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Minutes of the
Board of Minerals and Environment
Matthew Environmental Education and Training Center
523 East Capitol Avenue
Pierre, South Dakota

March 21, 2019
10:00 a.m. CDT

CALL TO ORDER: The meeting was called to order by Chairman Rex Hagg. The roll was called, and a quorum was present.

Chairman Hagg announced that the meeting was streaming live on SD.net, a service of South Dakota Public Broadcasting.

BOARD MEMBERS PRESENT: Rex Hagg, Gregg Greenfield, Glenn Blumhardt, Dennis Landguth, Daryl Englund, John Scheetz, Jessica Peterson, and Bob Morris.

BOARD MEMBERS ABSENT: Doyle Karpen.

OTHERS PRESENT: See attached attendance sheet.

APPROVAL OF MINUTES FROM JANUARY 17, 2019, MEETING: Motion by Blumhardt, seconded by Englund, to approve the minutes from the January 17, 2019, Board of Minerals and Environment meeting. A roll call vote was taken, and the motion carried unanimously.

MINING ISSUES

Consent Calendar: Prior to the meeting, the board received a table listing the department recommendations for transfers of liability and releases of surety, transfers of liability, and releases of liability (see attachment).

Tom Cline, DENR Minerals and Mining Program, was available to answer questions.

Responding to questions from Mr. Landguth, Mr. Cline stated that in the last 60 days several new operators have applied for a mine license; there are four new sites. On average, there are 10 to 12 new sites per year.

In response to a question from Mr. Englund regarding the transfer of liability and release of \$500 from Sylvan Van Zee to Gary Van Zee, Mr. Cline stated that this is an estate taking over the mine license for reclamation and closure of the mine site.

Responding to a question from Mr. Scheetz regarding new mining in the Black Hills, Eric Holm stated that new exploration has occurred, but no new mine permits have been issued.

Motion by Greenfield, seconded by Peterson, to accept the department recommendations for transfers of liability and releases of surety, transfers of liability, and releases of liability, as shown on the consent calendar. A roll call vote was taken, and the motion carried unanimously.

Annual Update of Post Closure Financial Assurance for Homestake Mining Company, Permits 332 & 456, and LAC Minerals (USA), LLC, Permit 445:

Homestake Mining Company – Eric Holm reported that during the January 18, 2018, board hearing on Homestake’s recalculated post closure financial assurance, the board approved increasing it to \$47,797,929. When department staff recalculated the financial assurance, the discount rate was reduced in phases to meet the goal of having a uniform 5 percent discount rate for all large-scale gold mine post closure bonds.

In the first phase approved by the board in 2018, the discount rate was reduced from 6 percent to 5.5 percent, which is reflected in the current financial assurance amount. During the 2018 hearing, staff explained that in the second phase the discount rate would be reduced from 5.5 percent to 5 percent during the annual update of the financial assurance in 2019.

For the 2019 update, the department reduced the discount rate from 5.5 percent to 5 percent and added plugging costs for an additional monitoring well. As a result, the face value of the surety bond that serves as the post closure financial assurance is required to be \$56,460,929. This is approximately an \$8.6 million increase from the amount approved by the board last year.

For the post closure financial assurance increase, Homestake submitted a rider to Surety Bond No. 8233-63-10, Federal Insurance Company, increasing the amount from \$47,797,929 to \$56,460,929. Mr. Holm stated that Federal Insurance is licensed in South Dakota and is on the US Department of Treasury list of approved surety companies. Ratings for the company from AM Best, Standard and Poor’s, Moody’s, and Fitch’s are superior, very strong, high quality, and very high credit, respectively. Outlooks are stable from AM Best, Standard and Poor’s, and Fitches, and positive from Moody’s.

The department recommended the board accept the rider to Bond No. 8233-63-10, Federal Insurance Company, increasing the post closure financial assurance amount for Homestake Mining Company to \$56,460,929.

Responding to a question from Mr. Morris, Mr. Holm stated that the discount rate went from 5.5 percent to 5 percent. Homestake installed an additional monitoring well, so the cost of plugging the well was added to the bond amount. The financial assurance discount rate was reduced to 5 percent rather than 4 percent in order to meet the goal of having a uniform 5 percent discount rate for all large-scale gold mine post closure bonds. Mr. Holm stated that the department consulted with Matt Clark, SD Investment Council, who suggested looking at the historic inflation discount rates, and since these are 100-year bonds, staff looked at the average throughout history. Other states are also using the 5 percent rate.

In response to questions from Mr. Scheetz, Mr. Holm stated that the Grizzly Gulch tailings dam was grandfathered from permitting, and as a result is not included in the mine permit and not subject to bonding.

Mr. Scheetz suggested that in light of the all the tailings issues that have occurred in the last several months, the department should look into including the Grizzly Gulch dam in the bond calculations.

Mr. Holm stated that the bond covers all of Homestake's permitted mine areas and the water treatment.

Mr. Scheetz said it is important to include the Grizzly Gulch dam in the bond calculations.

Mr. Holm will check to see if there is a fund that covers the Grizzly Gulch dam.

Responding to a question from Mr. Landguth, Mr. Holm stated that the DENR Water Rights Program does annual inspections of the dam and Homestake has consultants that do an onsite inspection of the dam. If the consultants detect any problems, they notify Homestake.

Mr. Landguth asked what the dam was designed for – a 100 year event or a 500 year event.

Mr. Scheetz stated that the dam was designed for a back-to-back 100-year event and it is a clay core dam. He said it is not a tailings dam built upstream; it is actually a solid water dam, but it is potentially the biggest liability in South Dakota.

Mr. Landguth stated that he would like more details on the design of the dam.

Mr. Greenfield asked if the board can change the amount of the financial assurance amount at any time. Mr. Holm answered that the financial assurance for post closure can be adjusted any time if there is a problem with the water treatment. He stated that the dam is not part of any mine permit.

Chairman Hagg asked staff to follow up with information to answer the board's questions and concerns at the next meeting. He requested board action.

Motion by Morris, seconded by Landguth, to accept the rider to Bond No. 8233-63-10, Federal Insurance Company, increasing the post closure financial assurance amount to \$56,460,929.00. A roll call vote was taken, and the motion carried unanimously.

LAC Minerals (USA), Inc. – Mr. Holm reported that the post closure conditions for Mine Permit No. 445, which were approved by the board on January 21, 2016, state that the financial assurance shall be automatically extended for periods of one year. At the time of each annual extension, the face value of the financial assurance shall be adjusted to the bonding schedule set by the board in 2016.

For 2019, the face value of the surety bond that serves as the post closure financial assurance is required to be \$21,156,324. This is an increase from the \$20,503,154 amount, which was submitted last year. For the increase, LAC Minerals submitted a rider to Surety Bond No. 09177703, Fidelity & Deposit Company of Maryland and Zurich American Insurance Company, which increases the amount to the new face value. Both surety companies are licensed in South Dakota and are listed on the US Department of Treasury's list of approved surety companies.

Ratings for both companies from AM Best and Standard and Poor's are superior to very strong, and outlooks are stable.

The department recommended the board accept the rider to Surety Bond No. 09177703, Fidelity & Deposit Company of Maryland and Zurich American Insurance Company, to increase the post closure financial assurance amount to \$21,156,324.

In response to a question from Mr. Scheetz, Mr. Holm stated that LAC Minerals is doing well with the water treatment, and there have been no significant changes in their ability to comply with the permit and the closure process. Mr. Scheetz asked if the department is concerned about anything that is not currently covered, or should be covered, under LAC Minerals' financial assurance bond. Mr. Holm answered that at this time he is not aware of anything that should be covered by the bond. In 2021 the department will perform a five-year review of the permit. He noted that if anything were to happen to Barrick, the department would be taking over both the LAC Minerals facility and Homestake, and when the financial assurance amounts are added together, the department holds almost \$80,000,000 for water treatment, etc.

Motion by Englund, seconded by Blumhardt, to accept the rider to Bond No. 09177703, Fidelity & Deposit Company of Maryland and Zurich American Insurance Company, increasing the post closure financial assurance amount to \$21,156,324.00. A roll call vote was taken, and the motion carried unanimously.

Request for Five-Year Extension of Temporary Cessation for American Colloid Company, Permit 475: Prior to the meeting, the board members were provided with a copy of American Colloid Company's letter requesting the five-year extension of temporary cessation.

Mr. Holm reported that as required under SDCL 45-6B-3(8)(c), American Colloid has requested that the board grant a five-year extension of the period of temporary cessation for its bentonite mine located approximately 17.5 miles north of Belle Fourche, South Dakota. Under ARSD 74:29:09:06, the original five-year period of temporary cessation was issued by DENR on June 5, 2014, since it was uncontested.

American Colloid is not currently mining bentonite at the mine because there is no demand for the specific grade available at this site. Mining will resume once there is a demand for the bentonite and associated economics. All maintenance activities at the mine will continue during the five-year extension period. About 40 acres of the previous disturbance has been reclaimed.

The period of temporary cessation cannot continue for more than 10 years. Under SDCL 45-6B-3(8)(c), if American Colloid does not resume production by June 5, 2024, the mine permit will be terminated. No reclamation will be necessary since all disturbance has been reclaimed.

The department recommended that the board approve the five-year extension of the temporary cessation period for Mine Permit 475, to expire on June 5, 2024.

Responding to questions from Chairman Hagg, Mr. Holm stated that mine operators submit a letter to the department to request a five-year extension of the temporary cessation period. In addition, the mine operators continue to submit annual reports and updates to the department on

the status of the sites. The department performs annual inspections and monitors the sites to make sure the maintenance and reclamation is being done.

Mr. Holm stated that if the operator does not resume production by 2024, the mine permit will be terminated.

Mr. Morris asked if the company could go in and resume production for one day, then stop so their permit does not get terminated. Mr. Holm stated that it is possible, but in this case, it would not be feasible for the company to resume mining for one day then stop. The company is required to give notice to the department when they do resume production. The department would then go to the site to make sure that production had resumed.

Responding to a question from Mr. Greenfield regarding the \$10,000 surety, Mr. Holm said the surety amount would be higher if American Colloid resumes production. For this site, a \$700,000 bond will be required prior to resuming mining operations.

Mr. Scheetz asked if the department would be comfortable with the \$700,000 bond amount if the state had to take over the mine site and do the reclamation work. Mr. Holm answered that according to the calculations, \$700,000 would be sufficient if the state had to reclaim the site.

Responding to a question from Ms. Peterson, Mr. Holm stated that American Colloid Company has been performing all of the required maintenance activities during the last five years.

Motion by Morris, seconded by Landguth, to approve the request for a five-year extension of the temporary cessation for American Colloid Company, Permit 475, which will extend the temporary cessation to June 5, 2024. A roll call vote was taken, and the motion carried unanimously.

OIL AND GAS BONDING - OVERVIEW OF BONDING REQUIREMENTS AND 2013 CHANGES TO BONDING REQUIREMENTS AND SPYGLASS CEDAR CREEK, LP'S REVOKED PERMITS – STATUS OF SPYGLASS WELLS, SUMMARY OF ENFORCEMENT OPTIONS AND OTHER OPTIONS FOR ADDRESSING UNPLUGGED WELLS: Rich Williams, Assistant Attorney General, stated that Lucy Blocker would present an overview of Spyglass wells and an overview of South Dakota's oil and gas bonding, and Mr. Lees would discuss the DENR proposal to address the orphaned Spyglass wells. The presentations are attached.

Chairman Hagg asked that in the future, prior to the meeting, the board members be provided with the information that will be presented.

Bob Morris stated that he would continue recusal over any quasi-judicial discussion regarding Spyglass, but he would participate in the bonding discussion.

Ms. Blocker offered a PowerPoint presentation, which included:

- A map showing the location of all of the Spyglass wells
- Photo of the State 4-35 well, well house, pit liner showing at the surface. The pit liner at the surface is one of the violations.

- Photo of the Price 13-24R well. This was originally an oil well drilled by Summit. The well was plugged by Summit and Spyglass reentered the well. This is the second deepest well of the 40. There is no sign on the well, which is a violation. This well has never produced gas. In the second photo of the Price 13-24R, there is a pile of rock in the background, which is present because this well was originally an oil well. The rock and gravel would have been used to create the well pad. The rock pile needs to be reclaimed unless the surface owner wants it.
- Photo of the Gilbert 10-9 well, which last produced in July 2012. This is one of the largest well sites that Spyglass operated. Ancillary equipment is on the site. The site sits on an acre with a barbed wire fence around it. There is a well house, well head, and pipeline equipment. A photo of the inside of the well house shows the pipe and flow meter. The well house, which is not fenced and does not have signage.
- Schematics showing how the Spyglass 4-35 State and 13-24R wells are constructed underground. Spyglass produced gas out of the Pierre Shale, and fluid doesn't easily flow through shale. Staff considers the likelihood of fluid moving up through the well itself to be very low; the Pierre Shale involves a reducing environment, so staff is not concerned about degradation of the casing pipe. The wells were constructed in accordance with applicable rules and regulations. The surface casing and production casing are cemented to the surface, so staff isn't concerned that the drinking water will be affected.
- DENR Gas Well Plugging and Surface Restoration Cost Estimate for the four wells with an average depth of 5195 feet and the 36 wells with an average depth of 1868 feet. The projected total Spyglass plugging cost is \$887,700. This includes all 40 wells and includes complete surface reclamation costs, and these are conservative estimates including cost of contract labor, contingency and administrative overhead.
- 2013 Oil and Gas Bond Increase. The bond amounts are set in statute. In 2013, the legislature considered a bill to increase required bond amounts. Prior to 2013, there was no well depth consideration when determining the amount of the bond. The bond amount was \$5,000 for a single well or \$20,000 for a blanket bond. In addition to that, there was a blanket surface restoration bond of \$10,000. The original bill proposed a comprehensive increase to oil and gas bond amounts, but the bill was amended to effectively increase the required bond for only deep wells. In 2013, the legislature passed the amended bill, changing the bond amount as follows: Single shallow well-\$10,000; blanket shallow wells-\$30,000; single deep well \$50,000; blanket deep wells-\$100,000; and the surface restoration bond was eliminated. The bill was passed with a grandfather clause, so operators were only required to update their bonds if they assumed additional wells either through transfer or if they applied for new permits. Spyglass was not required to update its bonds.
- 2019 Oil and Gas bond requirement comparison. The table includes the bond type, bond sub-type, bonding requirements for North Dakota, Montana, Colorado, Nebraska, Wyoming, and South Dakota.
- Minerals and Mining Program Oil and Gas Surety Approval Checklist

Ms. Blocker answered questions from the board.

Mike Lees reported that Spyglass drilled most of its wells from 2006 to 2009. The price of natural gas from 2002 to 2009 was above \$6.00 per mcf (1,000 cubic feet) of gas. In 2009, the price of gas dropped to below \$3.00 per mcf, and that is where it has remained during the last 10 years. From 2006 to 2008, Spyglass was operating according to the regulations. Mineral owners were happy because they were getting paid royalties on their leases; however, there were people that were frustrated with Spyglass – mainly the split estate surface owners. Mr. Lees stated that DENR regulates the actual well site and the well hole. DENR does not regulate the pipelines, the access roads, and the ancillary impacts associated with oil and gas development, which frustrates surface owners when they have weed complaints, issues with the pipeline, or erosion.

Mr. Lees stated that in 2009, when the price of gas decreased, there was frustration on the part of the operator because they were not able to operate as profitably as when gas was \$6.00 per mcf. Spyglass continued to operate until 2012 at which time they had to shut in all their wells. This is when the mineral owners, split estate and other surface owners became frustrated. The operator went through years of litigation with their business partners regarding control of the company. The mineral owners were frustrated because the operator's business partners put an \$18 million lien on the equipment and infrastructure associated with the Jumpoff Field.

Mr. Lees stated that at least one mineral owner has reported frustration because DENR didn't revoke the permits in 2012 or 2013, because that mineral owner believed someone else could have come in and paid all of Spyglass' creditors and taken over the field. Mineral owners and potential permit transferees expressed frustration because critical infrastructure, the gas compressor, and the commercial purchasing station where gas goes to the big pipeline, were removed, which further complicated the prospect of someone coming in and taking over the field.

Surface owners reported continuing frustration due to the unused wells, roads, and other ancillary equipment taking up space that they could have otherwise used to graze their livestock. Surface owners also reported frustration with the possibility of gas leaks. Mr. Lees said two leaks have been identified since 2012, and DENR coordinated fixing those leaks.

Mineral owners and infrastructure lien holders could potentially be frustrated if the wells are plugged and the Jumpoff Field is dissolved.

Mr. Lees stated that most of the frustrations the department hears on a daily or weekly basis are things that are outside of DENR's scope of authority.

Responding to a question from Chairman Hagg, Mr. Lees stated that he is not aware of any litigation by surface or mineral owners concerning the Jumpoff Field.

In response to a question from Mr. Scheetz regarding emails the board received from The Acton Group, Mr. Lees said he cannot speak to what the mineral owner is saying in the emails. He assured the board the DENR has annually inspected the Spyglass wells since they were shut in. The permit files for all 40 wells are on the department's website, and the inspection reports are included in the permit files. DENR staff has gone to the Spyglass site in response to complaints the department received.

Chairman Hagg asked when the pipelines were removed. Mr. Lees stated that the pipeline is outside of the department's regulatory authority. Mr. Lees said he believes the lines are still in place, but it is unknown whether they are still viable.

Responding to a question from Mr. Morris, Mr. Lees stated that in 2012 there was a legislative summer study committee. DENR and the Governor's Office participated closely with the committee. The 2013 legislation increasing the bond amounts was a product of the summer study. The department and industry supported the bond increases. During the legislative process, the small oil and gas operators communicated with their legislators, who were the prime sponsors of the bill, asking for the lower bond amount for companies operating shallow wells.

The legislature also passed a bill that allows the use of the Department of Agriculture's arbitrator for surface owner/oil and gas operator disputes. Mr. Lees said to his knowledge, no one has used the arbitrator, but it has been available since 2013.

Chairman Hagg asked Mr. Lees to explain SB 102, which was introduced during the 2019 legislative session. Mr. Lees stated that SB 102 would have provided funding for unspecified cleanup of gas wells in Harding County. The bill would have taken \$1,000,000 from DENR's Regulated Substance Response Fund. The fund is used for the cleanup of releases or spills. The bill was ultimately tabled.

Responding to questions from Mr. Greenfield regarding the \$18 million lien, Mr. Lees said he does not know the specifics of the lien.

Commissioner Ryan Brunner, School and Public Lands, said he believes the mortgage lien was filed by New Frontier Energy or Pivot Accounting. Mr. Brunner stated that the board could obtain a copy of the lien from Harding County.

Mr. Williams said he believes Harding County also has a tax lien against Spyglass.

Mr. Lees offered a slide presentation discussing DENR's recommended plan to address the 40 orphaned Spyglass wells. The department proposed using the \$10,000 Spyglass Cedar Creek, LP bond and the \$130,000 Quartz Operations, LLC forfeited oil and gas surety bond plus accrued interest to accomplish the highest priority plugging and surface reclamation activities associated with the 40 Spyglass wells. A total of \$145,723 is available.

In response to a question from Chairman Hagg regarding the \$130,000 Quartz forfeited bond, Mr. Williams stated that once the money is forfeited to the state, the money can be used for any purpose. It is up to the Board of Minerals and Environment to decide whether that money could or should be applied to the Spyglass project.

Chairman Hagg stated that he would like a legal opinion concerning that matter before the board would make a decision. He asked Mr. Lees to continue with his presentation.

Mr. Lees offered the following DENR proposal for public notice to the surface and mineral owners in the Jumpoff Field:

- Notice: BME ordered permit revocation and bond forfeiture; DENR will be entering affected lands to perform plugging and reclamation work pursuant to SDCL 45-9-70.
- Certified mailing to all known affected property owners.
- Publish Notice in Nation's Center News and Rapid City Journal, or wider distribution?
- Solicit input from affected property owners (e.g., those who do not want wells plugged, those with high-priority surface reclamation needs contemplated by ARSD 74:12:03.)
- Notify known mineral owners and well owners that if they do not want DENR to plug their well they have 90 days to assume plugging and performance liability by posting a \$10,000 well bond, and requesting Temporarily Abandoned status for the well(s).
- Inform equipment/well owners they have 90 days to remove equipment they do not want DENR to remove/dispose of.
- Use input from affected property owners to develop the actual list of priority plugging and surface restoration activities to accomplish using forfeited oil and gas bonds.

Mr. Lees offered the following scope of proposed work:

- Analysis of the pressure and well configuration data led to one pleasant conclusion: Just over half of the 40 wells can likely be plugged at a lower cost than originally estimated.
- Priority wells would be plugged with cement, wellheads replaced, well sheds replaced.
- Priority surface reclamation proposed includes removal of barbed wire fences and ancillary equipment (i.e., equipment not contained within well sheds).
- Currently available resources are insufficient to accomplish comprehensive plugging and surface restoration at the 40 sites; the recommended plan will close the gap, and address many of the highest priority reclamation needs. After the highest priority needs are addressed, the department will reassess the remaining reclamation needs and make further recommendation to the board.
- The department proposes holding back approximately \$10,000 of the available funds to fix future gas leaks that may occur at unplugged wells.
- Reclamation work could begin as soon as fall, 2019.

Mr. Lees presented tables outlining conceptual options for prioritization of proposed work and factors to consider during the prioritization process:

- Which wells pose greatest risk?
- Cost/Benefit
- Private vs. state-owned surface
- Private split estate surface
- Presumably most/all mineral leases give the lessor the option to take ownership of wells if lessee fails to meet the conditions of the lease
- Viable vs. non-viable wells
- Liens?

Chairman Hagg asked Commissioner Brunner if the Office of School and Public Lands is using any of the royalties received from Spyglass's production to pursue cleanup of the orphaned Spyglass sites on state property.

Commissioner Brunner informed the board that the Constitution does not allow the Office of School and Public Lands to use any of the royalties paid by Spyglass for cleanup of Spyglass sites—all the lease payments received by the state must be distributed to schools.

The department offered four conceptual options for the proposed initial reclamation plan for the 40 former Spyglass gas wells. Mr. Lees discussed the tables showing each of the four options which include the well name, permit number, average production at shut-in, whether or not the well is viable, the well depth, tubing, a well plugging cost estimate, the mineral interest ownership, surface ownership, whether or not there is fence of ancillary equipment at the site, and a partial surface restoration cost estimate.

Option 1 prioritizes plugging wells on private surface and removal of fences and ancillary equipment from the surface at an estimated cost of \$138,750. Approximately \$7,000 would be reserved for a leak repair contingency.

Option 2 prioritizes plugging the maximum number of wells at an estimated cost of \$134,500. Approximately \$11,000 would be reserved for a leak repair contingency.

Option 3 prioritizes plugging the maximum number of wells on private surface at an estimated cost of \$135,750. Approximately \$10,000 would be reserved for a leak repair contingency.

Option 4 prioritizes plugging non-viable wells and removal of fences and ancillary equipment from the surface at an estimated cost of \$137,700. Approximately \$8,000 would be reserved for a leak repair contingency.

Mr. Lees stated that Option 1 is DENR's preferred option, but it is preliminary. The department would have to determine whether or not the mineral interest owner(s) wanted the wells plugged. If they opt not to have the state plug the wells, the owner(s) would need to post a bond and assume plugging liability for unplugged wells. He answered questions from the board regarding the four options.

Mr. Lees discussed the department's justification for use of the Quartz surety. The Quartz bond was a plugging and performance bond. DENR recommended forfeiture of the bond because the operator did not perform according to state rules and permit conditions. At the January 2017 Quartz enforcement hearing, DENR recommended no further plugging or restoration actions be taken at the Quartz Northern Points 1 site.

The upper section of the Quartz well is adequately and permanently plugged. Surface restoration is complete. The well poses no threat to locally utilized fresh water resources. Reentering the well to plug the lower portion of the well would cost in excess of \$2,000,000 and likely would not work. The department does not know if lower-quality Minnelusa Aquifer ground water is migrating through the wellbore into the locally utilized Inyan Kara aquifer, but if it is, DENR calculated the maximum down gradient extent of influence at 1,400 feet after 50 years. The closest down gradient well is approximately seven miles away. And finally, there is no practical/beneficial Northern Points 1 reclamation work for which the \$130,000 bond can be used.

Mr. Lees stated that if the board decides not to use the \$130,000 surety bond forfeited by Quartz Operations, LLC, the department's alternate recommendation is that DENR continues periodic

monitoring of the 40 Spyglass wells and DENR holds the \$10,000 Spyglass bond as a well leak response contingency fund.

The department requested authorization pursuant to SDCL 45-9-70 to use the forfeited oil and gas surety from Spyglass Cedar Creek, LP (Spyglass) and Quartz Operations, LLC to enter upon land affected by Spyglass and perform well plugging and surface restoration activities. Spyglass failed to perform as ordered to do so in writing.

Chairman Hagg asked if there is anything in the Quartz Operations LLC Findings of Fact and Conclusion of Law that would interfere if the board decides to use the forfeited bond to plug Spyglass wells.

Mr. Williams stated that at the hearing, Mr. Blair indicated that he thought the forfeited bond might be earmarked for reclamation at the Northern Points 1 location, but that is not confirmed in the Findings of Fact and Conclusions of Law. Mr. Lees confirmed that the Findings of Fact and Conclusions of Law from the 2017 Quartz Enforcement case do not contain any language specifying how the forfeited \$130,000 bond would be used.

Mr. Greenfield said he is not ready to make a decision regarding using the forfeited Quartz bond. According to staff, there is no public health and safety problem at Spyglass. Mr. Greenfield is also not in favor of ordering landowners to do something. He said the department should send letters or establish meetings with the landowners to present the options and come back to the board with what the landowners want, and the board can then consider how to fund what needs to be done.

Mr. Lees said the wells are not an environmental threat and there is no potential for groundwater contamination, but the department's biggest concern is human health and safety in the event of future gas leaks. A driving factor in the department's prioritization is getting as many wells plugged as possible.

Chairman Hagg said communication with the surface owner is important, but we have to be careful that we are not taking over and infringing on their rights. He asked that either the department's counsel or the board's counsel prepare a legal opinion regarding whether or not the board can use the \$130,000 bond forfeited by Quartz Operations.

At the last meeting, the board asked staff for a calculation of the maximum civil penalty authorized by statute. Mr. Williams stated that the period from July 10, 2018, to March 21, 2019, is 254 days of violations at \$500 per well per day with a total civil penalty of \$15,494,000.

Motion by Englund, seconded by Scheetz, to go into executive session to consult with legal counsel regarding proposed litigation. The motion carried with Blumhardt, Englund, Greenfield, Hagg, Landguth, Peterson, and Scheetz voting aye. Morris abstained.

Following executive session, Mr. Williams stated that the calculated civil penalty amount starts on the date of the Notice of Violation. He noted that realistically the board could impose the civil penalty starting on the date of the first violation in 2012, if it chose to do so.

Chairman Hagg asked for board action regarding the department's recommended plan to address the 40 Spyglass wells.

Motion by Greenfield, seconded by Englund, to defer action on the department's recommended plan until the April 18, 2019, meeting when the board is provided with more information regarding the use of the \$130,000 Quartz bond. A roll call vote was taken, and the motion carried with Blumhardt, Englund, Greenfield, Landguth, Peterson, Scheetz, and Hagg voting aye. Morris abstained.

Motion by Blumhardt, seconded by Greenfield, to impose a civil penalty in the amount of \$15,494,000, which was calculated at \$500 per day per violation commencing on the date the Notice of Violation was issued to Spyglass Cedar Creek, LP to the present date (July 10, 2018 to March 21, 2019), which reflects the statutory amount. A roll call vote was taken, and the motion carried with Blumhardt, Englund, Greenfield, Landguth, Peterson, Scheetz, and Hagg voting aye. Morris abstained.

NEXT MEETING: The next meeting is April 18, 2019.

PUBLIC COMMENT PERIOD IN ACCORDANCE WITH SDCL 1-25-1: There were no public comments.

ADJOURN: Motion by Englund, seconded by Peterson, to adjourn the meeting. A roll call vote was taken, and the motion carried unanimously.

Secretary _____ Date _____ Witness _____ Date _____

***South Dakota Board of Minerals & Environment
Consent Calendar***

March 21, 2019

<u>License Holder</u>	<u>License No.</u>	<u>Site No.</u>	<u>Surety Amount</u>	<u>Surety No.</u>	<u>Surety Company or Bank</u>	<u>DENR Recommendation</u>
<u>Transfers of Liability and Releases of Surety:</u>						
Sylvan Van Zee Franklin, TN	83-198		\$500	2090	First State Bank, Armour	Transfer liability and release \$500.
		198001	W1/2 Section 12; T100N-R65W, Douglas County			
Transfer to:						
Gary Van Zee Franklin, TN	18-1045		\$1,500	3000067768	BankWest, Armour	
Winter Brothers Underground, Inc. Brookings, SD	13-954		\$20,000	55204401	United Fire & Casualty Company	Transfer liability and release \$20,000.
		954001	SE1/4 Section 18; T109N-R49W, Brookings County			
Transfer to:						
WC Land, LLC Crooks, SD	18-1044		\$20,000	55218784	United Fire & Casualty Company	

***South Dakota Board of Minerals & Environment
Consent Calendar***

March 21, 2019

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<u>Transfers of Liability:</u>						
Dakota Earthworks, Inc. Sioux Falls, SD	05-809		\$20,000	2074857	North American Specialty Insurance Company	Transfer liability.
		809003	SE1/4 except H-3 & H-4 Section 18; T109N-R49W, Brookings County			
Transfer to:						
WC Land, LLC Crooks, SD	18-1044		\$20,000	55218784	United Fire & Casualty Company	
Don Farnsworth, Jr. Keystone, SD	98-643		\$500	16405	First National Bank, Pierre	Transfer liability.
			\$500	6301319957	Wells Fargo Bank, Winner	
		643001	NE1/4 Section 24; T39N-R25W, Todd county			
Transfer to:						
Atteberry Construction, Inc. Colome, SD	97-617		\$20,000	304332	First Fidelity Bank, Colome	

***South Dakota Board of Minerals & Environment
Consent Calendar***

March 21, 2019

<u>License Holder</u>	<u>License No.</u>	<u>Site No.</u>	<u>Surety Amount</u>	<u>Surety No.</u>	<u>Surety Company or Bank</u>	<u>DENR Recommendation</u>
<u>Transfers of Liability:</u>						
Potter County Highway Department Gettysburg, SD	83-147		Exempt	NA	NA	Transfer liability.
		147013	SE1/4 Section 29; T120N-R74W, Potter County			
Transfer to:						
Brownlee Construction, Inc. Watertown, SD	89-393		\$20,000	5440062	United Fire & Casualty Company	
<u>Releases of Liability:</u>						
Jensen Rock & Sand, Inc. Mobridge, SD	83-112		\$20,000	41-16-48	New Hampshire Insurance Company	Release liability.
		112034	N1/2 NW1/4 Section 14; T125N-R76W, Campbell County			
Myrl & Roy's Paving Inc. Sioux Falls, SD	83-95		\$20,000	0 40 44 34	Great American Insurance Company	Release liability.
		95017	NE1/4 & E1/2 NW1/4 Section 15; T101N-R50W, Minnehaha County			

***South Dakota Board of Minerals & Environment
Consent Calendar***

March 21, 2019

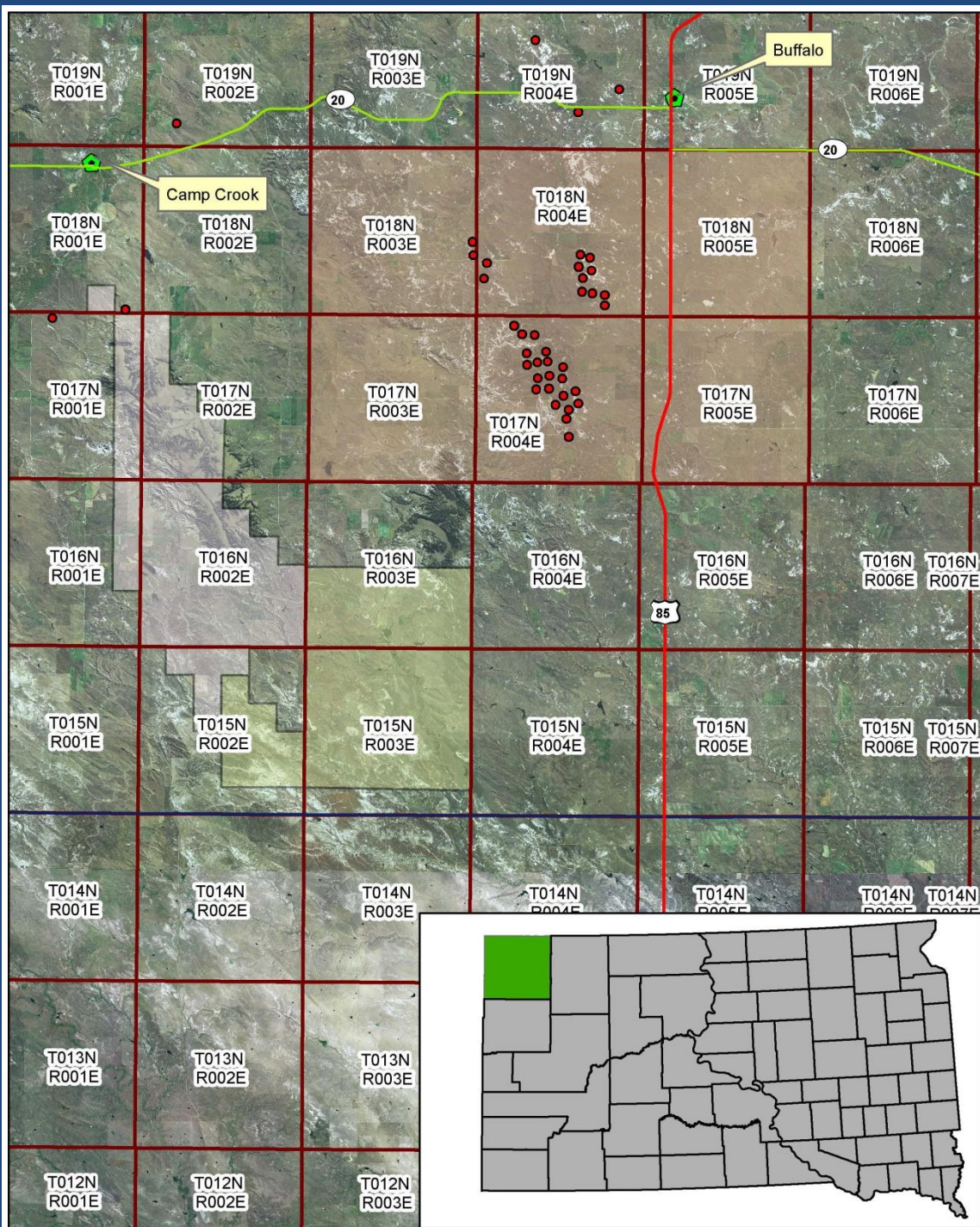
<u>License Holder</u>	<u>License No.</u>	<u>Site No.</u>	<u>Surety Amount</u>	<u>Surety No.</u>	<u>Surety Company or Bank</u>	<u>DENR Recommendation</u>
<u>Releases of Liability:</u>						
Charles Mix County Highway Department Lake Andes, SD	83-22		Exempt	NA	NA	Release liability.
		22024	SE1/4 NE1/4 Section 30; T99N-R68W, Charles Mix County			
Jackson County Highway Department Kadoka, SD	83-79		Exempt	NA	NA	Release liability.
		79003	NE1/4 Section 34; T3S-R21E, Jackson County			
		79023	NE1/4 Section 7; T43N-R33W, Jackson County			
		79025	NE1/4 Section 13; T3S-R22E, Jackson County			
		79031	SW14 Section 7; T1S-R25E, Jackson County			
		79039	SW1/4 Section 25; T1S-R24E, Jackson County			
		79040	E1/2 NE1/4 Section 25; T1S-R24E, Jackson County			
		79041	NE1/4 Section 11 & NW1/4 Section 12; T43N-R34W, Jackson County			

South Dakota Board of Minerals & Environment

March 21, 2019

<u>Permit Holder</u>	<u>Permit No.</u>	<u>Surety Amount</u>	<u>Surety No.</u>	<u>Surety Company or Bank</u>	<u>DENR Recommendation</u>
<u>Annual Update of Post Closure Financial Assurance:</u>					
Homestake Mining Company Central City, SD	332 & 456	\$47,797,929.00	8233-63-10	Federal Insurance Company	Accept rider to Bond No. 8233-63-10, Federal Insurance Company, increasing the Post Closure Financial Assurance amount to \$56,460,929.00.
LAC Minerals (USA), LLC Central City, SD	445	\$20,503,154.00	09177703	Fidelity & Deposit Company of Maryland Zurich American Insurance Company	Accept rider to Bond No. 09177703, Fidelity & Deposit Company of Maryland and Zurich American Insurance Company, increasing the Post Closure Financial Assurance amount to \$21,156,324.00.
<u>Request for 5-Year Extension of Temporary Cessation:</u>					
American Colloid Company Belle Fourche, SD	475	\$10,000	SU1114132	Arch Insurance Company	Approve the request for a 5-year extension of the temporary cessation for American Colloid Company, Permit 475, which will extend the temporary cessation to June 5, 2024.

Spyglass Cedar Creek and South Dakota's Oil and Gas Bonds



35 S 10 21 382
SPYGLASS
STATE 4-35
Permit #: 1814
NWNW 35-18N-4E
Harding County, South Dakota
© 2011-2012







Price 13-24R (40 063 20542 01, 1780)








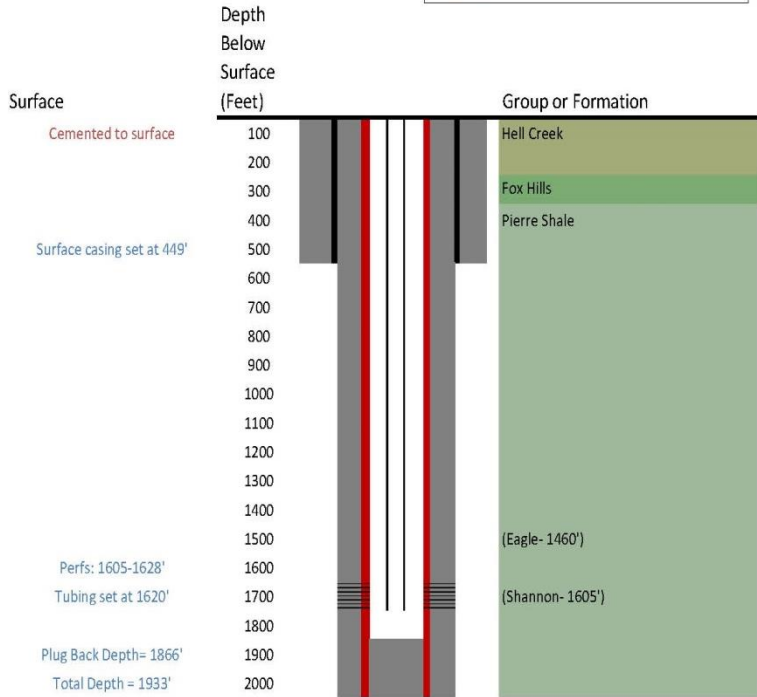
Gilbert 10-9 (40 063 20622, 1827)



Well Name: Spyglass 4-35 State
 Location: NWNW, Sec. 35, T18N, R4E




LEGEND

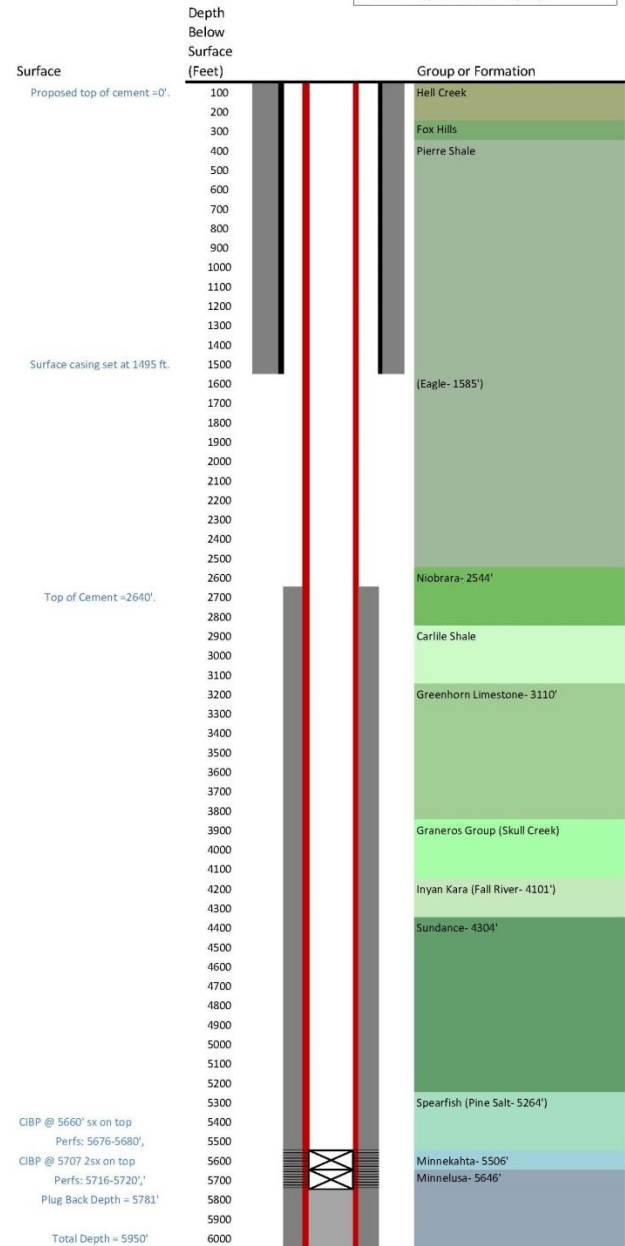
-  Cement
-  Surface Casing
-  Production Casing
- Red Text DENR Calculations / Comments
- Blue Text Application / Well Comp. Report



Well Name: Spyglass 13-24R Price
 Location: SWSW, Sec. 24, T19N, R4E

LEGEND

-  Cement
-  Surface Casing
-  Production Casing
- Red Text DENR Calculations / Comments
- Blue Text Application / Well Comp. Report



DENR Gas Well Plugging and Surface Restoration Cost Estimate

Operator: Spyglass Cedar Creek
Average well depth: 5195' (4 wells)
Average site acreage: 1.1 acres

Service/Item	Cost
Surface Restoration: Mobilization, removing equipment, grading, replacing topsoil, reseeding, spraying weeds	\$8,000
Completion Rig: 2 day at \$4,750/day	\$9,500
Haul Water to Site:	\$1,000
Wireline Services: Set Bridge Plug, Set Cement Retainer, Perforating	\$10,000
Cementing Services:	\$10,000
Administrative Overhead:	\$1,000
Contract Labor:	\$2,500
10% Contingency:	\$4,200
Total per well:	\$46,200
Accumulative Deep Well Cost:	\$184,800

DENR Gas Well Plugging and Surface Restoration Cost Estimate

Operator: Spyglass Cedar Creek
Average well depth: 1868' (36 wells)

Service/Item	Cost
Surface Restoration: Mobilization, removing equipment, reseeding, spraying weeds	\$4,000
Completion Rig: 1 day at \$4,750/day	\$4,750
Haul Water to Site:	\$1,000
Cementing Services:	\$5,500
Administrative Overhead:	\$500
Contract Labor:	\$2,000
10% Contingency:	\$1,775
Total per well:	\$19,525
Accumulative Shallow Well Cost:	\$702,900

Projected Total Spyglass Plugging Cost:	\$887,700
--	------------------

2013 Oil and Gas Bond Increase

Bond Type	Bond Sub Type	Previous	Current
Oil and Gas Well Plugging and Performance Bond	Single Well ("shallow")	\$5,000	\$10,000
	Blanket Wells ("shallow")		\$30,000
	Single Well ("deep")	\$5,000	\$50,000
	Blanket Wells ("deep")		\$100,000
	Blanket Bond	\$20,000	\$20,000
Surface Restoration Bond	NA	\$10,000	Repealed

2019 Oil and Gas Bond Requirement Comparison

Bond Type	Bond Sub Type	North Dakota	Montana	Colorado	Nebraska	Wyoming	South Dakota
Oil and Gas Well Plugging and Performance Bond	Single Well ("shallow")	\$50,000 or less if approved by Director (for depths less than 2,000')	\$1,500 (for depths less than 2,000')	\$10,000 (for depths 3,000' or less)	\$10,000	\$10.00/ft of wellbore	\$10,000
	Single Well ("deep")	\$50,000 (for depths greater than 2,000')	\$5,000 (for depths 2,000' to 3,500') \$10,000 (for depths 3,501' or more)	\$20,000 (for depths 3,000' or more)	\$10,000	\$10.00/ft of wellbore	\$50,000
	Blanket Bond	\$100,000 (Covers limited number of wells)	\$50,000	\$60,000 for less than 100 wells, \$100,000 for 100 or more wells	\$100,000	\$100,000	\$30,000 for shallow wells, \$100,000 for deep wells
Oil and Gas Enhanced Recovery Unit		Amount specified by the commission in the approving order	NA	NA	NA	NA	NA
Surface Restoration Bond	General (per well)	NA	NA	NA	NA	NA	NA
	Irrigated Lands (per well)	NA	NA	\$5,000	NA	NA	NA
	Non-Irrigated Lands (per well)	NA	NA	\$2,000	NA	NA	NA
	Blanket Bond	NA	NA	\$25,000	NA	Supervisor may approve a bond to cover all oil & gas operations on the surface owner's land	NA
Bond for Temporarily Abandoned Oil and Gas Wells	NA	NA	NA	Bond increased by \$10,000/excessive inactive well for less than 3,000' of inactive wells, and \$20,000/excessive inactive well for greater than 3,000' of inactive wells	NA	Up to \$10.00 per foot of idle well on fee or patented lands	NA

Bond Amounts for All Non-Plugged Wells at \$10/foot Vs. Existing Bond Amounts

Operator	# Wells	Total Amount at \$10/foot (USD)	Current Bonded Amount (USD)
Bert Corwin	1	\$5,000.00	\$30,000.00
Citation Oil and Gas Corp.	28	\$1,833,020.00	\$30,000.00
Clark Blake Production, LLC	50	\$810,500.00	\$320,000.00
Continental Resources Inc.	151	\$12,890,856.00	\$100,000.00
Gulf Exploration	1	\$38,000.00	\$30,000.00
L and J Operating Inc.	5	\$150,510.00	\$22,000.00
Luff Exploration Co.	65	\$5,792,653.00	\$100,000.00
Murex Petroleum Corp.	4	\$257,600.00	\$20,000.00
P. K. Roosevelt	9	\$279,060.00	\$60,000.00
RIM Operating, Inc.	2	\$183,940.00	\$100,000.00
Sands Oil Co.	27	\$257,940.00	\$30,000.00
Spyglass Cedar Creek LP	40	\$885,380.00	\$9,950.00
Thomas L. Sunde	6	\$90,260.00	\$30,000.00
Zenergy Operating Co., LLC	5	\$420,470.00	\$100,000.00
Total	394	\$24,602,160.00	\$981,950.00

Minerals and Mining Program

Oil & Gas Surety Approval Checklist

Operator:		Surety Number:	
Reviewer:		Review Date:	
Surety Co.:		Date Established:	
Agent:			
Agency:			
Surety Type:		Bond Amount:	

Surety Bond Form	
<input type="checkbox"/>	The correct surety bond number is listed on the form
<input type="checkbox"/>	The correct permit number is listed on the form
<input type="checkbox"/>	The correct bond amount has been circled for shallow vs. deep wells, single vs. blanket
<input type="checkbox"/>	The Company/Principal name matches the name on the permit
<input type="checkbox"/>	The state where the surety company is organized and exists matches the state listed on the Power of Attorney
<input type="checkbox"/>	Notarized acknowledgement of Company/Principal official having authority to sign the form submitted
<input type="checkbox"/>	The Company/Principal official's signature, title, mailing address, and the date information is correctly listed
<input type="checkbox"/>	The surety company's name and mailing address are correctly listed
<input type="checkbox"/>	Surety company's authorized power of attorney's signature, title, and date information is correctly listed
<input type="checkbox"/>	The surety seal has been applied to the form
Surety Company	
<input type="checkbox"/>	The surety company is licensed to transact surety business in South Dakota
<input type="checkbox"/>	The surety company is listed on the US Dept. of Treasury Circular 570
	http://www.fiscal.treasury.gov/fsreports/ref/suretyBnd/c570_a-z.htm
	Date checked: _____
Power of Attorney (POA)	
<input type="checkbox"/>	Person signing bond is shown as POA as agent/attorney-in-fact with authority to commit the surety
<input type="checkbox"/>	Notarized acknowledgement of agent/attorney-in-fact submitted
<input type="checkbox"/>	The date on the POA is consistent with the date the attorney-in-fact signed the surety bond form
<input type="checkbox"/>	The correct surety seal is applied to the original POA
Certificate of Deposit (CD)	
<input type="checkbox"/>	The wording and amount of the CD is correct
<input type="checkbox"/>	CD requires operator and DENR signature to access funds
Comments:	

Proposed Initial Reclamation Plan for 40 Former Spyglass Gas Wells, OPTION 1
Prioritizes Plugging Wells on Private Surface and Removal of Fences and Ancillary Equipment from Surface

Well Name	Permit	Average production at shut-in (mcf/day)	Viable?	Depth (ft)	Tubing	Wellbore Plugging Estimate	Mineral Interest	Surface Owner	Fence or Ancillary Equipment at site	Partial Surface Restoration Cost Estimate
3-30 State	1793	23.44	Yes	1950		\$5,000	49.43% SPL, 50.57% Federal/Private	Private	Yes	\$8,000
Spyglass 16-24 Hett	1825	3.90	Yes	1539*		\$5,000	50% SPL, 50% Private	Private	Yes	\$1,000
Peterson 6-5	1826	1.93	Yes	1912		\$5,000	12.51% SPL, 87.49% Private	Private	Yes	\$1,000
Gilbert 10-9	1827	20.00	Yes	2085		\$5,000	Mix of Private and Federal	Private	Yes	\$1,000
Gilbert State 3-16	1828	37.10	Yes	2000		\$5,000	100% SPL	Private	Yes	\$1,000
Gilbert 5-26	1829	44.92	Yes	1880		\$5,000	Mix of Private and Federal	Private	Yes	\$1,000
Hett 8-24	1869	0	No	1905		\$5,000	100% Private	Private	Yes	\$1,000
State 11-30	1948	0	No	1697		\$5,000	Unkown % of SPL minerals	Private	Yes	\$1,000
State 12-4	1964	0.00	No	1722		\$5,000	10.9 % SPL	Private		
Gilbert 12-9	1965	11.44	Yes	1720		\$5,000	100% Private/Federal	Private		
Heairet-Henderson 10-	1966	0.00	Yes	1790		\$5,000	100% Private/Federal	Private		
Gilbert 12-16	1968	0.50	Yes	1698		\$5,000	100% SPL	Private		
Heairet-Henderson 2-	1969	1.65	Yes	1780		\$5,000	100% Private	Private		
Gilbert 13-10	1975	0.00	No	1720		\$5,000	100% Private	Private		
Gilbert 1-34	1978	0.04	No	1722		\$5,000	100% Private	Private		
Gold Point State 32-1	1778	0	No	2831		\$5,000	100% Private	School and Public Lands		
10-27 State	1789	0	No	5024		\$5,000	100% Private	School and Public Lands		
State 10-35	1865	0.36	Yes	1906		\$5,000	50% SPL, 50% Federal/Private	School and Public Lands	Yes	\$1,000
State JO 6-27	1885	0	No	2156		\$5,000	100% Private	School and Public Lands	Yes	\$1,000
State 13-23	1887	0.00	Yes	1730		\$5,000	100% SPL	School and Public Lands		
Spyglass State 7-35	1949	0.07	Yes	1700		\$5,000	100% SPL	School and Public Lands		
State 2-27	1950	44.47	Yes	1450		\$5,000	75% SPL, 25% Federal/Private	School and Public Lands		
Gilbert 5-15	1868	0.19	Yes	1967	1.75" Tubing	\$12,250	100% Private	Private	Yes	\$1,000
Peterson 10-5	1877	35.92	Yes	2023	1.75" Tubing	\$12,250	12.5% SPL, 87.5% Federal/Private	Private	Yes	\$1,000
Gilbert 7-9	1890	14.27	Yes	1905	1.75" Tubing	\$12,250	50% SPL, 50% Federal/Private	Private	Yes	\$1,000
State 16-8	1863	14.36	Yes	1914	1.75" Tubing	\$12,250	75% SPL, 25% Federal/Private	School and Public Lands	Yes	\$1,000
State 14-36	1886	0	No	1842	.5" Poly Tubin	\$12,250	100% Private	School and Public Lands		
State 16-22	1888	0.71	Yes	1905	1.75" Tubing	\$12,250	100% SPL	School and Public Lands	Yes	\$1,000
Gilbert 1-2H	1979	0	No	1560	1.5" Tubing	\$12,250	100% Private	School and Public Lands		
Gilbert 13-15	1867	110.85	Yes	1980		\$24,000	Mix of Private and Federal	Private	Yes	\$1,000
Questar 9-27	1876	127.37	Yes	2000	1.75" Tubing	\$24,000	50% SPL, 50% Private	Private	Yes	\$1,000
Fox 6-22	1961	139.85	Yes	1740		\$24,000	100% Private	Private		
State 2-16	1967	75.11	Yes	1710		\$24,000	100% SPL	Private		
Acton 11-22	1971	122.74	Yes	1760		\$24,000	100% Private	Private		
Spyglass 4-35 State	1814	99.04	Yes	1933	1.75" Tubing	\$24,000	100% SPL	School and Public Lands	Yes	\$1,000
State 10-16	1864	72.97	Yes	2000		\$24,000	100% SPL	School and Public Lands	Yes	\$1,000
State 8-8	1866	81.04	Yes	1932	1.75" Tubing	\$24,000	50% SPL, 50% Federal/Private	School and Public Lands	Yes	\$1,000
State 1-21	1960	118.89	Yes	1743		\$24,000	25% SPL, 75% Private	School and Public Lands		
Price 13-24R	1780	0	No	5950		\$46,200	100% Private	Private		
State 4-16	1781	0	No	5972		\$46,200	100% Private	School and Public Lands		

*depth of perforations

ESTIMATED COST TO PLUG 18 PRIORITY WELLS

\$111,750

Work Proposed

Under Option 1

TOTAL OPTION 1 COST ESTIMATE

\$138,750

SURFACE WORK EXPENDITURES

\$27,000

\$6,973 Remains for Leak Repair Contingency

Wellbore Plugging Estimate for 40 Spyglass Wells

\$504,150

Fence/Equipment Removal Estimate for 40 Spyglass Wells

\$27,000

**Proposed Initial Reclamation Plan for 40 Former Spyglass Gas Wells, OPTION 2
Prioritizes Plugging Maximum Number of Wells**

Well Name	Permit	Average production at shut-in (mcf/day)	Viable?	Depth (ft)	Tubing	Wellbore Plugging Estimate	Mineral Interest	Surface Owner	Fence or Ancillary Equipment at site	Partial Surface Restoration Cost Estimate
3-30 State	1793	23.44	Yes	1950		\$5,000	49.43% SPL, 50.57% Federal/Private	Private	Yes	\$8,000
Spyglass 16-24 Hett	1825	3.90	Yes	1539*		\$5,000	50% SPL, 50% Private	Private	Yes	\$1,000
Peterson 6-5	1826	1.93	Yes	1912		\$5,000	12.51% SPL, 87.49% Private	Private	Yes	\$1,000
Gilbert 10-9	1827	20.00	Yes	2085		\$5,000	Mix of Private and Federal	Private	Yes	\$1,000
Gilbert State 3-16	1828	37.10	Yes	2000		\$5,000	100% SPL	Private	Yes	\$1,000
Gilbert 5-26	1829	44.92	Yes	1880		\$5,000	Mix of Private and Federal	Private	Yes	\$1,000
Hett 8-24	1869	0	No	1905		\$5,000	100% Private	Private	Yes	\$1,000
State 11-30	1948	0	No	1697		\$5,000	Unkown % of SPL minerals	Private	Yes	\$1,000
State 12-4	1964	0.00	No	1722		\$5,000	10.9 % SPL	Private		
Gilbert 12-9	1965	11.44	Yes	1720		\$5,000	100% Private	Private		
Heairet-Henderson 10	1966	0.00	Yes	1790		\$5,000	100% Private	Private		
Gilbert 12-16	1968	0.50	Yes	1698		\$5,000	100% SPL	Private		
Heairet-Henderson 2-	1969	1.65	Yes	1780		\$5,000	100% Private	Private		
Gilbert 13-10	1975	0.00	No	1720		\$5,000	100% Private	Private		
Gilbert 1-34	1978	0.04	No	1722		\$5,000	100% Private	Private		
Gold Point State 32-1	1778	0	No	2831		\$5,000	100% Private	School and Public Lands		
10-27 State	1789	0	No	5024		\$5,000	100% Private	School and Public Lands		
State 10-35	1865	0.36	Yes	1906		\$5,000	50% SPL, 50% Federal/Private	School and Public Lands	Yes	\$1,000
State JO 6-27	1885	0	No	2156		\$5,000	100% Private	School and Public Lands	Yes	\$1,000
State 13-23	1887	0.00	Yes	1730		\$5,000	100% SPL	School and Public Lands		
Spyglass State 7-35	1949	0.07	Yes	1700		\$5,000	100% SPL	School and Public Lands		
State 2-27	1950	44.47	Yes	1450		\$5,000	75% SPL, 25% Federal/Private	School and Public Lands		
Gilbert 5-15	1868	0.19	Yes	1967	1.75" Tubing	\$12,250	100% Private	Private	Yes	\$1,000
Peterson 10-5	1877	35.92	Yes	2023	1.75" Tubing	\$12,250	12.5% SPL, 87.5% Federal/Private	Private	Yes	\$1,000
Gilbert 7-9	1890	14.27	Yes	1905	1.75" Tubing	\$12,250	50% SPL, 50% Federal/Private	Private	Yes	\$1,000
State 16-8	1863	14.36	Yes	1914	1.75" Tubing	\$12,250	75% SPL, 25% Federal/Private	School and Public Lands	Yes	\$1,000
State 14-36	1886	0	No	1842	1.5" Poly Tubin	\$12,250	100% Private	School and Public Lands		
State 16-22	1888	0.71	Yes	1905	1.75" Tubing	\$12,250	100% SPL	School and Public Lands	Yes	\$1,000
Gilbert 1-2H	1979	0	No	1560	1.5" Tubing	\$12,250	100% Private	School and Public Lands		
Gilbert 13-15	1867	110.85	Yes	1980		\$24,000	Mix of Private and Federal	Private	Yes	\$1,000
Questar 9-27	1876	127.37	Yes	2000	1.75" Tubing	\$24,000	50% SPL, 50% Private	Private	Yes	\$1,000
Fox 6-22	1961	139.85	Yes	1740		\$24,000	100% Private	Private		
State 2-16	1967	75.11	Yes	1710		\$24,000	100% SPL	Private		
Acton 11-22	1971	122.74	Yes	1760		\$24,000	100% Private	Private		
Spyglass 4-35 State	1814	99.04	Yes	1933	1.75" Tubing	\$24,000	100% SPL	School and Public Lands	Yes	\$1,000
State 10-16	1864	72.97	Yes	2000		\$24,000	100% SPL	School and Public Lands	Yes	\$1,000
State 8-8	1866	81.04	Yes	1932	1.75" Tubing	\$24,000	50% SPL, 50% Federal/Private	School and Public Lands	Yes	\$1,000
State 1-21	1960	118.89	Yes	1743		\$24,000	25% SPL, 75% Private	School and Public Lands		
Price 13-24R	1780	0	No	5950		\$46,200	100% Private	Private		
State 4-16	1781	0	No	5972		\$46,200	100% Private	School and Public Lands		

*depth of perforations

ESTIMATED COST TO PLUG 24 PRIORITY WELLS

\$134,500

Work Proposed

SURFACE WORK EXPENDITURES

\$0

Under Option 2

TOTAL OPTION 2 COST ESTIMATE

\$134,500

\$11,223 Remains for Leak Repair Contingency

Wellbore Plugging Estimate for 40 Spyglass Wells

\$504,150

Fence/Equipment Removal Estimate for 40 Spyglass Wells

\$27,000

**Proposed Initial Reclamation Plan for 40 Former Spyglass Wells, OPTION 3
Prioritizes Plugging Maximum Number of Wells on Private Surface**

Well Name	Permit	Average production at shut-in (mcf/day)	Viability?	Depth (ft)	Tubing	Wellbore Plugging Estimate	Mineral Interest	Surface Owner	Fence or Ancillary Equipment at site	Partial Surface Restoration Cost Estimate
3-30 State	1793	23.44	Yes	1950		\$5,000	49.43% SPL, 50.57% Federal/Private	Private	Yes	\$8,000
Spyglass 16-24 Hett	1825	3.90	Yes	1539*		\$5,000	50% SPL, 50% Private	Private	Yes	\$1,000
Peterson 6-5	1826	1.93	Yes	1912		\$5,000	12.51% SPL, 87.49% Private	Private	Yes	\$1,000
Gilbert 10-9	1827	20.00	Yes	2085		\$5,000	Mix of Private and Federal	Private	Yes	\$1,000
Gilbert State 3-16	1828	37.10	Yes	2000		\$5,000	100% SPL	Private	Yes	\$1,000
Gilbert 5-26	1829	44.92	Yes	1880		\$5,000	Mix of Private and Federal	Private	Yes	\$1,000
Hett 8-24	1869	0	No	1905		\$5,000	100% Private	Private	Yes	\$1,000
State 11-30	1948	0	No	1697		\$5,000	Unkown % of SPL minerals	Private	Yes	\$1,000
State 12-4	1964	0.00	No	1722		\$5,000	10.9 % SPL	Private		
Gilbert 12-9	1965	11.44	Yes	1720		\$5,000	100% Private/Federal	Private		
Heairet-Henderson 10-	1966	0.00	Yes	1790		\$5,000	100% Private/Federal	Private		
Gilbert 12-16	1968	0.50	Yes	1698		\$5,000	100% SPL	Private		
Heairet-Henderson 2-	1969	1.65	Yes	1780		\$5,000	100% Private	Private		
Gilbert 13-10	1975	0.00	No	1720		\$5,000	100% Private	Private		
Gilbert 1-34	1978	0.04	No	1722		\$5,000	100% Private	Private		
Gold Point State 32-1	1778	0	No	2831		\$5,000	100% Private	School and Public Lands		
10-27 State	1789	0	No	5024		\$5,000	100% Private	School and Public Lands		
State 10-35	1865	0.36	Yes	1906		\$5,000	50% SPL, 50% Federal/Private	School and Public Lands	Yes	\$1,000
State JO 6-27	1885	0	No	2156		\$5,000	100% Private	School and Public Lands	Yes	\$1,000
State 13-23	1887	0.00	Yes	1730		\$5,000	100% SPL	School and Public Lands		
Spyglass State 7-35	1949	0.07	Yes	1700		\$5,000	100% SPL	School and Public Lands		
State 2-27	1950	44.47	Yes	1450		\$5,000	75% SPL, 25% Federal/Private	School and Public Lands		
Gilbert 5-15	1868	0.19	Yes	1967	1.75" Tubing	\$12,250	100% Private	Private	Yes	\$1,000
Peterson 10-5	1877	35.92	Yes	2023	1.75" Tubing	\$12,250	12.5% SPL, 87.5% Federal/Private	Private	Yes	\$1,000
Gilbert 7-9	1890	14.27	Yes	1905	1.75" Tubing	\$12,250	50% SPL, 50% Federal/Private	Private	Yes	\$1,000
State 16-8	1863	14.36	Yes	1914	1.75" Tubing	\$12,250	75% SPL, 25% Federal/Private	School and Public Lands	Yes	\$1,000
State 14-36	1886	0	No	1842	.5" Poly Tubin	\$12,250	100% Private	School and Public Lands		
State 16-22	1888	0.71	Yes	1905	1.75" Tubing	\$12,250	100% SPL	School and Public Lands	Yes	\$1,000
Gilbert 1-2H	1979	0	No	1560	1.5" Tubing	\$12,250	100% Private	School and Public Lands		
Gilbert 13-15	1867	110.85	Yes	1980		\$24,000	Mix of Private and Federal	Private	Yes	\$1,000
Questar 9-27	1876	127.37	Yes	2000	1.75" Tubing	\$24,000	50% SPL, 50% Private	Private	Yes	\$1,000
Fox 6-22	1961	139.85	Yes	1740		\$24,000	100% Private	Private		
State 2-16	1967	75.11	Yes	1710		\$24,000	100% SPL	Private		
Acton 11-22	1971	122.74	Yes	1760		\$24,000	100% Private	Private		
Spyglass 4-35 State	1814	99.04	Yes	1933	1.75" Tubing	\$24,000	100% SPL	School and Public Lands	Yes	\$1,000
State 10-16	1864	72.97	Yes	2000		\$24,000	100% SPL	School and Public Lands	Yes	\$1,000
State 8-8	1866	81.04	Yes	1932	1.75" Tubing	\$24,000	50% SPL, 50% Federal/Private	School and Public Lands	Yes	\$1,000
State 1-21	1960	118.89	Yes	1743		\$24,000	25% SPL, 75% Private	School and Public Lands		
Price 13-24R	1780	0	No	5950		\$46,200	100% Private	Private		
State 4-16	1781	0	No	5972		\$46,200	100% Private	School and Public Lands		

*depth of perforations

ESTIMATED COST TO PLUG 19 PRIORITY WELLS

\$135,750

Work Proposed

Under Option 3

TOTAL OPTION 3 COST ESTIMATE

\$135,750

SURFACE WORK EXPENDITURES

\$0

\$9,973 Remains for Leak Repair Contingency

Wellbore Plugging Estimate for 40 Spyglass Wells

\$504,150

Fence/Equipment Removal Estimate for 40 Spyglass Wells

\$27,000

Proposed Initial Reclamation Plan for 40 Former Spyglass Wells, OPTION 4
Prioritizes Plugging Non-Viable Wells and Removal of Fences and Ancillary Equipment from Surface

Well Name	Permit	Average production at shut-in (mcf/day)	Viable?	Depth (ft)	Tubing	Wellbore Plugging Estimate	Mineral Interest	Surface Owner	Fence or Ancillary Equipment at site	Partial Surface Restoration Cost Estimate
Hett 8-24	1869	0	No	1905		\$5,000	100% Private	Private	Yes	\$1,000
State 11-30	1948	0	No	1697		\$5,000	Unkown % of SPL minerals	Private	Yes	\$1,000
State 12-4	1964	0.00	No	1722		\$5,000	10.9 % SPL	Private		
Gilbert 13-10	1975	0.00	No	1720		\$5,000	100% Private	Private		
Gilbert 1-34	1978	0.04	No	1722		\$5,000	100% Private	Private		
Price 13-24R	1780	0	No	5950		\$46,200	100% Private	Private		
Gold Point State 32-1	1778	0	No	2831		\$5,000	100% Private	School and Public Lands		
10-27 State	1789	0	No	5024		\$5,000	100% Private	School and Public Lands		
State JO 6-27	1885	0	No	2156		\$5,000	100% Private	School and Public Lands	Yes	\$1,000
State 14-36	1886	0	No	1842	.5" Poly Tubing	\$12,250	100% Private	School and Public Lands		
Gilbert 1-2H	1979	0	No	1560	1.5" Tubing	\$12,250	100% Private	School and Public Lands		
State 4-16	1781	0	No	5972		\$46,200	100% Private	School and Public Lands		
3-30 State	1793	23.44	Yes	1950		\$5,000	49.43% SPL, 50.57% Federal/Private	Private	Yes	\$8,000
Spyglass 16-24 Hett	1825	3.90	Yes	1539*		\$5,000	50% SPL, 50% Private	Private	Yes	\$1,000
Peterson 6-5	1826	1.93	Yes	1912		\$5,000	12.51% SPL, 87.49% Private	Private	Yes	\$1,000
Gilbert 10-9	1827	20.00	Yes	2085		\$5,000	Mix of Private and Federal	Private	Yes	\$1,000
Gilbert State 3-16	1828	37.10	Yes	2000		\$5,000	100% SPL	Private	Yes	\$1,000
Gilbert 5-26	1829	44.92	Yes	1880		\$5,000	Mix of Private and Federal	Private	Yes	\$1,000
Gilbert 12-9	1965	11.44	Yes	1720		\$5,000	100% Private/Federal	Private		
Heairet-Henderson 10-	1966	0.00	Yes	1790		\$5,000	100% Private/Federal	Private		
Gilbert 12-16	1968	0.50	Yes	1698		\$5,000	100% SPL	Private		
Heairet-Henderson 2-	1969	1.65	Yes	1780		\$5,000	100% Private	Private		
Gilbert 5-15	1868	0.19	Yes	1967	1.75" Tubing	\$12,250	100% Private	Private	Yes	\$1,000
Peterson 10-5	1877	35.92	Yes	2023	1.75" Tubing	\$12,250	12.5% SPL, 87.5% Federal/Private	Private	Yes	\$1,000
Gilbert 7-9	1890	14.27	Yes	1905	1.75" Tubing	\$12,250	50% SPL, 50% Federal/Private	Private	Yes	\$1,000
Gilbert 13-15	1867	110.85	Yes	1980		\$24,000	Mix of Private and Federal	Private	Yes	\$1,000
Questar 9-27	1876	127.37	Yes	2000	1.75" Tubing	\$24,000	50% SPL, 50% Private	Private	Yes	\$1,000
Fox 6-22	1961	139.85	Yes	1740		\$24,000	100% Private	Private		
State 2-16	1967	75.11	Yes	1710		\$24,000	100% SPL	Private		
Acton 11-22	1971	122.74	Yes	1760		\$24,000	100% Private	Private		
State 10-35	1865	0.36	Yes	1906		\$5,000	50% SPL, 50% Federal/Private	School and Public Lands	Yes	\$1,000
State 13-23	1887	0.00	Yes	1730		\$5,000	100% SPL	School and Public Lands		
Spyglass State 7-35	1949	0.07	Yes	1700		\$5,000	100% SPL	School and Public Lands		
State 2-27	1950	44.47	Yes	1450		\$5,000	75% SPL, 25% Federal/Private	School and Public Lands		
State 16-8	1863	14.36	Yes	1914	1.75" Tubing	\$12,250	75% SPL, 25% Federal/Private	School and Public Lands	Yes	\$1,000
State 16-22	1888	0.71	Yes	1905	1.75" Tubing	\$12,250	100% SPL	School and Public Lands	Yes	\$1,000
Spyglass 4-35 State	1814	99.04	Yes	1933	1.75" Tubing	\$24,000	100% SPL	School and Public Lands	Yes	\$1,000
State 10-16	1864	72.97	Yes	2000		\$24,000	100% SPL	School and Public Lands	Yes	\$1,000
State 8-8	1866	81.04	Yes	1932	1.75" Tubing	\$24,000	50% SPL, 50% Federal/Private	School and Public Lands	Yes	\$1,000
State 1-21	1960	118.89	Yes	1743		\$24,000	25% SPL, 75% Private	School and Public Lands		

*depth of perforations

ESTIMATED COST TO PLUG 11 NON-VIABLE WELLS

\$110,700

Work Proposed

Under Option 4

TOTAL OPTION 4 COST ESTIMATE

\$137,700

SURFACE WORK EXPENDITURES

\$27,000

\$8,023 Remains for Leak Repair Contingency

Wellbore Plugging Estimate for 40 Spyglass Wells

\$504,150

Fence/Equipment Removal Estimate for 40 Spyglass Wells

\$27,000

1. Recommended Plan Addressing **40 Orphaned Spyglass Wells**

- Use \$10K (Spyglass Cedar Creek, LP) and \$130K (Quartz Operations, LLC) in forfeited oil and gas surety (plus accrued interest) to accomplish highest priority plugging and surface reclamation activities associated with the 40 orphaned Spyglass wells.

- Total Funds Available: \$145,723

2. Public Notice:

- Notice: BME ordered permit revocation and bond forfeiture; DENR will be entering affected lands to perform plugging and reclamation work pursuant to SDCL 45-9-70.
- Certified mailing to all known affected property owners.
- Publish Notice in Nation's Center News and Rapid City Journal, or wider distribution?
- Solicit input from affected property owners (e.g., those who do not want wells plugged, those with high-priority surface reclamation needs contemplated by ARSD 74:12:03.)
- Notify known mineral owners and well owners that if they do not want DENR to plug their well they have 90 days to assume plugging and performance liability by posting a \$10K/well bond, and requesting Temporarily Abandoned status for the well(s).
- Inform equipment/well owners they have 90 days to remove equipment they do not want DENR to remove/dispose of.
- Use input from affected property owners to develop the actual list of priority plugging and surface restoration activities to accomplish using forfeited oil and gas bonds.

3. Scope of Proposed Work:

- Analysis of the pressure and well configuration data led to one pleasant conclusion: Just over half of the 40 wells can likely be plugged at a lower cost than originally estimated.
- Priority wells would be plugged with cement, wellheads replaced, well sheds replaced.
- Priority surface reclamation proposed includes removal of barbed wire fences and ancillary equipment (i.e., equipment not contained within well sheds).
- Currently available resources are insufficient to accomplish comprehensive plugging and surface restoration at the 40 sites; the recommended plan will close the gap, and address many of the highest priority reclamation needs. After the highest priority needs are addressed, the department will reassess the remaining reclamation needs and make further recommendation to the board.
- The department proposes holding back approximately \$10K of the available funds to fix future gas leaks that may occur at unplugged wells.
- Reclamation work could begin as soon as fall, 2019.

4. Options for Prioritization:

Considerations:

- Which wells pose greatest risk?
- Cost/Benefit
- Private vs. State-Owned Surface
- Private Split-Estate Surface
- Presumably most/all mineral leases give the lessor the option to take ownership of wells if lessee fails to meet the conditions of the lease
- Viable vs. Non-Viable Wells
- Liens?

5. Justification for Use of Quartz Surety:

The Quartz bond was a plugging and *performance* bond—DENR recommended forfeiture of the bond because the operator did not perform according to state rules and permit conditions—at the January, 2017 Quartz enforcement hearing, DENR recommended no further plugging or restoration actions be taken at the Quartz Northern Points 1 site.

- Upper section of the well adequately and permanently plugged.
- Surface restoration is complete.
- Well poses no threat to locally utilized fresh water resources.
- Reentering the well to plug the lower portion of the well would cost in excess of \$2M and likely would not work.
- We don't know if lower-quality Minnelusa Aquifer ground water is migrating through the wellbore into the locally utilized Inyan Kara aquifer, but if it is, DENR calculated the maximum down gradient extent of influence at 1,400 feet after 50 years. The closest down gradient well is approximately seven miles away.
- There is no practical/beneficial Northern Points 1 reclamation work for which the \$130K bond can be used.

6. Alternate Recommendation:

- DENR continues periodic monitoring of 40 Spyglass wells
- DENR holds \$10,000 Spyglass bond as well leak response contingency fund

7. DENR's Request:

- The department requests authorization pursuant to SDCL 45-9-70 to use forfeited oil and gas surety from Spyglass Cedar Creek, LP (Spyglass) and Quartz Operations, LLC to enter upon land affected by Spyglass and perform well plugging and surface restoration activities Spyglass failed to perform as ordered to do so in writing.