1R - 425-03

# Annual GW Mon. REPORTS

DATE:
2009

**Texerra**

**505 N Big Spring, Suite 404 Midland, Texas 79701**
**Tel: 432-634-9257 E-mail: lpg@texerra.com**

April 6th, 2010

Mr. Edward Hansen
New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, New Mexico 87504



RE: **Annual Report**
Rice Operating Company
Vacuum K-35-1 Boot, UL K, Sec 35, T17S, R35E
**OCD Case Number 1R0425-03**

Sent via E-mail and U.S. Certified Mail: No. 7007 0710 0003 0305 3835

Mr. Hansen:

This letter summarizes progress made for this project over the past calendar year pursuant to the NMOCD approved Corrective Action Plan for this site. Location and site schematic maps are given in Figures 1 and 2, respectively. In brief:

- Approximately 9,200 barrels of chloride affected groundwater have been withdrawn from a near-source recovery well (RW-1) over the period June 2008 through December 2009 (Figures 2, 3 and 4). A portion of this water has been treated on-site using reverse osmosis and used for site irrigation. The balance has been used for Rice SWD line and well maintenance purposes.
- Groundwater chloride concentrations in the at-source monitor well (MW-4) have declined from approximately 6,770 ppm in February 2007 to 1,200 ppm by October of 2009 (Figure 5).
- The ground surface was restored and reseeded with native vegetation (Figures 6 and 7).

The marked decline in at-source and near-source groundwater chloride concentrations since groundwater withdrawals began indicates that groundwater quality is improving substantially. If this trend continues and we are able to successfully re-vegetate the site we may propose remediation "termination" by this time next year.

Over the course of the present year groundwater chloride removal will resume. We also anticipate irrigating the restored surface with reverse-osmosis treated water to further encourage site re-vegetation.

ROC is the service provider (agent) for the Vacuum Salt Water Disposal System and has no ownership of any portion of pipeline, well or facility. The Vacuum SWD System is owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage ownership/usage basis.

Please do not hesitate to contact either myself or Rice Operating Company if you have any questions or need additional information.

Sincerely,

L. Peter Galusky, Jr. Ph.D.

Copy: Rice Operating Company

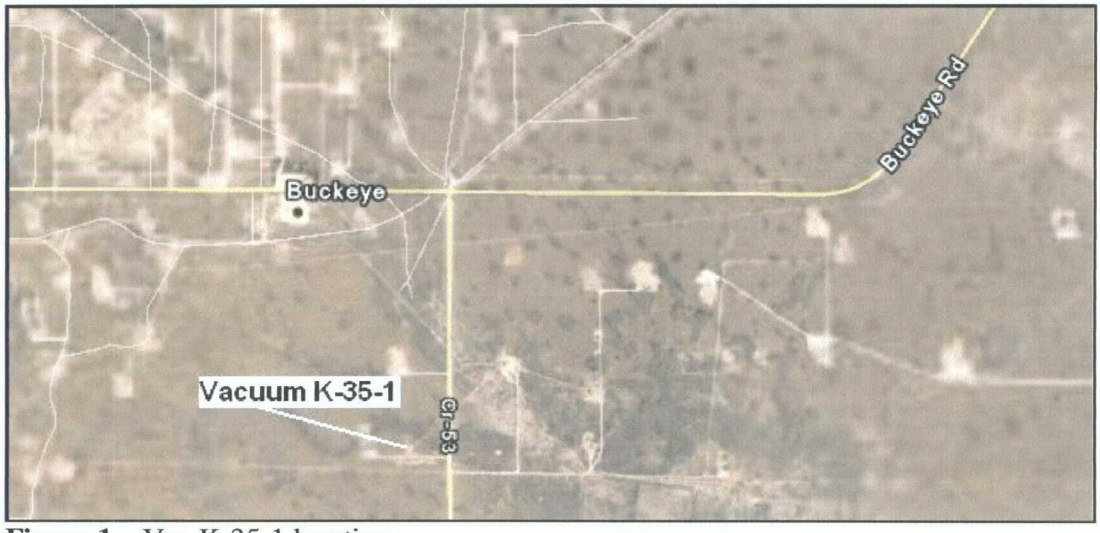


**Figure 1** – Vac K-35-1 location.

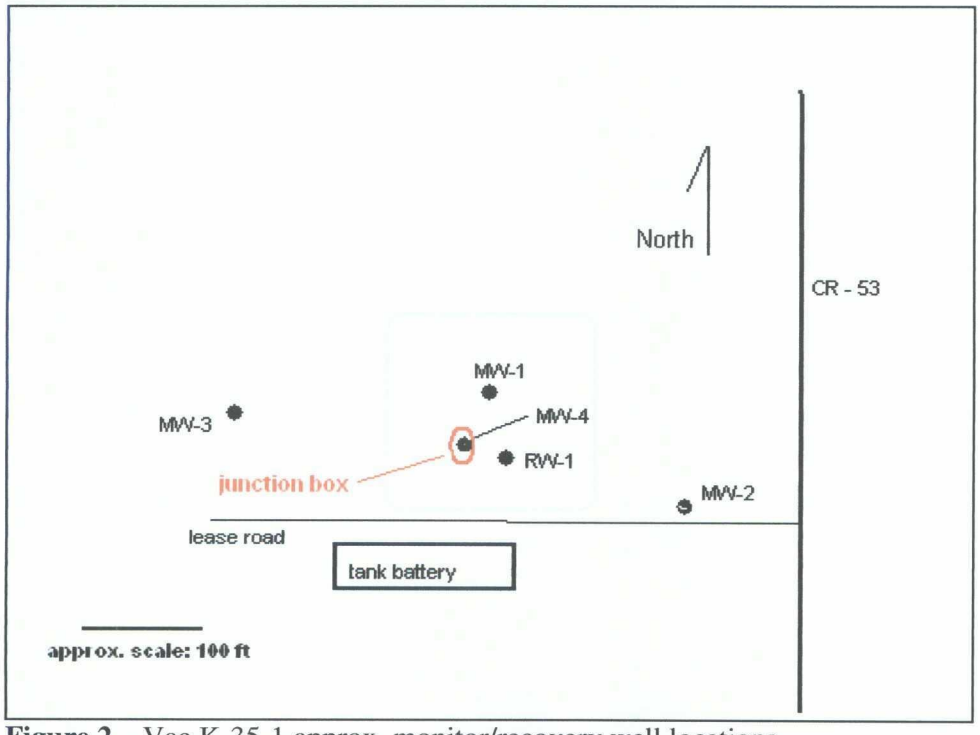


**Figure 2** – Vac K-35-1 approx. monitor/recovery well locations.

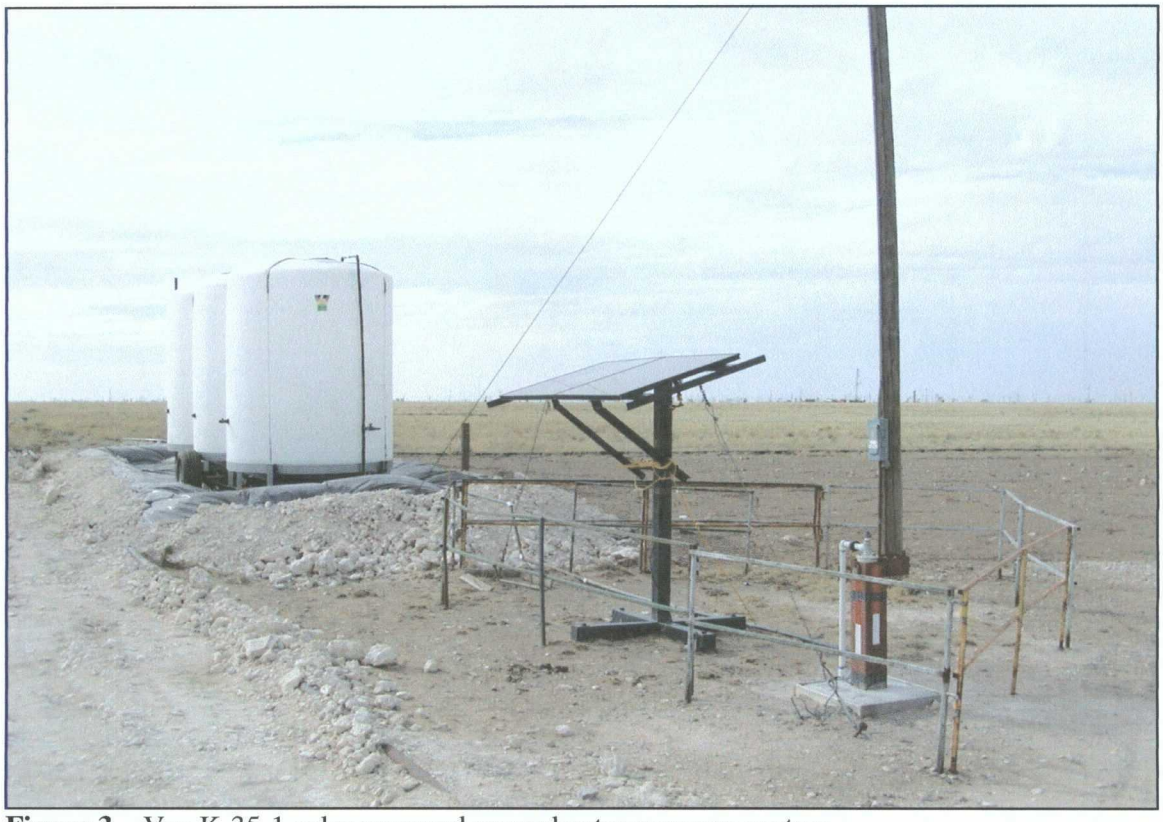

**Figure 3** – Vac K-35-1 solar-powered groundwater recovery system.

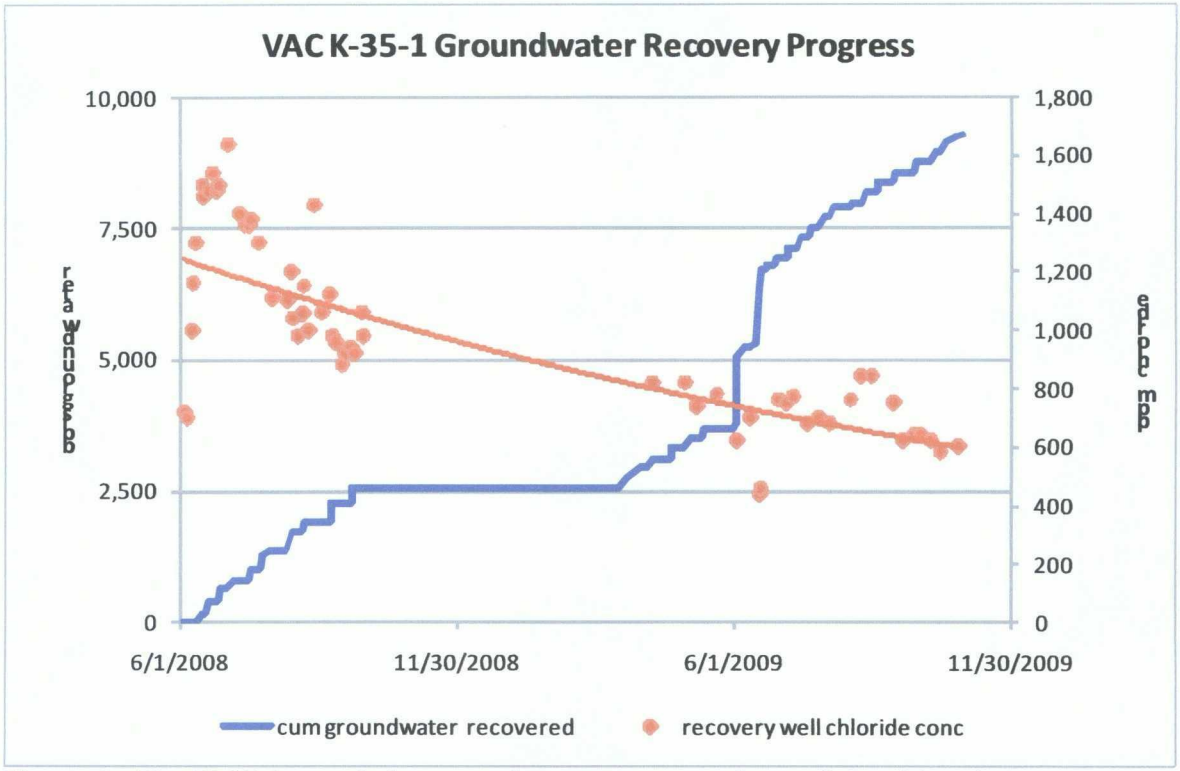


**Figure 4** – Vac K-35-1 cumulative groundwater recovery volumes (left axis) and recovery well (near-source) groundwater chloride concentrations (right axis). **Note that the early rise in chloride concentrations during the first two months of pumping is likely due to the entrainment of more highly affected groundwater from beneath the former junction box. The subsequent decline in recovery well groundwater concentrations indicates that the most severely contaminated groundwater is being effectively removed.**

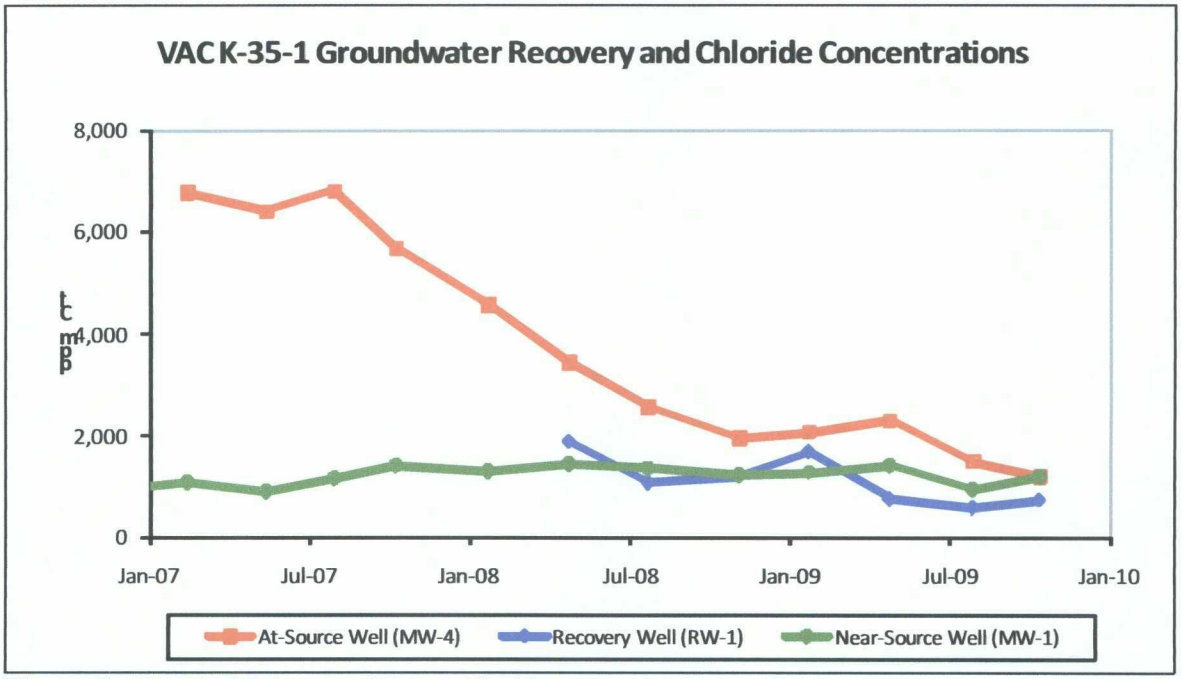


**Figure 5** – Vac K-35-1 groundwater chloride concentrations. Chloride concentrations in the down-gradient monitor well (MW-2) have held below 30 ppm throughout 2009. (They are not shown on this graph because they are so low that they would obscure the horizontal axis).


**Figure 6** – Vac K-35-1 view south across restored surface, December 2009.

**Figure 7** – Vac K-35-1 view south across affected surface before restoration efforts, October 2006.