CARSWELL AFB
TEXAS

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 759

CARSWELL/PLANT 4
RESTORATION ADVISORY BOARD MEETING

FINAL
Summary Minutes of November 8, 2001
Regular Quarterly Meeting

A regular meeting of the Carswell/Plant 4 Restoration Advisory Board (RAB) was held November 8, 2001 at the Westworth Village Council Chamber, 311 Burton Hill Road. The RAB meeting began at 6:00 p.m.

Agenda

Welcome/Introductions/Minutes

Air Force Plant 4 (George Walters)
Project Update (includes Six-Phase Heating Update)

Westworth Redevelopment Authority Update (Leland Clemons)

Carswell Off-base (Charles Pringle)
Project Update
—Aerospace Museum
—Sanitary Sewer System
—PCE Site

Carswell On-Base (Mike Dodyk)
Project Update
Site Investigation AOC2, AOC20 (Dr. Jin)

Future Meetings (Mr. Yates)

Community Affairs (Charles Pringle)

Next Meeting Agenda

Open Discussion/Questions

Welcome and Introduction of Attendees

J'Nell Pate, community co-chair, introduced herself and welcomed all attendees to the meeting. Ms. Pate called the meeting to order and asked if there were any objections or corrections to be presented regarding the August 9, 2001 RAB Meeting Minutes. Hearing none, the minutes from the previous meeting were approved.

Comments regarding the draft meeting minutes (November 8, 2001) should be sent to:

Mr. Rick Levin
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Newberry, FL 32669
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Air Force Plant 4

Ms. J'Nell Pate introduced Mr. George Walters, Air Force Plant manager from Wright Patterson Air Force Base, to give a project update on the Air Force Plant 4.

Mr. Walters reintroduced himself and offered an outline of what he would be covering in his update and identified his topics of discussion as the second phase of Lake Worth sediment sampling, six phase heating update, and carbon isotope testing.

Mr. Walters said that, unfortunately, with the events of 9/11, the Department of Defense pulled back roughly $300,000 for homeland defense that had been set aside for the second phase Lake Worth sediment sampling. The budget for FY' 02 will be coming out shortly. Mr. Walters said he will try to get money to fund that project again.

Mr. Walters indicated that he has nine projects lined up for FY' 02. He plans to talk with regulators to see if they can re-prioritize some of his projects and specifically move the Lake Worth sediment sampling up. Mr. Walters also plans to search for other funding that might be available to support the sampling effort.

Mr. Walters indicated that the next sampling effort was going to focus on the inlet area where no data was collected during the first phase of sediment sampling.

Mr. Walters stressed that although the project is currently postponed, he still plans to finish, even if it does not get done until next year.

Mr. Walters moved on to speak about six-phase heating at Building 181 which is a source of the TCE. He also said that they would be renaming it three-phase heating or electrical resistance heating due to an improvement to the treatment system.

Mr. Walters indicated that his Landfill # 3 treatment system is currently shut down due to an air quality violation. He explained that the problem they are having is occurring after they have run the system for a month when the TCE concentrations are low. The instrument that they use to monitor the exhaust gases is not working well under high temperatures and in highly acidic environments. Mr. Walters indicated that they have

developed a new method to deal with the problem and they have sent a letter to the regulators seeking permission to turn the system back on.

Mr. Walters continued to define Dense Non Aqueous Phase Liquid (DNAPL) and how it has moved into the groundwater and into the fractured bedrock. He indicated that the good news is that the TCE has not been found in the drinking water aquifer. He indicated that they are very careful when installing monitoring wells in the bedrock because of the risk of polluting the aquifer by poking through the bedrock and allowing the DNAPL to seep through. They prevent cross contamination by filling the boreholes with cement and then installing the monitoring well by drilling through the cement.

Mr. Walters informed everyone that groundwater pumping treats dilute water not pure product. He indicated that groundwater treatment is very expensive because millions of gallons of water must be treated to remove only a gallon of product. He also indicated that they have people bailing pure product from wells, which cost only about 20 dollars a gallon. One of the wells is bailed on a weekly to monthly basis depending on how much fluid is in the monitoring well, and they removed approximately 250 gallons.

Mr. Walters said that the present day contamination problem is the result of old disposal practices, from back in 1941, when we were at war with Japan. All waste products were put into the landfill back then.

Mr. Walters stressed that TCE is very difficult to find because the pollutant can travel in so many different directions underground. It is a constant struggle for geologists, hydrogeologists, and engineers to determine the source of the contaminant and where it is going.

Mr. Walters said that one of the problems until the 1980's was with detection limits. During the 1980's computers and analytical techniques improved, lowering detection limits to parts per billion.

Mr. Walters stressed that their job is a big challenge because there are no technologies today that will tell one exactly what is in the subsurface from one point to another.

Someone asked Mr. Walters how a slight earthquake would affect his previous work of finding fractures in the bedrock. Would he have more problems? How would he know if he has fractures caused by an earthquake?

Mr. Walters responded by saying that he has deep monitoring wells scattered all over the base that would indicate if there is any change in flow of the contaminant.
Mr. Walters stated that if there were a problem with municipal wells in the surrounding area the Air Force would be able and willing to take care of the problem.

Mr. Walters continued, in response to the question about the earthquake. He said that depending on the severity of the earthquake, some of the monitoring wells would be damaged. He also said they would redrill the wells to determine the extent of the changes.

Mr. Walters moved on to describe a new pilot system at Building 181 called six-phase heating. The new project is going to be installed in the next few months and should be in operation in 2002.The system treats a half acre of land. Currently they have 32 soil vapor extraction wells that treat the vadose zone. Mr. Walters wants to concentrate on treatment of the groundwater.

Mr. Walters indicated that one of the problems is finding pools or depressions filled with product. Currently, there is no technology that will help find a depression.

Mr. Walters said they determined by drilling beneath Building 181 that there are no fractures or DNAPL.

Mr. Walters described the change from a six-phase heating to a three-phased heating system that utilizes an electrode array to clean up the TCE from the top of the bedrock. The electrodes will heat the ground to 100°C. TCE boils at 72°C. The high temperatures will speed up the treatment process.

Mr. Walters stated that this is the first time that three-phase heating has been done in this country inside a building that is currently active.

Mr. Walters went on to describe the vapor recovery system, which consists of a series of electrodes and an extraction well. The water is heated and cooled before it can be run through the water system and the catalytic oxidation unit.

Mr. Walters indicated that they have discontinued the use of TCE at Plant 4. He also seemed hopeful, new technologies seem to come along to help speed up the degradation of TCE.

Mr. Walters proceeded to discuss carbon isotope testing, which he is hoping will enable them to determine the TCE fingerprint. It may not work because there are many different types of TCE, but if it does it may enable them to spot different fingerprints, which could warn them of changes in the plume and prevent further movement offsite.

Mr. Walters stated that TCE byproducts break down in the environment quicker than pure TCE. He said that there are new technologies that involve the release of hydrogen compounds in the ground that will degrade TCE and other chemicals.

Mr. Walters moved on to discuss the 1,000 ft long slurry wall (Permeable Reactive Barrier) that is composed of an iron/sand mixture. When TCE or any products related to it, vinyl chloride, or DCE, flow through the PRB, they break down into chemicals of lower concentrations.

Mr. Walters indicated that they have a partnering effort with Carswell, Plant 4 and the BRAC to jointly fund the PRB project. It is going to be a pilot test. He said that the good news is, all over the country it seems to work, so they decided to go ahead and make it even longer than they originally had planned so they wouldn't have to come back

in four or five years and make it longer. He hopes to save money by doing it all now. They were able to get the project funded and sent to AFCEE for contracting efforts.

Mr. Walters continued saying that one advantage of this system is, after the cost of installing it, one doesn't have to expend the electricity to pump groundwater, because groundwater naturally flows through it.

Mr. Walters indicated that the location was chosen because that's where the golf course being constructed. That property will be transferred. The property will be off-base and regulators don't want any contamination migrating from the flight line to be above drinking water standards even though the aquifer is non-drinkable. Some of the rules apply to make it drinkable when remediation efforts are conducted on it.

Mr. Walters closed asking for any questions.

Westworth Redevelopment Authority

Mr. Clemons pointed out that the Authority's primary focus is on economic development and job creation rather than environmental areas. He acknowledged the significance of Lockheed's new contract especially when retail building starts have decreased, and gave kudos to Norman Robins, Lockheed's representative. Development activities include:

- Lowe's- construction is nearing completion;
- Contract negotiations are underway with Walgreen's and another major retailer for sites adjacent to Lowe's;
- Work on residential properties progressing-clearing of abandoned and unused utilities underway. Construction to begin within two weeks (very favorable response to residential development and planners, design, and contractor personnel are assembled for the task);
- Coordinated planning effort with Westworth Village planning and zoning commission;
- Progress on golf course construction-indication that construction could be completed as early as June under favorable conditions.

Mr. Clemons described current renovation activities at the golf course and emphasized the economic and public benefit of the course. Parties are interested in hosting major charitable tournaments at the facility.

Carswell Off-Base

Mr. Pringle identified his association with the Air Force Base Conversion Agency and their mission of land transfer and his involvement in environmental cleanup. He pointed out that the NAS has acquired some of the transferable land on-base. He specified that his job involves off-base land under the BRAC program and monies. Graphic materials were included in his presentation. Mr. Pringle stated that originally BRAC addressed 19 sites and that all have either been closed or have closure letters from regulators. Two sites are still in the reporting phase: the Aerospace Museum and PERC site.

Work on-base involves the sanitary sewer system. His team and the Navy (using a camera system) have conducted independent investigations identifying breaks in the sewer. Contamination has been discovered out from breaks at approximately seven sites that will receive additional sampling (starting in January) at hot spots under phase four. Currently, funds are being programmed. Remedial actions can potentially be done by spring and reviewed by regulators.

Mr. Pringle asked if anyone had any questions. Mr. Brown's question was inaudible. Mr. Pringle responded with 49 acres and an unidentified speaker responded with 70 acres. Mr. Bill Olshefski (community) inquired of the dispensation of excavated soil at the Aerospace Museum. The material in question was determined to be that in roll-offs. Larry Tyner stated that the non-hazardous material had been disposed of in a landfill. Mr. Olshefski questioned its being held for a period of time rather than immediate disposal. Mr. Pringle elaborated on the regulatory process that requires determination of the nature of the material and followed by proper disposal practices.

Carswell On-Base

Mr. Dodyk stated that their major function was to close sites at Carswell (Seventy IRP sites) consisting of solid waste management units. During the previous three months, seven sites were permitted for closure by the State. Included are the:

- Fuel hydrant system,
- Oil/water separator at the Hobby Shop,
- Former Base refueling area,
- SWMU 60 (POL tank farm),
- Oil/water separator at three buildings, (most with no release detected), Oil/water separator at AOC 13 did leak. Material was removed, separator was removed, soil was replaced and the area was paved, achieving closure.

In addition, activities included work at two fire training areas. Drums containing TCE had been recovered nearby. Metal identified at the sites was excavated and removed. A half drum used as a dry well and underground piping were also removed.

The Base gas station had USTs leaking to groundwater. Aquifer tests were performed and a French drain system was installed to collect petroleum, after which the drain was removed.

As part of Base-wide monitoring, an additional monitoring well has been installed.

Past investigations at Landfills identified hot spots. Soil borings were advanced and soils sampled to identify areas to be removed in the future.

The final RFI report for Landfill 3 is ready for submittal to the State. The data gap investigation is continuing for AOC 2, the RFI, and AOC 20.

Upcoming field activities include removal of hot spots at Landfills and Waste Accumulation Areas, additional well installation at fire training areas to determine the extent of contamination. In January, design and installation of a permeable reactive barrier will occur at the southern lobe of the TCE plume. Continued study at this site includes a risk assessment and a Focused Feasibility Study.

Site Investigation AOC2, AOC 20

Dr. Jin described the current stage of his project as developing a conceptual model showing contamination sources, rate and direction of movement and evolution of daughter products of the contaminant. TCE can be changed as it flows through different conditions within the media.

Phase One of Dr. Jin's investigation includes evaluating the best placement of the permeable reactive wall. Evaluation includes determining depth of bedrock, soil permeability, and depth and width of the plume. Seismic, X-ray and other methods are used in this investigation. Phase Two of the investigation involves sampling efforts to further define the leading edge of the plume, identify hot spots, and fill data gaps. Interpretation of the data will be used to explain how and why the contaminants are behaving as they are.

Field work has been conducted, interpretation and report production will done during the next two months.

Dr. Jin explained the relationship between the potentiometric surface and groundwater surface flow and how variation in patterns naturally reduce contaminant concentrations.

Mr. Pringle asked if the investigation uses isotope or other fingerprinting methods to trace source and plume characteristics or if he looks at concentration levels.

Dr. Jin responded that the focus is on trends and historical data as well as hydraulic framework; however, the USGS is working with isotope methods.

Mr. Pringle asked if the information from each will be incorporated in a report.

Dr. Jin responded that the time frame for the studies will likely not allow incorporation.

Future Meetings

Mr. Yates stated that the integrated product team leader (Ted Grady) had the forethought to assess the next scheduled RAB meeting date to find that February 14, is also Valentines Day. It was suggested that in order to maintain harmony in relationships, the meeting date be moved to February 7, 2002 with RAB approval. Mr. Yates asked the membership for acceptance.

A member questioned the future location. Because of possible schedule conflicts with Westworth Village, alternate locations were scouted for review and approval. Desert Storm Conference Center may not be available. The Lockheed recreational site was suggested by Mr. Yates and asked for acceptance. A location to meet on a regular basis has not been located but will be pursued and determined by the next meeting.

Community Affairs

Mr. Yates, Mike Hawkins and Greg McGraw have been working with local school communities and administrations. Community relations events have been scheduled for March 6, 7, and 8. Regulatory partners and RAB members and contractors are invited to participate. Finalized plans should be made by next RAB meeting.

Mr. Pringle asked for a definition of public relations with schools.

Mr. Yates responded with an environmental fair targeted at (Lake Worth) fifth to eight grade students and presenting the type of work we are doing with a March 6th date. March 7th is suggested for White Settlement (middle school), and March 8th for 10th-senior students (career orientation focus).

Question: Is it related to Earth Day?
Answer: No, not specifically.

Question: Is the White Settlement Senior Citizen's location being considered for a meeting place?
Answer: No, Thursdays are generally booked up for that facility.

Question: Can the meeting date be changed to the third or fourth Thursday or are we held to a particular night?
Answer: Not held to a particular night, however, the attendees are geared to the current date.

Question: Mr. Braun asked for details on trees that were being cut down.
Answer: Unidentified speaker: We're probably going to put up a fence or electric fence

The meeting adjourned.

Adjournment

The next meeting is scheduled for Thursday, February 7, 2002.

In Attendance

Carswell DERA (On-Base)

Don Ficklen, HQ AFCEE/ERD
Mike Hawkins, HQ AFCEE/ERD
Mike Dodyk, AFCEE, Resident Engineer
Rick Harvey, Wright Patterson Air force Base
Rich Wheeler, Ellis Environmental Group
Rick Levin, Ellis Environmental Group
Anthony Kwan, Ellis Environmental Group
Miquette Rochford, HydroGeoLogic, Inc.
Lynn Morgan, HydroGeoLogic, Inc.
Peter Dacyk, HydroGeoLogic, Inc.
Dr. Jerry Jin, SAIC
Bob Donald, SAIC
Andrea Linder, Universe Technologies
Audrey McDean, Universe Technologies
Chris Downey-Hewett, Universe Technologies
Larry Tyner, IT Corporation
Greg McGraw, IT Corporation
Don Brennerman, Tetra Tech
Brian Mosley, Roy F. Weston
Gordon Walters

Carswell AFBCA (Off-Base)
Charles C. Pringle, HQAFCEE/ERD

Air Force Plant 4
Rick Wice, IT Corporation
Lynn Schuetter, Jacobs Engineering
Victor Dozey, IT Corporation, Project Manager
Don Yates, Wright Patterson Air force Base
Christopher Braun, U.S. Geological Survey
Sonja. A. Jones, U.S. Geological Survey
George Walters, AFP 4 Project Manager, Wright Patterson Air force Base

United States Navy
J.D. Davids, USN

Texas Natural Resource Conservation Commission
Roy S. Risener
Luda Voskov
Mark Weegar

U.S. Environmental Protection Agency
Gary Miller

Lockheed Martin
Fred Novak

Norman Robins

Others (Off-Base)

Leland Clemons, Westworth Redevelopment Authority
J'Nell Pate, Community member, co-chair.
Ed VonKohn, Westworth Village
W.F. Olshefski, Lake Worth Civic Club
Walter Hardin, Lake Worth Management Office, City of Fort Worth Water Dept.
Jim Scanlan, City of Fort Worth Water Department
Mike Rose, Community member
Ms. Chris Baack, Community Member
Linda Berry, Silver Creek Materials
Melba Campbell, Community member
Joe deColward, Community member
D.W. Owens, River Oaks
Greg Henderson, River Oaks
John Maddox, Community member

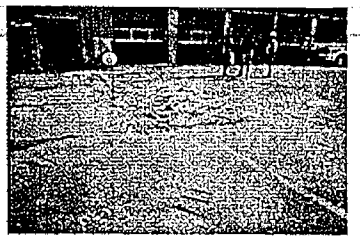
NAS Fort Worth JRB Installation Restoration Program Update

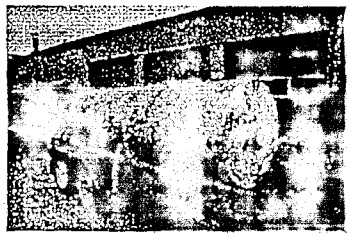
Michael R. Dodyk, P.E.

November 8, 2001

Site Closure Update

- TNRCC granted closure on 7 sites since the August RAB meeting:
  - Area of Concern (AOC) 4, Fuel Hydrant System
  - AOC 13, Oil/Water Separator at the Auto Hobby Shop
  - AOC 7, Former Base Refueling Area
  - Solid Waste Management Unit (SWMU) 68, POL Tank Farm
  - Oil/Water Separators at Buildings 1602, 3358, and 4146





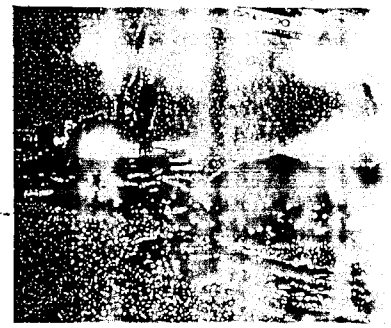
AOC 13 Hobby Shop Oil/Water Separato Removal May 2 0

Field Activities

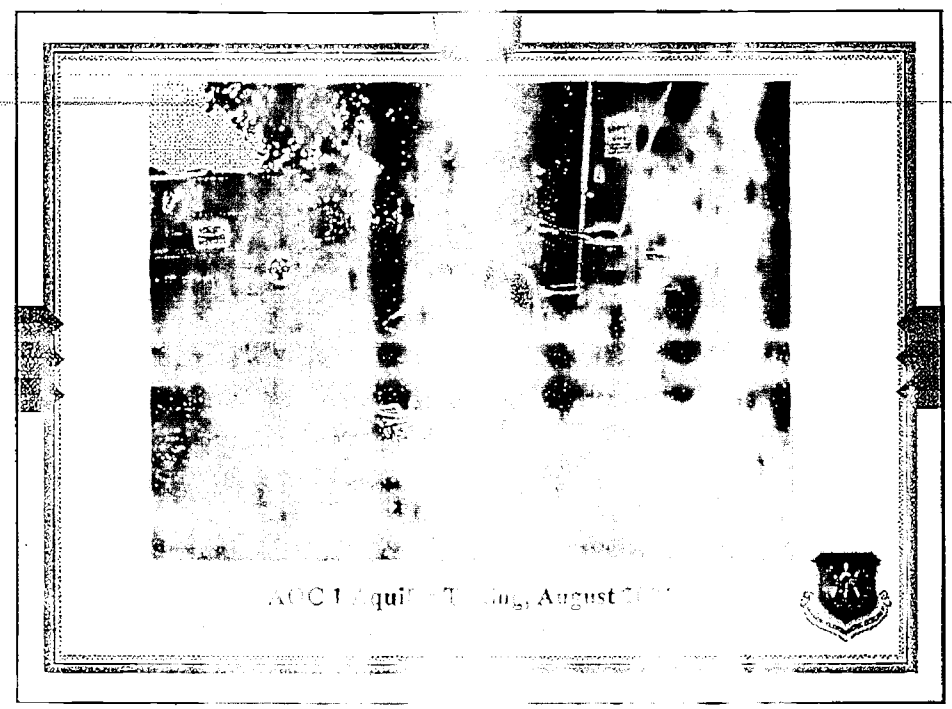
- Excavations of buried metallic debris were c n ted in August at Former Fire Trai a No. 2, a C 19, a Suspected Former Fire Training Area.
- Aquifer testing was conducted i August at the Base Service/Gas Station.
- SWMU 64, the French Under System, w oved in October.
- Basewide groundwater sampling w conducted in October.
- Soil "hot spots" excavation w gan at va and fill's and Waste Accumulation month ngoing.

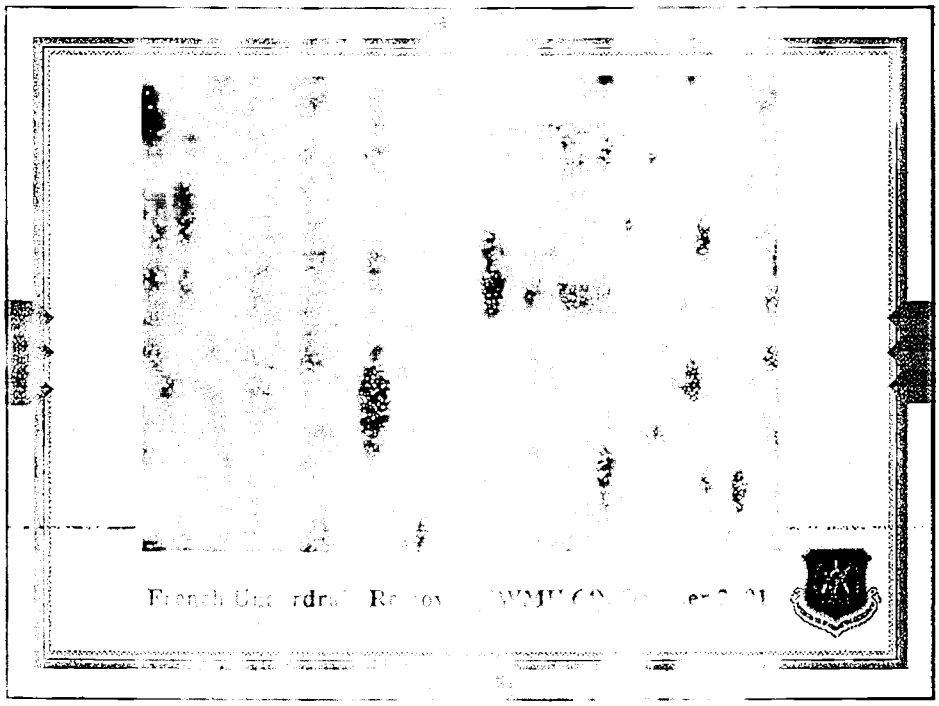
Excavation work at S WMU 19, Aug

Metal Piping Excavated at SWMU 19

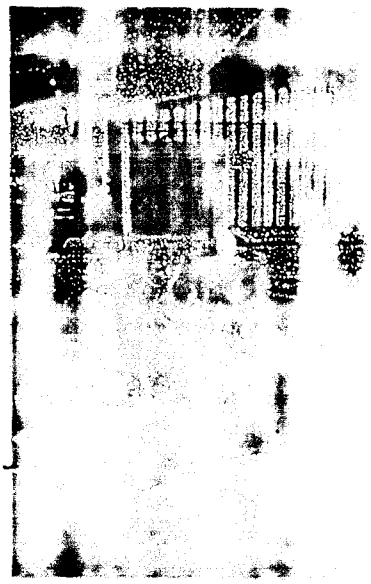


Dry well ex SWMU 19



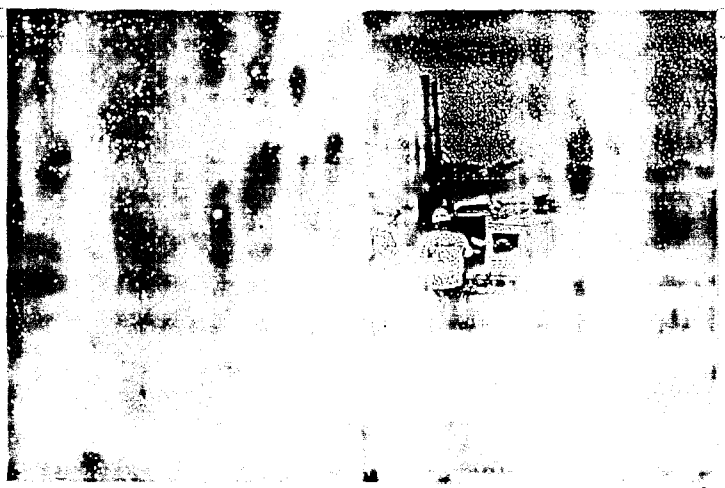


Installation of monitoring wells a MU 12, Octob 1



Basewide Groundwater Sampling

October 2001



Soil s[illegible]ng for c[illegible] [illegible]t Landfill 2, [illegible] 01

Upcoming Field Ta[illegible]

- **This Month:**
  - Completion of the [illegible] Remedial Acti[illegible] [illegible]emove soil "hot spots" [illegible] Landfills an[illegible] Accumulation Areas.
- **Next Month:**
  - Installation of additional monitoring wells at [illegible]MW's 19, 20 and 21, Former Fire Training Area [illegible].
- **Early Next Year:**
  - Installation of the permeable reactive barrier for southern [illegible]le of the TCE plume, scheduled to begin [illegible] 20[illegible]2.

Continued Progress

- Final RFI Report for Landfill 3 to be submitted to TNRCC this month.
- Risk Assessment and Focused Feasibility Study of the southern lobe of the TCE plume continued.
- Work continued with designing the permeable reactive barrier for the southern lobe of the TCE plume.
- Data gaps investigation for AOC 2 RFI and AOC 20 Site Investigation is ongoing.

Briefing of AOC20 Site Inspection and Results

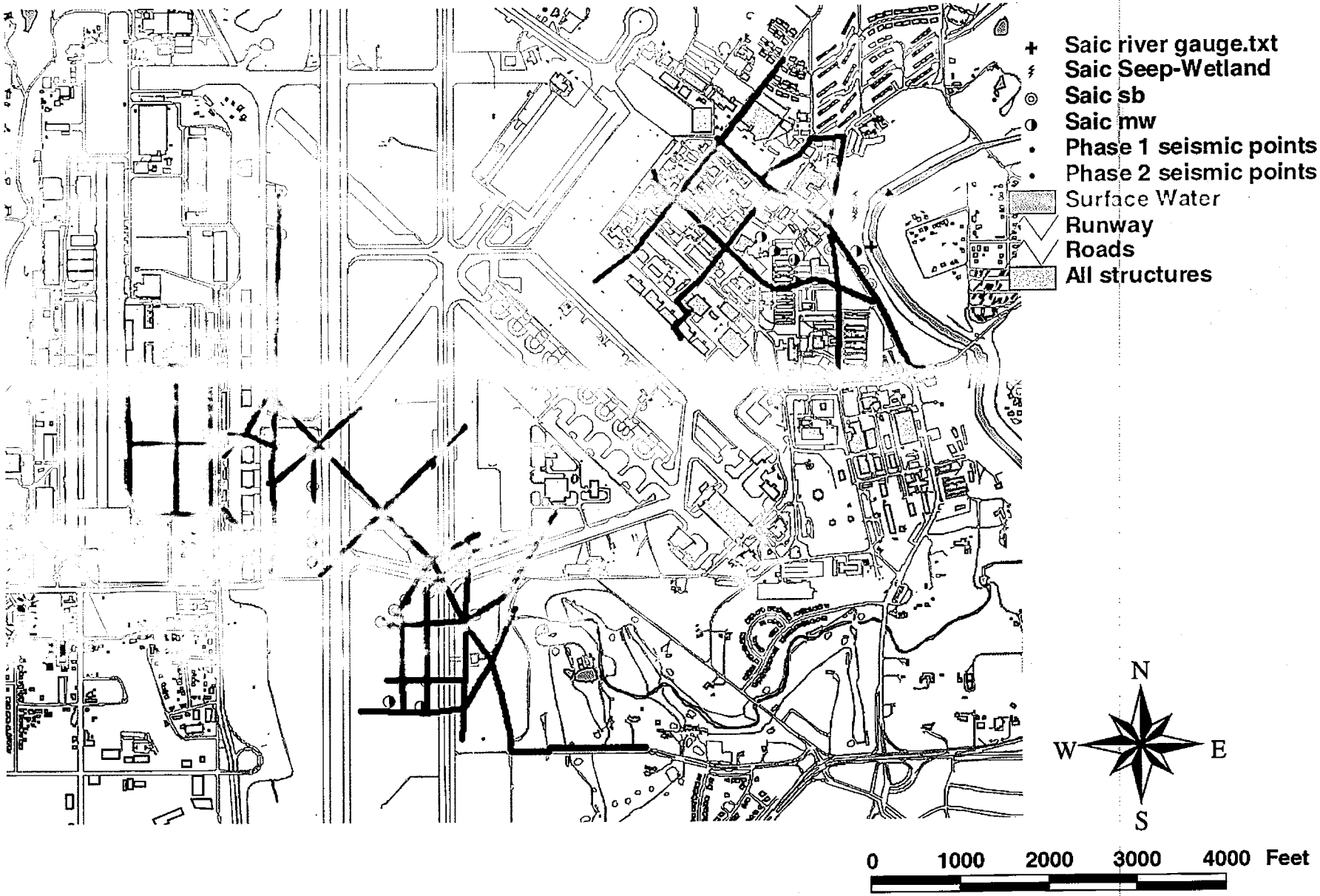
Jerry Jin
SAIC

November 8, 2001

Objectives

- Phase 1: Map the paleochannel for PRB siting
- Phase 2: Map the paleochannel in an expanded area and establish conceptual site model

Locations of Field Points



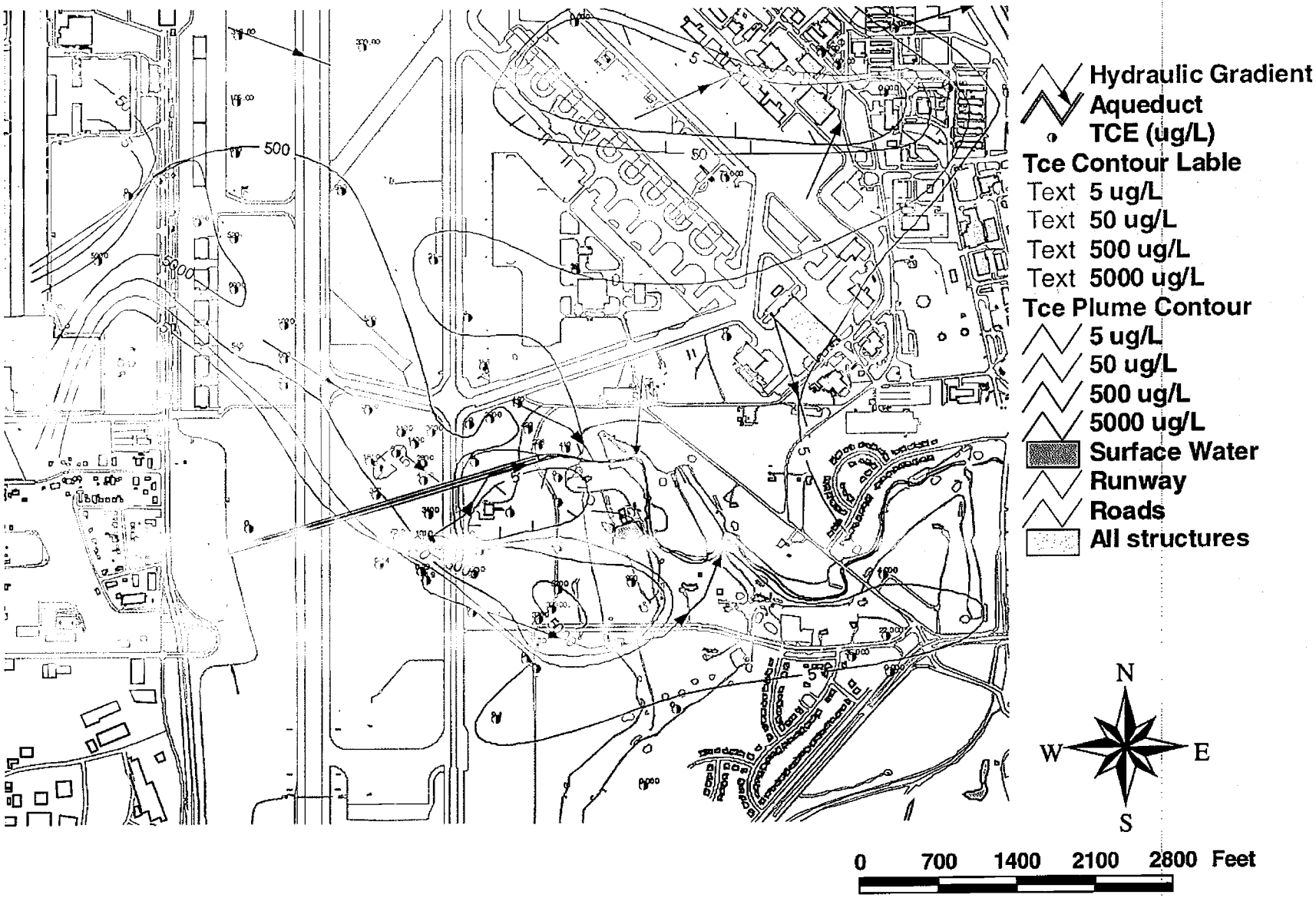
Field Methods

- Seismic survey to map the bedrock surface
- Electrical imaging survey to map alluvium heterogeneity
- Soil borings to aid geophysical interpretation
- Groundwater sampling to refine the plume and map the aquifer geochemical conditions

AOC20 Conceptual Model

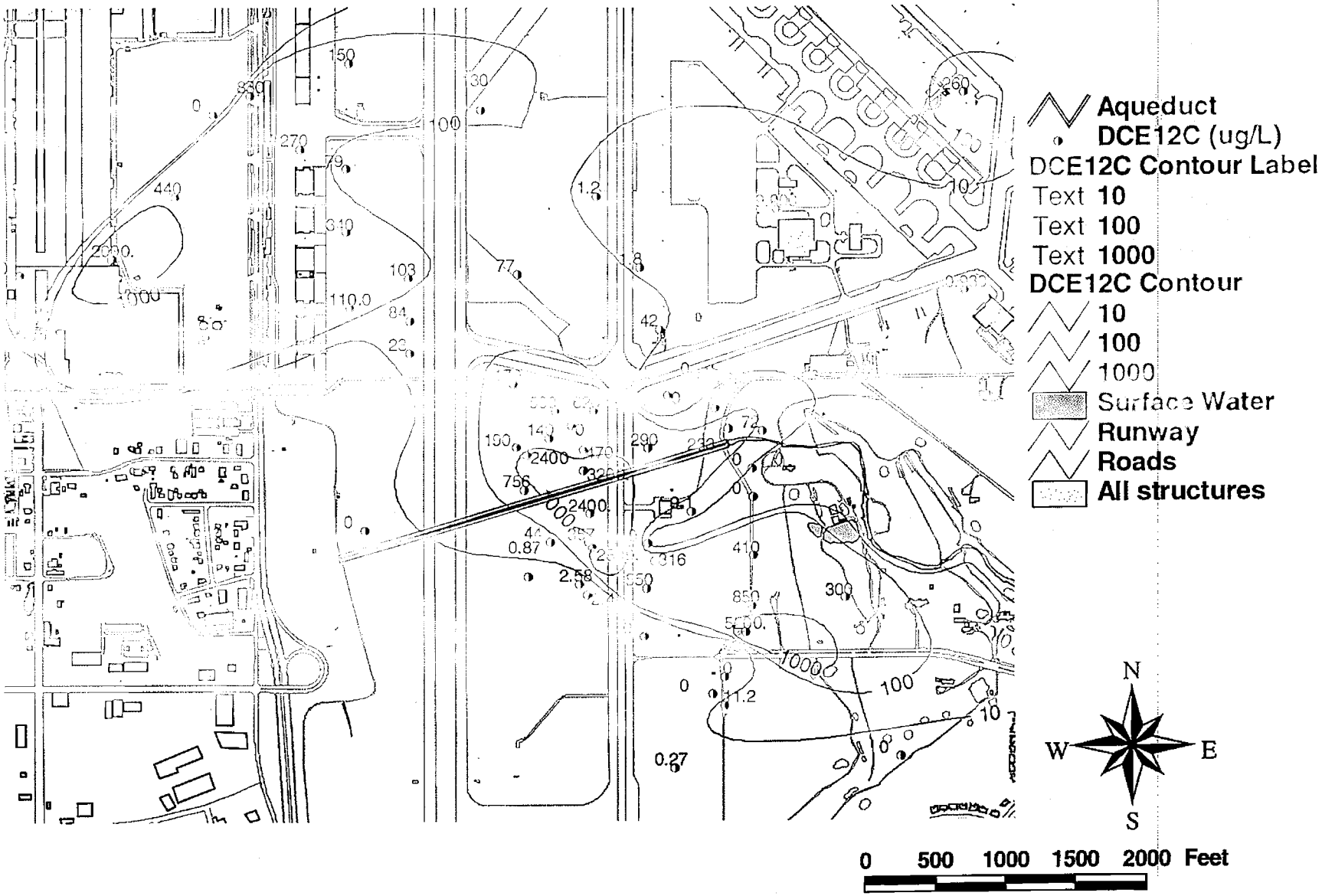
- There are potentially more than 3 TCE sources for the observed TCE plume.
- The fill materials around the Aqueduct may have additional TCE sources.
- TCE plume is degraded in multiple places
- TCE plume partially drained by Aqueduct and FBC.

TCE Plume
Based on Phases 1 and 2 SI, 10-00 Basewide Sampling, and Other 2000-2001 Data



Cis-12DCE Plume

Based on Phases 1 and 2 SI, 10-00 Basewide Sampling, and Other 2000-2001 Data



Briefing of AOC2 Data Gap Investigation

Jerry Jin
SAIC

November 8, 2001

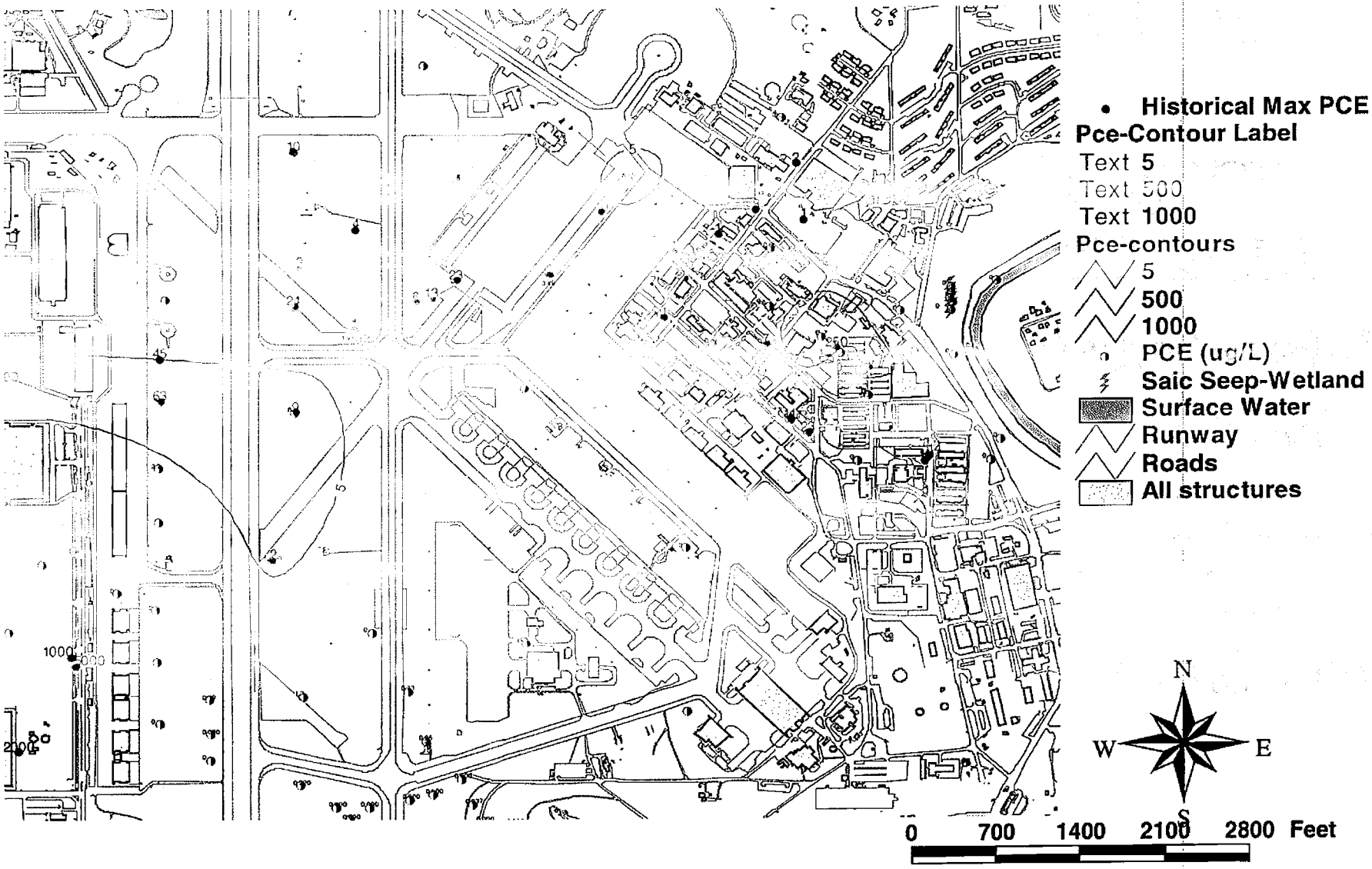
Objectives

- Confirm the presence of PCE & determine the potential of PCE sources
- Define the leading edge of the TCE plume
- Evaluate the potential of contaminated groundwater discharging into Trinity River

PCE Confirmation

- PCE was initially detected at at CPT point, PCHMHTA0E3, at 250 ug/L.
- A well installed next to PCHMHTA0E3 has no detectable PCE.
- PCE is detected in other wells, in line with historical PCE distribution, pointing to an old source north of B181.

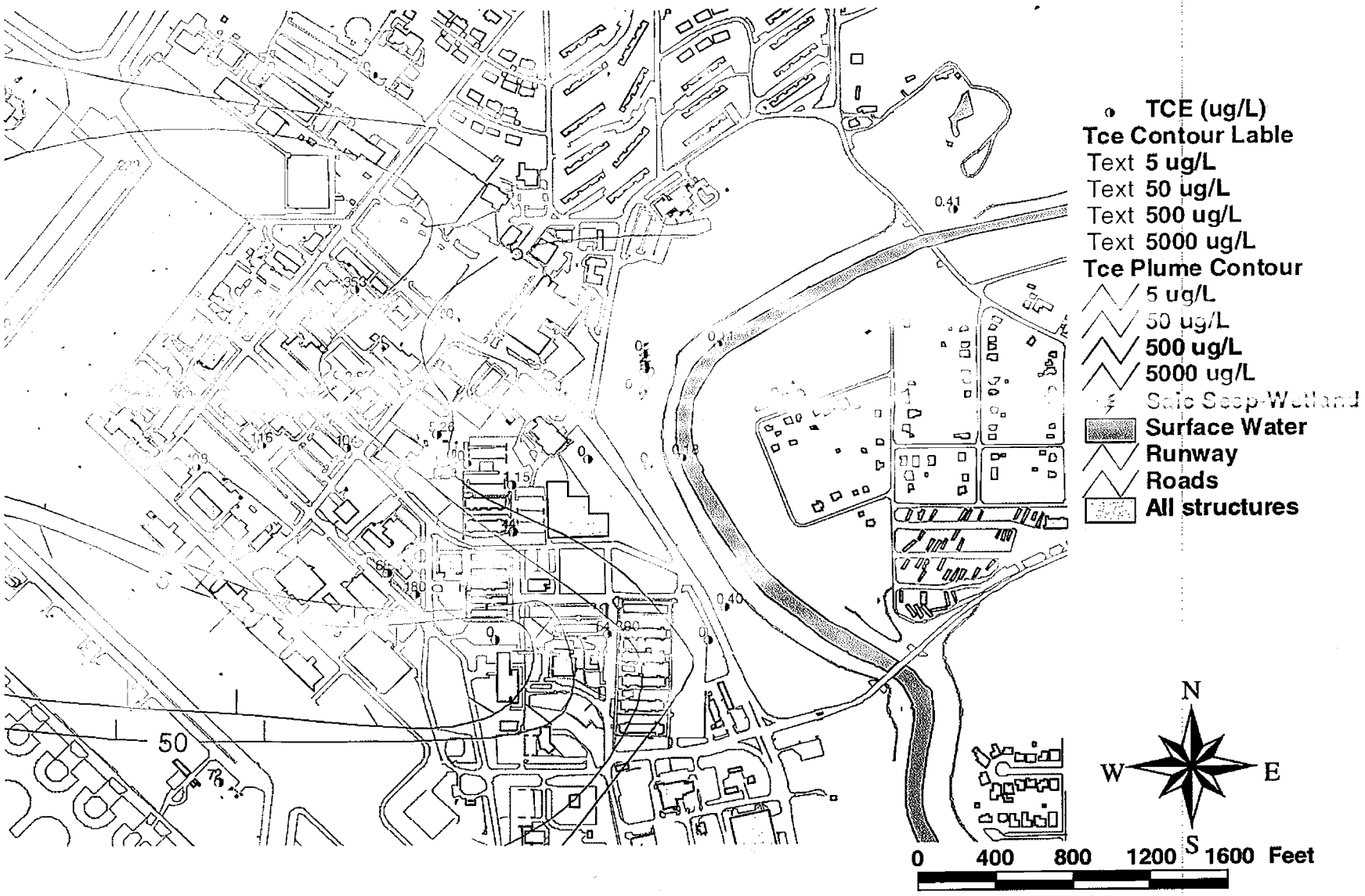
PCE Plume Based on Phase 1 and 2 SI, and 10-00 Basewide Sampling Data And Maximum Historical Detections



Plume Delineation and Pathway

- Trace TCE (0.4 ug/L) is detected in a well MW-12 and in seep C-3 next to Trinity.
- Trace TCE (0.1 to 0.2 ug/L) is detected in the two river water samples.
- The seeps that feed the large wetland have no detectable solvents this time.

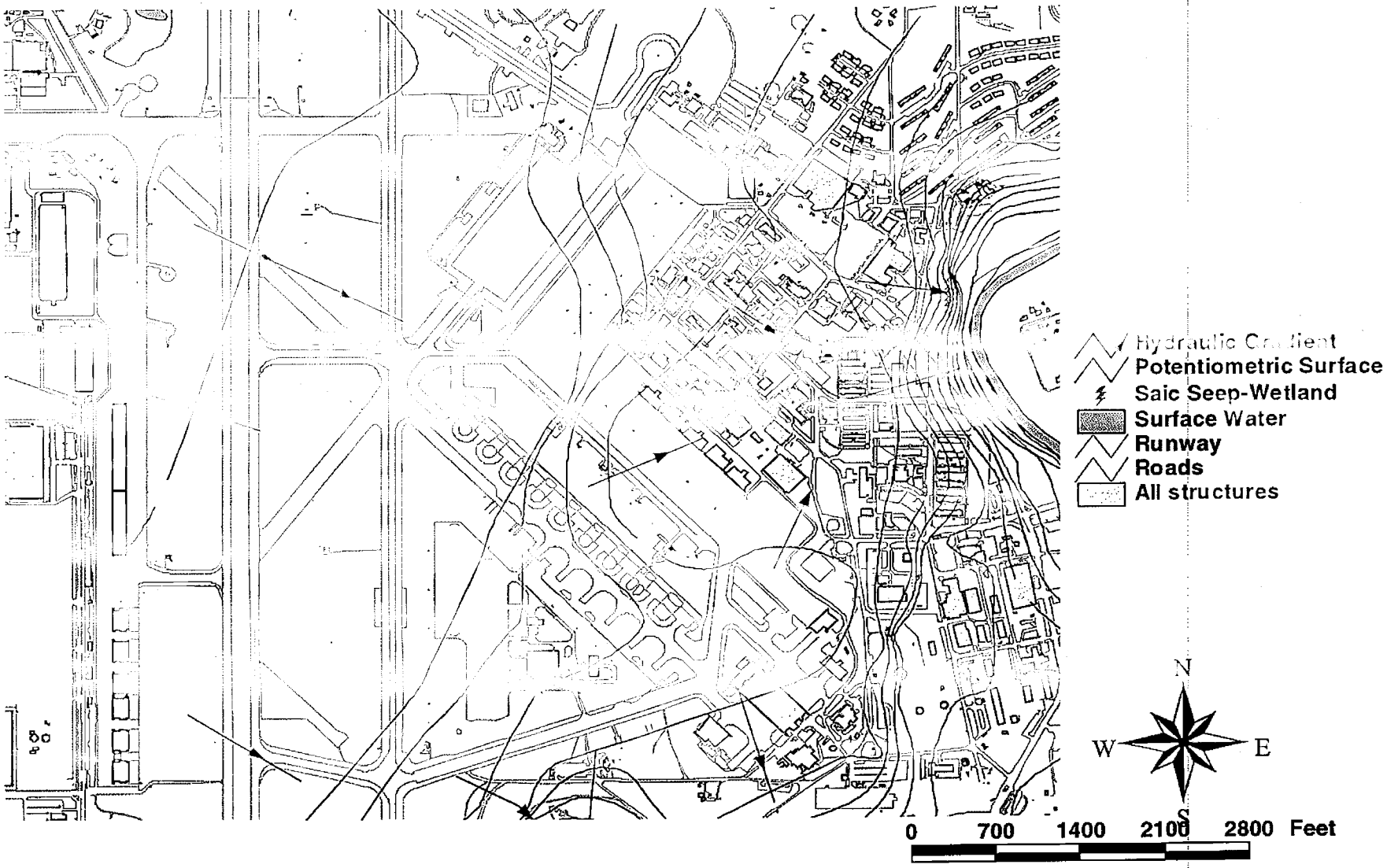
TCE Plume
Based on Phase 1 and 2 SI, and 10-00 Basewide Sampling Data



AOC2 Conceptual Model

- TCE & PCE appear to be mainly from AFP4.
- Potential PCE sources within north lobe, but its concentration should be low and finding it will be challenging.
- The seep that feed the large wetland may have rinsed part of the plume clean.
- Trace TCE should have reached Trinity River, but majority is attenuated before reaching the river.

Potentiometric Surface, AOC2



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ADMINISTRATIVE RECORD

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