Environmental Restoration Contractor **ERC Team**

Meeting Minutes

C049947

Job No. 22192
Written Response Required? NO
Closes CCN: N/A
OU: 200-ZP-2; 200-ZP-1
TSD: N/A
ERA: CCl4
Subject Code: 4170; 8220

SUBJECT 200-ZP-1 AND 200-ZP-2 STATUS

TO Distribution

FROM V. J. Rohay VJR 8/1/97

DATE August 1, 1997

NOV 1998 RECEIVED EDMC

ATTENDEES

M. A. Buckmaster H0-19
D. A. Faulk B5-01
V. J. Rohay H9-02
A. C. Tortoso H0-12

DISTRIBUTION

Attendees
R. L. Jackson H9-02
M. C. Kelly H9-01
A. J. Knepp H0-19
M. H. Sturges H9-01
L. C. Swanson H9-02
P. B. Tolley H9-03
Document and Information Services H0-09

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A meeting on the above subject was held on July 23, 1997, in conference room 2C58 at 3350 George Washington Way. The agenda is included as Attachment 1.

200-ZP-2 Rebound Study

Soil gas monitoring for the carbon tetrachloride rebound study began on 11/4/96 and was completed on 7/10/97. V. J. Rohay provided a graph illustrating the maximum carbon tetrachloride rebound concentration at each monitoring point as a function of depth (Attachment 2). During the eight months of the rebound study, carbon tetrachloride concentrations have remained less than 10 ppmv at monitoring points between the ground surface and approximately 10 m depth in the area remediated using soil vapor extraction. The highest carbon tetrachloride concentrations, between 100 and 800 ppmv, have been observed at wells and monitoring probes between approximately 26 and 40 m below ground surface, near the Plio-Pleistocene fine-grained soils and "caliche layer." Carbon tetrachloride vapor concentrations between 56 and 64 m below ground surface, near the water table, have not exceeded 50 ppmv. Concentrations at some monitoring locations exhibit fluctuations which appear to be related to fluctuations in barometric pressure. V. J. Rohay provided graphs of all of the data for all of the monitoring locations to A. C. Tortoso and D. A. Faulk.

V. J. Rohay provided a status of the three mini-tests that include field activities. Packers were installed at two wells for the carbon tetrachloride-packer test on 6/18/97. Soil gas monitoring data were collected from 6/19/97 through 7/7/97, and the packers were removed on 7/14/97. Installation of instrumentation was completed at the well for the carbon tetrachloride-barometric pressure test on 6/25/97, and data were collected from 6/25/97 through 7/14/97. Instrumentation for the passive extraction valve test is anticipated to be installed at three wells by 8/15/97, after completion of soil vapor extraction operations configured to conclude the rebound study.

Full-scale soil vapor extraction (SVE) operations began 7/18/97, meeting the Tri-Party Agreement milestone to restart operations by 7/31/97. All of the wells which were on-line in November 1996 prior to initiating the rebound study are on-line now to facilitate comparison of inlet concentrations before and after the rebound study. The systems will operate in this configuration an estimated two to three weeks until concentrations approach the levels observed in November 1996. During this time, concentrations at selected wells are being monitored. Prior to full-scale SVE operations, carbon tetrachloride concentration data were collected during the initial hours of operation at two selected wells during three-hour-long vapor extraction tests on 7/14/97 and 7/15/97 to determine the concentrations at progressive distances from each extraction well.

The University of Washington (UW) and Rutgers University (New Jersey) jointly received a 5-year grant under The Consortium for Risk Evaluation with Stakeholder Participation (CRESP) to assist the U.S. Department of Energy with risk-related cleanup decisions. The UW selected the carbon tetrachloride vapor extraction project at 200-ZP-2 as a focus area and would like to help set risk-based cleanup levels for carbon tetrachloride in the unsaturated zone. V. J. Rohay reported that two students from UW met with her on 7/9/97 and visited the 216-Z-9 site on 7/9/97-7/11/97. One student, from the UW environmental health department, is using an open path Fourier Transform Infrared (FTIR) spectrometer to measure near-surface carbon tetrachloride vapor concentrations. The other student, from the UW civil and environmental engineering department, is using numerical modeling of rebound behavior and the 200-ZP-2 rebound study data to infer the subsurface distribution of carbon tetrachloride and to evaluate various SVE operational strategies.

D. A. Faulk reported that the CRESP team is planning to visit Hanford on 8/13/97 to tour selected sites, including the vapor extraction site. He will try to set up a meeting with the 200-ZP-2 project team at that time to discuss the project needs and timetable with CRESP.

A. C. Tortoso suggested that the 200-ZP-2 project team plan a half-day workshop for early to mid-September 1997 to discuss all of the data, including the effect of 200-ZP-1 Pump-and-Treat Phase III operations on 200-ZP-2 concentrations, and the options for future remediation strategies. D. A. Faulk suggested that CRESP be invited to the workshop also to incorporate their research and experience in planning activities.

<u>200-ZP-1</u>

M. A. Buckmaster provided an update on the 200-ZP-1 pump-and-treat remediation (Attachment 3). As of July 1997, the 200-ZP-1 treatment system has removed 621 kg of carbon tetrachloride and treated 200 million liters (53 million gallons) of water. Carbon tetrachloride concentrations have been relatively constant at the three extraction wells; the combined average influent to the treatment system is 3,700 ppb carbon tetrachloride. After treatment, the carbon tetrachloride concentration is less than detection (2 ppb), meeting the remedial action objective for discharge to the injection wells. During the past week, the 200-ZP-1 pump-and-treat system operated at 100 percent availability.

Installation of the piping and wiring for Phase III operations has been completed. Modifications to manifolds and pumps within the main process building are expected to be completed within three to four weeks. This one-month schedule delay was caused by the necessity to change contractors, but is not anticipated to impact the August 31, 1997, milestone. The last three extraction wells are scheduled to be

on-line by August 31, 1997, to complete initiation of 200-ZP-1 Phase III operations, for a total of six on-line extraction wells. D. A. Faulk stated that if all six wells cannot be brought on-line by August 31, 1997, using a reasonable level of effort, it would be acceptable to EPA in this case for 200-ZP-1 Phase III operations to begin within the following few weeks and that DOE-RL needs only to send a letter to EPA acknowledging the delay and the expected start date. Based on testing at all six wells, a total flow of 1,000 L/min (270 gal/min) is anticipated.

Decommissioning of well 299-W15-5 began 6/23/97. Water samples indicate dissolved carbon tetrachloride concentrations of 6,000 ppb at the water table, approximately 65 m (213 ft) below ground surface; 5,800 ppb 4.5 m (15 ft) below the water table; and 2,600 ppb 33.5 m (110 ft) below the water table. Results are pending for the sample collected 67 m (220 ft) below the water table at the top of the Ringold Formation lower mud unit. Work has currently reached 142 m (466 ft) depth below ground surface; total depth of the well is 183 m (599 ft) below ground surface in the confined aquifer system. Although the well is within the capture zone for 200-ZP-1 Phase III operations, pump-and-treat in the unconfined aquifer is not expected to affect the underlying confined aquifer zone.

Per D. A. Faulk's request, M. A. Buckmaster provided D. A. Faulk and A. C. Tortoso with copies of the waste profile data sheet for 200-ZP-1 Investigation Derived Waste going to the Environmental Restoration Disposal Facility (ERDF).

Future Status Meetings

The next status meeting on the 200-ZP-1 and 200-ZP-2 projects is anticipated to coincide with the August meeting with CRESP (approximately 8/13/97).

Attachments:
1. Meeting agenda
2. Graph illustrating the maximum carbon tetrachloride rebound concentration at 200-ZP-2
3. Update on the 200-ZP-1 pump-and-treat remediation

AGENDA
200-ZP-1 and 200-ZP-2 STATUS
JULY 23, 1997

200-ZP-2 Rebound Study

- Summary of Rebound Study Data 11/4/96 - 7/10/97
- Status of Rebound Study "Mini-Tests"
- Status of Soil Vapor Extraction System Operations

  Initial 3-Hour Tests

  Full-Scale Operations

- Consortium for Risk Evaluation with Stakeholder Participation (CRESP)

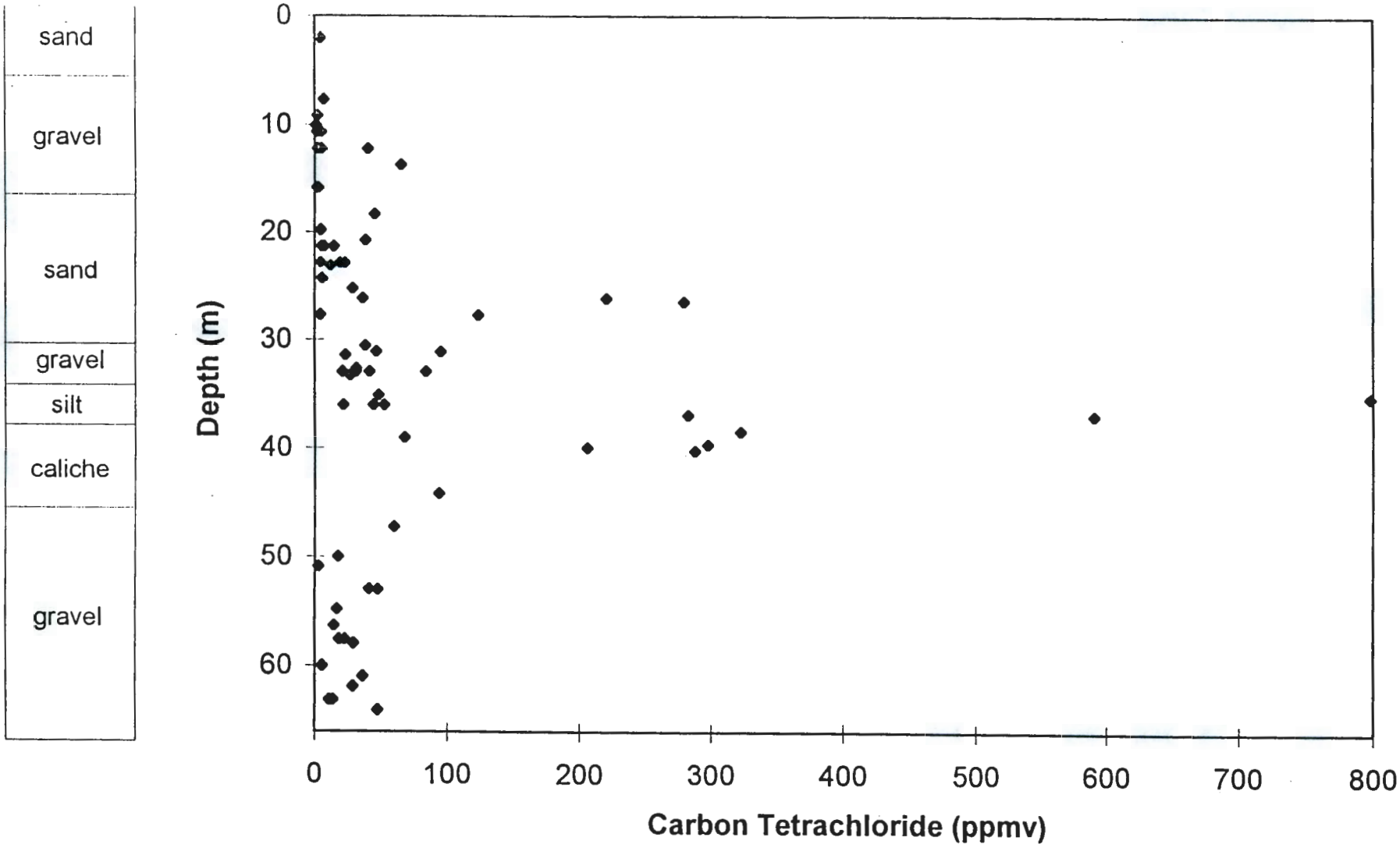
  Characterization of Residual Carbon Tetrachloride in Unsaturated Soils Beneath the Hanford 200 West Area Using a 3-D Contaminant Transport Model

  Open Path Fourier Transform Infrared (FTIR) Spectrometry Measurements

200-ZP-1 Pump-and-Treat Remediation

- Summary of Pump-and-Treat Operations
- Decommissioning of Well 299-W15-5

Maximum Carbon Tetrachloride Rebound 11/4/96 - 7/10/97



ATTACHMENT 2

200-ZP-1
WEEKLY OPERATION SUMMARY

System Runtime (hrs)	Avg. Flow (gpm)	Avg. Flow (gpm)	Avg. Flow (gpm)	Weekly Process (gals)	Avg. RH (%)	Avg. Airflow (scfm)	Avg Air Temp (F)	CCl_4 Removed kg/ (lbs)	Sys. Avail Week Total (%)	Sys. Avail Apr.TD Total (%)	Sys. Avail PTD Total (%)	CCl_4 PTD Total kg/ (lbs)	Groundwater Treated YTD Total (gals)
168	WE01 31.7	WE02 43.6	WE03 78.4	1,549,296	6.4	510	70.9	21.8/ (47.9)	100	86.6	83.2	621.1/ (1366.4)	52,805,481

ATTACHMENT 3
(Page 1 of 2)

200-ZP-1
WEEKLY SAMPLING SUMMARY

Sample Date	WE01 W15-33 Conc. (ppb)	WE02 W15-34 Conc. (ppb)	WE03 W15-35 Conc. (ppb)	T-01 Ext Tank Conc. (ppb)	V-01 Stripper Conc. (ppb)	T-02 Inj. Tank Conc. (ppb)	H-01 Inf. Vapor Conc. (ppm)	A-3 Eff. Vapor Conc. (ppm)
7-16-97	5800 CCl4 26 TCM 11 TCE	3200 CCl4 15 TCM 12 TCE	3700 CCl4 20 TCM 5 TCE	3700 CCl4 19 TCM 7.9 TCE	<2 CCl4 <2 TCM <2 TCE	<2 CCl4 <2 TCM <2 TCE	17	<1

ATTACHMENT 3
(Page 2 of 2)