



**GEOSCIENCES AND ENGINEERING DIVISION
QUALITY ASSURANCE
SURVEILLANCE REPORT**

PROJECT NOS.06002.01.252,
262, 272, 282

REPORT No.:2007-10

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SURVEILLANCE SCOPE: CNWRA Hydrology (HYD) Activities:

- Climate and Infiltration (CI)
- Flow Paths in the Unsaturated Zone (FPUZ)
- Flow Paths in the Saturated Zone (FPSZ)
- Concentration of Radionuclides in Groundwater (CRG)

REFERENCE DOCUMENTS:

QAPs-001, 005, 007, 013; TOP-018; AP-001

START DATE:

4/2/07

END DATE:

4/5/07

QA REPRESENTATIVE:

M. Simpson

PERSONS CONDUCTING ACTIVITY (staff contacted): R. Lenhard (HYD Mgr. & CRG PI), S. Stothoff (CI PI), C. Manepally (FPUZ PI), H. Basagaoglu, K. Das, R. Green, A. Sun (FPUZ PI)

SATISFACTORY FINDINGS:

General Observations:

Discussions were held with the HYD Manager, PIs for the four primary HYD activities, and three other GED staff members. Areas being reviewed included scientific notebook control, software control, work planning, and personnel qualification, training, and conflict of interest (COI) status. No currently active lab or field activities are funded under HYD projects.

Generally, scientific notebooks appear to be satisfactorily maintained (all those reviewed were electronically maintained and located on individual's "D" drives, assuring nightly backup as part of the GED network). One externally maintained notebook had recently been transferred to a GED D drive as part of the recent "disaster recovery" exercise. Quality improvement discussions with one staff member resulted in immediate enhancements to the corresponding notebook.

Software in use is appropriately controlled or is currently under development. Personnel qualifications/training/COI are up to date for reviewed staff. Work planning documentation in Quality Requirements Application Matrices (QRAMs) is complete and remains current.

CI:

The final version of the "world study" report, involving literature review and analysis of CI was completed last year. A follow-up report, Long Term Average Infiltration at Yucca Mountain, was delivered to NRC in January; comments are expected shortly. Comments on TPA User Guide work were recently received and are being resolved. An AGU poster presentation was given in December and preparations for an upcoming CI presentation at Devil's Hole continue. Matlab software is being utilized and SN 563E was reviewed. Follow-up discussions on notebook correction methods identified in the previous surveillance revealed that no corrections are been made since then but that requirements are understood.

FPUZ:

TPA work has been the focus of most attention recently. An "Appendix 7" meeting with DOE will be held next week. A report on the recent Seepage Workshop with NRC is being prepared and other follow-up activities are being planned. Work on Flow Processes in the Rubble continues, including processing of Yucca Mountain samples (note; this sample/lab work is not being primarily charged to HYD and so was not assessed as part of this surveillance). The 20% Drift Scale Experiment (blue tube) has been concluded, with a report delivered to NRC last year. Comments on the initial report have been resolved and a revised report will be ready shortly. The experiment set-up will not be disassembled in anticipation of future needs. Computational fluid dynamics modeling activities are continuing with work transferring from a Division 18 employee to HYD staff. Other FPUZ work includes preparation of a journal article on active fracture modeling and literature reviews of matrix defusion and thermal refluxing. Reviewed notebooks 478E, 841E, 536E, 822E, 844E, 845E, and 843E. The staff member maintaining the latter notebook agreed to include entry dates and not to replace descriptions of abandoned approaches or earlier versions of work. The information is maintained outside the notebook and will be now be reincorporated. Software being used includes Mathematica; Flow3D, v. 6.0 and v. YMUZ2, v.1.

FPSZ:

A recently completed journal article, Stochastic Simulation of Alluvium Facies Distribution in Forty Mile Wash is currently being reviewed by NRC. This paper summarizes FPSZ work since last year. Modeling and data analysis of Nye County well logs continues. Physical and chemical heterogeneity modeling has recently begun. Notebook 746E was reviewed. Software includes Matlab; GMS, v.6.0; and MODFLOW, v.2000.

CRG:

The HYD Manager is the PI but no new work in this area has been assigned by the NRC Project Manager since the HYD manager's hire. Work to revise an earlier report to address significant NRC comments continues by a former staff member, now a consultant. An NRC Project Officer will begin a CNWRA staff exchange next week that will include review of this activity.

UNSATISFACTORY FINDINGS: None

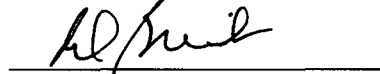
NCR NO.: None

CAR NO.: None

ATTACHMENTS: None

RECOMMENDATIONS/ACTIONS: None

APPROVED:



DATE: 9/9/2007

DISTRIBUTION:

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