United States Department of the Interior

NATIONAL PARK SERVICE
Geologic Resources Division
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December 19, 2007

Memorandum

To: Superintendent, Padre Island National Seashore
Attn: Darrell Echols

From: Carol McCoy /s/
Planning, Evaluation, and Permits Branch
Geologic Resources Division

Subject: Boss Operating Company Dunn-McCampbell Prospect Exploration Wells at Padre Island National Seashore

The Geologic Resources Division submits the following comments on the Boss Operating Company, LLC (Boss) plan of operations to drill the Dunn-McCampbell #16-1 exploration well at the park. The proposed plan of operations includes the possibility for two additional wells, #16-2 and #16-3, which would be drilled from the same surface location.

The Division finds that the proposed plan of operation meets most of the relevant informational requirements of the 36 CFR Part 9B regulations. Division, park, and region staff met via teleconference on December 10, 2007 to share information and issues related to the proposal. A main topic of discussion was the consultant's conclusion that the 5.4-acres of proposed disturbance would affect only 0.2 acres of wetland. This was quite unexpected given what is known of the project area. Kevin Noon, a wetlands scientist with the Water Resources Division, and Pete Biggam, a soils scientist with the Division, are following up with the consultant and park staff to verify wetlands data and provide further direction if warranted.

The Division recommends not accepting the plan as complete until wetlands questions are resolved and the operator provides the necessary information discussed in our comments.

General Comments

Overall, Boss has developed an environmentally sound drilling and production program that uses much the same approach as recently approved well drilling projects in the park. The primary effort for the NPS then becomes identification and evaluation of alternatives for site selection, access routes, and pipeline routes to find solutions that best meet the approval standard of "technologically feasible least damaging methods." Park staff has done an excellent job in considering resource, visitor use, and park management issues to avoid or minimize the adverse affects of this oil and gas development proposal. In addition to the options already being examined, we recommend a gathering line alternative in our section-by-section comments below for your consideration.

The next general comment is overdue and relates to the voluminous nature of the plans being prepared for companies by consultants like Belaire Environmental, Incorporated. To cut down on the use of paper, copying and time, we recommend that Boss and other companies ask their consultants to just cross-reference the materials listed below in their plans, and not submit them with the plan. In addition, a plan does not need to include copies of NPS documents and can reference materials previously submitted in substantially the same form as in a previously approved plan (36 CFR §9.36(b)).

- Exhibit C – The NPS's *Guideline for the Detection and Quantification of Contamination at Oil and Gas Operations.*
- Exhibit G – Texas Air Control Board Standard Exemption List, Revised June 18, 1992. Reference a plan where this has been previously submitted until such time as the document is revised.
- Appendix C – PINS Plan of Operations Guideline. Note that this is not the current guidance for plan of operations preparation, and we recommend that operators use the Operator's Handbook dated October 2006 as a reference and tool and preparing their plans.
- Appendix C – The general mitigation measures table. The plan should infuse the appropriate measures into the plan and tailor them to the site specific issues.
- Appendix D – The Material Safety Data Sheets. Continue to provide mud and cementing programs, but reference MSDS when possible. Most of these sheets are available online and could be provided with a list of web links. The MSDS are accounting for more than 1/3 the bulk of plans being submitted by operators.

Finally, use of double-sided printing would reduce the remaining bulk by essentially 50%. By following these suggestions, the current plan could be reduced from a packed 3-inch binder to a roomy 2-inch binder.

Section-by-Section Comments

Section I – Lease and Ownership Information

The Division found several missing signature pages on leases in Appendix A that Boss needs to

when the drilling pad is fully lined. We recommend you advise Boss that additional information, accompanied by further NPS review and approval is necessary only for a change in rig type or class.

Section III – Description of Geology

The TDEQ Form-0051 in Appendix C gives 400 feet as the depth to which usable quality water must be protected. For other wells drilled at Padre Island, the state typically requires protection of the Goliad Aquifer, which occurs in the area from about 1400 to 1700 feet. We note that the State of Texas is consistent in specifying a 400-foot water protection depth for the nearby Kindee and Ensearch wells. Boss' proposed surface casing program and plugging program account for isolation and protection of the Goliad Aquifer if it is present here, so there are no issues so long as work progresses as planned. We will follow-up with the state to verify the status of the Goliad Aquifer in this area of the park. The correct information becomes important if well drilling/plugging does not go according to plan.

Section IV – Timeline for Operations

Experience shows that these time estimates are best case scenarios. Impact analysis should consider that drilling/completion times always tend to be somewhat longer than estimates and sometimes even double. The operator states that drilling will not occur continuously, so the analysis of impacts should consider three mobilizations/demobilizations of drilling rigs and three mobilizations/demobilizations for the workover rigs used to complete and test each well.

Section V – Description of Operations

Item A – Road Construction. Per the above discussion on road dimensions, this discussion needs to be made consistent with revised plats and diagrams.

Item B – Methods and Equipment Used During Drilling/Completion. Like the previous discussion on drilling rig details, it would be more useful for the plan to include an example diagram and equipment inventory of a completion rig at this time so we do not have to make assumptions during impact analysis. Then so long as the rigs used are the same type and class, there is no need for second, third, and fourth rounds of information submissions, reviews, and approvals.

Item E – Water Requirements. Boss states a number of alternatives for obtaining water at the drill site, but never clearly states its proposal. We recommend that the "alternatives" discussion be moved to Section X. F., and this section plainly state that water will be obtained from a fire hydrant north of the park and transported to location by laying temporary polypipe from the source alongside Park Road 22 and the well's access road. We note that the number of truckloads required under the hauling scenario is miscalculated to the high side.

Item G – Well Flow Testing Program. Given the site's proximity to visitor use areas, the Division recommends that Boss provide the Superintendent, or his representative, with advance

notice of flaring 24 hours in advance and then again 1 hour in advance. This allows the park to both observe the testing and inform visitors in the area via contact at the entrance station of the event.

Item J – Completions, Stimulations, Workovers. The discussion in this section is limited to the initial well completion activities. It is the operator's choice to include workovers as part of its proposed activities. However, since workovers are a reasonable expectation at some point over the life of a producing well, we suggest you inform Boss of the potential review and approval time delays by not including such an activity in this plan. We also recommend that you advise the company that the NPS defines workover simply as "work performed on an existing well using a truck-mounted rig typically lasting one to several weeks." The impacts (e.g., traffic, noise, sights, emissions, etc) of a workover are comparable to the proposed completion activities. So if Boss envisions the need for workovers as defined by the NPS, then it need only state that it proposes to conduct workovers on its wells as necessary.

As a function of monitoring and compliance, we recommend that Boss be required to submit specific procedures and any associated permits for NPS review and verification for compliance with its plan of operations. We recommend that you also specify a requirement for Boss to notify the Superintendent 48 hours prior to beginning work (or another timeframe suitable to the park).

Item K – Pipeline Construction. Boss proposes to construct a 1950-foot gathering line from the wellsite to a tie-in point on the Houston Pipeline using a trench and burial method. Kindee recently demonstrated that it is feasible to install a 2000-foot section of gathering line using horizontal directional drilling (HDD) under the same conditions expected at Boss' site. One alternative route described in the plan includes an 1100-foot HDD section in combination with an 1100-feet section of trenched line. The Division suggests that the park evaluate an alternative to use HDD from the well site to a point near the alternative tie-in point shown in the plan. This would be a distance of approximately 1900 feet, and would minimize surface disturbance associated with pipeline construction and operation.

Sales Meter Location. The plan is inconsistent in describing the location of the pipeline company's sales meter. A sales meter location at the well site is preferable to a sales meter located at the tie-in point on the Houston Pipeline based solely on the environmental benefits of avoiding an additional long-term access road and operations site. However, since Transfer Energy (operator of the Houston Pipeline) is not responsible for constructing and maintaining the gathering line, it is understandable that it prefers to locate the sales meter at its pipeline. For the pipeline company, it simply keeps gas that it has paid for within its area of control. It is our opinion that proper installation, testing, and maintenance of a new gathering line can mitigate a pipeline operator's concern to a point where reduction in resource impacts is the determining factor in locating the meter. It is appropriate for the NPS to consider the pipeline operator's concerns in the context of the impact analysis.

As proposed, it seems there would be justification for placing the sales meter at the well site and avoiding a 2000-foot road in previously undisturbed area. If an HDD alternative places the tie-in

point several hundred feet north of Bird Island Basin Road, and we think it can, the environmental impacts of a sales meter at the pipeline change to short access along a previously disturbed route (i.e., the pipeline corridor).

Well Cellars. The plan is silent on how well cellars would be maintained during the production phase, but the park has identified resource concerns with open cellars. The park has documented bird mortalities at sites and the open cellars often become unwanted waste receptacles. We support a requirement for operators to fill the cellars as part of the procedures for making wells ready for production.

It is important from an operational integrity standpoint to be able to monitor the production casing - surface casing annulus for pressure buildup. In most cases, filling in the cellar will cover surface casing valves. The Division recommends, and State of Texas Statewide Rule 17 infers, that operators need to monitor pressures between casing strings. So before filling in the cellar, the operator needs to install piping from the surface casing valve(s) to above grade (leaving surface casing valve open or providing a means for operating it) so that pressure can be checked periodically. Should the operator need access to below-grade valves and piping, sand could easily be washed/vacuumed out of the cellar and replaced when work is complete.

Item L – Well Plugging Procedures. The plan appropriately states that plugging will meet both federal and state standards. Boss provides the necessary detail for the Division to ascertain that the plugging program in the event of a dry hole does indeed meet NPS standards, with one exception. Plug #1 should be set across the intermediate casing shoe, which is designed to be 9742' measured depth. With that correction, Boss may proceed directly to dry hole plugging operations as set forth in the plan without further NPS review and approval. Should actual well conditions necessitate wide variation from the plugging plan, Boss would need to obtain concurrence from both the state and the NPS. In coordination with your staff, Pat O'Dell, our petroleum engineer, will be available to monitor drilling progress and to respond to substantial deviations from the plan's plugging program. Your staff already has Pat's work, home, and cell phone numbers.

Figure 18 is a proposed plugging and abandonment wellbore schematic for an exhausted producer. We recommend the environmental assessment assume that the well or wells are successful producers and include analysis of future plugging of exhausted producers just like we do for other reclamation activities. The actions and impacts of future plugging can be predicted with reasonable accuracy and should be included within the scope of an approved plan for drilling and production. As a function of monitoring and compliance, we recommend that Boss be required to submit specific procedures and wellbore diagrams at the time of plugging for NPS review and verification for compliance with its plan of operations.

Item N – Actions to Ensure Compliance with Operating Standards. Operator monitoring and reporting requirements were also a topic of discussion on the December 10, 2007 teleconference call. The Division supports requiring operators to self-monitor operations and report as part of the park's overall monitoring and compliance program. We are

available to help you design and implement standard protocol that would be applied to all operators in the Seashore.

Section VI – Contaminating or Toxic Substance Spill Control Plan

Boss' proposed plan of operations contains all the necessary components that make up a strong spill control plan. Though we do not recommend organizational changes to this plan, we suggest that you advise operators now developing plans of operations to follow the guidance in Chapter 11 of the Operator's Handbook for developing spill control plans. That way, the spill control plan contained within a plan of operations can actually be a stand alone document making field implementation easier.

Section VII – Reclamation Plan

Item I – Itemized Cost Estimate and Recommended Performance Bond Amount. The cost estimates for reclamation exceed $200,000. Thus, the Division recommends setting the performance bond at $200,000 – the maximum allowed under 36 CFR §9.48(d)(3).

Section VIII – Affidavits and Statements

The Division's review copy of the affidavit is unsigned. If you are not in possession of a signed original already, Boss needs to provide one to you. The regulatory compliance affidavit needs to be signed by an officer of Boss with the authority to legally bind the company. The document also should be notarized.

Thank you for the opportunity to review and comment on this plan.

cc: IMSF: Linda Dansby, Program Manager, Office of Minerals/Oil and Gas Support