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DUE
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United States Government *057694-2* Department of Energy
memorandum *112 2 2* Rocky Flats Office

ACTION *Stiger*
DIST LTR ENC

BERMAN H S	
CARNIVAL G J	
COPP R D	
CORDOVA R C	
DAVIS J G	
FERRERA D W	
FRANZ W A	
HANNI B J	
HEALY T J	
HEDAHL T G	
HILBIG J G	
HUTCHINS N M	
KELL R E	
KIRBY W A	
KUESTER A W	
MAHAFFEY J W	
MANN H P	
MARX G E	
MCKENNA F G	
MORGAN R V	
PIZZUTO V M	
POTTER G L	
SANDLIN N B	
SATTERWHITE D G	
SCHUBERT A L	
SETLOCK G H	
STIGER S G	X
SULLIVAN M T	
SWANSON E R	
WILKINSON R B	
WILSON J M	

Busby W X
O'Rourke T X

MAY 12 1994

ER DFG 05353

Review of Revised Operable Unit No 7 Work Plan

Susan Stiger, Associate General Manager
Environmental Restoration Management
EG&G Rocky Flats, Inc



Attached are the Department of Energy's comments relative to the review of the Operable Unit No 7 (OU-7) Revised Work Plan. Overall, the document is well written and will only require minimal revision. Reviews were conducted by Dave George of Environmental Restoration and Ralph Lindberg from the Environmental Guidance Division. Please revise the document to incorporate these comments.

The next version of the document meets two Interagency Agreement milestones and will be transmitted to the Colorado Department of Health and the U S Environmental Protection Agency, thus, a high quality, clear, and concise document is required.

Your cooperation is appreciated. Point of contact for OU-7 is Jen Pepe, at extension 2184 or Dave George at extension 5669.

Jessie Roberson
Jessie Roberson
Acting Assistant Manager for
Environmental Restoration

Attachment.

cc w/Attachment
F Lockhart, ER, RFFO
J Pepe, ER, RFFO
D George, ER, RFFO
W Busby, EG&G
T O'Rourke, EG&G

Stiger
Busby

CORRES CONTROL	x	x
ADMN RECORD/080		
PATS/T130G	X	X

Reviewed for Addressee
Corres Control RFP

5/12/94 CML
DATE BY

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DOE ORDER # *54001*



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Followell

ADMIN RECORD

Review
of
Technical Memorandum, Revised Work Plan,
Operable Unit 7 - Present Landfill

General Comments

My overall impression of this Tech Memo is that it is unusually clear and well-written, and that the subcontractor really knows OU7 and the subject matter. I like the content of the sections pertaining to groundwater and have only minor "specific comments"

Specific Comments

Page 1, Paragraph 3 The third sentence says over simplistically that tritium and strontium were detected in landfill leachate in 1973. So what? Low levels of tritium are detected routinely all over Rocky Flats in surface water and groundwater. The real issue at OU7 in 1973 was that elevated levels of tritium were found in the leachate, approaching activities of 300,000 pCi/L. The source of this tritium was located and removed. The Executive Summary should probably reflect some of this significant historical information. The text on tritium at the bottom of page 1-9 also fails to mention this until pages 1-14 and 1-15. The latter pages don't appear to discuss removal of the source.

P vi, bottom It's great to see that the extent of Upper Flow System groundwater contamination will be determined along No Name Gulch. Please consider the following recommendations:

- (1) Be sure to utilize the previous evaluation of this contamination in the final *Well Evaluation Report* (available from S. Singer at EG&G Geosciences)
- (2) Coordinate proposed well locations with those of the FY94 Well Abandonment and Replacement Program (WARP), which will be installing at least one new monitoring well in No Name Gulch in May or June. This new well will go in mid-way between existing wells 0686 and 0586.
- (3) In future investigations be aware of and utilize the results of the chemical fate and transport modeling of the Walnut Creek drainage being done by B. Roberts (EG&G Geosciences)

P 2-21, Section 2.5.2 The drawdown recovery test information is nicely written, but is too detailed for the main body of the workplan. I think most of the details of the Bouwer and Rice method, and the other methods should go into an appendix.

P 2-32, last para. Observation The authors of this report are to be complimented on using chemistry data like TDS or specific conductance to evaluate the effectiveness of landfill structures, and to identify landfill leachate. My experience has been that these water quality parameters work well as indicators of most known RFP groundwater plumes.

P 2-33, Para. starting with "In practice" I don't think that many people will believe that "quarterly and/or monthly sampling rounds ensure that observations are independent"

Independence is always an issue in groundwater sampling of the same wells at a regular interval

Section 2.5.4.2 The statistical approach is fine, but a simple visual presentation can be equally effective. Why not try to show isoconcentration contours for TDS on Figure 2-38? Maybe it was tried and it failed?

P 2-50 Water balance conclusions These conclusions state that landfill leachate seeps into weathered bedrock, and that the E Landfill Pond is recharging weathered bedrock, and that the pond embankment has minimal seepage. Yet there is independent evidence of landfill leachate moving with alluvial groundwater down No Name Gulch (see the draft Well Evaluation Report). So, does the weathered bedrock surface (or a lower bedrock unit) transmit contaminants under the pond embankment? Geologic cross section G-G' suggests that this is possible. What becomes of all this recharge to the weathered bedrock? I think the text should discuss this.

Table 2-2 I think the Table caption should refer to "cone penetrometer test locations" rather than the cryptic "CPT locations"

Table 2-4, P 2-62 What is the meaning/value of the field item "RFEDS" under the Ground Surface Elevation column for the last 3 wells?

Table 2-5 Four significant digits are not believable for the transmissivity data

Figure 2-3 The figure should state the reference for the data and whether the average monthly precipitation is for the last 40 years, or what?

P 4-5 Observation I'm pleased to see that this workplan has incorporated the recently defined methodology for PCOC identification (Gehan test etc.)

P 4-49, Table 4-5 The "Total Gas" column does not include carbon dioxide, and is really "Total Organic Gases". I think it should be renamed.

Table 4-6 This is a nice summary of the soil gas results, but (1) commas to indicate thousands must have been entered manually in the methane column since some are erroneous (e.g. 7,2199 208 and 2,0201 456), and (2) three significant digits to the right of the decimal point on concentrations measured in the thousands are not credible (see e.g. methane 56588 440).

Figures 4-34 and 4-36 Observation These figures indicate very low activities of U-235 and U-238 in filtered groundwater samples. It might prove valuable in the text of the report to compute the average activity ratio U-238/U-235 (or alternatively the average mass ratio) and make a statement about the U isotopic mix (i.e. natural, depleted, or enriched) in the upper flow system.

Table 5-2 and text on page 5-10 Although I have not examined the basis (presumably the equation on page 5-9) of the calculations used for computing N (the optimal sample size), some of the N values appear to be nonsensical. This infers that the equation, the calculations, or the assumptions may be incorrect. For example, barium has an N of 29002! In the next phase of field work how could 29000 samples be collected from the small area surrounding the landfill pond? I assume that the statistics are based on 133 samples previously collected for barium during the Phase I RFI/RI, and not the number of samples recommended for collection during the next phase of field work? The text on page 5-10 (or a footnote to table 5-2) should at least explain the rationale to be used for

defaulting to the collection of a *realistic* number of samples when the *ideal* number (e.g. 29002) can not be achieved!

Table 5-6 This table simply reinforces the above comment, i.e. the N values are crazy. N=82015870 samples for Al! Even if the equation and calculated N values are correct they are ridiculous. So the workplan clearly needs to present a more realistic strategy for defining a practical N value for sampling?