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## Re: Landfarming Sundry questions from COGCC

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**Lujan - DNR, Carlos** <carlos.lujan@state.co.us>  
To: "EnviroScan, OGCC" <OGCC.EnviroScan@state.co.us>  
Cc: "Bang, Heidi" <hsb@bry.com>

Wed, Oct 2, 2013 at 1:05 PM

Amber,

Would you be kind enough to upload/link the attached (3) documents and this email to the following Form 04 document numbers?

Thank you much,  
Carlos

(Heidi: Please read comments below)

Name	Location ID	Form 04 Doc #
O36	335658	400465196
F01	335716	400479013
C19	417618	400479153
C20	335621	400479167
F06	335887	400479179
J13	335616	400479195
J20	335841	400479197
K06	335966	400479210
J15	335568	400479220
M15	335865	400479483
A21	335516	400479505
B10	335677	400479559
K15	335991	400480043
L15	335979	400480138

Heidi,

The 14 Form 04s concerning the landfarming of cutting material have been approved. Amber will attach the landfarming plans and lab results that you provided to the Form 04s. Thanks.

I included (in most of the approved Form 04s - I missed few of them) the following Conditions of Approval:

- Before backfilling the pit, statistically representative DISCRETE samples of walls/bottom of the pit will be collected and sampled for TPH and PAHs.
- Representative discrete confirmation samples will be collected from the landfarmed soil for TPH, PAHs and SAR, pH, Arsenic.
- Arsenic background samples from nearby native soil (upgradient and cross-gradient of the pad) will be collected to compare arsenic background concentrations with impacted soil arsenic concentrations.
- A form 04, Notice of Completion will be submitted when pit and landfarmed material are in compliance with

Table 910-1 and arsenic concentrations are below or at the max background concentration + 10%.

I also have the following questions:

1. Long Ridge J15 595: The lab summary table has a column titled "Prod Pit" which I assume means "production pit". There is a frac pit permitted as Pit Facility ID # 289284 in that pad. Is this the pit Berry is in the process of closing? If that is the case, a form 27 pit closure work plan must be submitted (Form 04 is not a substitute for COGCC Form 27 Rule requirement for production pits);
2. Long Range M15 595: A note on the lab summary table says that a Form 27 was submitted in July 2012. I could not find it in the database. There are no pits registered on that pad, suggesting that there are no production pits. Was the form 27 actually submitted? Did you receive a Remediation # upon approval of the Form 27? Do you know who received the Form 27? What was the purpose of the Form 27? Pit closure or spill remediation?
3. Looking at the analytical results presented on the table, I noticed that in many cases, arsenic increases and decreases significantly over time on samples taken from the pit. This may suggest that samples are not representative of the pit bottom/walls. If that is the case, other analyte results are not representative either. Do you have another explanation for the significant changes in arsenic concentrations?
4. There are no analytical results presented for the pit on L-15. Is Berry planning on sampling the pit?

Thanks,  
Carlos

**Carlos A. Luján, Ph.D**

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On Fri, Sep 27, 2013 at 2:22 PM, Bang, Heidi <[hsb@bry.com](mailto:hsb@bry.com)> wrote:

Hi Carlos,

All Landfarming Sundry forms are similar, so go ahead and change them to draft and I can attach the supporting documents attached. Let me know if this would be acceptable for what you need.

Please let me know if you need any additional information.

Have a good weekend!

**Heidi Bang**

Regulatory Compliance Assistant

Berry Petroleum Company

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Heidi – see comments below in red and attached documents. The attachment has a written plan for each of the pad listed below; a one-sheet matrix that details land farm operations to treat drill cuttings; and drawings of each of the locations that detail stormwater treatment for each pad, however, these drawings need to be refreshed for stormwater: O36B, F01, C19, F06, J15, M15, A21, and L15. I will not have those drawings until next week. The second attachment is Dave Nicholson's spreadsheet that tracks the lab results – please find out if the State will accept that or if they need a copy of ESC's lab report. (It will take me some time to dig all of those up). Please let me know if you need additional information. Tom

**From:** Lujan - DNR, Carlos [<mailto:carlos.lujan@state.co.us>]  
**Sent:** Tuesday, September 24, 2013 3:37 PM  
**To:** Bang, Heidi  
**Subject:** Re: Form 4 doc 400479210

Heidi,

Berry Petroleum submitted 12 Form 04s that were assigned to me. I reviewed the last two (# 400480043 and 400479559) of the list. Both state that Berry is landfarming cuttings onsite. There were no attachments. I have few questions:

- Are all 12 forms similar (about landfarming cuttings)? If yes, I can change their status to "Draft" so that you can attach the information and documents that I request below. **YES**
- Did Berry prepare/submit material management plans describing treatment methods, stormwater management (berms, etc.), **See attached drawings**. final use of cuttings, etc.? **A site stabilization written plan was prepared (copies attached)**. If yes, would you please submit the management plans for COGCC's review? **Yes**.
- What are the PAHs concentrations? **See attached spreadsheet**. arsenic concentrations? **See attached spreadsheet**. Please submit the lab reports.
- How does Berry plan to a) remediate PAHs? **See attached site stabilization plan and land farming treatment plan**. b) lower arsenic concentrations? **Arsenic occurs at a high background level, Berry is not going to attempt to lower arsenic concentrations**.
- Did Berry take soil samples to determine arsenic background values? **Yes**.

Approval will be on hold pending your response.

Regarding your question about getting an email confirming approval, once a e-Form is approved (or denied), the system automatically notifies the operator.

Please call/email me if you have questions.

Thanks,

Carlos

**Carlos A. Luján, Ph.D**  
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### 3 attachments



**Master\_PitClosure\_dkn\_August2013.xls**

331K



**List of 14 documents and Sites with landfarming projects..docx**

102K



**Form 4 supporting documents 9-25-13.pdf**

2229K