FermiNews

November 2, 1990 Vol. XIII, No. 14 Fermi National Accelerator Laboratory

What is NEPA

You may have heard alot about NEPA lately. But what is NEPA?

NEPA is the acronym for the National Environmental Policy Act. When enacted in 1970, it represented our nation's first comprehensive commitment toward responsible custody of our environment. The objectives of the Act include arresting deterioration of the environment and restoring already damaged areas. With this Act, Federal agencies are required to include appropriate and careful consideration of any environmental effects in all of their proposed and alternative actions.

Since its enactment, NEPA has become the basic policy-setting Federal law relating to protection of the environment and has provided the initiative for passage of other Federal and state environmental statutes such as the National Historic Preservation Act, the Endangered Species/Fish and Wildlife Coordination Acts and floodplains/wetlands regulations. Recently, the significance of NEPA has been rediscovered in a new wave of public environmental concern about ozone depletion, massive deforestation, species extinctions and wetlands protection. Earlier this year, after a comprehensive review of DOE's existing procedures, the Secretary of Energy, Admiral Watkins, issued a new directive (SEN-15-90) on DOE NEPA policies and procedures. This directive has affected significant changes in DOE and, consequently, Fermilab NEPA procedures.

New Lab NEPA procedures

New NEPA procedures integrate environmental review with early budgetary and technical planning, thus permitting identification and proper consideration of environmental issues, alternative actions and mitigation measures during the development process. The NEPA review process begins with the identification of an action and subsequent determination of the level of NEPA documentation required.

We have a mosaic of habitats, an abundance of species and a wealth of cultural resources at Fermilab. Properly implemented, NEPA procedures will help us to preserve them.

In order to identify those actions with potential environmental impact, all Fermilab activity is reviewed, including all line item budget and plant project directive requests, Davis Bacon determinations and purchase requisitions. As an interim measure the Safety Section currently reviews this paperwork daily in the Business Services Office to avoid delay in processing.

NEPA approval of requisitions has proven to be an effective method to check the pulse of the Laboratory's activity with only a small time investment by reviewers. Activities with potential environmental impact are flagged and intercepted. Requisitions not flagged are stamped "Reviewed for NEPA Compliance" and processing continues. The Safety Section begins the first step of NEPA review with an Environmental Evaluation (EE) on the intercepted projects. Based on this evaluation, the activity will be approved or further investigated in an Environmental Assessment (EA) or an Environmental Impact Statement (EIS). NEPA documentation and conclusions require both Directorate and DOE approval.

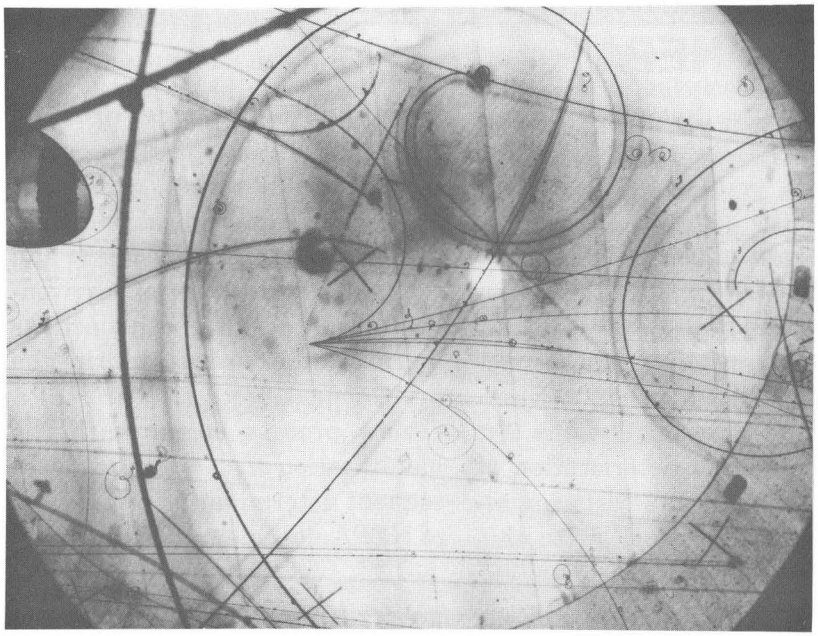
Environmental impacts considered in review

Environmental impacts considered in the reviews include such issues as the presence of endangered or threatened species in the project area, possible conflict with prehistoric or historic sites, water quality, air quality and the involvement of floodplains or wetlands. There is an EA currently in progress to assess the environmental impacts of the Main Injector Project which is located in the southwest portion of the Fermilab site, an area that includes wetlands.

Fermilab has contracted the services of consultant archaeologists, biologists, wetlands experts and other professionals to assist in characterizing the natural and cultural resources onsite. As these characterizations are completed and as NEPA procedures become better defined, NEPA considerations in the design of projects and activities will become routine. — *Deb Grobe*

Farewell to Fermilab FAF

The Physics Department Film Analysis Facility officially closed Friday, October 19. The decision to close the facility came closely on the heels of the 1988 decommissioning of the Fermilab 15-Foot Bubble Chamber. The Film Analysis Facility (FAF) was phased out over a twelve month period. "As the use of photographic detectors drew to a close at the Laboratory, there was no further need for us to operate the Film Analysis Facility," stated Jim Hanlon, leader of the Data Support Group.



In bubble chamber experiments, each pulse of beam from the accelerator sends a shot of particles into the liquid hydrogen in the chamber. Cameras mounted in the top of the chamber photograph the interactions that occur as the beam passes through the hydrogen. About 10,000 pictures of interactions, such as the one pictured above, were taken each good day of an experimental run in the 15-Foot Chamber and nearly triple that number was taken in the 30-Inch Chamber. It is this film that was analyzed in the FAF. This photo is from E-632.The neutrino beam enters from the left and produces a variety of secondary particle interactions.

The five scanners and one technician who worked in the facility have moved to other positions within the Physic Department and are currently training for their new responsibilities. On-the-job training is something that is not new to scanners Karen Carew, Rene Jones Joanne Lindo, Nancy Michael and Sue Schultz. "A scanner can be trained in a week to do basic scanning, but the educational process continues throughout a scanner's career," said Jim Hanlon.

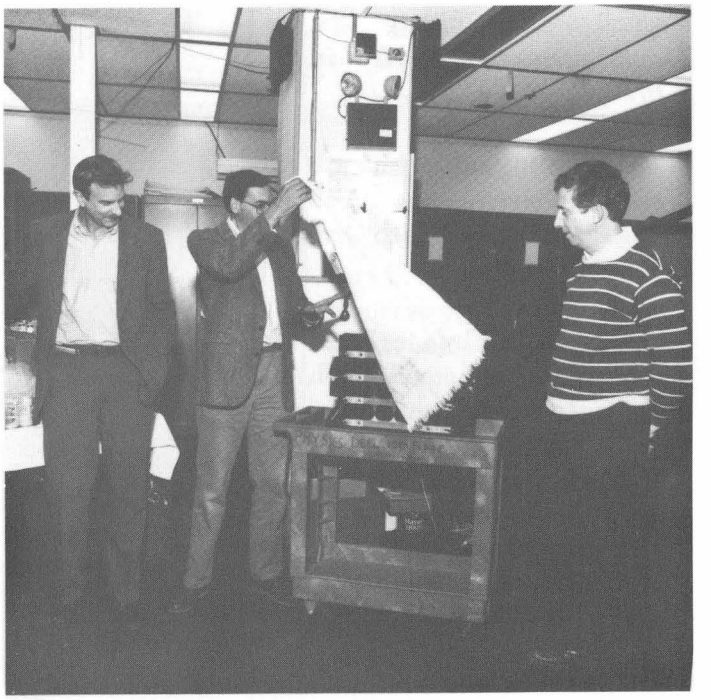
The job of a scanner is very skill-specific and an occupation unique to the scientific world. It is precise work that also requires flexibility and good judgement. "During early training," said Sue Schultz, "we were given a basic set of instructions on how to identify the interactions and how to record data." The task, however, is not as simple as memorizing basic patterns. The diversity of the interactions is so great that even after years on the job, things would be seen that had never been seen before. This phenomena required scanners to make quick decisions while viewing the film so that unusual interactions or apparent exceptions would be pointed out to the experimenters.

Over the years, FAF has played an important role in many experiments. They have analyzed film from bubble chamber experiments, spark chambers and most recently from E-665 muon streamer chambers. "Scanning was a chance to be a part of many different experiments. We enjoyed the challenge and the satisfaction of knowing we had measured some interesting events," said Karen Carew.

Jim concluded by saying, "Most of the knowledge gained from film analysis was not a single startling event, but rather was derived from the accumulated statistics of tens of thousands of events."

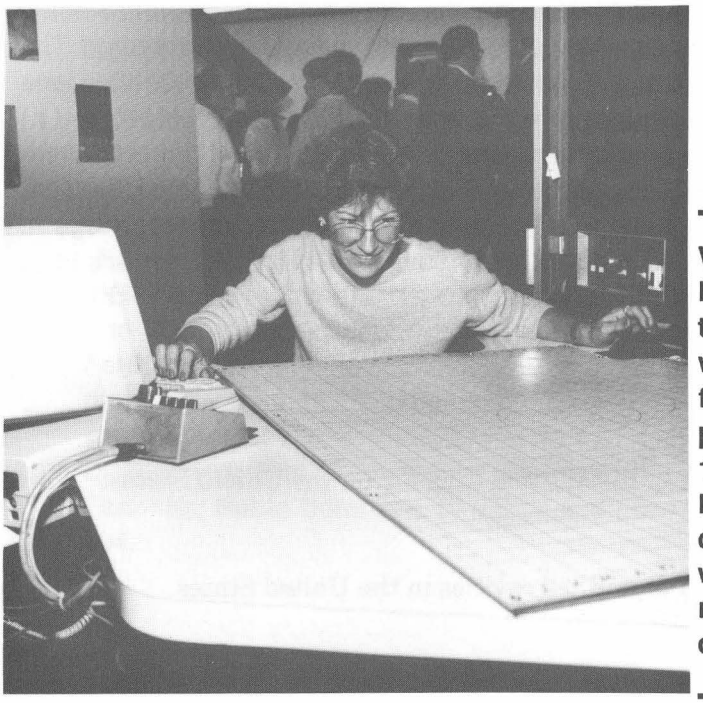
The closing of the Film Analysis Facility marks the end of one scientific era at Fermilab as we forge ahead in a new one.

In true Fermilab style, friends gathered on the ninth floor to commemorate the closing of FAF. Director John Peoples joined the Physics Department in bidding the facility farewell and accepted on behalf of the Lab a film transport stage presented by Physics Department Head, Jeff Appel and Data Support Group Leader, Jim Hanlon. The film stage will be donated to the history room in honor of the role played by the facility in the experimental program. In accepting the memento John said, "This is not an end. Many interesting things were done here and we will go on to do more interesting things."



Facts...

•The Film Analysis Department, now known as the Data Analysis Group, has been operating at Fermilab since the beginning of the experimental program.
•The MOMMS were designed by Carl Lindenmeyer (RD/Mech. Dept.) and fabricated at Fermilab. They were maintained by Physics Department technician Dick Bingham.
•The first scanner was hired on September 22, 1969.
•The last measurements taken at the facility were for experiments E-745, E-632, and E-665.



Working in a darkened room at machines known as MOMMS (manually operated measuring machines), the scanners combined their visual observations with electronic techniques in order to analyze the film. The scanner's reports were then studied by the physicists conducting the experiments. During the 1970s, as many as 12 scanners were employed by the Laboratory. Over the years, efforts were made to completely computerize the scanning process, but it was found that the human eye was more adept at recognizing patterns than were machines. Pictured at one of the MOMMS is Sue Schultz.

Quality Corner

Why spend all this time finding and fixing and fighting when you could prevent the incident in the first place?

The following suggestion was recently received by the QA office. Associate Director Rich Orr prepared the response.

Suggestion: Why does Fermilab continue to promote Ph.D. physicists into management positions without any training for carrying-out their new management roles? They have spent many years studying physics and no time studying management and supervisory skills.

My new boss is technically competent but lacks many people skills required for management. Managers must learn how to listen and how to treat their subordinates as people. Human Resource Management is an up-and-coming issue as people become more capable of moving on to a job with a better atmosphere. (Fermilab has a nice atmosphere, but having this type of boss can ruin things fast.)

The 15th floor sponsors a very short, instructional program that if the manager decides to go, when it is available, it might do some good. How about a required (or they will think they are too busy), off-site (or the distractions will detract severely), 3-5 day (too short is no good) program for each new supervisor? Annual one day reviews would be good also for those going from one super-

(continued on page 5)

Milestones

Celebrating Ten Years of Service

Ten year service awards were presented at a luncheon held Friday, September 21. Rich Orr, Associate Director, presented the awards. The recipients were (row 1, l. to r.) King-Yuen Ng, Debra Cobb, Gene Desavouret, Treva Gourlay, Mike Grimson, Harold Stahl, (row 2, l. to r.) Tom Lassiter, Warren Classert, Chuck Serritella, Craig Rogers, Elmer Major, (row 3, l. to r.) Gary Andrews, Fred Ullrich, Mike Utes, Rick Bossert, Clare Miller, Rick Mahlum, (row 4, l. to r.) Dennis McCormick, Jorge A. Martinez, Jackie Wilson, Bryan Johnson, Bruce Merkel, (row 5, l. to r.) Alan Riddiford, Rich Orr (Directorate representative), Luann O'Boyle, René Padilla and John Yoh.

Harper's index

Estimated number of M&M's sold each day in the United States:
200,000,000

Estimated number of unfilled cavities in the United States:
500,000,000

Education Office

Chicago's Science Explorers at Fermilab

Fox Valley area school curriculum directors met with Fermilab Education Office Manager Stanka Jovanovic, Program Manager Marge Bardeen and Outreach Coordinator Robin Dombeck to discuss the Chicago Explorer's Program at Fermilab for elementary school students. This U.S. Department of Energy Office of Energy Research funded program is constructed to use two special resources: a "New Explorers" tape developed by Bill Kurtis about Yellowstone National Park's recent fire; and the resources of Fermilab's National Environmental Research Park including the prairie, wetlands, buffalo farm, ponds and forests. This is one of the many programs currently running or under development in Fermilab's Education Office. In attendance at the October 11, 1990 meeting were: (l. to r.) Petina Tarr, Wheaton District 200; Sherry Eagle, Aurora District 129; Stanka Jovanovic, Fermilab; Nancy Smith, Batavia District 101; Rita Blankenship, Elgin District U-46; Marge Bardeen, Fermilab; Robin Dombeck, Fermilab and Lorri Davis, Geneva District 304.

Quality Corner Continued

visory position to another, since they have to re-address certain issues they have not had to deal with lately. Thanks.

Response: Your letter brings up a very valid point. There is a program put on by the Laboratory Services Section called the Supervisory Development Program. Lectures and discussions encourage review of the basic skills of good management, awareness of current human relations issues and updates of the many services offered by the Laboratory. Your suggestion of an off-site intensive program for supervisors is a good one. This will be discussed with our Human Resources people who manage the Supervisory Development Program.

Laboratory Services sends a memo to division and section heads informing them when the next program will take place and asking them to recommend employees for attendance. Usually newly appointed supervisors attend, but it could be suggested that seasoned supervisors should also be invited to participate. Perhaps, Ph.D physicists in leadership positions should be given special encouragement.

If you have a suggestion on how to improve the quality, efficiency, reliability or effectiveness of a Laboratory service or operation, please send it to Mark Bodnarczuk, MS 200 or BIT-NET Bodnarczuk@FNAL.

News from Nalrec

Elvis is coming to Fermilab
The rock and roll music of Elvis Presley played by the **Bellaires** will highlight the theme for dancing at the annual employees' Turkey Party. **Elvis Presley** with his Southern drawl and swinging hips will perform live on stage accompanied by the Bellaires. This once in a lifetime event will be held on Friday, November 16 in the Village Barn from 5:15 to 10:00 p.m.

Fifty lucky raffle ticket holders will be announced during the evening of festivities. Winners of these first 50 turkeys need not be present. However, an additional 25 turkeys will be awarded to ticket holders present at the Turkey Party.

Raffle tickets are being sold by Nalrec members at $1 each or 5 for $3. Look for the flyers posted in your area for updated announcements concerning this event.

Christmas dinner-dance
An ***Old-Fashioned Christmas*** will be the theme of Fermilab's annual Christmas dinner-dance sponsored by Nalrec. The party will be held in the Atrium of Wilson Hall on December 15, 1990.

Festivities will begin with cocktails at 6:30 p.m. followed by dinner at 7:30. Dancing will begin at 9:00 with selections by **The Music Makers – The Big Band Sound** playing music from all eras for your dancing pleasure until 12:00 midnight.

The main entree will be a choice of prime rib or cornish hen with wild rice. Wine will be served with dinner. The center pieces will be given as door prizes.

There are 400 tickets available for this event. Tickets will go on sale at the front desk on November 15 on a first come basis.

Other events of the season
Children's Christmas Party - December 9 - John Satti, Chair

Employees' Christmas Party - December 21 - Nalrec Board Chairs

The deadline for the Friday, November 16 *FermiNews* is Wednesday, November 7. Please send your article submissions or ideas to the Publications Office.

FermiNews is printed on paper stock containing at least 50 percent recycled materials. After reading, it is acceptable in the white office paper recycling boxes located in Wilson Hall.

Employee Assistance Program

Abusive behavior, whether at home or in the workplace, has detrimental effects on an employee's performance. Employees who are abused have more health problems, poor peer relationships and cannot concentrate, severely undermining business productivity. This situation becomes cyclical as affected employees take their stress and frustrations home at the end of the day or to the office from home.

Businesses spend $3.5 billion dollars annually in abuse-related absenteeism and $100 billion in abuse-related medical costs. Researchers have reported eighty percent of workplace performance problems can be traced to the employee's childhood developmental history and present home conflicts.

The key to breaking the cycle is professional help. Individuals who recognize the symptoms and learn alternative patterns of behavior are in a better position to be more productive, creative, take risks and perform at a higher level both at home and in the workplace.

Any employee whose life is being affected by abusive behavior is encouraged to contact Eleanor Thomas-Grumbach of the Employee Assistance Office at x3591 for confidential, professional assistance.

The Art Series presents
Chester String Quartet and **Prism Quartet**

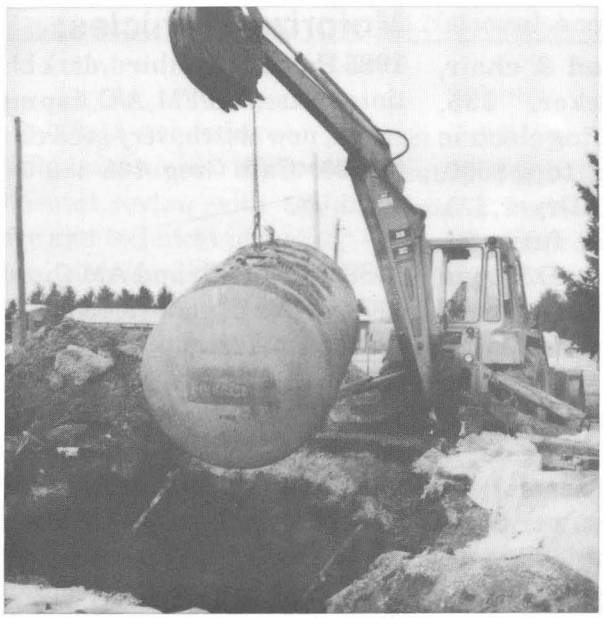
Fermilab's Ramsey Auditorium
Saturday, November 10, 1990
at 8:00 p.m.

Call 708-840-ARTS for ticket information.

Site 55 LUST

Contamination is threatening one of Illinois' most valuable natural resources–groundwater. According to the Illinois Environmental Protection Agency (IEPA), approximately 5.5 million people in Illinois rely on groundwater (wells) for their drinking water.

The IEPA states that one significant source of the contamination of groundwater is leaking underground storage tanks (LUSTs). The U.S. Environmental Protection Agency (EPA) states that 25% of the 3 million to 5 million tanks in the United States have leaked or will leak some time in the future.



Excavated diesel tank removed from Site 55 on December 12, 1988.

Fermilab is aware of the problems that LUSTs can cause and has taken action to ensure that the underground storage tanks (USTs) on site do not contaminate the surrounding groundwater or soil.

Starting in 1988, Fermilab began an annual tank tightness testing program to determine the integrity of the USTs on site. This program was begun by David Cathey, the Business Services Environment & Safety Department Head.

During the initial tank tightness testing, Environment, Safety & Health (ES&H) personnel were informed by the testing contractor that a pipe was leaking leading into a leaded gasoline UST at Site 55. The test revealed that the leaded gas was leaking at a rate of 0.29 gallons per hour (gph). This exceeded the standard allowable leak rate of 0.10 gph set by the EPA.

James E. Finks, Jr., Head of the Business Services Section, in full support of UST management, assigned the Business Services Environment & Safety Department, Support Services and Facilities Management to coordinate the removal of the tank to prevent further contamination of the soil and nearby groundwater.

Hunter/Keck Environmental Services, Inc. was hired to remove the 2,000 gallon LUST and an additional 2,000 gallon UST adjacent to it. Excavation of the tanks began on December 19, 1988. The tanks were removed and closely inspected. No evidence of cracks or holes were observed and the overall integrity of the tanks was documented to be excellent.

Samples of both the residual water accumulated beneath the tanks and the soil surrounding the excavation were taken shortly after and screened for contaminates. The water in the pit was then pumped out by an approved transport company for disposal.

No further work was done on the excavation, however, until June of 1989, when Fermilab had received all of the proper manifest documents necessary to remove the special wastes. Removal began again on June 12, 1989. Contaminated soil was removed and shortly after transported to an IEPA approved landfill facility.

To permanently close the site, and be certain there was no more contaminated soil at Site 55, further testing was required by IEPA regulations. These tests indicated that the soil surrounding the site would not have any significant detrimental impact on the environment.

A report detailing the excavation and remediation efforts, was then **(continued on page 8)**

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Miscellaneous:

Full/Queen headboad & chair, natural color wicker, $35. **Frigidaire self-cleaning electric stove with Corning top,** $500. **Speed Queen Electric Dryer,** $75. **Magic Chef alcove furnace,** 75,000 BTU, $100. **Sears D.P. gym pac,** $100. Portable crib, light weight with mess sides and carrying case, $40. **Infant Car Seat,** $10. Call Barbara at x3492 or 708-859-8699.

Murray 20 in. lawn mower, $100. **Sears Craftsman snow blower,** 3 hp, electric starter, $250. **A. O. Smith water heater,** 40-gallon, $250. **Jenkins upright piano,** $350. **Console humidifier,** 8-gallon output, @ $25. All in good working cond. Call Dan at x4605 or E-mail FNAL::KAPLAN or evenings at 815-756-6558.

Super-single size waterbed, heater, liner, baffled mattress, padded side-rails, 6-drawer pedestal base, Early American, $350. Call Jo at x3032.

JDL Printer/Plotter, prints standard A to C size drawings along with pin feed forms and hand-fed papers. Autocad Rel. 10 software. Call x3782.

Motorized vehicles:

1985 Pontiac Sunbird, dark blue, tinted glass, AM/FM, A/C, 5 sp man. trans., new clutch, very good cond., $2,000. Call Greg 708-383-9441 evenings.

1988 Pontiac Grand AM Quad 4, A/C, ps., pb., tilt, cruise, $6500. Call Butch at x3700.

1989 17 ft. 5 in. Boneta V-Hull, including: 1990 E-Z load trailer, 90 hsp. Evenrude motor, trolling motor, two down riggers, two batteries, two live wells, electronic fish finder, depth finder and ship-to-shore radio. less than 10 hrs., paid $13,000 new, asking $6,700. Call 708-985-7847 evenings.

Real estate:

Ranch home on Batavia's west side, 3 bedrm., 1 bath, newly remodeled, for sale at $95,000 or possible short term lease, available Nov. 1. Call 584-0698 evenings.

Waterfront vacation house for rent in Key Largo, Florida, 3 bedrm., 3 full baths, gourmet kitchen, jacuzzi, private dock, overlooks Florida Bay, minutes from world class fishing, snorkeling and SCUBA diving, available by week or month in 1991. For further information calll JoAnne at x3865 or 815-758-2903 evenings.

LUST continued from p. 7

forwarded to the IEPA by DOE-CH for their review and approval to backfill and close the excavation. The IEPA returned their approval to Fermilab allowing the site to be closed.

"The Business Services Section will continue to monitor its USTs for petroleum releases through monthly inventory control measures and annual tank tightness testing," Cathey said.

"It has always been a priority of the Business Services Environment and Safety Department to inspect, monitor and control any potential release of chemicals to the subsurface," Cathey added. "Management from the Directors Office and Business Services has emphasized their full support and guidance for this and other environmental programs."— *Jean L. Kidd*

Wanted:

Female roommate, single, non-smoking, to share expenses of house in Batavia with same. Call JoAnn at x8001 or 406-9427.

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