

## Lujan, Carlos

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**From:** Lujan, Carlos  
**Sent:** Friday, June 25, 2010 1:22 PM  
**To:** 'adrienne.n.rosecrans@exxonmobil.com'  
**Cc:** laura.e.buehrig@exxonmobil.com; Canfield, Chris; Fischer, Alex; Baldwin, Debbie; Prince, Nancy  
**Subject:** RE: ExxonMobil: Recent form 27 postings in the COGCC database

Adrienne,

In your last email (below) you asked me to confirm that PCU 296-7A (project # 5076) and PCU 297-13A (project # 5077) Remediation and Work Plans (Form 27s) have been approved. Yes, you are correct. I approved them on behalf of Chris Canfield and posted to the MRDB database (public access).

Remediation		Sundry Notice (Background)	Operator	Facility	County	API
Doc #	Project #	Doc #		Name		Sequence
2607402	5076	2607401	Williams	PCU 296-7A	103	10822
2607412	5077	2607411	Williams	PCU 297-13A	103	10879

Your email came just before I sent you the notification of approval with comments and clarifications. They were included in the approved Sundry Notes (Form 04s) and Form 27s as Conditions of Approval (COAs) but for some bugs in the system they don't shown in the public database. Here they are:

1. COGCC staff has given consideration to Arsenic background levels in native soils (Note 1, Table 910-1, COGCC Rules & Regulations) and approves leaving material at the base of a pit excavation with arsenic concentrations
  - less than or equal to 1.2 times the highest background level, or
  - less than or equal the background level calculated using the proposed CDPHE statistical method (<http://www.cdphe.state.co.us/hm/soilplcydraft.pdf>).
2. Materials with elevated pH, SAR, or EC should be buried under a minimum of three (3) feet of clean backfill that satisfies either the Table 910-1 levels for pH, SAR, and EC or the background levels for such contaminants within three (3) feet of the ground surface at the site."

### COMMENT #1: Background values - Metals or Organics

The condition of approval #1 deserves some discussion. ExxonMobil's proposed background levels based on the CDPHE statistical method which already includes a confidence level: "The background value at a 95% confidence level is estimated as the median of the data plus 2 times the IQR". The resulting background level calculated this way is higher than the highest background level measured on site and should not be multiplied by an additional factor of 1.2.

The alternative method accepted by Chris Canfield consists in using the highest measured background value and multiply it by 1.2. This value is then used as the reference background level.

In the case of the PCU 297-13A pit closure plan, the Arsenic background level measured at a 95% Confidence level using the MEDIAN + 2 X IRQ is equal to **10.3 mg/Kg**; Using the alternative method, the highest Arsenic value multiplied by 1.2 is  $8.5 \times 1.2 = 10.2 \text{ mg/Kg}$  (by coincidence the two numbers are almost the same).

→ So, use either method but do not combine the 95% confidence level with the 1.2 multiplier.

**COMMENT #2: Background values – Inorganics**

There is no need to request consideration of background levels for pH, SAR or EC. Response #31 of the FAQs (go to COGCC HOME, look for “Final Amendments Rules” under PUBLIC ANNOUNCEMENTS) states :

**31. How will the COGCC apply the Table 910-1 concentration levels for pH, sodium adsorption ratio (SAR), and electrical conductivity (EC)?**

December 9, 2009: Consistent with its prior practice and Rule 1003, the COGCC will generally apply the Table 910-1 concentration levels for pH, SAR, and EC to soils that are within three (3) feet of the ground surface because **elevated levels of pH, SAR, and EC in deeper soils should not adversely affect the successful reclamation of the site**, which is the objective of these concentration levels. In addition, the COGCC requires that materials with elevated pH, SAR, or EC be buried under a minimum of three (3) feet of backfill cover and soil that satisfies either the Table 910-1 levels for pH, SAR, and EC or the background levels for such contaminants within three (3) feet of the ground surface at the site. In addition, the soil horizons must be replaced in their original relative position and reclaimed in accordance with 1000 Series Rules, including the establishment of vegetative cover on non-cropland and successful crop growth on cropland.

Additional reflection: pH values are logarithmic numbers in nature. One number in the scale represents one order of magnitude, so the use of statistical methods or adding a 20% to the highest measured pH value may be a distortion . The background level calculated by ExxonMobil for one of the sites is 12.7. This is almost the alkalinity of bleach.

For future communications please refer to the “Remediation Project Number” indicated in the table above.

Let us know when backfilling and reclamation is completed and confirm that material with elevated SAR, pH, and EC is covered with at least 3’ of clean backfill material, to issue a No Further Action letter and close the case(s).

Please let Chris or me know If you have any question or comments,

Best Regards,  
Carlos

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-----Original Message-----

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To: Lujan, Carlos  
Cc: Canfield, Chris; [laura.e.buehrig@exxonmobil.com](mailto:laura.e.buehrig@exxonmobil.com)  
Subject: ExxonMobil: Recent form 27 postings in the COGCC database

Carlos -

I just saw today that the Form 27's for both PCU 296-7A (project # 5076) and PCU 297-13A (project # 5077) have been posted to the COGCC online database. Based on previous guidance I received from you, this means that our pit closure plans have been approved, correct? I just want to confirm before I distribute this approval to our pit closure implementation team members. Thanks again for looking into this for us.

Regards,

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