

**Summary of Liability Conference Call
WRI CCS Project
21 April 2006**

Group participants and contact information on following page.

Participants: Julio Friedmann, Sarah Forbes, Sarah Wade, Elizabeth Wilson, Jeff Logan, Kipp Coddington, Larry Bengal, Karen Utt, Mark de Figueiredo

Goal of call: To agree on outline for first working document and assign tasks to gather data.

One concern: Document should focus upon commercial applications; saline aquifers too far in future, EOR is happening now.

Comments: Two significant saline aquifer injections are happening now, and will be important in the future. There are overlapping issues. General decision of need to focus first document on describing underlying basis of liability, as it is linked to risk, with a focus to: a) target analysis in conjunction with MMV work (example scenario analysis of sites: EOR WY; Central Valley, CA; Permian Basin; Mt. Simon, OH), and b) adding temporal phase in this document to understand where liability falls within a project.

Other concerns: What happens when an ongoing EOR project becomes a sequestration project from a liability perspective? (Industry had not planned for liability when project commenced.)

Accounting issues: Groups already crediting (Blue Source). Will issues remain outside of 1605(b) and CDM Executive Board developments?

Need to draw out focus specifically on wells.
Transboundary issues.
Commercial fraud and contract law.

ACTION ITEMS: Next call, week of May 15. Please have outline of your section sketched out for discussion. Remember, the focus is on **LIABILITY** associated with activity, not on activities themselves.

Assignments:

Proposed Outline for Document 1

Intended Audience: Regulators, policy makers, CCS community, project developers (eventually), first step is to build consensus within group

Product # 1. Understanding the basis of liability

Potential sources of liability from GS, incorporating jurisdictional differences (mechanistic focus), with the recognition that this will be bounded by risk assessment (not done here), location, and project specifics

- General considerations--- Elizabeth
- Subsurface ownership
- Property of injected fluid

Liability tied to risk and tied to place

-Subsurface Liability

- Geophysical trespass (Kipp and Larry)
- Ownership of pore space (Kipp and Larry)
- Harm to hydrocarbons
 - EOR and unitization statutes (Kipp and Larry)

--Harm to groundwater (Karen and Sarah Forbes)

- Direct contact
- Displacement
- Mobilization of heavy metals
- Produced water changes
- Importance of groundwater regimes

--Geophysical damage: Induced seismicity, ground heave (Julio and Mark)

-Surface Risk (Sarah Wade, Jeff Logan, Sarah Forbes)

- Leakage to surface
 - Harm to humans
 - Harm to agriculture
 - Harm to ecosystems
 - Climate system compromise

-Damages and Remediation (Julio)

- Through wells or faults

- Programmatic considerations

- EOR → sequestration site (Kipp and Larry)
- Public and private lands (Karen, Mark, and Elizabeth)
- Institutions involved/to be considered

General research/regulatory questions for bounding liability

Liability considerations factored into both research (for evidentiary standards) and project planning

- Summary linking location, research, and liability
- SECTION covering Temporal split
 - o Liability associated with site characterization
 - o Construction
 - o Operation

- Closure
 - Near term
 - Long term

Options for upcoming papers:

-GENERAL

--Models of public assumption of liability

Long term care and monitoring, leakage at $t=100$

- Technologies to limit liability
 - Modeling
 - Siesmic
 - Monitoring
 - Remediation
 - Context of accounting? Research tools for accounting may/may not match what is practical from a project developer/industry perspective
- Accounting considerations
 - Where does ownership of CO₂ transfer
 - Does liability simply follow ownerships?
 - Who takes over liability after accounting period ends?
 - Is not getting credit for tons sequestered the penalty for leakage?
- Liability for commercial applications – what questions need to be answered right now
- Specific project case studies

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