	360	7871
14900	91	360	7869
15000	91	360	7867
15100	91	360	7865
15200	91	360	7864
15300	91	360	7862
15400	91	360	7860
15500	91	360	7858
15600	91	360	7857
15700	91	360	7855
15800	91	360	7853
15900	91	360	7851
16000	91	360	7850
16100	91	360	7848
16200	91	360	7846
16300	91	360	7844
16400	91	360	7843
16500	91	360	7841
16600	91	360	7839
16700	91	360	7837
16800	91	360	7836
16900	91	360	7834
17000	91	360	7832
17100	91	360	7830
17200	91	360	7829
17300	91	360	7827
17400	91	360	7825
17500	91	360	7823
17600	91	360	7822
17700	91	360	7820
17800	91	360	7818
17900	91	360	7816
18000	91	360	7815
18100	91	360	7813
18200	91	360	7811
18300	91	360	7809
18400	91	360	7808
18500	91	360	7806
18600	91	360	7804
18700	91	360	7802
18800	91	360	7801
18900	91	360	7799
19000	91	360	7797
19100	91	360	7795
19200	91	360	7794
19300	91	360	7792
19400	91	360	7790

19500	91	360	7789
19567	91	360	7787

northing +N/-S (ft)	easting +E/-W (ft)
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
-1	-1
-5	-5
-8	-8
-11	-11
-17	-17
-24	-23
-30	-29
-36	-36
-43	-42
-49	-48
-55	-54
-62	-61
-68	-67
-74	-73
-81	-79
-87	-86
-93	-92
-100	-98
-106	-104
-112	-111
-119	-117
-125	-123
-131	-129
-138	-136
-144	-142
-150	-148
-156	-154
-163	-160
-169	-167
-175	-173
-182	-179
-188	-185
-194	-192
-201	-198
-207	-204
-213	-210
-220	-217
-226	-223

-232	-229
-239	-235
-245	-242
-251	-248
-258	-254
-264	-260
-270	-266
-277	-273
-283	-279
-289	-285
-296	-291
-302	-298
-308	-304
-315	-310
-321	-316
-327	-323
-334	-329
-340	-335
-346	-341
-353	-348
-359	-354
-365	-360
-372	-366
-378	-373
-379	-374
-379	-376
-377	-377
-374	-379
-370	-380
-364	-382
-358	-383
-350	-385
-340	-386
-330	-388
-318	-389
-305	-391
-291	-392
-277	-393
-261	-394
-244	-396
-226	-397
-207	-398
-187	-399
-167	-400
-146	-401
-124	-401
-101	-402
-79	-403
-55	-403
-31	-404
-7	-404
18	-405
42	-405
67	-405
92	-405
107	-405

117	-405
217	-405
317	-405
417	-405
517	-405
617	-405
717	-406
817	-406
917	-406
1017	-406
1117	-406
1217	-406
1317	-406
1417	-406
1517	-406
1617	-406
1717	-406
1817	-406
1917	-406
2017	-406
2117	-406
2217	-406
2317	-406
2417	-407
2517	-407
2617	-407
2717	-407
2817	-407
2917	-407
3017	-407
3117	-407
3217	-407
3317	-407
3417	-407
3517	-407
3617	-407
3717	-407
3817	-407
3917	-407
4017	-407
4117	-407
4217	-408
4317	-408
4417	-408
4517	-408
4616	-408
4716	-408
4816	-408
4916	-408
5016	-408
5116	-408
5216	-408
5316	-408
5416	-408
5516	-408
5616	-408

5716	-408
5816	-408
5916	-409
6016	-409
6116	-409
6216	-409
6316	-409
6416	-409
6516	-409
6616	-409
6716	-409
6816	-409
6916	-409
7016	-409
7116	-409
7216	-409
7316	-409
7416	-409
7516	-409
7616	-410
7716	-410
7816	-410
7916	-410
8016	-410
8116	-410
8216	-410
8316	-410
8416	-410
8516	-410
8616	-410
8716	-410
8816	-410
8916	-410
9016	-410
9116	-410
9216	-410
9316	-411
9416	-411
9516	-411
9616	-411
9716	-411
9816	-411
9916	-411
10016	-411
10116	-411
10216	-411
10316	-411
10416	-411
10516	-411
10616	-411
10716	-411
10816	-411
10916	-411
11016	-412
11115	-412
11215	-412

11315	-412
11383	-412

Well Name PRU High Point 4-28H16
 Surface Location Sec 28 T8N R80W
 Bottom Hole Location Sec 16 T8N R80W
 Field North Park
 County, State Jackson, Colorado
 Operator Number 10598
 Ground Elevation 8196
 RKB 26
 Target Formation Niobrara
 Surface Csg Depth 2400
 Surf Csg Size 9 5/8
 Surf Hole Size 12 1/4
 Prod Csg Size 5 1/2
 Prod Hole Size 8 3/4
 Target TVD 7985
 B - Section 11" 5M x 7 1/16" 5M
 A - Section 9 5/8" SOW x 11" 5M
 Logs (w/ Drilling): MWD & Gamma Ray
 Open Hole Logs: None Planned
 Cores: None Planned
 DSTs: None Planned
 Blind Rams 5000 psi
 Pipe Rams 5000 psi
 Annular 5000 psi

Form	TVD	Oil&Gas/H2O
Lance	4090	-
Fox Hills	4120	-
Sussex	5650	-
Shannon	6140	-
Lower Pierre	6460	-
Niobrara	7770	Oil & Gas

Section	MD (ft)	TVD (ft)	Oil&Gas/H2O
KOP	7501	7478	Oil&Gas
Niobrara	7817	7770	Oil&Gas
Land Pt	8290	7984	Oil&Gas
TD	19567	7787	Oil&Gas

316

292

APD ID: 10400047165

Submission Date: 09/16/2019

Highlighted data
reflects the most
recent changes

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Existing Roads

Will existing roads be used? NO

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

PRU_High_Point_Roads_pipeline_electrical_20190911094527.pdf

New road type: LOCAL

Length: 4264 Feet

Width (ft.): 40

Max slope (%): 2

Max grade (%): 7

Army Corp of Engineers (ACOE) permit required? N

ACOE Permit Number(s):

New road travel width: 16

New road access erosion control: If identified during/after construction of the access road, erosion control methods such as wattles, straw bales, and ditches will be used

New road access plan or profile prepared? N

New road access plan attachment:

Access road engineering design? N

Access road engineering design attachment:

Turnout? Y

Access surfacing type: GRAVEL

Access topsoil source: ONSITE

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

Access surfacing type description:

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: A minimum of 6" of topsoil will be removed prior to location construction. Topsoil will be stockpiled adjacent to the wellsite within the disturbed area and will be segregated from other material and clearly marked. Topsoil will be stored in a safe location and will be reseeded if stored for longer than 6 months.

Access other construction information: Access Road is proposed to be 16' travel width with a 40' construction corridor. There will be 6 turnouts located along the length of the road. Each Turnout will be 18' wide by 150' long for a total disturbance of 0.37 acres. The turnouts will fit within the construction corridor. Construction disturbance of the road will be 3.91 acres. Reclaimed disturbance of the road (including allowing for turnouts) will be - 1.77 acres

Access miscellaneous information:

Number of access turnouts: 6

Access turnout map:

Drainage Control

New road drainage crossing: CULVERT

Drainage Control comments: if necessary, culverts will be installed prior to drilling operations. Riprap will be places at inlet and outlet of culverts. The bar ditches along the road will be reseeded to landowner specifications.

Road Drainage Control Structures (DCS) description: drainage may consist of wing ditches if and where necessary. bar ditches will be reseeded to landowner specifications

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Section 3 - Location of Existing Wells

Existing Wells Map? NO

Attach Well map:

Existing Wells description: There are no existing wells

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: Production Facilities will be on the Marmot 0880 S19 CTB. Marmot is on Private surface and will service private wells in addition to BLM wells. It is currently being constructed. There will be NO NEW DISTURBANCE caused by these APDs. It will be built regardless of BLM permission through this APD. Marmot has already been NEPA analyzed for the following wells: 1) PRU 0880 2-29H17 (API 050570661200) 2) PRU 0880 6-29H17 (API 050570661300)

Production Facilities map:

Marmot_0880_S19_Prod_Fac_Map_20190911093318.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

Water source type: PERENNIAL SURFACE

Water source use type: SURFACE CASING
STIMULATION
DUST CONTROL
INTERMEDIATE/PRODUCTION CASING

Source latitude: 40.635874

Source longitude: -106.395058

Source datum: NAD83

Water source permit type: PRIVATE CONTRACT

Water source transport method: PIPELINE

Source land ownership: PRIVATE

Source transportation land ownership: PRIVATE

Water source volume (barrels): 210000

Source volume (acre-feet): 27.06755023

Source volume (gal): 8820000

Water source and transportation map:

High_Point_0880_S28_Temp_Waterline_24k_20190913062713.pdf

Water source comments: source transportation was chosen as private. This is because that vast majority of the length of temporary water line will be on private surface

New water well? N

New Water Well Info

Well latitude:

Well Longitude:

Well datum:

Well target aquifer:

Est. depth to top of aquifer(ft):

Est thickness of aquifer:

Aquifer comments:

Aquifer documentation:

Well depth (ft):

Well casing type:

Well casing outside diameter (in.):

Well casing inside diameter (in.):

New water well casing?

Used casing source:

Drilling method:

Drill material:

Grout material:

Grout depth:

Casing length (ft.):

Casing top depth (ft.):

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

Well Production type:

Completion Method:

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Using any construction materials: YES

Construction Materials description: Construction Materials will consist of pit gravel from High Country Hard Rock . Pit is located at 122 CR 15D Walden, CO 80480

Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: drill cuttings and fluids

Amount of waste: 2500 barrels

Waste disposal frequency : Weekly

Safe containment description: Drill cuttings will be treated per sandridge's north park production waste management plan which was approved by COGCC. a closed loop system will be used. During completion and testing produced fluid will be contained in frac tanks. Contractors will maintain their own SPCC plans. SandRidge will maintain an SPCC plan that will include all production facilities.

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE

Disposal type description:

Disposal location description: liquids sent to Polar bear or a private SWD cuttings taken to Twin Enviro

Waste type: SEWAGE

Waste content description: Portable toilet waste

Amount of waste: 0 gallons

Waste disposal frequency : Weekly

Safe containment description: sewage will be disposed of according to state and local regulations. We will hire a third party contractor to handle this for us and they will remove waste as needed from location

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE

Disposal type description:

Disposal location description: commercial disposal facility

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

Waste type: GARBAGE

Waste content description: trash and various waste from location

Amount of waste: 0 pounds

Waste disposal frequency : Weekly

Safe containment description: Garbage will be kept in a enclosed portable cage on location. Amount is marked as 0 because its impossible to know what will be necessary. Trash will be removed by third party weekly or as needed

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE

Disposal type description:

Disposal location description: a third party contractor will haul garbage from our location. They will decide the location it is taken. Location will be approved by CDPHE

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit? NO

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? Y

Description of cuttings location 3 sided bins

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: Y

Ancillary Facilities attachment:

PRU_High_Point_Roads_pipeline_electrical_20190911093604.pdf

Comments: SandRidge will require a buried powerline. The powerline will be buried approximately 3' deep. Total length will be 4,264 feet and disturbance will be 20 feet wide (1.95 acres). 648 of this will be on BLM (0.29 acres) the rest will be on private (1.66 acres) Additionally - SandRidge will require four (4) 6" polyflow PE flex pipelines that will run down the lease road from High Point to Highway 14. The pipes will be buried at least 6' deep. 2 will be for oil and one will be for gas and the last will be for produced water. 648' of this pipeline ROW will be on BLM surface and it will be 40' in width during construction (0.59 acres). The remaining 3616' of ROW will be on private surface and it will be 40' in width (3.3 acres). The pipeline corridor will be fully reclaimed to the requirements listed in this form leaving very little disturbance (0.29 acres). Long term disturbance on BLM will be zero after final reclamation and a BLM seed mix will be used Total Disturbance (pipeline and powerline) BLM Initial 0.88 acres Interim 0.05 acres Final 0 acres FEE Initial 4.96 Interim 0.24 Final - 0

Section 9 - Well Site Layout

Well Site Layout Diagram:

PRU_High_Point_Wellsite_Diagram_20190911094211.pdf

wildlife_fence_20200108135551.JPG

Comments: SandRidge will be constructing a fence around the High Point location in order to keep big game and grazing off location. We will be using CPWs wildlife friendly fencing guide that I have attached. SandRidge will construct this fence around the entire disturbed area of this location.

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: High Point

Multiple Well Pad Number: S28

Recontouring attachment:

Drainage/Erosion control construction: Any of the following may be installed for drainage and erosion control at High Point: Diversion ditches/water bars, appropriate slope, drainage dips, ditches, turnouts, culverts, berms, silt fences, straw bales/crimping, surface roughening, catch basins/sediment traps, permanent vegetation. Selection will be done on a case by case basis

Drainage/Erosion control reclamation: Any of the following may be installed for drainage and erosion control at High Point: Diversion ditches/water bars, appropriate slope, drainage dips, ditches, turnouts, culverts, berms, silt fences, straw bales/crimping, surface roughening, catch basins/sediment traps, permanent vegetation. Selection will be done on a case by case basis

Well pad proposed disturbance (acres): 5.41

Well pad interim reclamation (acres): 0.99

Well pad long term disturbance (acres): 0

Road proposed disturbance (acres): 3.91

Road interim reclamation (acres): 2.14

Road long term disturbance (acres): 1.66

Powerline proposed disturbance (acres): 1.95

Powerline interim reclamation (acres): 1.95

Powerline long term disturbance (acres): 0

Pipeline proposed disturbance (acres): 4.04

Pipeline interim reclamation (acres): 3.75

Pipeline long term disturbance (acres): 0

Other proposed disturbance (acres): 0

Other interim reclamation (acres): 0

Other long term disturbance (acres): 0

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

Total proposed disturbance:
15.309999999999999

Total interim reclamation: 8.83

Total long term disturbance: 1.66

Disturbance Comments: Upon abandonment of the well, SandRidge will return all disturbed areas on federally owned surface to their original contour. Additionally, SandRidge will return topsoil to its original location and a weed free seed mixture approved by BLM will be used to restore the location. SandRidge will monitor reclaimed areas until 70% of the area has been restored. Monitoring will continue annually until this goal has been met.

Reconstruction method: A Dozer and Grader will be used to return all disturbed areas to their original contours. Topsoil will be returned to its original location and an approved, weed free seed mixture will be used to restore the location

Topsoil redistribution: topsoil will be stored separate from other soil horizons on location and will be clearly marked to identify it. Upon interim/final reclamation topsoil will be place back in its original position

Soil treatment: Non anticipated

Existing Vegetation at the well pad: Please see Biological Evaluation

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Please see biological Evaluation

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: Please see biological evaluation

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: Please see biological evaluation

Existing Vegetation Community at other disturbances attachment:

Non native seed used? N

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? N

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? N

Seed harvest description:

Seed harvest description attachment:

[Seed Management](#)

[Seed Table](#)

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre
-----------	-------------

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name:

Last Name:

Phone:

Email:

Seedbed prep: seed bed prep will consist of tilling 4-6 inches deep prior to seeding. After surface has been re-contoured. Seeding will be conducted within 24 hours. Certified weed free seed will be used. Seed mix will be approved by surface owner

Seed BMP:

Seed method:

Existing invasive species? N

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: Weeds will be controlled on all disturbed areas. SandRidge will submit a pesticide use proposal before pesticide application begins. All reclamation equipment will be cleaned before moving onto the site.

Weed treatment plan attachment:

Monitoring plan description: SandRidge will monitor reclaimed areas until 70% of the area has been restored. Monitoring will continue annually until this goal has been met

Monitoring plan attachment:

Success standards: 70% predisturbance conditions with 90% dominant species

Pit closure description: not applicable

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: PIPELINE

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT,PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

Fee Owner: TRK properties

Fee Owner Address: 600 Parsons

Phone: (307)421-5524

Email:

Surface use plan certification: NO

Surface use plan certification document:

Surface access agreement or bond: AGREEMENT

Surface Access Agreement Need description: We have a Memo of agreement with TRK for surface access.

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT,PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

Fee Owner: TRK Properties

Fee Owner Address: 600 parsons

Phone: (307)421-5524

Email:

Surface use plan certification: NO

Surface use plan certification document:

Surface access agreement or bond: AGREEMENT

Surface Access Agreement Need description: We have a memo of agreement for surface access

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Disturbance type: TRANSMISSION LINE

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT,PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

Fee Owner: TRK Properties

Fee Owner Address: 600 Parsons

Phone: (307)421-5524

Email:

Surface use plan certification: NO

Surface use plan certification document:

Surface access agreement or bond: AGREEMENT

Surface Access Agreement Need description: We have a memo of agreement for surface access

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Section 12 - Other Information

Right of Way needed? N

Use APD as ROW?

ROW Type(s):

ROW Applications

SUPO Additional Information: SandRidge is unable to connect to a gas sales/marketing line in Jackson Co. due to the lack/nonexistence of marketing pipelines in this county. SandRidge is currently working on several scenarios to use, sell or transport gas produced from this well and all wells it operates in Jackson Co. but none of those plans/scenarios are finalized; therefore, SandRidge will have to flare all produced gas made by this well through an enclosed combustor complying with COGCCs Rule 805 b. (1.) and CDPHE approved flaring methods only after permission is granted by BLM and COGCC. Lastly, gas is expected to decline from the initial production rate and contain 0 ppm of H2S.

Use a previously conducted onsite? N

Previous Onsite information:

Other SUPO Attachment

Peterson_Ridge_Unit_Order_No._531_47_20190910075705.pdf

2019_SPWRAP_Certificate_20190910094058.pdf

CO001445_000_REC_MEMO_OF_AGMT_B187_P772_20190911082000.pdf

SandRidge_PRU_High_Point_0880_4_28H16_well_Waste_Minimization_Plan_20190912081318.pdf

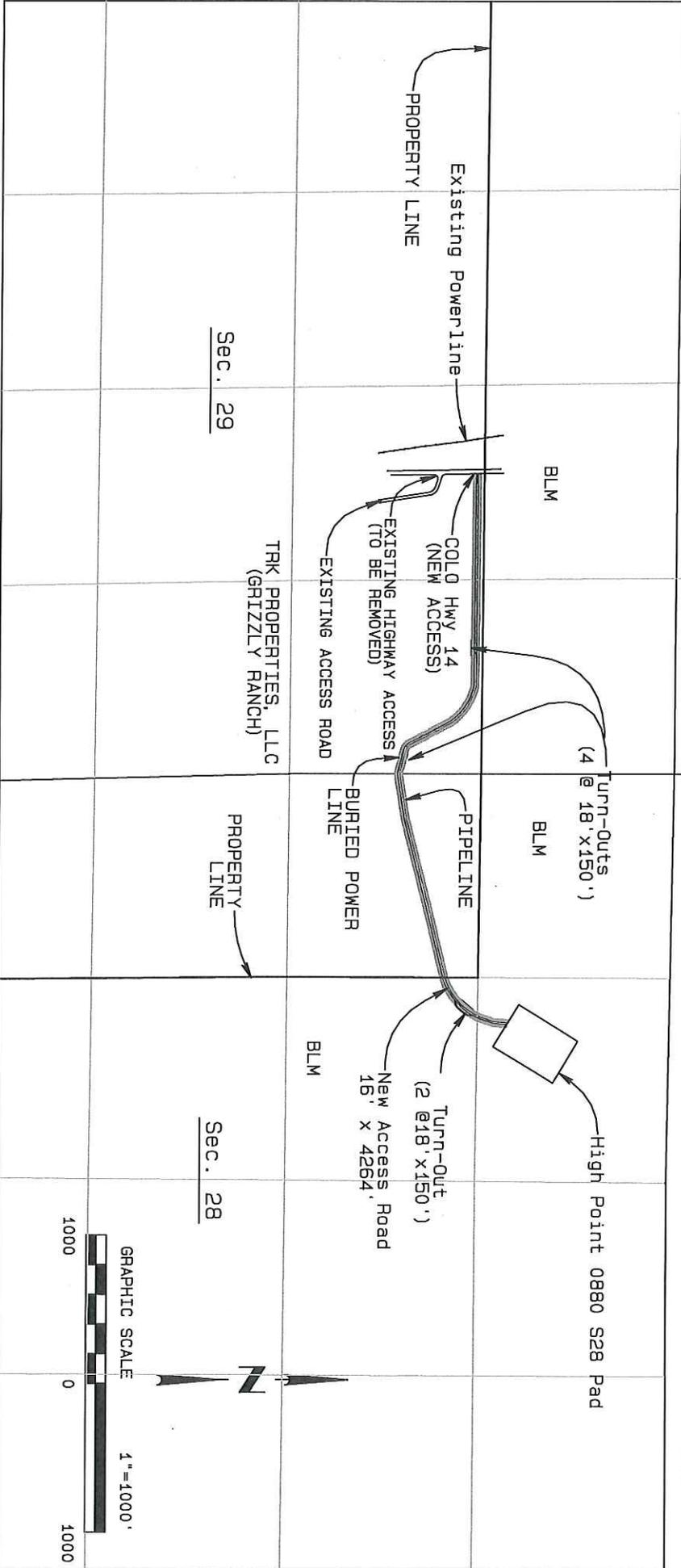
PRU_High_Point_0880_4_28H16_LUA__20200130074619.pdf

2019_North_Park_High_Point_Phacelia_Survey_Final_Report_9306_20200309074858.pdf

High_Point_Pad_Biological_Evaluation_Final_February_2020_20200309074904.pdf

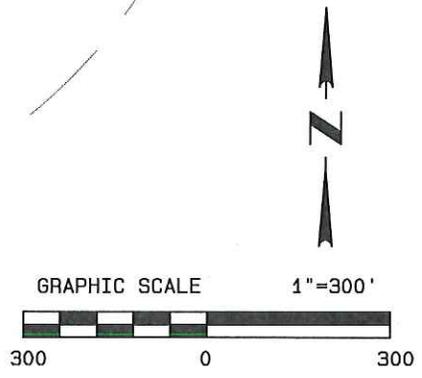
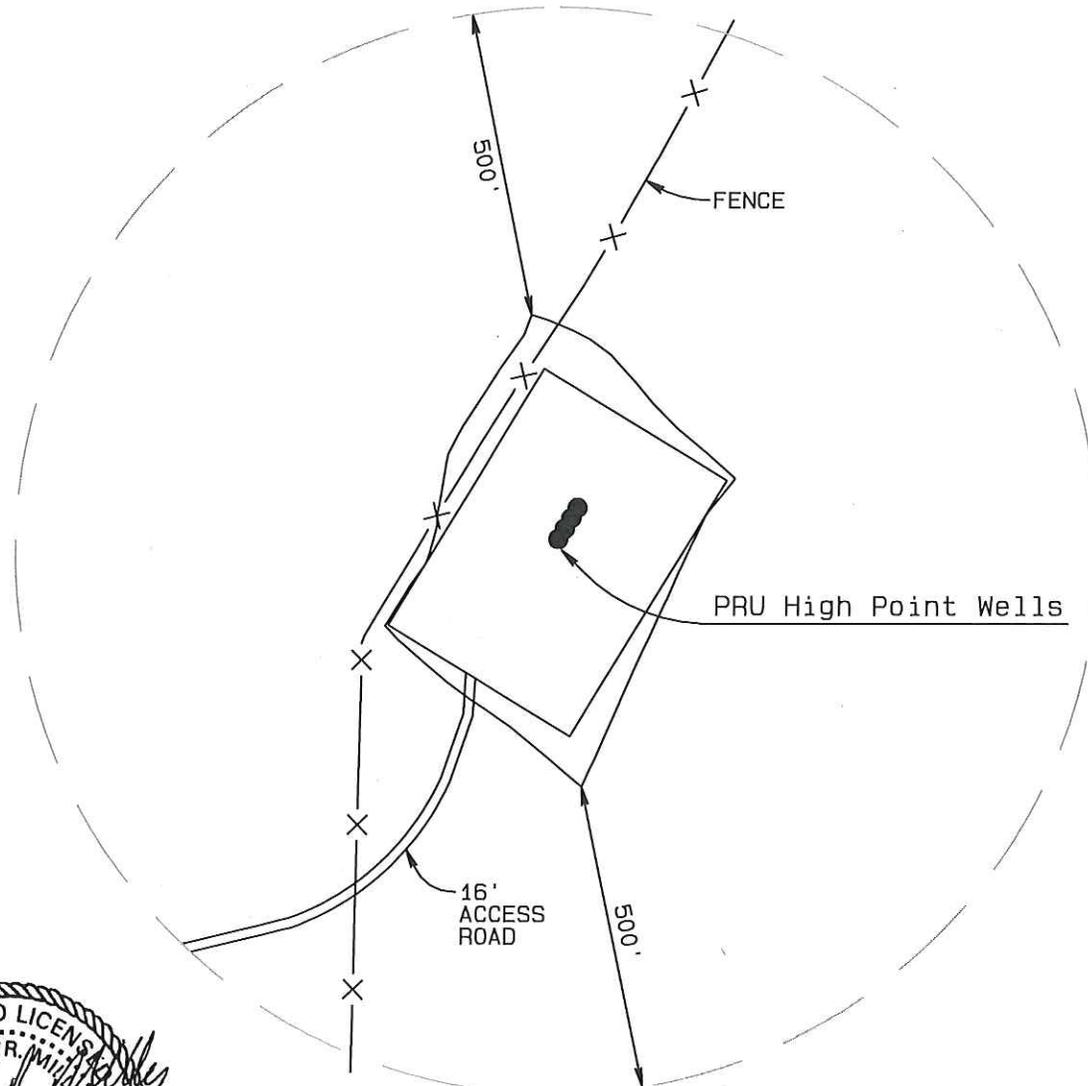
SandRidge Exploration & Production, LLC
ACCESS ROAD, PIPELINE & ELECTRIC LINE PLAT
 High Point 0880 S28 Pad
 Sections 28, and 29, T8N, R80W, 6th P.M.,
 Jackson County, Colorado.

GRIZZLY RANCH	
NEW ACCESS ROAD	3616'
TURN-OUTS (4)	600'
BLM NEW ACCESS ROAD	648'
TURN-OUTS (2)	300'



SandRidge Exploration & Production, LLC

LOCATION OVERVIEW DRAWING
 High Point 0880 S28 Pad
 NE1/4NW1/4 of Section 28, T8N, R80W, 6th P.M.
 Jackson County, Colorado.



DISTURBED AREA FOR DRILL PAD

BEFORE RECLAMATION:
 PAD TOTAL=5.41 Ac
 AFTER RECLAMATION:
 PAD TOTAL=4.42 Ac

CULTURAL FEATURE TABLE FROM PROD FACILITIES

EXISTING FEATURE	DIRECTION	LENGTH
BUILDING	S70°13'W	3216'
BUILDING UNIT	S64°18'W	3284'
HIGH OCC. BUILDING UNIT		+5280'
DESIGNATED OUTSIDE AREA		+5280'
PUBLIC ROAD (JCR14)	S86°34'W	3597'
POWER LINE	S82°18'W	3840'
RAILROAD		+5280'
PROPERTY LINE	S38°56'W	382'

CURRENT LAND USE

- | | | | | | |
|--|-------------------------------------|-------------------------------------|---|---|------------------------------|
| <input type="checkbox"/> CROP LAND | <input type="checkbox"/> IRRIGATED | <input type="checkbox"/> DRY LAND | <input type="checkbox"/> IMPROVED PASTURE | <input type="checkbox"/> HAY MEADOW | <input type="checkbox"/> CRP |
| <input type="checkbox"/> NON-CROP LAND | <input type="checkbox"/> RANGELAND | <input type="checkbox"/> TIMBER | <input type="checkbox"/> RECREATIONAL | <input type="checkbox"/> OTHER (Describe) | |
| <input type="checkbox"/> SUBDIVIDED | <input type="checkbox"/> INDUSTRIAL | <input type="checkbox"/> COMMERCIAL | <input type="checkbox"/> RESIDENTIAL | | |

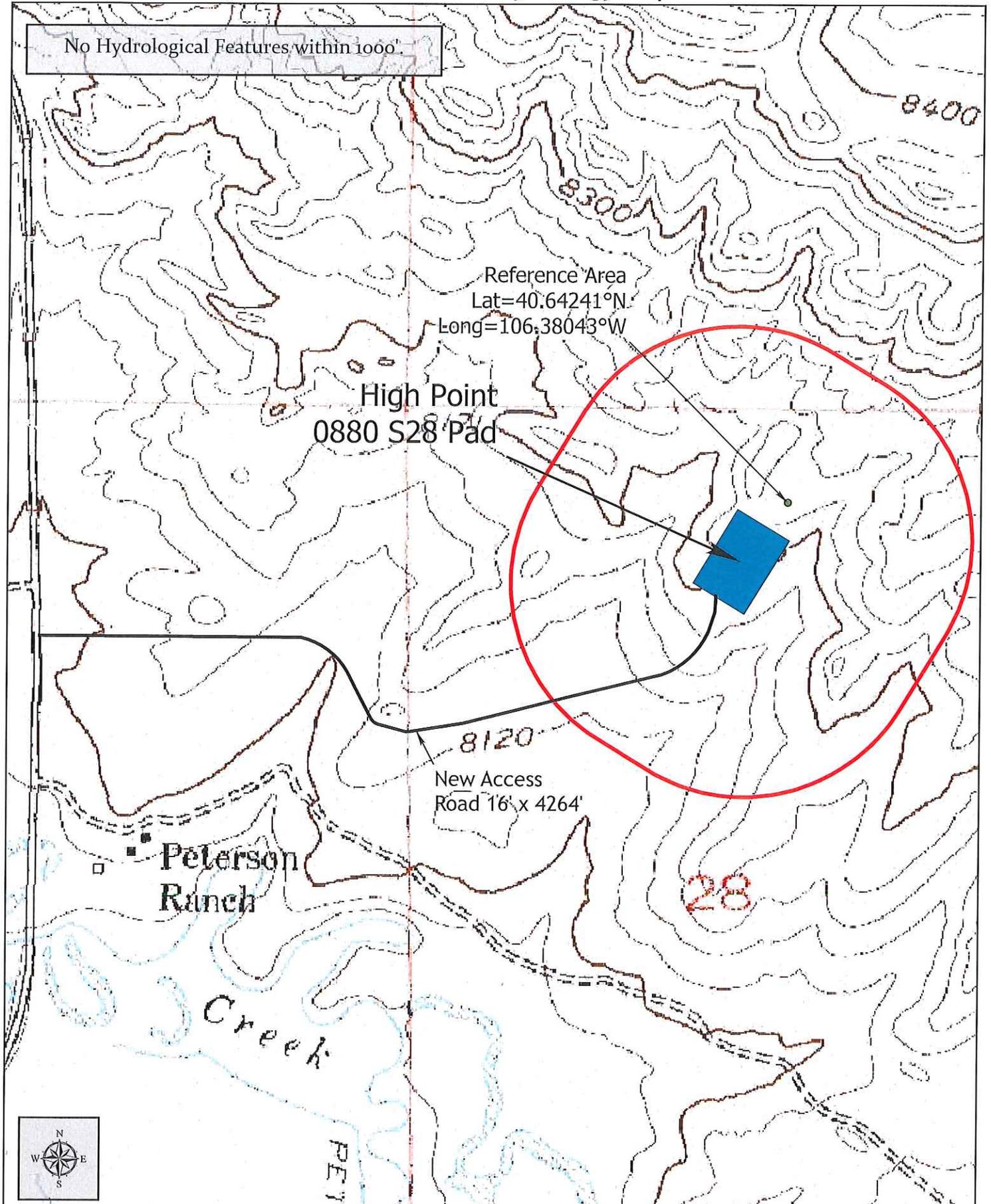
FUTURE LAND USE

- | | | | | | |
|--|-------------------------------------|-------------------------------------|---|---|------------------------------|
| <input type="checkbox"/> CROP LAND | <input type="checkbox"/> IRRIGATED | <input type="checkbox"/> DRY LAND | <input type="checkbox"/> IMPROVED PASTURE | <input type="checkbox"/> HAY MEADOW | <input type="checkbox"/> CRP |
| <input type="checkbox"/> NON-CROP LAND | <input type="checkbox"/> RANGELAND | <input type="checkbox"/> TIMBER | <input type="checkbox"/> RECREATIONAL | <input type="checkbox"/> OTHER (Describe) | |
| <input type="checkbox"/> SUBDIVIDED | <input type="checkbox"/> INDUSTRIAL | <input type="checkbox"/> COMMERCIAL | <input type="checkbox"/> RESIDENTIAL | | |

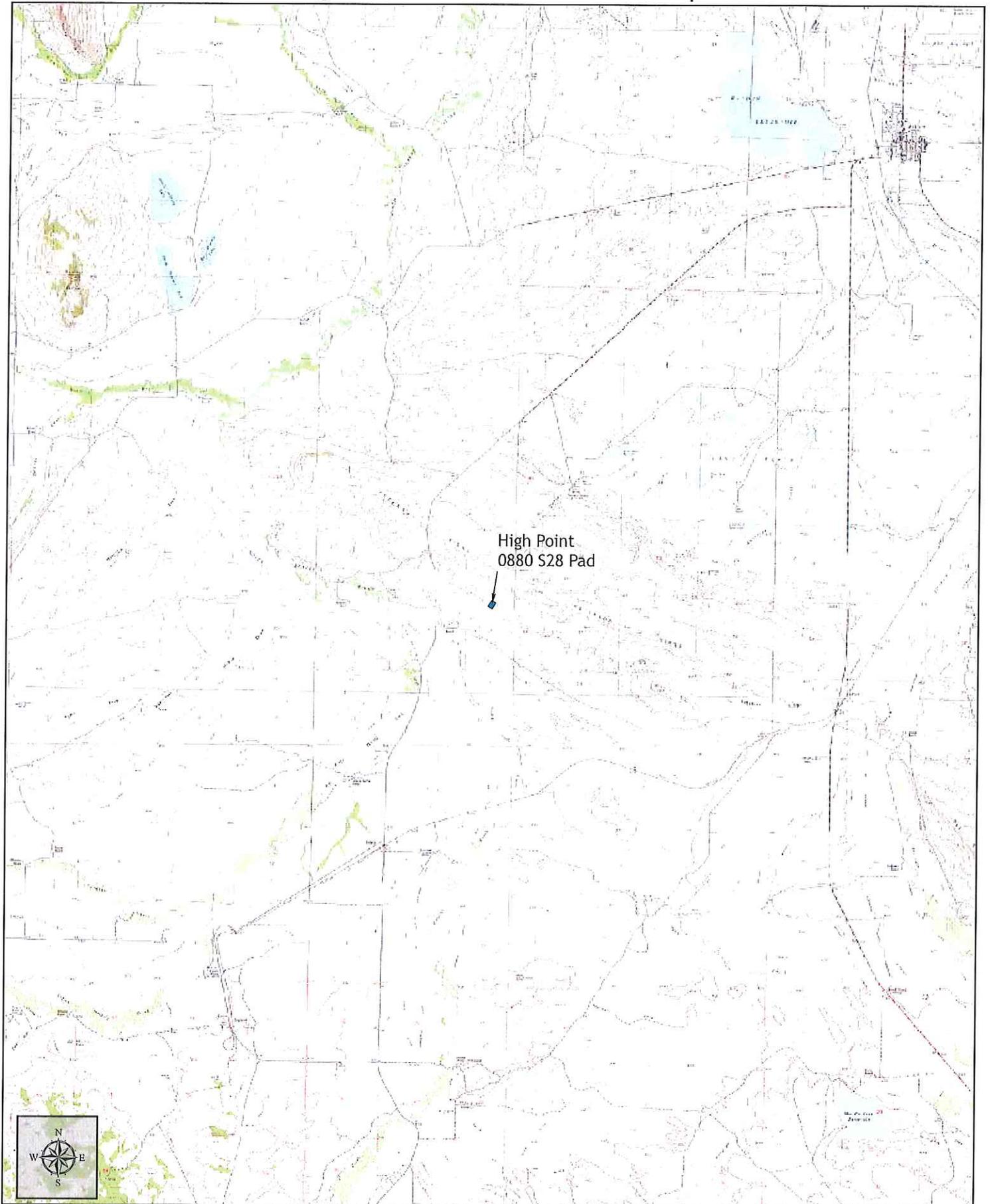
PLANT COMMUNITY

- DISTURBED GRASSLAND
- NATIVE GRASSLAND
- SHRUB LAND
- PLAINS RIPARIAN
- MOUNTAIN RIPARIAN
- FOREST LAND
- WETLANDS AQUATIC
- ALPINE
- OTHER (Describe): _____

High Point 0880 S28 Pad Hydrology Map w/ Access



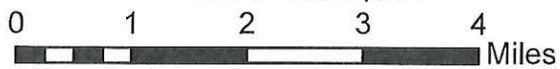
High Point 0880 S28 Pad 100k Map



High Point
0880 S28 Pad



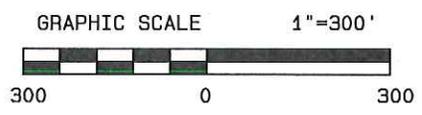
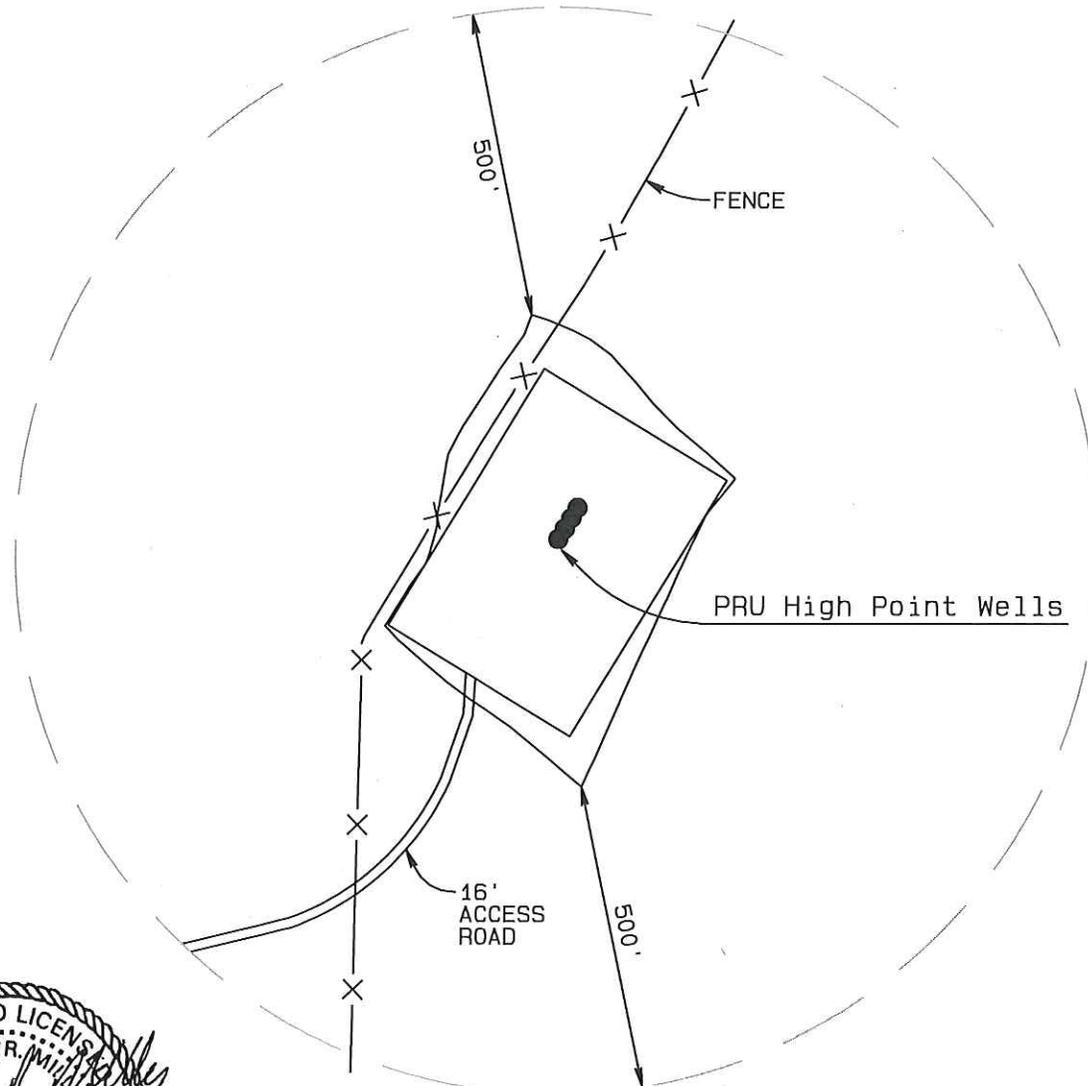
Scale: 1:100,000



SandRidge Exploration &
Production LLC.

SandRidge Exploration & Production, LLC

LOCATION OVERVIEW DRAWING
 High Point 0880 S28 Pad
 NE1/4NW1/4 of Section 28, T8N, R80W, 6th P.M.
 Jackson County, Colorado.



DISTURBED AREA FOR DRILL PAD

BEFORE RECLAMATION:
 PAD TOTAL=5.41 Ac
 AFTER RECLAMATION:
 PAD TOTAL=4.42 Ac

CULTURAL FEATURE TABLE FROM PROD FACILITIES

EXISTING FEATURE	DIRECTION	LENGTH
BUILDING	S70°13'W	3216'
BUILDING UNIT	S64°18'W	3284'
HIGH OCC. BUILDING UNIT		+5280'
DESIGNATED OUTSIDE AREA		+5280'
PUBLIC ROAD (JCR14)	S86°34'W	3597'
POWER LINE	S82°18'W	3840'
RAILROAD		+5280'
PROPERTY LINE	S38°56'W	382'

CURRENT LAND USE

- CROP LAND IRRIGATED DRY LAND IMPROVED PASTURE HAY MEADOW CRP
- NON-CROP LAND RANGELAND TIMBER RECREATIONAL OTHER (Describe) SUBDIVIDED INDUSTRIAL COMMERCIAL RESIDENTIAL

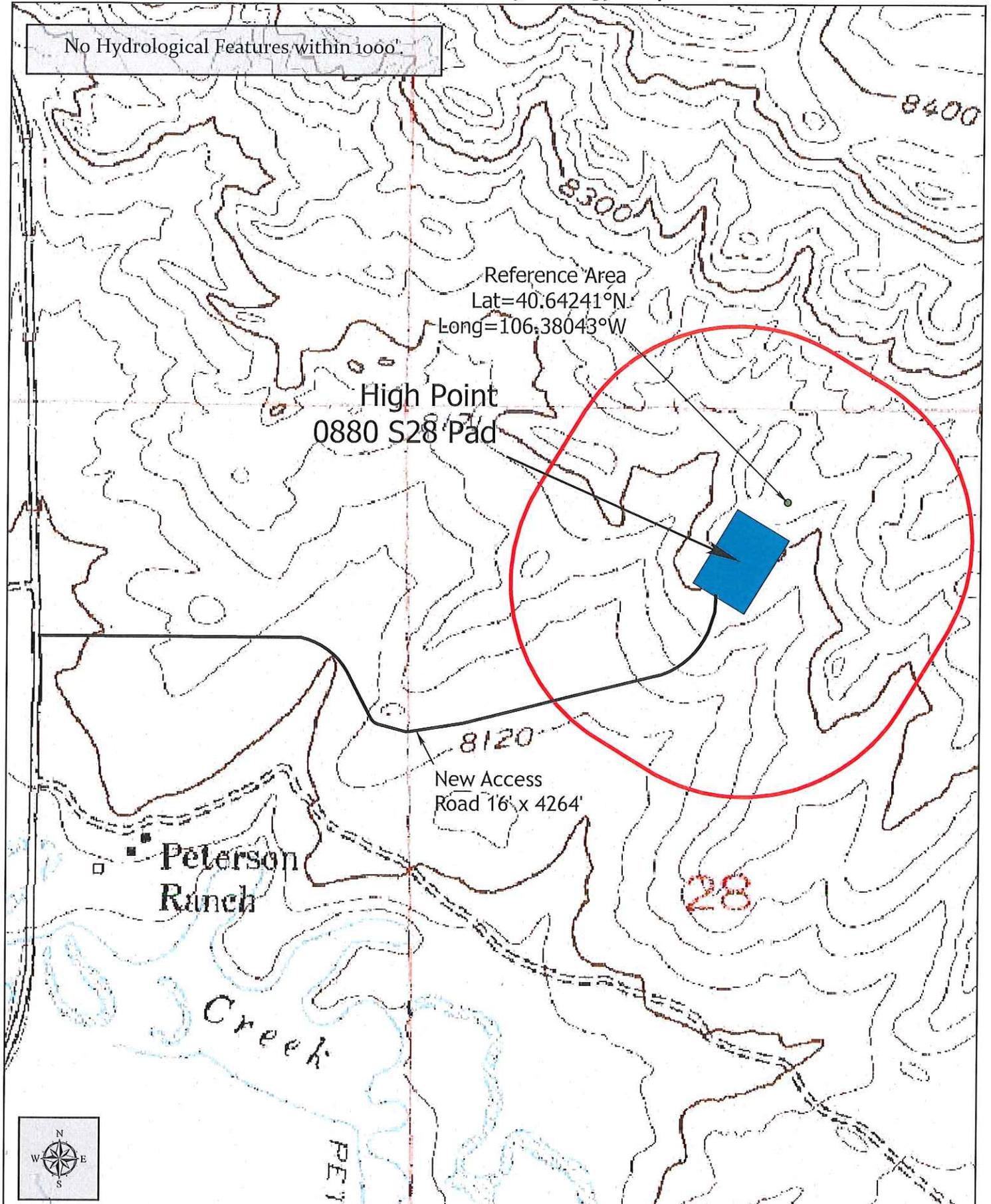
FUTURE LAND USE

- CROP LAND IRRIGATED DRY LAND IMPROVED PASTURE HAY MEADOW CRP
- NON-CROP LAND RANGELAND TIMBER RECREATIONAL OTHER (Describe) SUBDIVIDED INDUSTRIAL COMMERCIAL RESIDENTIAL

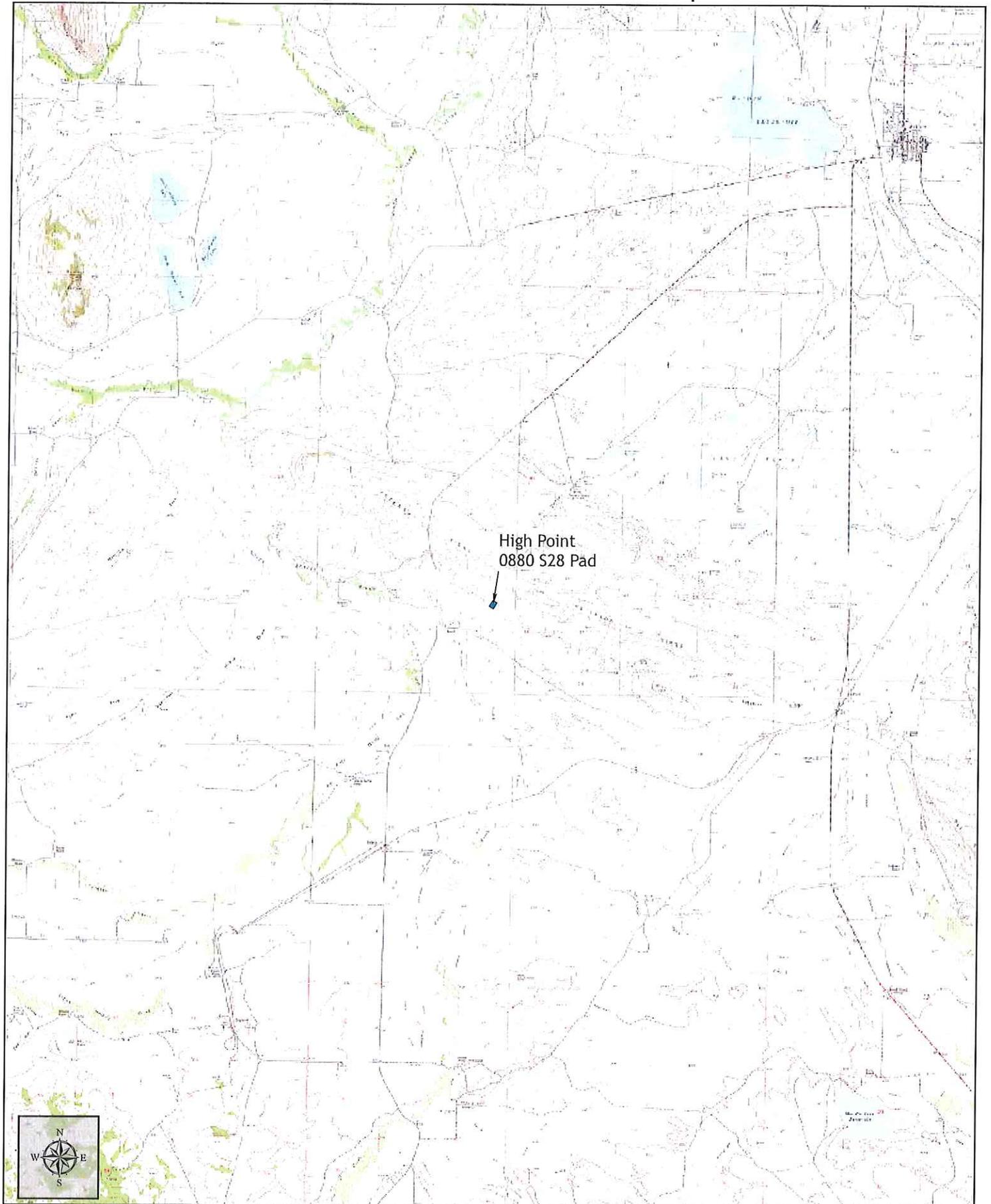
PLANT COMMUNITY

- DISTURBED GRASSLAND
- NATIVE GRASSLAND
- SHRUB LAND
- PLAINS RIPARIAN
- MOUNTAIN RIPARIAN
- FOREST LAND
- WETLANDS AQUATIC
- ALPINE
- OTHER (Describe): _____

High Point 0880 S28 Pad Hydrology Map w/ Access



High Point 0880 S28 Pad 100k Map



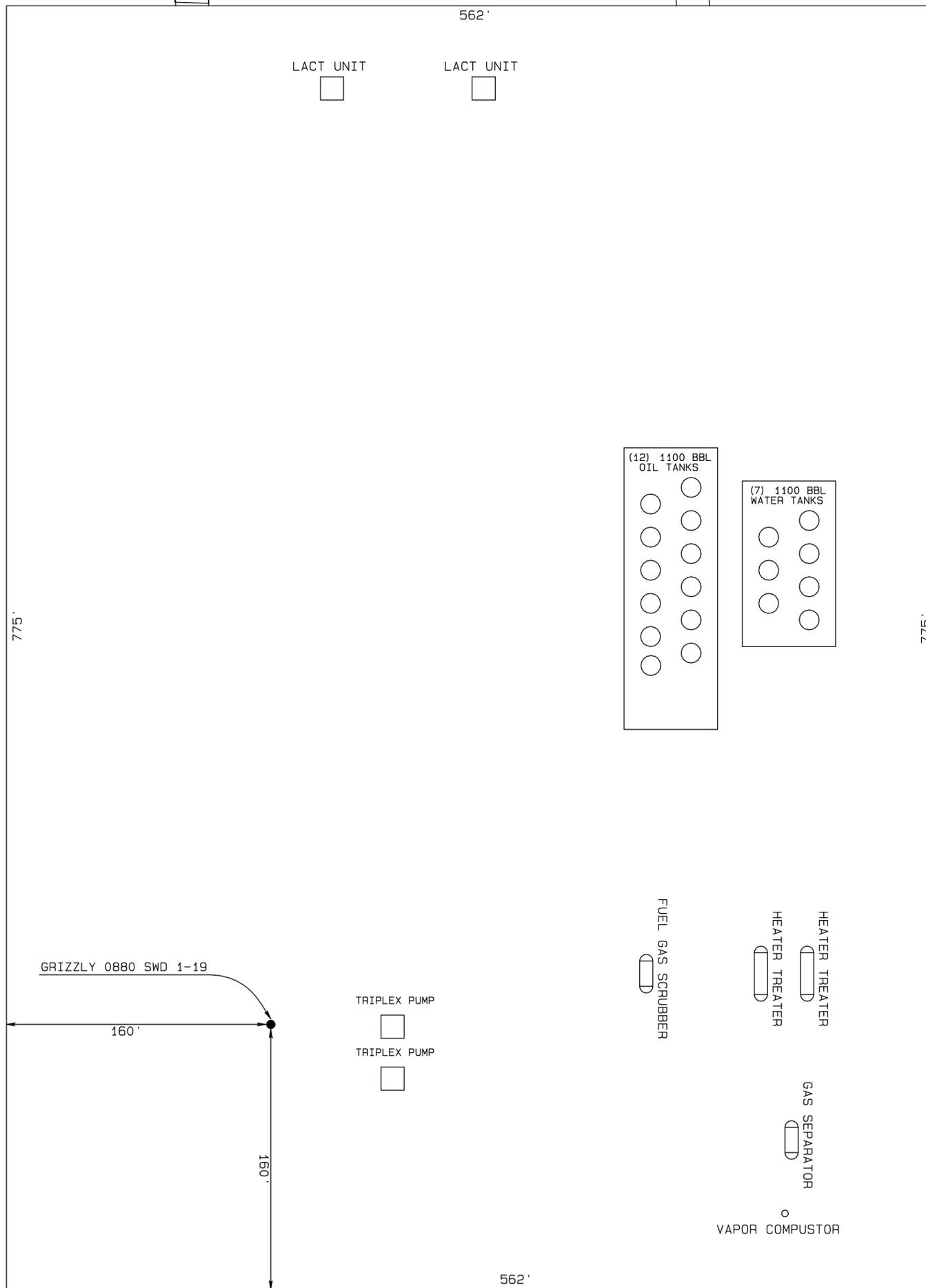
Scale: 1:100,000

0 1 2 3 4 Miles

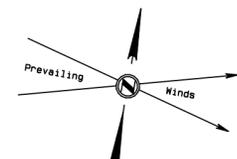
SandRidge Exploration & Production LLC.

SandRidge Exploration & Production, LLC

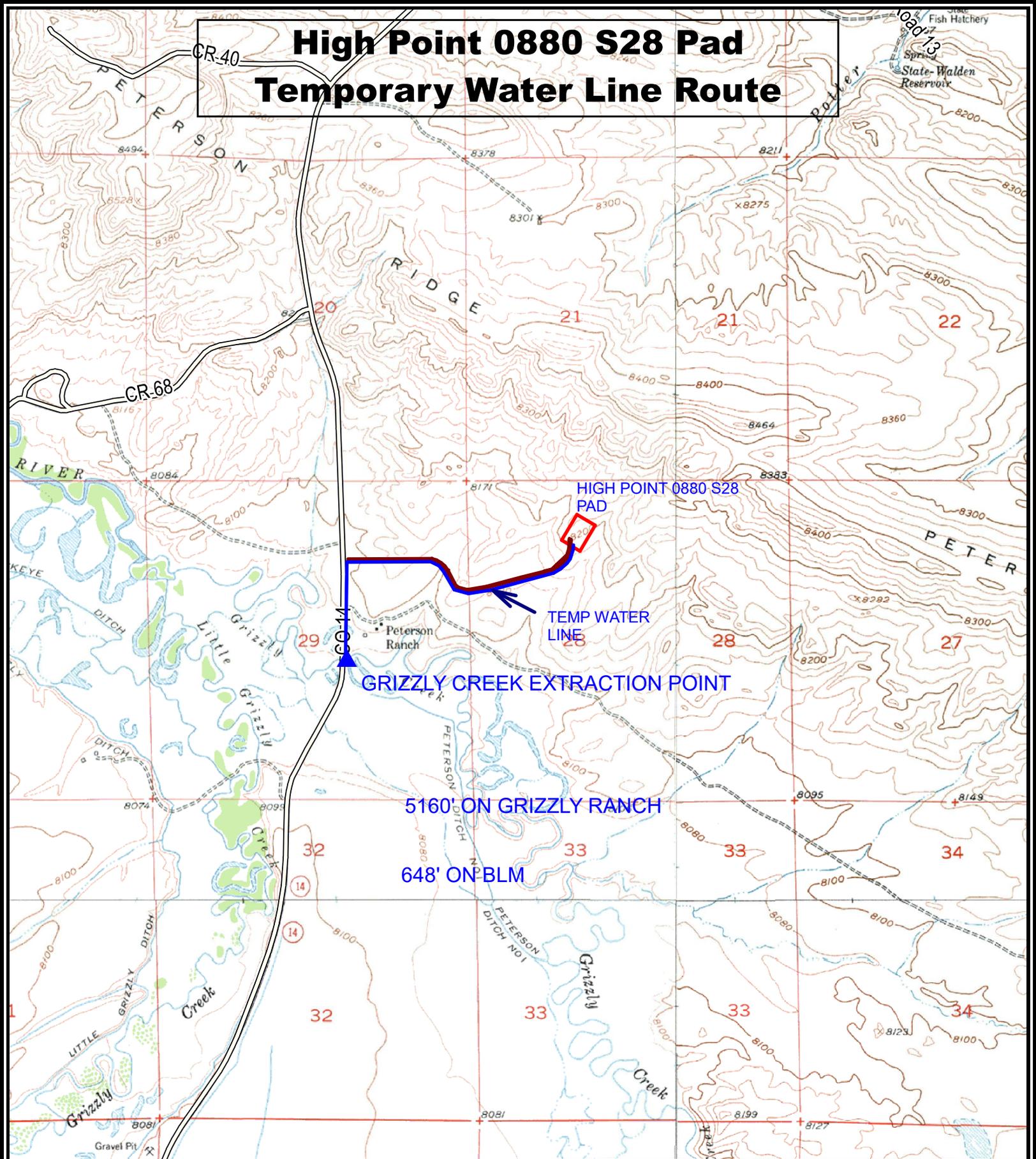
FACILITIES LAYOUT
MARMOT 0880 S19 CTB
SE1/4SE1/4 of Section 19, T8N,
R80W, 6th P.M., Jackson County, Colorado.



Final Pad Elevation = 8104'
FUNCTIONAL PAD AREA = 10.00 acres
TOTAL DISTURBED AREA = 12.11 acres

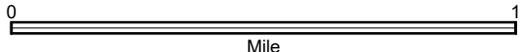


High Point 0880 S28 Pad Temporary Water Line Route



5160' ON GRIZZLY RANCH
648' ON BLM

SCALE 1:24000

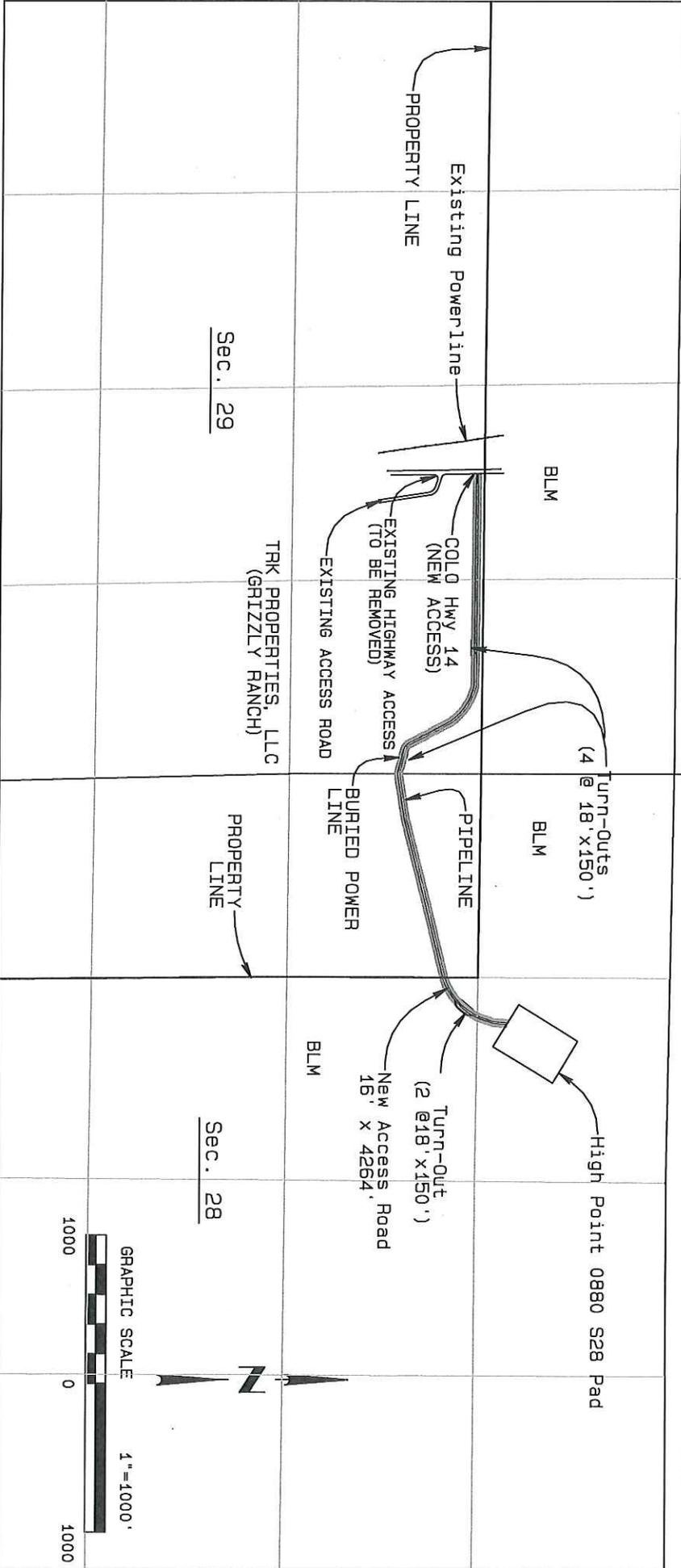


SandRidge Exploration & Production, LLC

Map Name: DELANEY BUTTE
Scale: 1 inch = 2,000 ft.
Map Center: 040.635302° N, 106.384860° W
Horizontal Datum: NAD83

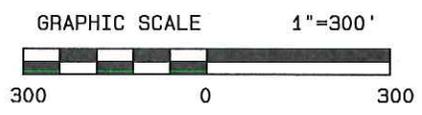
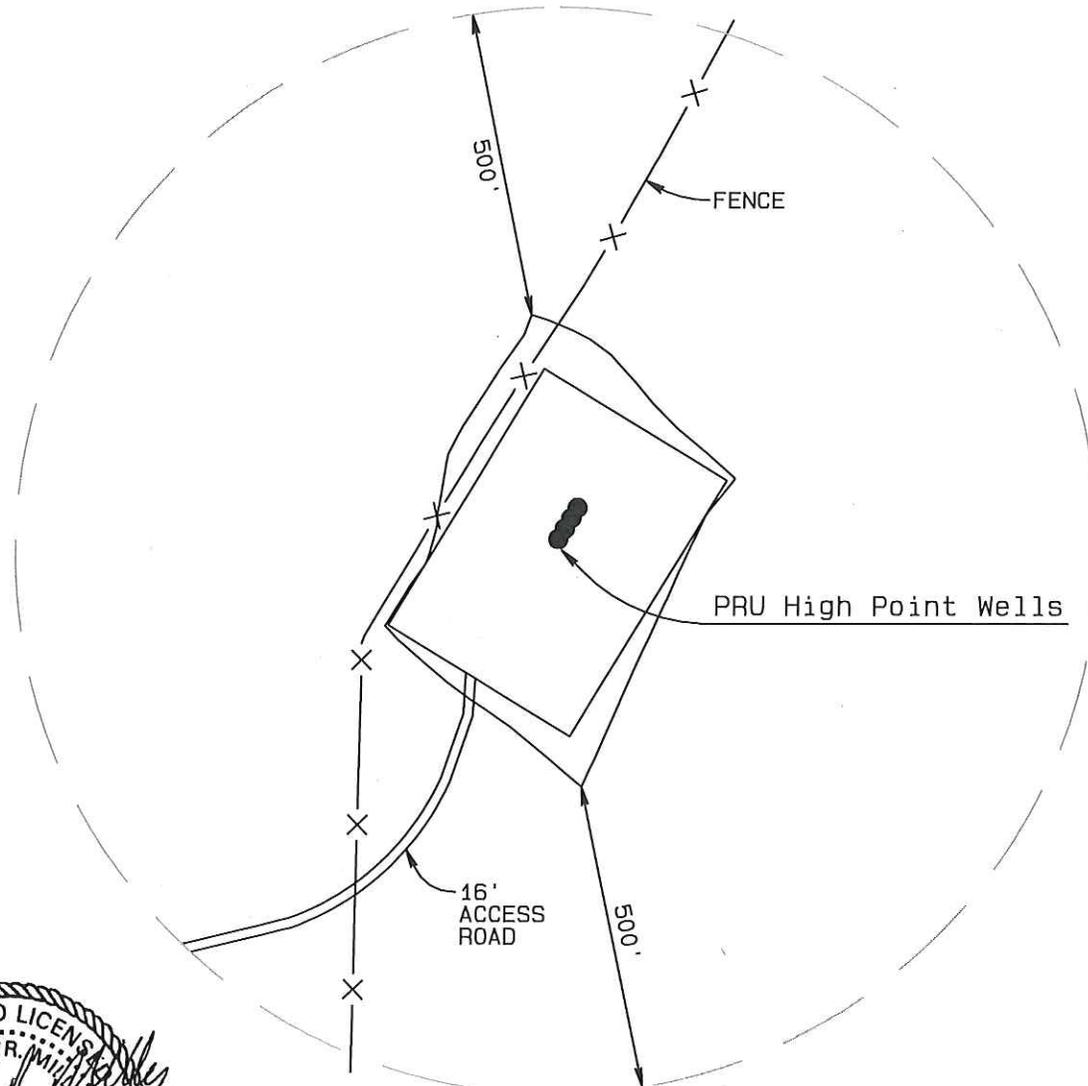
SandRidge Exploration & Production, LLC
ACCESS ROAD, PIPELINE & ELECTRIC LINE PLAT
 High Point 0880 S28 Pad
 Sections 28, and 29, T8N, R80W, 6th P.M.,
 Jackson County, Colorado.

GRIZZLY RANCH	
NEW ACCESS ROAD	3616'
TURN-OUTS (4)	600'
BLM NEW ACCESS ROAD	648'
TURN-OUTS (2)	300'



SandRidge Exploration & Production, LLC

LOCATION OVERVIEW DRAWING
 High Point 0880 S28 Pad
 NE1/4NW1/4 of Section 28, T8N, R80W, 6th P.M.
 Jackson County, Colorado.



DISTURBED AREA FOR DRILL PAD

BEFORE RECLAMATION:
 PAD TOTAL=5.41 Ac
 AFTER RECLAMATION:
 PAD TOTAL=4.42 Ac

CULTURAL FEATURE TABLE FROM PROD FACILITIES

EXISTING FEATURE	DIRECTION	LENGTH
BUILDING	S70°13'W	3216'
BUILDING UNIT	S64°18'W	3284'
HIGH OCC. BUILDING UNIT		+5280'
DESIGNATED OUTSIDE AREA		+5280'
PUBLIC ROAD (JCR14)	S86°34'W	3597'
POWER LINE	S82°18'W	3840'
RAILROAD		+5280'
PROPERTY LINE	S38°56'W	382'

CURRENT LAND USE

- | | | | | | |
|--|-------------------------------------|-------------------------------------|---|---|------------------------------|
| <input type="checkbox"/> CROP LAND | <input type="checkbox"/> IRRIGATED | <input type="checkbox"/> DRY LAND | <input type="checkbox"/> IMPROVED PASTURE | <input type="checkbox"/> HAY MEADOW | <input type="checkbox"/> CRP |
| <input type="checkbox"/> NON-CROP LAND | <input type="checkbox"/> RANGELAND | <input type="checkbox"/> TIMBER | <input type="checkbox"/> RECREATIONAL | <input type="checkbox"/> OTHER (Describe) | |
| <input type="checkbox"/> SUBDIVIDED | <input type="checkbox"/> INDUSTRIAL | <input type="checkbox"/> COMMERCIAL | <input type="checkbox"/> RESIDENTIAL | | |

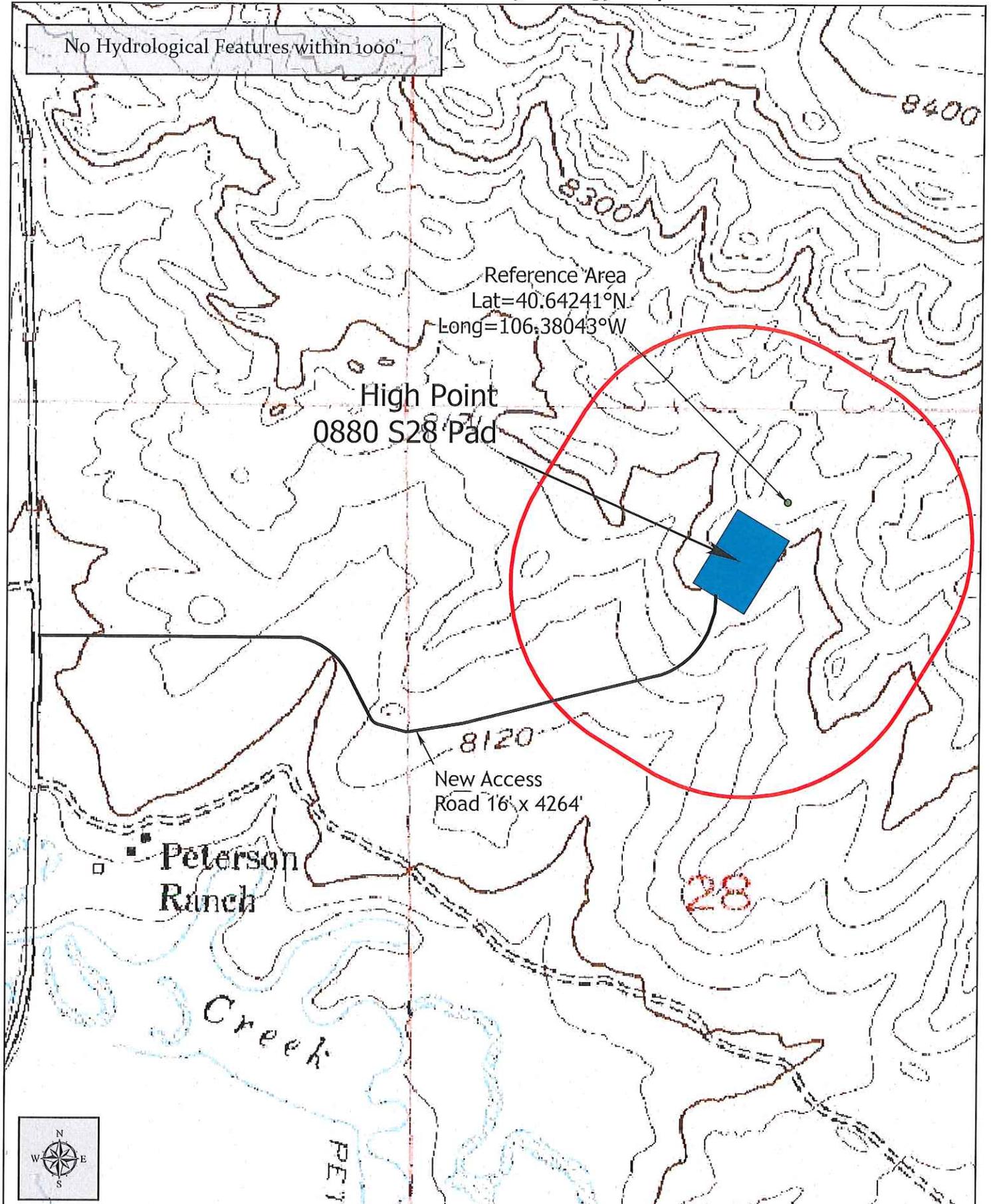
FUTURE LAND USE

- | | | | | | |
|--|-------------------------------------|-------------------------------------|---|---|------------------------------|
| <input type="checkbox"/> CROP LAND | <input type="checkbox"/> IRRIGATED | <input type="checkbox"/> DRY LAND | <input type="checkbox"/> IMPROVED PASTURE | <input type="checkbox"/> HAY MEADOW | <input type="checkbox"/> CRP |
| <input type="checkbox"/> NON-CROP LAND | <input type="checkbox"/> RANGELAND | <input type="checkbox"/> TIMBER | <input type="checkbox"/> RECREATIONAL | <input type="checkbox"/> OTHER (Describe) | |
| <input type="checkbox"/> SUBDIVIDED | <input type="checkbox"/> INDUSTRIAL | <input type="checkbox"/> COMMERCIAL | <input type="checkbox"/> RESIDENTIAL | | |

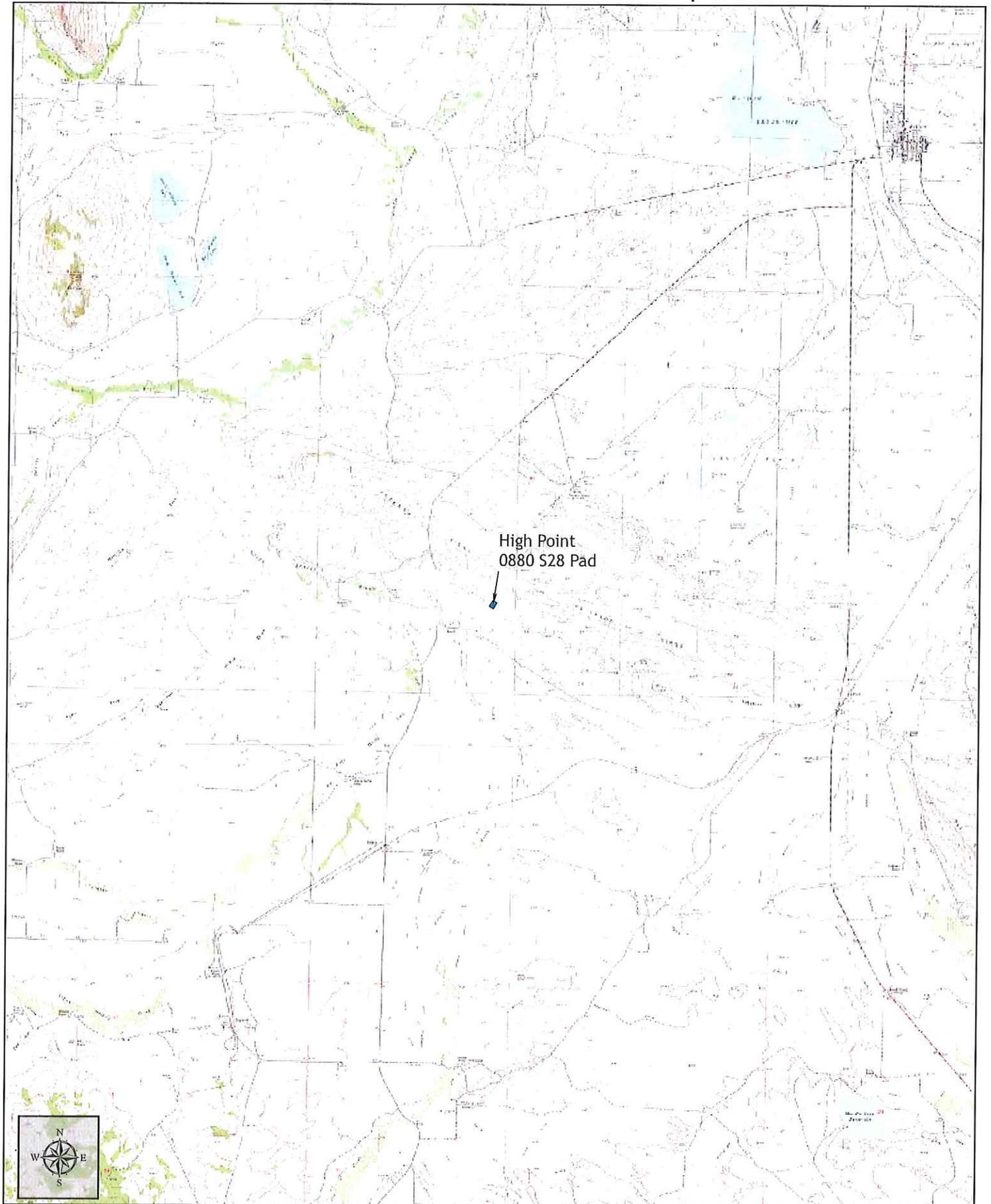
PLANT COMMUNITY

- DISTURBED GRASSLAND
- NATIVE GRASSLAND
- SHRUB LAND
- PLAINS RIPARIAN
- MOUNTAIN RIPARIAN
- FOREST LAND
- WETLANDS AQUATIC
- ALPINE
- OTHER (Describe): _____

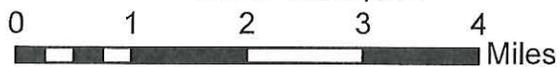
High Point 0880 S28 Pad Hydrology Map w/ Access



High Point 0880 S28 Pad 100k Map

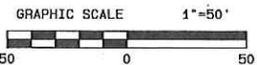
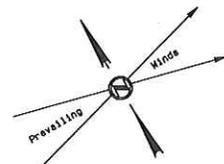
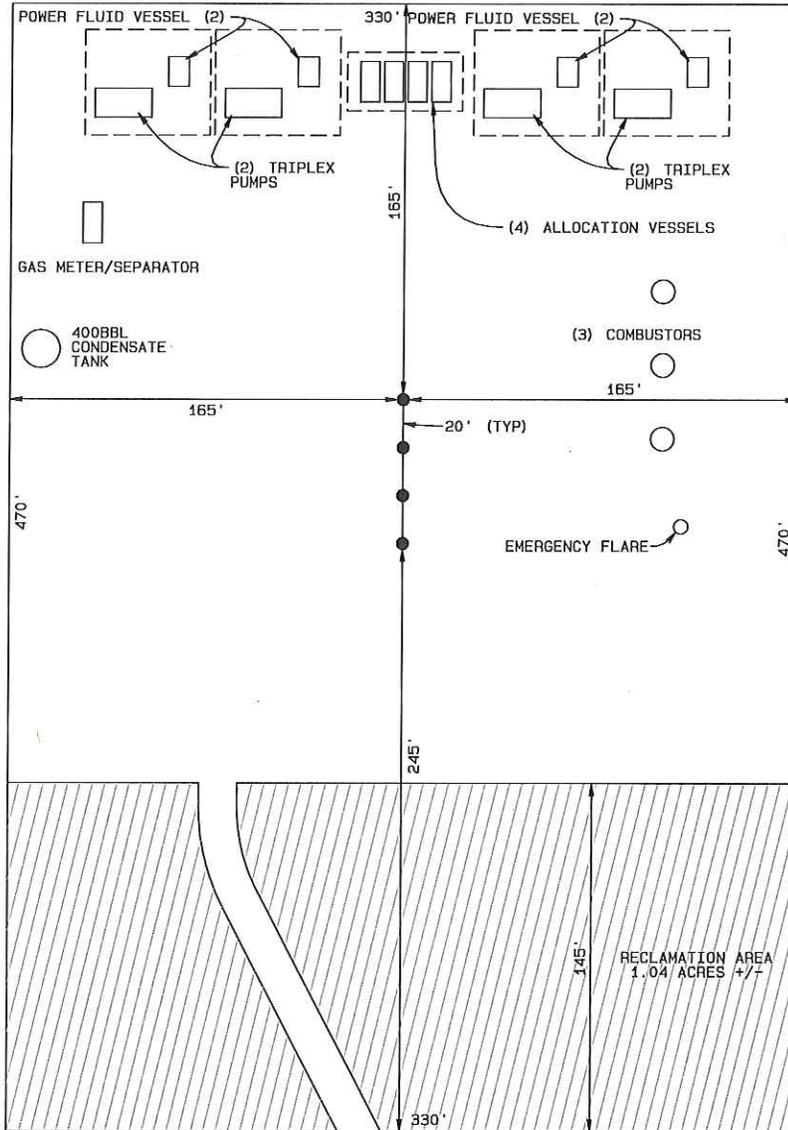


Scale: 1:100,000

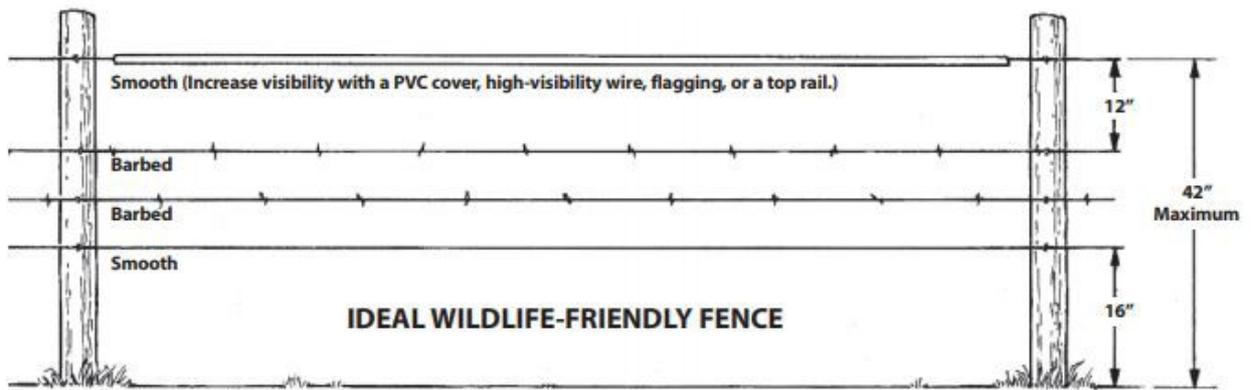


SandRidge Exploration & Production LLC.

SandRidge Exploration & Production, LLC
 PRODUCTION FACILITY LAYOUT ON WELL PAD
 High Point 0880 S28 Pad
 NE1/4NW1/4 of Section 28, T8N, R80W, 6th P.M.
 Jackson County, Colorado.



Final Pad Elevation = 8196'



BEFORE THE OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF COLORADO

IN THE MATTER OF THE PROMULGATION) CAUSE NO. 531
AND ESTABLISHMENT OF FIELD RULES TO)
GOVERN OPERATIONS FOR THE NIOBRARA) DOCKET NO. 170500286
FORMATION, JACKSON AND GRAND)
COUNTIES, COLORADO) TYPE: EXCEPTION LOCATION
)
) ORDER NO. 531-47

REPORT OF THE COMMISSION

The Commission heard this matter on May 1, 2017, at the Colorado Oil and Gas Conservation Commission, 1120 Lincoln Street, Suite 801, Denver, Colorado, 80203, upon application for an order to reduce setbacks from the exterior boundaries and any uncommitted tract within the Peterson Ridge Federal Exploratory Unit, being lands in Townships 7 and 8 North and Ranges 80 West and 81 West, 6th P.M., ("Peterson Ridge Unit") for the production of oil, gas and associated hydrocarbons from the Niobrara Formation.

FINDINGS

The Commission finds as follows:

1. SandRidge Exploration & Production LLC, Operator No. 10598 ("SandRidge" or "Applicant"), is an interested party in the subject matter of the above-referenced hearing.
2. Due notice of the time, place and purpose of the hearing has been given in all respects as required by law.
3. The Commission has jurisdiction over the subject matter embraced in said Notice, and of the parties interested therein, and jurisdiction to promulgate the hereinafter prescribed order pursuant to the Oil and Gas Conservation Act.
4. On May 18, 2015, the Commission entered Order No. 531-19, which allowed 300 foot setbacks as to the unit boundaries of the Peterson Ridge Unit, composed of the Application Lands, for the production of oil, gas, and associated hydrocarbons from the Niobrara Formation.
5. On March 2, 2017, SandRidge, by its attorneys, filed with the Commission a verified application ("Application") for an order to: 1) modify the setbacks for the Peterson Ridge Unit, composed of the below-described lands ("Application Lands"), such that the productive interval of any well within the Application Lands should be no less than 100 feet from the boundaries of the Application Lands when measured parallel to the orientation of the wellbore, and no less than 300 feet from the boundaries of the Application Lands when measured perpendicular to the orientation of the wellbore, for the production of oil, gas, and associated hydrocarbons from the Niobrara Formation, without exception being granted by the Director, and 2) modify the setbacks for the Application Lands such that the productive interval of any well within the Application Lands should be no less than 100 feet from the from the boundaries of any lease or mineral tract not committed to the Application Lands when measured parallel to the orientation of the wellbore, and no less than 300 feet from the from the boundaries of any lease or mineral tract not committed to the Application Lands when measured perpendicular to

JUN 02 2017

Beatty & Wozniak, P.C.

the orientation of the wellbore, for the production of oil, gas, and associated hydrocarbons from the Niobrara Formation:

Township 7 North, Range 80 West, 6th P.M.

Section 1: W¹/₂
Section 2: All
Section 3: All

Township 8 North, Range 80 West, 6th P.M.

Section 1: All
Section 2: All
Section 3: All
Section 4: All
Section 5: All
Section 7: All
Section 8: All
Section 9: All
Section 10: All
Section 11: All
Section 12: All
Section 13: All
Section 14: All
Section 15: All
Section 16: All
Section 17: All
Section 18: All
Section 19: All
Section 20: All
Section 21: All
Section 22: All
Section 23: All
Section 24: All
Section 25: All
Section 26: All
Section 27: All
Section 28: All
Section 29: All
Section 30: All
Section 33: All
Section 34: All
Section 35: All
Section 36: All

Township 8 North, Range 81 West, 6th P.M.

Section 13: All
Section 24: All
Section 25: All

6. Applicant's analysis of wells in the vicinity of the Application Lands indicates that drainage radius of such wells parallel to the wellbore orientation (that is, past the "heels" and "toes" of the wells) does not extend more than 100 feet, and that 100 feet is adequate to protect

the correlative rights of owners of tracts that are adjacent to the Application Lands, or that are within the Application Lands but are not committed to the Peterson Ridge Unit.

7. On April 10, 2017, SandRidge, by its attorneys, filed with the Commission a written request to approve the Application, based on the merits of the verified Application and the supporting exhibits. Sworn written testimony and exhibits were submitted in support of the Application.

8. Testimony and exhibits submitted in support of the Application by Richard Silman, Senior Landman for SandRidge showed that SandRidge owns a leasehold interests in the Application Lands.

9. Geology testimony and exhibits submitted in support of the Application by Scott Cherry, Geologist for SandRidge, showed that the thickness of the Niobrara Formation underlying the Application Lands ranges from approximately 440 to 520 feet thick. Further testimony showed that the Niobrara Formation is a sequence of chalks and marls and is a common source of supply.

10. Engineering testimony and exhibits submitted in support of the Application by Wesley K. McAlister, Reservoir Engineer for SandRidge, showed that drilling and completing horizontal wells within the Niobrara Formation underlying the Application Lands is an efficient and economic method of developing the resource. Testimony concluded the productive interval of any well within the Application Lands should be no less than 100 feet from the boundaries of the Application Lands and from the boundaries of any lease or mineral tract not committed to the Application Lands, when measured parallel to the orientation of the wellbore.

11. The above-referenced testimony and exhibits show that granting the Application will allow more efficient reservoir drainage, will prevent waste, will assure a greater ultimate recovery of hydrocarbons, and will not violate correlative rights.

12. Applicant agrees to be bound by oral order of the Commission.

13. Based on the facts stated in the verified Application, having received no protests, and based on the Hearing Officer review of the Application under Rule 511., the Commission should enter an order to reduce setbacks from the exterior boundaries and any uncommitted tract within the Peterson Ridge Federal Exploratory Unit, being lands in Townships 7 and 8 North and Ranges 80 West and 81 West, 6th P.M., ("Peterson Ridge Unit") for the production of oil, gas and associated hydrocarbons from the Niobrara Formation.

ORDER

IT IS HEREBY ORDERED:

1. The setbacks for the Peterson Ridge Federal Exploratory Unit are hereby modified such that the productive interval of any well within the below-described lands ("Application Lands") should be no less than 100 feet from the boundaries of the Application Lands when measured parallel to the orientation of the wellbore, and no less than 300 feet from the boundaries of the Application Lands when measured perpendicular to the orientation of the wellbore, for the production of oil, gas, and associated hydrocarbons from the Niobrara Formation, unless an exception granted by the Director:

Township 7 North, Range 80 West, 6th P.M.

Section 1: W¹/₂
Section 2: All
Section 3: All

Township 8 North, Range 80 West, 6th P.M.

Section 1: All
Section 2: All
Section 3: All
Section 4: All
Section 5: All
Section 7: All
Section 8: All
Section 9: All
Section 10: All
Section 11: All
Section 12: All
Section 13: All
Section 14: All
Section 15: All
Section 16: All
Section 17: All
Section 18: All
Section 19: All
Section 20: All
Section 21: All
Section 22: All
Section 23: All
Section 24: All
Section 25: All
Section 26: All
Section 27: All
Section 28: All
Section 29: All
Section 30: All
Section 33: All
Section 34: All
Section 35: All
Section 36: All

Township 8 North, Range 81 West, 6th P.M.

Section 13: All
Section 24: All
Section 25: All

2. The setbacks for the Application Lands are hereby modified such that the productive interval of any well within the Application Lands should be no less than 100 feet from the from the boundaries of any lease or mineral tract not committed to the Application Lands when measured parallel to the orientation of the wellbore, and no less than 300 feet from the from the boundaries of any lease or mineral tract not committed to the Application Lands when measured perpendicular to the orientation of the wellbore, for the production of oil, gas, and

associated hydrocarbons from the Niobrara Formation, unless an exception granted by the Director.

3. Any horizontal wells to be drilled under the Order for production from the Niobrara Formation will be drilled from the surface of the drilling unit, or on adjacent lands with consent of the landowner, from no more than four surface locations, unless an exception granted by the Director.

IT IS FURTHER ORDERED:

1. The provisions contained in the above order shall become effective immediately.

2. The Commission expressly reserves the right, after notice and hearing, to alter, amend or repeal any and/or all of the above orders.

3. Under the State Administrative Procedure Act, the Commission considers this Order to be final agency action for purposes of judicial review within 35 days after the date this Order is mailed by the Commission.

4. An application for reconsideration by the Commission of this Order is not required prior to the filing for judicial review.

ENTERED this 12th day of May 2017, as of May 1, 2017.

OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF COLORADO

By 
Peter Gowen, Acting Secretary

YEAR: 2019

2,700.0 UNITS

CERTIFICATE OF MEMBERSHIP

South Platte Water Related Activities Program, Inc.

CLASS I-3

Sandridge Exploration & Production, LLC

This certifies that _____, "Member") has become a Class I-3 member of the South Platte Water Related Activities Program, Inc. (SPWRAP), a non-profit corporation incorporated under the laws of the State of Colorado. This Certificate indicates that Member has paid all assessments owed on its membership through the current year identified above. This membership is not transferable except as may be provided in the Articles or Bylaws of SPWRAP. Additional terms, conditions and limitations pertaining to this membership are printed on the back hereof.

In Witness Whereof, SPWRAP has caused this Certificate to be signed by its duly authorized officers, and sealed with the seal of the corporation this 15th day of January, 2019.

Kim Hutton

President



Daniel H. [Signature]

Executive Director

Seal

When Recorded Please Return To:
EE3 LLC
P. O. Box 19587
Boulder, Colorado 80308
Attn: Ruth Hartshorn

95662 B: 00187 P: 772 MEMOU
07/18/2013 03:03:23 PM Page: 1 of 3
R:\$21.00D:\$0.00Jackson County CO, Hayle Johnson



MEMORANDUM OF AGREEMENT

This MEMORANDUM OF AGREEMENT (this "Memorandum") is to impart notice to all persons of the Agreement for Right of Way, Easement, Surface Access and Use dated June 28, 2013, by and between **Grizzly Land, LLC**, P. O. Box 670, Windsor, Colorado 80550, as Surface Owner, and **EE3 LLC**, P. O. Box 19587, Boulder, Colorado 80308, as Operator (the "Agreement").

Surface Owner does hereby GRANT, LEASE and LET, **subject to the terms and conditions set forth in said Agreement**, unto Operator and Operator's successors and assigns, the surface of the lands described on Exhibit "A" attached hereto and made a part hereof, located in Jackson County, Colorado (the "Said Lands"), for the purpose of drilling and completing crude oil and natural gas wells, constructing roads, pipelines, power lines, production facilities and other appurtenances to store, process, transport and market crude oil, natural gas and associated products on, under and upon the surface of the Said Lands.

Surface Owner does further hereby GRANT, LEASE and LET, **subject to the terms and conditions set forth in said Agreement**, unto Operator and Operator's successors and assigns, the right to use Surface Owner's ranch roads currently or hereafter located on the Said Lands, together with the right to use Surface Owner's ranch roads located upon those portions of Sections 1, 2 and 11-T7N-R81W, 6th P.M., Jackson County, Colorado which are currently leased from the State of Colorado.

Any party in interest may examine the full terms of the Agreement by contacting Operator at the address hereinabove. This Memorandum, the Agreement and all rights and covenants in connection therewith shall run with the land and shall be binding upon the parties hereto and their respective successors and assigns.

This Memorandum may be executed in multiple counterparts, each of which shall constitute an original and all of which, when construed together, shall constitute one and the same instrument.

95662 B: 00187 P: 772 MEMOU
07/18/2013 03:03:23 PM Page: 2 of 3
R: \$21.00D: \$0.00 Jackson County CO, Hayle Johnson

Dated this 28th day of June, 2013.



SURFACE OWNER

OPERATOR

GRIZZLY LAND, LLC

EE3 LLC

Kirk A. Shiner, Manager

Richard F. McClure, President

STATE OF COLORADO

COUNTY OF WELD



This instrument was acknowledged before me on the 16th day of July, 2013 by Grizzly Land, LLC, a Colorado limited liability company, by Kirk A. Shiner, Manager.

Commission Expires: 12/2/2014

Notary Public in and for the State of Colorado

Printed Name: Susan A. Alaniz

STATE OF COLORADO

§

§

COUNTY OF BOULDER

§

This instrument was acknowledged before me on the 16th day of July, 2013 by EE3 LLC, a Colorado limited liability company, by Richard F. McClure, President.

Commission Expires:

Notary Public in and for the State of Colorado

Printed Name: Ruth Hartshorn

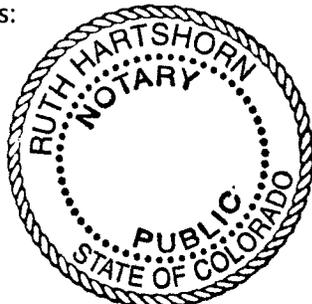




EXHIBIT A

Attached to and made a part of that certain Memorandum of Agreement dated June 28, 2013
by and between EE3 LLC and Grizzly Land, LLC

DESCRIPTION OF LANDS COVERED BY THE AGREEMENT Jackson County, State of Colorado

Township 7 North, Range 80 West, 6th P.M.

Section 5: Lot 4, SWNW, W2SW

Section 6: All

Section 7: Lying north of County Road 24

Township 7 North, Range 81 West, 6th P.M.

Section 1: All

Section 2: All

Section 3: SENE, SE

Section 10: N2NE

Section 11: N2NW, NWNE, E2NE

Section 12: N2NE

Township 8 North, Range 80 West, 6th P.M.

Section 19: S2SE, SESW

Section 28: SWNW, W2SW

Section 29: W2SW, S2N2, SE, E2SW, 4.74 ac. In SESW

Section 30: Lot 1, Lot 2, E2NW, W2NE, SENE, NESE, SESW, W2SE, SESE, NENE

Section 31: W2, SE, N2NE, SWNE

Section 32: N2, N2SW, SWSW, NWSE

Section 33: NW

Township 8 North, Range 81 West, 6th P.M.

Section 13: SWSW, S2SE, SESW

Section 23: N2NE, SENE, E2SE

Section 24: W2, W2SE, SESE

Section 25: NW, N2NE, SWNE, NWSW

Section 26: S2N2, SW, S2SE, NESE

Section 27: SENE, SE

Section 33: S2NE, NWSE, N2SW, SWSW

Section 34: NENW, S2NW, NE, NESE

Section 35: N2NW, SWNW, NWNE, S2NE, SE

Section 36: All

SandRidge Expl. & Prod., LLC

Bureau of Land Management

Waste Minimization Plan

1. Well Name and Operator:

- a. PRU High Point 0880 4-28H16
- b. SandRidge Expl. & Prod., LLC

2. Anticipated completion date:

- a. November 1, 2020

3. Anticipated production:

a. Approximate 1st production date:

- i. December 1, 2020

b. Anticipated/desired oil and gas production rates:

- i. Oil – 700 bbl/day
- ii. Gas – 400 mcf/day

c. Anticipated production curve decline:

- i. Unknown

d. Possible btu:

- i. 1300-1700

4. Certification that we (operator) have provided connection details to a midstream company:

- a. SandRidge is unable to have a contract/dedication agreement in place for purchase and transport of all or any of SandRidge's gas produced in Jackson County, CO. This scenario is due to the lack/nonexistence of marketing pipelines in this county. SandRidge is currently working on several scenarios to use, sell, or transport gas produced from this well and all wells it operates in Jackson County but none of those plans/scenarios are finalized allowing SandRidge to state as our plan. Further explanations of planned actions for our produced gas are detailed below.

- 5. Identification of a gas pipeline and if it will accommodate anticipated production.**
 - a. Maximum current daily capacity of the pipeline**
 - i. None available
 - b. Current throughput of the pipeline**
 - i. None available
 - c. Anticipated daily capacity of pipeline at the date of first gas sales of well**
 - i. None available
 - d. Anticipated throughput of the pipeline at the anticipated date of first gas sales from the proposed well**
 - i. None available
 - e. Any plans known to the operator for expansion of pipeline capacity for the area that includes the proposed well**
 - i. None available
- 6. If an operator cannot identify a gas pipeline w/capacity to accommodate the well....**
 - a. As mentioned above, SandRidge is unable to connect to a gas sales/marketing line in Jackson County due to lack/nonexistence of marketing pipelines in this county. The closest known sales/marketing line is over 100 miles away. SandRidge is currently working on several scenarios to use, sell, or transport gas produced from this well and all wells it operates in Jackson County but none of those plans/scenarios are finalized; therefore, SandRidge will have to flare all produced gas made by this well through an enclosed combustor complying with COGCC's Rule 805 b. (1.) and CDPHE approved flaring methods only after permission is granted by BLM and COGCC. SandRidge has already submitted the required air emission tool worksheet through the BLM's system. Lastly, gas is expected to decline from the initial production rate and contain 0ppm of H₂S.
 - b. SandRidge is currently working the following options/scenarios to manage our produced gas.

- i. Construct mechanical refrigeration units, gas to liquids units, or other such gas processing units allowing for converted gas to be transported and sold via alternative means besides pipelines.



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
White River Field Office
220 East Market Street
Meeker, CO 81641

In Reply Refer To:
PRU High Point 0880 4-28H16

Landowner Access Agreement (providing access to BLM personnel)

In accordance with Instruction Memorandum No. 2018-014, which covers wells or access located on non-federal surface and mineral locations drilled into federal minerals, this document serves as a guarantee from the owner of the surface land or access for SandRidge Exploration and Production, LLC's PRU High Point 0880 4-28H16 located at Township 8N, Range 80W, Section 28, that the Department of the Interior, including the Bureau of Land Management (BLM) has permission to access the non-Federal lands at the PRU High Point 0880 4-28H16 location for the sole purpose of performing all necessary inspections. If I have a locked gate restricting access I will either provide BLM with the combination or key to the lock, or allow a BLM lock to be placed alongside mine, allowing access. The access to BLM will be limited to the use of the access road, pipeline ROW (if applicable), and well pad. In the event of a spill or leak, BLM personnel may access along the extent of the spill or leak.

This agreement is in no way intended to give permission for use of this privilege for accessing any other BLM lands from this location.

TRK Properties, LLC (d/b/a Grizzly Ranch) by Kallen Kimzey, Manager

Signature: _____

Date: 1/24/20



North Park Phacelia Survey Report

High Point Pad Project, Jackson County, Colorado

September 2019

Submitted by:
WSP USA
1600 Broadway, Suite 1100
Denver, CO 80202

TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
1.1	Project Description.....	1
1.2	Existing Biological Conditions.....	1
1.3	Species Description and Phenology.....	1
2.0	METHODS	1
2.1	Field Survey Methodology.	2
3.0	FIELD SURVEY RESULTS.....	2
4.0	CONCLUSION.	2
5.0	REFERENCES.....	3

LIST OF FIGURES AND TABLES

Figure 1. High Point North Park Phacelia Survey Area

Attachments: Appendix A - Photographs

1.0 INTRODUCTION

This report presents the results of the North Park Phacelia (*Phacelia formosula*) survey conducted for the proposed High Point Pad Project in Jackson County, Colorado. The North Park Phacelia is listed as federally-endangered and is only endemic to Jackson County. Surveys were conducted during the peak 2019 blooming period for the plant from July 24th through the 26th. The North Park Phacelia will be referred to as phacelia in this document.

1.1 Project Description

The High Point Pad Phacelia Study Area is in T8N, R80W, and Section 29. The survey area is shown on Figure 1. Elevations within the survey area range from 8,000 to 8,287 feet.

1.2 Existing Biological Conditions

North Park is a high and broad, intermountain basin surrounded by several mountain ranges. The headwaters of four major rivers occur in the North Park basin, contributing greatly to the landscape of the area by carving out valleys and benches. While the benches support a sagebrush steppe vegetation community, many of the valleys have been converted into irrigated hay meadows, drawing water from the many streams in the area. The High Point Pad Phacelia Study Area occurred within a sagebrush steppe vegetation community. This community is comprised of sagebrush species, grasses, and forbs, with the dominant shrub being either Mountain big sage (*Artemisia tridentate* var. *vaseyana*) or Wyoming big sage (*Artemisia tridentata* var. *Wyomingensis*) (CPW 2008).

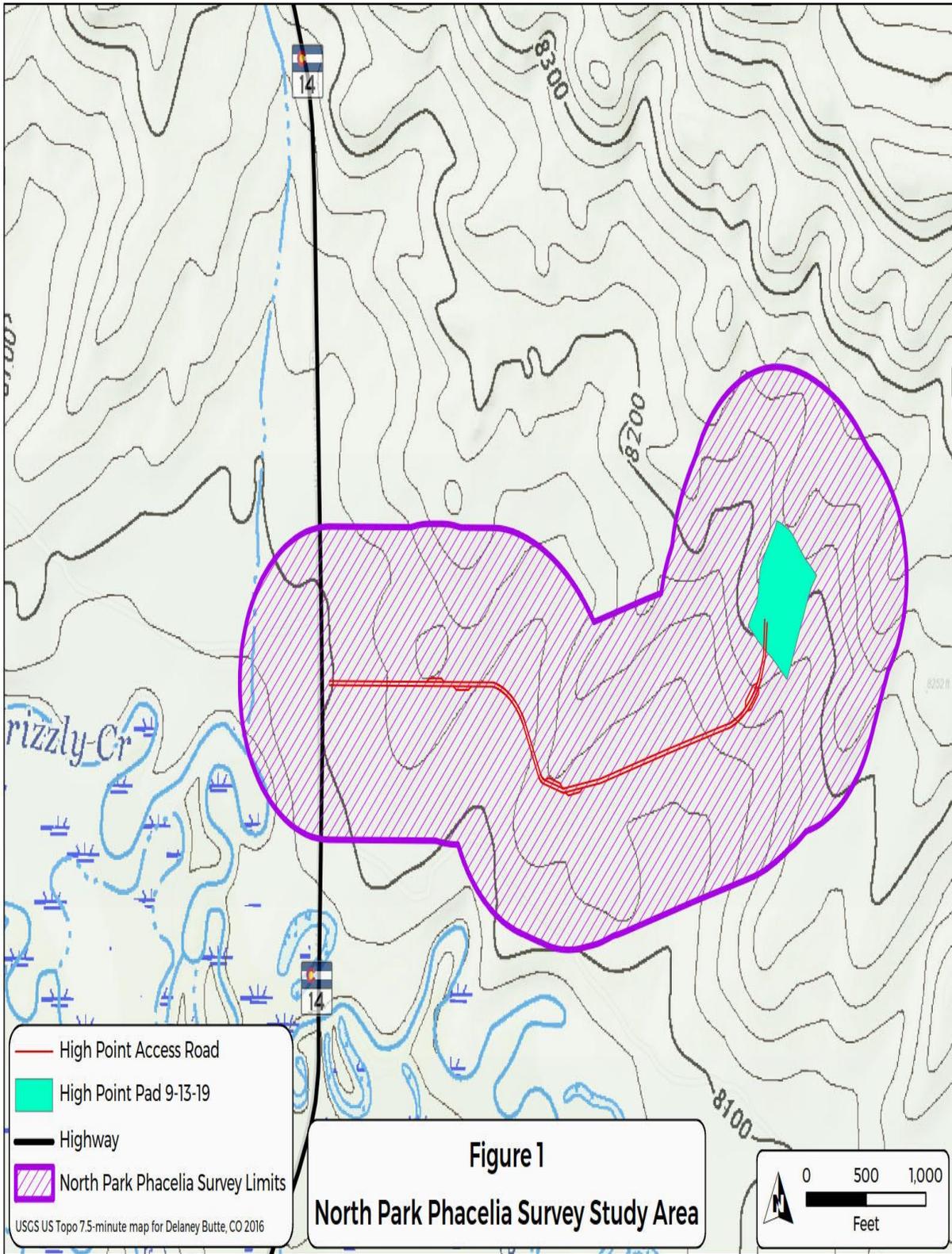
1.3 Species Description and Phenology

North Park phacelia is an herbaceous biennial plant that grows to 22 cm tall in an erect, branched pattern. Inflorescence is a helicoid cyme and flowers are purple (Spackman *et al.* 1997). The plant flowers from late June through October in favorable years. Peak flowering is typically from July to early August, and is dependent on conditions in any given year. Phacelia is only known to occur in Jackson County, Colorado and prefers sparsely vegetated exposures of the Coalmont Formation that include steep-sided ravines, low sandy hills, and bluffs (Spackman *et al.* 1997). Taxa associated with phacelia include *Chrysothamnus*, *Artemisia*, *Oryzopsis hymenoides*, and *Chaenactis douglasii*.

2.0 METHODS

WSP surveyed the proposed High Point Pad and the access road for the presence of phacelia. This survey included a 750-foot buffer around the proposed well-pad and access road. The survey buffer around the proposed facilities was chosen because it considers the required 200-meter setback identified in the *Kremmling Resource Management Plan* for protection of phacelia and other listed plant species from project development.

Figure 1. Phacelia Survey Area



To ensure the survey would be timed to coincide with the peak blooming period for the plant, WSP biologists observed an Arapaho National Wildlife Refuge (Refuge) phacelia population starting the week of July 8, 2019. The phacelia initiated blooming the week of July 15th at the Refuge. To coincide with the peak blooming, the surveys were initiated the week of July 22nd. WSP biologists had also conducted phacelia surveys for the High Point Pad Study Area in 2018 and noted the improved condition of the vegetation in North Park due to the increased winter and spring precipitation. The phacelia that were observed on the Refuge were also more robust this year than in 2018.

2.1 Field Survey Methodology

Field survey methodology was prepared using the United States Fish and Wildlife Service (USFWS) document “*Guidance for Section 7 Consultations that Includes Plants within the State of Colorado*”. As required by the survey protocol, 15-meter parallel transects were walked within the study area. In some areas with poor visibility, biologists shorted the distance between transects to less than 15 meters to adequately observe the ground.

3.0 FIELD SURVEY RESULTS

WSP biologists Robert Belford and Daniel Board completed the High Point Pad and access road phacelia survey. Both biologists were familiar with the phacelia and Mr. Belford conducted the 2018 High Point Pad Phacelia Survey. The weather during the surveys was generally sunny and temperatures were in the upper 70s.

Phacelia were not observed within the High Point Pad Study Area. The proposed High Point Pad and access road are located in an area with extensive sagebrush that did not provide the eroded, barren soils required for phacelia. WSP biologists concluded the proposed development sites contained poor habitat for phacelia and it is unlikely the plant would colonize the study area in the future. Photographs showing the habitat in the study area are in Appendix A.

Plants observed in the study area understory included, Sulphur buckwheat (*Eriogonum umbellatum dichrocephalum*), prairie lupine (*Lupinus lepidus utahensis*), hoods phlox (*Phlox hoodi*), Nevada bluegrass (*Poa nevadensis*), Idaho fescue (*Festuca idahoensis*), thickspike wheatgrass (*Agropyron dasystachyum*), and bearded bluebunch wheatgrass (*Agropyron splicatum*).

4.0 CONCLUSION

Based on field observations at the Arapahoe National Wildlife Refuge, the plant was in peak bloom during the survey. However, no phacelia was observed within the High Point Pad Phacelia Study Area. The study area contained an extensive sagebrush over story that does not support phacelia. Additionally, the sites did not contain the highly eroded and barren soils that support the plant. Therefore, the study area was considered to have poor habitat for the phacelia.

5.0 REFERENCES

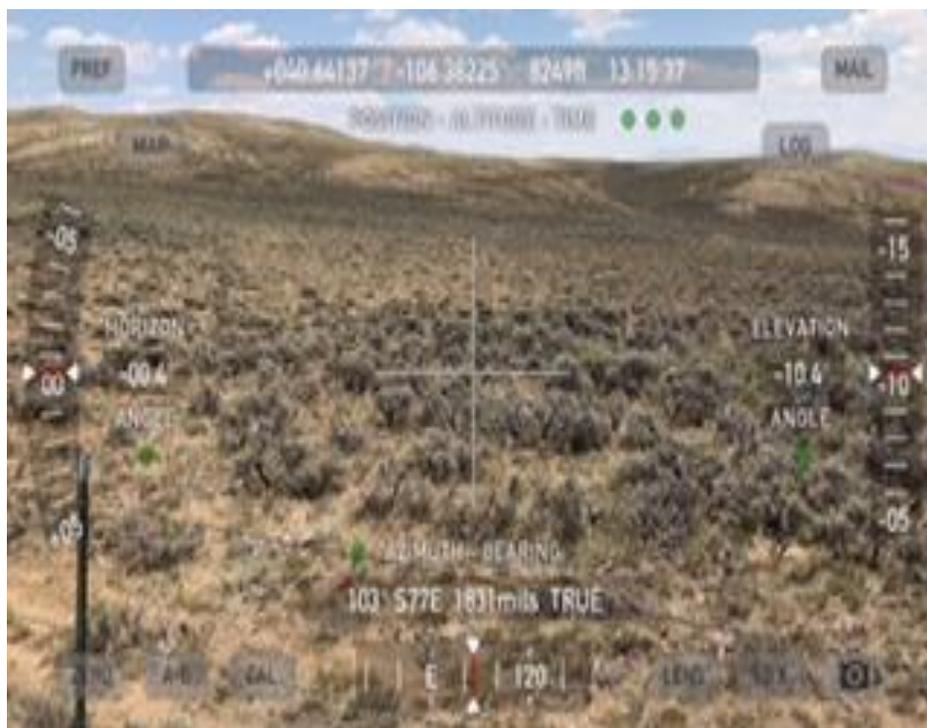
Spackman, S., B. Jennings, J. Coles, C. Dawson, M. Minton, A. Kratz, and C. Spurrier. 1997. Colorado Rare Plant Field Guide. Prepared for Bureau of Land Management, U.S. Forest Service and U.S. Fish and Wildlife Service by Colorado Natural Heritage Program.

Appendix A Photographs

High Point Pad Phacelia Survey Photographs



Photograph 1: Proposed High Point Pad looking east. Site has an extensive sagebrush canopy.



Photograph 2: Proposed High Point Pad looking northeast.



Photograph 3: Proposed High Point Pad Road looking west.



High Point Pad

Biological Evaluation

February 2020

Submitted to:
SandRidge Energy, Inc.
123 Robert S. Kerr Avenue
Oklahoma City, OK 73102

Submitted by:
WSP USA
1600 Broadway, Suite 1100
Denver, CO 80202

TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
2.0	FEDERALLY-PROTECTED SPECIES.....	1
3.0	BLM SPECIAL STATUS SPECIES.....	6
4.0	MIGRATORY BIRDS.....	6
5.0	SAGE GROUSE.....	7
6.0	CONCLUSION.....	8
7.0	REFERENCES.....	8

LIST OF TABLES

Table 1.	Federally-Listed Species.....	3
----------	-------------------------------	---

FIGURES

Figure 1.	Project Facility Location
-----------	---------------------------

1.0 INTRODUCTION

This biological evaluation (BE) presents the findings from the WSP USA (WSP) desktop studies and field survey for the proposed High Point Pad Project. The field survey was conducted in July and August 2019. The project area was assessed for the potential presence of federally-listed threatened and endangered species and their habitat, Bureau of Land Management (BLM) special status species, nesting migratory birds (including raptors), potential sage grouse habitat, and wetlands or other “Waters of the U.S.”

The High Point Pad is in T8N, R80W, and Sections 20, 21, and 29 in Jackson County, Colorado. The project area is located within a sagebrush steppe vegetation community. The proposed High Point Pad is a new oil and natural gas well pad that will include construction of an access road.

Figure 1 shows the location of the proposed facilities within the project area. The project area includes the High Point Pad and access road.

2.0 FEDERALLY-PROTECTED SPECIES

The Endangered Species Act (ESA) of 1973 prohibits any person from “taking” (harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, relocating, or collecting or attempting to engage in any such conduct) any federally-listed threatened or endangered species. Significant habitat modification or degradation that results in death or injury to federally-listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering is also prohibited. Administration and enforcement of the ESA are the responsibility of the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service.

To evaluate the proposed project area for the potential presence of protected species, WSP reviewed the USFWS list of threatened and endangered species and Designated Critical Habitat areas. Twelve federally-listed threatened and endangered species are associated with Jackson County. The bonytail chub, Colorado pikeminnow, humpback chub, and the razorback sucker are associated with the Colorado River and could potentially be impacted by depletions to Jackson County waterways located in the Colorado River watershed. The least tern, piping plover, whooping crane, western prairie-fringed orchid, and the pallid sturgeon are associated with the Platte River and could potentially be impacted by depletions to Jackson County waterways in the Platte River watershed. The Canada lynx may occur in alpine habitats in Jackson County. The North Park Phacelia grows in select habitat in Jackson County. The yellow-billed cuckoo and Mexican spotted owl are avian species listed as threatened in the county. Table 1 identifies the federally-listed species potentially occurring in Jackson County or species that are associated with county watersheds.

Figure 1- Project Infrastructure

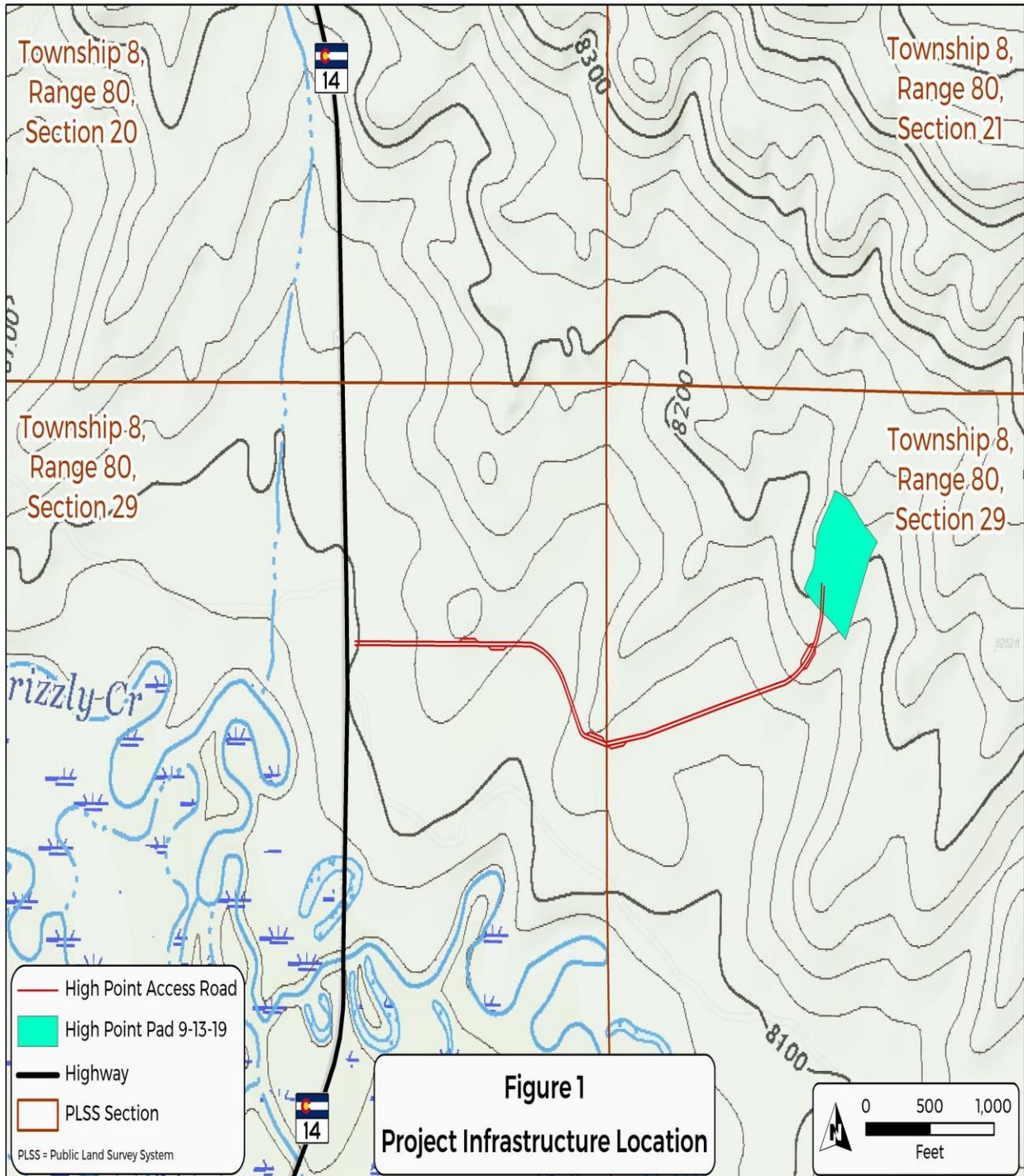


Table 1. Federally threatened, endangered, and candidate species potentially found in Jackson County or with the potential to be affected by projects in Jackson County.

Common Name	Scientific Name	Status	Habitat	Suitable Habitat Present
Birds				
Least Tern	<i>Sterna antillarum</i>	E	Sandy/pebble beaches on lakes, rivers, and reservoirs	No depletions to Platte River watershed will occur
Piping Plover	<i>Charadrius Melodus</i>	T	Sandy lakeshore beaches and river sandbars	No depletions to Platte River watershed will occur
Whooping Crane	<i>Grus americana</i>	E	Shallow wetlands. Will also utilize upland and agricultural areas during migration	No depletions to Platte River watershed will occur
Yellow-Billed Cuckoo	<i>Coccyzus americanus</i>	T	Low- to moderate-elevation riparian forests. Cottonwood-willow forests are most often used for breeding habitat.	No suitable habitat within the project area
Mexican spotted owl	<i>Strix occidentalis lucida</i>	T	Old growth and mature forest with diverse structural characteristics	No habitat present within the project area
Mammals				
Canada Lynx	<i>Lynx canadensis</i>	T	Spruce/fir forests of the high mountains	No suitable habitat within the project area
North American Wolverine	<i>Gulo luscus</i>	C	High mountains, near tree-line, where snow persists into May	No suitable habitat within the project area
Fishes				
Bonytail Chub	<i>Gila elegans</i>	E	Historically present in upper and lower Colorado River basins	Project is not in the Colorado River watershed

Common Name	Scientific Name	Status	Habitat	Suitable Habitat Present
Colorado Pikeminnow	<i>Ptychocheilus Lucius</i>	E	Adapted to warm rivers, requires uninterrupted passage for migration	Project is not in the Colorado River watershed
Humpback Chub	<i>Gila cypha</i>	E	Swift and turbulent rivers	Project is not in the Colorado River watershed
Razorback Sucker	<i>Xyrauchen texanus</i>	E	In upper Colorado River basin, large rivers, floodplain wetlands connected to rivers	Project is not in the Colorado River watershed
Pallid Sturgeon	<i>Scaphirhynchus albus</i>	E	Large, turbid, free-flowing rivers	No depletions to Platte River watershed will occur
Flowering Plants				
North Park Phacelia	<i>Phacelia formosula</i>	E	Eroded soil outcrops composed of barren exposures of the Coalmont Formation	The project would be located within the Coalmont Formation. Therefore, the potential exists for the plant to occur within the project area
Western Prairie-fringed Orchid	<i>Platanthera praeclara</i>	T	Mesic to wet tallgrass prairies and meadows	No depletions to Platte River watershed will occur
T = Federally Threatened; E = Federally Endangered; PT = Proposed Threatened; C = Candidate Species				

South Platte River Species

Five federally-listed species in Jackson County are associated with depletions to the Platte River System. Actions undertaken in Colorado that result in depletions to the Platte River are considered a direct effect on these federally-listed species associated with the river in Nebraska:

- Interior Least Tern
- Pallid Sturgeon
- Piping Plover

- Whooping Crane
- Western Prairie Fringed Orchid

The High Point Pad Project is located within the Platte River Watershed. However, no water depletions are expected to occur during construction of the facilities. Since no water depletion impacts to the Platte River downstream species will occur, these species will not be discussed in this BE.

Colorado River Fish Species

Four endangered fish species endemic to the Colorado River System are federally-listed in Jackson County. These fish species are:

- Bonytail Chub
- Colorado Pikeminnow
- Humpback Chub
- Razorback Sucker

Since this project is not located in the Colorado River Watershed, these species will not be addressed in this BE.

The **yellow-billed cuckoo** is a fairly-large, long, and slender bird that is a neo-tropical migrant. Conservationists separate this species into two distinct populations based on breeding location: the western population, which occurs west of the Continental Divide, and the eastern population, which occurs east of the Continental Divide. The western population is listed as threatened by the USFWS. The western yellow-billed cuckoo breeds in low- to moderate-elevation forests lining rivers and streams of the western United States. Cottonwood-willow forests are most often used, although other riparian tree species such as alder, box elder, and oak can be important species as well. No habitat exists within the project area for the yellow-billed cuckoo, therefore it is WSP's determination that the project will likely have **no effect** on the yellow-billed cuckoo (USFWS 2019a).

The **Mexican spotted owl** is forest-dwelling owl found in mature and old-growth forests. The species is endemic to these forests in the southwestern and central-mountain states. This species likes uneven stands of forest canopy with diverse structural characteristics. The project area does not have the habitat characteristics that Mexican spotted owls prefer, therefore it is WSP's determination that the project will likely have **no effect** on the species (USFWS 2019b).

The **Canada lynx** is a medium-sized, forest-dwelling cat of the northern latitudes and high mountains. In Colorado, lynx primarily inhabit the rugged San Juan mountain range and the central mountain ranges. The lynx prefers dense subalpine forest and willow-choked corridors

along mountain streams and avalanche chutes. Given the location of the project area in a sagebrush vegetation community, it is unlikely that lynx occupy the project area. It is WSP's determination that the project will likely have **no effect** on the Canada lynx (USFWS 2019c).

North Park phacelia (phacelia) is listed as endangered under the ESA. The phacelia is found only in the North Park Basin in Jackson County, Colorado. The species is restricted to eroded soil outcrops composed of barren exposures of the Coalmont Formation, a coal-bearing substrate. Phacelia is found between 8,000 to 8,300 feet in elevation. The project area is located within the Coalmont Formation. Therefore, the project area was surveyed for phacelia in July and August 2019. The surveys conducted in 2019 coincided with the blooming period for the plant. To determine when the plant is in bloom, WSP monitors an established population of phacelia on the Arapahoe National Wildlife Refuge. The 2019 surveys for the phacelia did not observe the plant within the project area. WSP biologists determined the project area does not contain the eroded, barren exposures preferred by the plant. The vegetation present in the project area is primarily a sagebrush canopy with varying densities of grass and herbaceous plants in the understory. This vegetation community creates unfavorable habitat conditions for phacelia. Therefore, it is WSP's determination that the proposed project will have **no effect** on the phacelia (USFWS 2019d).

3.0 BLM SPECIAL STATUS SPECIES

Prior to conducting the field survey, a desktop review was conducted to determine potential BLM sensitive wildlife and plant species that could potentially occur within the project area. Based on this desktop analysis and the field review of habitat within the project area, sage grouse (*Centrocercus urophasianus*) and Brewers sparrow (*Spizella breweri*) are the only BLM sensitive species that could potentially be present in project area habitat (BLM 2015). Sage grouse will be addressed in Section 5.0. Brewers sparrow occupy sagebrush and brushy plains habitat. This avian species could potentially utilize sagebrush habitat in and adjacent to the project area. WSP biologists did not observe Brewers sparrow during the July and August 2019 surveys. However, the species may be present within the project area during the summer and early fall.

4.0 MIGRATORY BIRD AND RAPTOR NESTS

The project area was surveyed for the presence of migratory bird and raptor nests in July 2019. No nesting migratory birds were observed. Additionally, no raptor nests were observed within or adjacent to the project area. WSP recommends conducting migratory bird nest surveys prior to beginning construction activities during the nesting season of May 15th through July 15th.

5.0 SAGE GROUSE

The project area was surveyed for the presence of brood-rearing, summer/fall, and winter sage grouse habitat in July 2019. Greater sage-grouse (GrSG) habitat surveys were conducted under the guidelines outlined in the *Colorado Greater Sage-Grouse Conservation Plan*, Appendix A, Structural Habitat Guidelines.

Per the Structural Habitat Guidelines, eight overstory and understory vegetation structural characteristic guidelines were identified for breeding and summer-fall habitats for GrSG. These characteristics include: (1) sagebrush canopy cover; (2) non-sagebrush canopy cover; (3) total shrub cover; (4) sagebrush height; (5) grass cover; (6) forb cover; (7) grass height; and (8) forb height. Only two overstory vegetation structural characteristic guidelines were developed for winter habitat: (1) sagebrush cover, and (2) sagebrush height (CGSSC 2008).

Based on the GrSG Structural Habitat Guidelines, the North Park Basin is classified as an arid vegetation community. Non-sagebrush shrubs included in the GrSG Structural Habitat Guidelines for more arid locations include: horsebrush (*Tetradymia canescens*), rabbitbrush (*Chrysothamnus* spp.), bitterbrush (*Purshia tridentata*), snakeweed (*Gutierrezia sarothae*), greasewood (*Sarcobatus vermiculatus*), and winterfat (*Ceratoides* spp.).

Breeding Habitat

The project area was observed to provide an extensive sagebrush canopy, with various densities of understory grasses and herbaceous plants. Breeding habitat for GrSG is defined as sagebrush communities delineated within four miles of a strutting ground (lek). It is not known whether a strutting ground exists within four miles of the project area. Utilizing the Structural Habitat Guidelines, the plant species composition present at the proposed High Point Pad and access road meets or exceeds the minimum requirements for GrSG breeding habitats in five categories: Sagebrush Canopy (15-30%), Total Shrub Canopy (20-40%), Sagebrush Height (30-60 cm), Forb Understory (5-15%), and Grass Understory (10-20%). Since the vegetation variables meet or exceed the Structural Habitat Guidelines for GrSG breeding habitat, it is WSP's determination that construction of the High Point Pad and access road **may adversely affect** GrSG breeding habitat.

Summer-Fall Habitat

Using the GrSG Structural Habitat Guidelines for summer-fall in arid locations, the High Point Pad and access road plant species composition meets or exceeds the minimum requirements for summer-fall habitat in five categories: Sagebrush Canopy (10-25%), Total Shrub Canopy (20-35%), Sagebrush Height (30-65cm), forb understory (5-15%), and Grass Understory (10-30%).

Since the vegetation variables meet or exceed the Structural Habitat Guidelines for GrSG summer-fall habitat, it is WSP's determination that construction of the High Point Pad and access road **may adversely affect** summer-fall GrSG habitat.

Winter Habitat

Winter habitat is defined as sagebrush communities that are inhabited by GrSG from October through February. The two characteristics defining winter GrSG habitat are: Sagebrush Canopy (20-40%) and Sagebrush Height (20-40 cm). The proposed High Point Pad and access road exceeds the two vegetation requirements for GrSG winter habitat, therefore it is WSP's determination that construction of the High Point Pad and access road **may adversely affect** GrSG winter habitat.

6.0 CONCLUSION

- No federally-listed endangered species or their habitat were observed at the proposed project area during site surveys.
- The proposed High Point Pad and access road habitat meets or exceeds the vegetation variables specified in the *Colorado GrSG Conservation Plan* for breeding, summer-fall, and winter habitats. Therefore, construction of the High Point Pad and access road may adversely affect GrSG seasonal habitats.
- The BLM designated sensitive Brewers sparrow may occupy sagebrush habitat within and adjacent to the proposed project infrastructure. This species would likely nest in preferred habitat between May 15th through July 15th. It is recommended that clearing associated with the construction of the High Point Pad and access road be completed outside of this nesting period to avoid impacting nesting Brewers sparrow.
- No wetlands were present within the proposed High Point Pad Project Area.

7.0 REFERENCES

BLM (Bureau of Land Management). 2015. Kremmling Field Office Record of Decision and Resource Management Plan.

CGSSC (Colorado Greater Sage-grouse Steering Committee). 2008. Colorado Greater Sage-grouse Conservation Plan. Colorado Division of Wildlife, Denver, Colorado, USA.

CPW (Colorado Parks and Wildlife). 2019. Lynx. Retrieved from <http://cpw.state.co.us/learn/Pages/SOC-Lynx.aspx> (accessed November 3, 2019).

USFWS (U.S. Fish and Wildlife Service). 2019a. Western Yellow-billed Cuckoo. Retrieved from <<https://www.fws.gov/sacramento/outreach/Public-Advisories/WesternYellow-BilledCuckoo/docs/WYBC-factsheet-southwestlearning.pdf>> (accessed November 3, 2019).

USFWS (U.S. Fish and Wildlife Service). 2019b. Mexican Spotted Owl. Retrieved from <https://www.fws.gov/ifw2es/mso.pdf> > (accessed January, 2019).

USFWS (U.S. Fish and Wildlife Service). 2019c. Canada Lynx. Retrieved from <https://www.fws.gov/mountain-prairie/species/mammals/lynx/canada_lynx.pdf> (accessed November 3, 2019).

USFWS (U.S. Fish and Wildlife Service). 2019d. North Park Phacelia. Retrieved from <<https://www.fws.gov/uploadedFiles/Phacelia%20formosula%20fact%20sheet.pdf>> (accessed November 3, 2019).

APD ID: 10400047165

Submission Date: 09/16/2019

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? N

Produced Water Disposal (PWD) Location:

PWD disturbance (acres):

PWD surface owner:

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number:

Injection well name:

Assigned injection well API number?

Injection well API number:

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Other PWD discharge volume (bbl/day):

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:



APD ID: 10400047165

Submission Date: 09/16/2019

Highlighted data
reflects the most
recent changes

Operator Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Well Name: PRU HIGH POINT 0880

Well Number: 4-28H16

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB000548

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: