

June 24, 2014

**RE: IRP Manager's Notes on the Background Study (BGS) Technical Exchange Meeting (TEM) at the IRP Manager's Office in Hinkley, CA on June 24, 2014**

**Keywords**

*Cr VI Background Study, groundwater, anthropogenic, TWG, Hinkley*

On June 24, 2014, the United States Geological Survey (USGS), Pacific Gas & Electric Company (PG&E), Stantec, CH2MHill, Water Board, the Hinkley Community Advisory Committee (CAC), and the Independent Review Panel (IRP) Manager participated in a Technical Exchange Meeting (TEM) at the IRP Manager's Office in Hinkley, CA to discuss and finalize the selection of wells for the Cr VI Background Study (BGS). The Technical Working Group (TWG) for the BGS consists of the USGS, PG&E (Stantec and CH2MHill), Water Board, CAC and the IRP Manager. Participants to the June 24 BGS TEM were:

John Izbicki, USGS	Lisa Dernbach, Water Board
Iain Baker, PG&E	Dennis Maslonkowski, CH2MHill
Chris Maxwell, Stantec	Raudel Sanchez, Project Navigator, Ltd.
Halil Kavak, Project Navigator, Ltd.	Rajeev Sane, Project Navigator, Ltd.
Anna Garcia, MWA	Daron Banks, CAC
Barbara Ray, CAC	Larry Griep, CAC
Betty Hernandez, CAC	Lester White, Hinkley Resident

**USGS Open-File 2014-1082: Geochemical and Mineralogical Maps for Soils of the Conterminous United States**

John presented and discussed the recent USGS total chromium in surface soils map<sup>1</sup> from a depth of 0 to 5 cm of the United States (see **Attachment 1**). The resolution of the map is 40 mile by 40 mile or 1,600 square miles. The USGS map for total chromium indicated that the near surface soil concentration reported were below the 20 percentile or less than 16 mg/kg for the Mojave Desert Region. The number samples taken was 4,841 and the 95 percentile concentration of total chromium was reported at 73 mg/ kg for the entire country.

<sup>1</sup> The USGS Open-File Report 2014-1082 can be downloaded from <http://pubs.usgs.gov/of/2014/1082/pdf/ofr2014-1082.pdf>.

John suggested preparing a figure showing the total chromium in surface soil map overlaid by the USGS Cr VI Groundwater Ambient Monitoring Assessment (GAMA) Program<sup>2</sup> data to show if any relationship exists with the near soil surface total chromium concentration data.

### **Review of Current Candidate Wells and Rationale for Well Selection**

Below is a summary of key topics discussed during the selection of wells for the BGS.

- John reduced the number of monitoring wells for the 1<sup>st</sup> sampling event to 35 monitoring and 4 domestic wells (see **Attachment 2**).
- The TWG agreed that groundwater at MW-193S3 needs to be collected since the Cr levels reported at this location have been above 100 ppb. MW-193S3 may not produce enough volume to run the full suite of analysis. Sampling procedures might be modified for MW-193S3.
- Add MW-203 to the program and remove MW-154 from the candidate list.
- Possible removal of MW-159S/D (tritium detection at this monitoring well located near the Former Waste Pit) and replace it with MW-163S/D.
- Residual tritium in the groundwater at the flow system may exist in some wells where water was added as part of the development process. Carbon 14 analysis will determine the age of the water and determine if it's residual tritium.
- Carbon 14 samples will be performed at the USGS NWQL. Typical turnaround time for the analysis is 3 months.
- Chlorofluorocarbons (CFCs) and sulfur hexafluoride (SF<sub>6</sub>) analysis will be performed at the USGS RDGL. Possible tubing issues with Teflon or plastic may require the use of a USGS sample pump with copper tubing water discharge lines in PG&E monitoring wells.
- Only Cr isotope analysis will be performed on MW-45A.
- Depth-dependent flow analysis will be conducted at 28N-04, 27-40, C-04 and 27-03 and be completed by Christmas. The depth-dependent work is part of Task 4 and will take approximately one week per location (see **Attachment 3**).
- Once the data is collected and validated from the BGS and approved by the TWG, the data will then be posted on the USGS website.
- Two wells will be sampled per day once 1<sup>st</sup> sampling event begins.
- No work will be conducted on weekends.
- 10 hour work days will be required.
- A total of 40 wells will be sampled during the 1<sup>st</sup> sampling event.
- Overall the TWG is in agreement with the wells selected by John for the 1<sup>st</sup> sampling event for the BGS.

---

<sup>2</sup> Additional information on the GAMA Program can be found at <http://ca.water.usgs.gov/gama/>.

## **State Well Number Assignments**

BGS sampling wells will be assigned state well ID numbers. The BGS generated database will contain both state well ID numbers and current PG&E well ID numbers (e.g. MW-193S3). PG&E's current well ID numbers will be used during presentations for the TWG and be included in the final USGS report.

## **IRZ Drilling and Core Collection This Summer**

Arcadis submitted a work plan to the Water Board regarding the modifications to the *In Situ* Reactive Zone (IRZ) remediation system. New IRZ wells are planned to be installed during a two month period. Core samples from new IRZ wells will be used as part of Task 8 and will require special handling. Iain Baker will send John a schedule of the upcoming IRZ work to coordinate the special handling procedures for core materials. The only planned analysis for groundwater samples for IRZ wells are Cr isotopic analysis.

## **Status of USGS and Water Board Contract**

Contract continues to be processed by the State Water Board and is anticipated to be completed by the end of July.

## **Status of Tritium Contract**

The laboratory selected for the tritium analysis is the University of Bremen<sup>3</sup> and was selected because it is one of two laboratories in the world with a precision of 0.01 TU. The standard turnaround time for the results for the tritium analysis is estimated to take 10 months. Most of the time required to run the analysis consist in the ingrowth of helium-3 the decay product of tritium within the degassed sample. John expressed concern about the USGS contracting process and asked Lisa if the LRWQCB would be able to release funds from the escrow account back to PG&E to directly fund tritium/noble gas analyses by the University of Bremen.

## **Time for Coordination at the Field Sample Team Level**

The training for field personnel is anticipated to start on August 11 if the USGS and Water Board contract is completed by July 27. If the contract is not completed by July 27 then the 1<sup>st</sup> sampling event for the BGS will be postponed until September. CH2MHill suggested a two week notice before planning the 1<sup>st</sup> sampling event. On a follow up between Dennis and John, both agreed that the 1<sup>st</sup> sampling event should be postponed to late September 2014. Postponing the

---

<sup>3</sup> Additional information on tritium analysis at the University of Bremen can be found at [http://www.noblegas.uni-bremen.de/index\\_eng.html](http://www.noblegas.uni-bremen.de/index_eng.html).

1<sup>st</sup> sampling event for the BGS to late September will ensure adequate time to train field personnel and plan for field logistics.

### **Action Items**

- Iain Baker will send John a schedule for the IRZ work to coordinate the collection of core samples with Arcadis.
- Lisa to provide John an update on the contract by July 27.
- John and Dennis will coordinate the training of field personnel for the 1<sup>st</sup> sampling event for the BGS.
- John to send out an email to the TWG of the final list of wells for the 1<sup>st</sup> sampling event. TWG to send John an email agreeing with John's final list.
- Next TWG BGS TEM is scheduled for September 17 at 2:30 pm at the IRP Manager's Office in Hinkley.

### *Attachments*

- 1: USGS Open-File Report 2014-1082: Near Surface Soils Total Chromium Concentration
- 2: Candidate Wells on Spreadsheet: Summer 2014
3. Candidate Wells on Spreadsheet: Depth-dependent Wells