2021 Hazardous Waste Scanning Project

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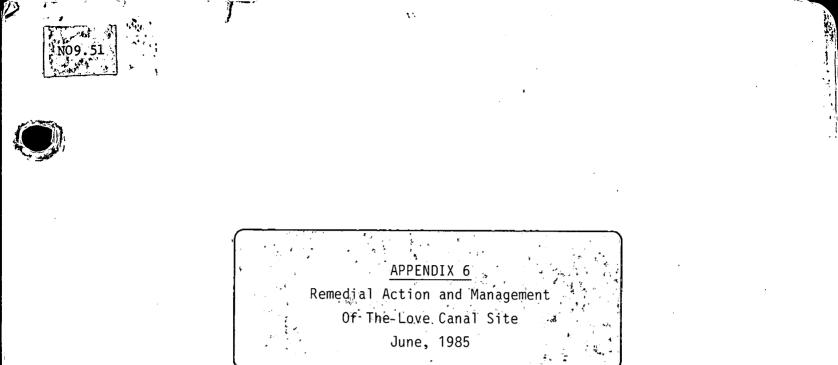
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Appendix 6



REMEDIAL ACTION AND MANAGEMENT OF THE LOVE CANAL SITE

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Appendix 6



REMEDIAL ACTION AND MANAGEMENT OF THE LOVE CANAL SITE

6.1.0 OVERVIEW

In 1978, Love Canal, a community in the southeast end of Niagara Falls, N.Y., exploded into the news and entered the nation's daily vocabulary as a grim symbol of improper hazardous waste disposal practices. Reports of chemicals entering the basements of homes nearest to the original Love Canal channel, along with reports of high numbers of illnesses in those homes, led to an investigation by New York State and set off a chain of actions and reactions that forced many of the residents to move, and involved a number of state and federal agencies and even the President of the United States.

Probably more than any other single event, the environmental/health tragedy that unfolded at the Love Canal Site, Niagara Falls, New York, focused national attention on the serious problems associated with abandoned hazardous waste disposal sites. The Love Canal remedial program is an ongoing effort to contain and control an abandoned hazardous waste disposal site. By reviewing the history, the objectives, the work that was actually performed, and the work planned for the Love Canal Site it may be possible to gain additional confidence in the habitability of areas removed from the site itself.

The Love Canal story began in the late 1800's when entrepreneur William T. Love began digging a channel from the Upper Niagara River escarpment. He was trying to create a canal with a 280-foot drop that would be a secondary source of cheap direct-current hydroelectric power. His dream was to divert some of the Niagara River's potential water power to new areas in the hope that new industries and towns would spring up nearby.

But before the project was completed, alternating electrical current was developed so industry no longer needed to be near the source of power. The

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canal project was abandoned, leaving behind, according to newspaper reports of the day, an excavation approximately one mile long and 80-foot wide.

From 1942 to 1953, the Hooker Electrochemical Company dumped about 21,800 tons of chemical wastes from its nearby plants - which produced pesticides and plasticizers - into the abandoned canal.

In 1953, the Niagara Falls Board of Education purchased the property from Hooker and built the 99th Street School on the site. Because of the school, the number of young families moving into the surrounding area increased. During the next 25 years, chemical odors and black oily substances oozing into the nearby basements became more noticeable, and as the dirt fill settled, barrels and chemical wastes were exposed.

In August of 1978, after some investigation by the New York State Department of Environmental Conservation (NYSDEC), the New York State Commissioner of Health declared the area around the old dump site to be a health hazard. The 99th Street School was closed immediately, and over 230 families were permanently relocated from the first two rings of houses around the Love Canal. The area was fenced off. A Presidential emergency declaration let the Federal Government provide funds to assist the State in its relocation efforts. The State purchased homes located along 97th and 99th Streets, at fair-market value.

In May 1980, President Carter issued the second emergency declaration for Love Canal. New boundaries which established the horseshoe-shaped Emergency Declaration Area (EDA) affected approximately 800 additional families. Again, extensive federal funding supplemented the State's resources.

6.1.1 OVERVIEW - REMEDIAL ACTIONS TAKEN

Prior to the 1980 developments, United States Environmental Protection Agency (EPA) and NYSDEC had signed a cooperative agreement to develop a program

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to contain the chemicals at Love Canal.

The first step by NYSDEC was the installation of a collection system around the dump site and the construction of a facility to treat the collected contaminated ground water (leachate). A 16-acre, three-foot thick clay cap was placed over the Love Canal dump.

Leachate moving through the ground was caught and carried to a drain pipe. This collection system lowers the level of the water inside the dump site and causes water in the ground - outside the canal itself - to flow inward toward the pipes. The system is a barrier, preventing leachate from moving into the ground water. The leachate collection system and treatment plant began operating in December 1979.

The clay cap acts as an umbrella, preventing rainwater and melting snow from mixing with the toxic and hazardous chemicals underneath it. The cap decreased the amount of water entering the dump site; prevented the runoff of contaminated rainfall; prevented human contact with the waste in the dumpsite; and stopped atmospheric emissions from the buried chemicals.

The abandoned homes in the area immediately adjacent to Love Canal were bulldozed into their basements and covered with earth. The 99th Street School was demolished.

Now the way was clear for completing the expanded remedial program by extending the 16-acre cap to about 40 acres. These additional remedial measures further reduced the amount of water entering the leachate collection system.

Eighteen inches of soil materials were put on top of the plastic liner and seeded with a mix of grasses and fertilizer. Before the winter of 1984-1985's first snowfall, healthy grass covered the dumpsite. The eight-foot high chain link fence still limits access to the area.

In 1983, NYSDEC investigations in the EDA confirmed that Love Canal chemicals had moved from the dump site into the storm and sanitary sewers.

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Dioxin-contaminated sediments were found in Black and Bergholtz Creeks. EPA and NYSDEC are currently developing plans to clean the sewers and creeks. It is hoped that this work will be completed by 1987. One concern, however, is where and how to dispose of the dioxin-contaminated sediments when they are removed. This issue is still unresolved as this appendix is written.

Additional work will include an extended perimeter survey achieved by drilling into the ground to determine the extent of chemical contamination from the Love Canal dumpsite. Any needed additional work will be done as soon as possible.

6.1.2 OVERVIEW - LOVE CANAL HABITABILITY REVISITED

EPA conducted a study of the Love Canal EDA in 1980 to provide an environmental data base for decisions related to the sale of the homes there. The study results, released in May 1982, concluded that there was no clear evidence of environmental contamination in these residential areas which could be directly attributed to the movement of chemicals from Love Canal.

In June 1983, the Congressional Office of Technology Assessment (OTA) issued a report, "Habitability of the Love Canal Area - An Analysis of the Technical Basis for the Decision on the Habitability of the Emergency Declaration Area," which disputed the EPA's conclusions. The principal OTA finding is that, "with available information, it is not possible to conclude either that unsafe levels of toxic contamination exist or that they do not exist in the EDA."

The OTA says: "There is still a need to demonstrate more unequivocally that the EDA is safe for human habitation now and in the future....If that cannot be done, it may be necessary to accept the original presumption that the area is not habitable."

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Since the OTA report was released, a new government committee has been formed to restudy the habitability question. This Love Canal Technical Review Committee (TRC) includes representatives of EPA, NYSDEC, the New York State Department of Health (NYSDOH), and the U.S. Department of Health and Human Services (DHHS). This group acts as a managerial body, coordinating the many interrelated governmental activities necessary to resolve the complex issues related to habitation of the Love Canal EDA and cleanup and protection of the site.

A second group of non-governmental expert scientists from a variety of disciplines was formed by DHHS and the NYSDOH to develop the criteria upon which the habitability of the EDA could be judged. These scientists have met on several occasions in a public forum in the City of Niagara Falls to discuss the development of these habitability criteria.

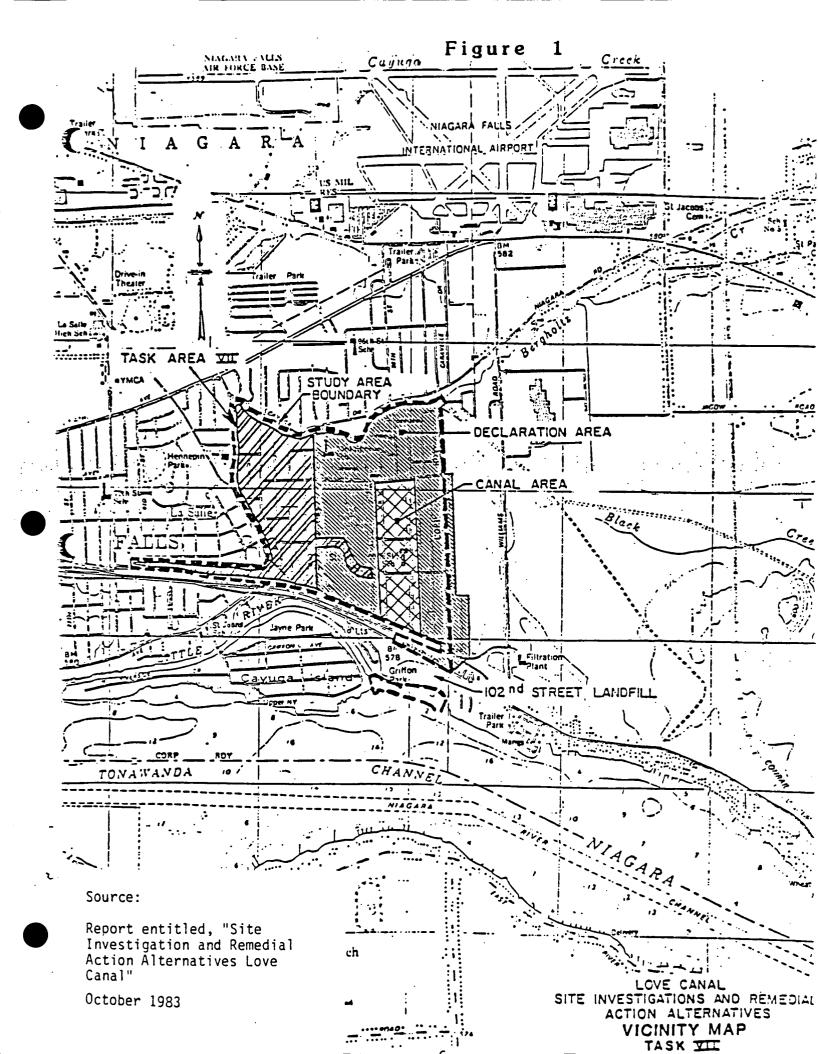
6.2 SETTING

The Love Canal Site is located in the southeast corner of the city of Niagara Falls and is approximately one-quarter mile north of the Niagara River (see Figure 1). It was one of two initial excavations in what was to be a power canal to provide cheap hydroelectric power for industrial development around the turn of the century. The abandoned excavation, partially filled with water, was used largely for recreational purposes.

Aligned nearly north-south, the Love Canal lies in the southeast corner of the City of Niagara Falls. The Canal runs through the center of three city blocks in what was once a residential area in the City.

The portion of the canal project that was abandoned was approximately 3,200 feet long, and perhaps 80 feet wide. The exact depth of the excavation of the canal has not been documented and there are only annecdotal references which

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indicate an original depth of about 10 to 12 feet (3.0 to 3.6m) which was subsequently increased to a maximum depth of between 20 to 35 feet (6.1 to 10.7m) prior to placement of wastes in some areas (Hartman, 1981). If true, the latter depths would appear to place the base of the excavation, in some areas, near or at the top of the bedrock. Interpretation of data from geophysical explorations conducted in 1979 by NYSDEC suggest a range of waste deposits from 10 to 15 feet (3.05 to 4.57m) in portions of the central and northern sections of the canal.

6.3 USE

Between the years 1942 and 1953, Hooker Chemical and Plastics Corporation (now Occidental Chemical Corporation) disposed of over 21,800 tons of various chemicals into Love Canal. The solid and liquid wastes deposited into the Love Canal include acids, chlorides, mercaptans, phenoIs, toluenes, pesticides, chlorophenoIs, chlorobenzenes and sulfides.

Hooker obtained title to the Canal property in 1947 and continued to dispose of wastes there until about 1953. Portions of the Canal were also used by the City of Niagara Falls for the disposal of municipal refuse.

The early 1950's saw an increase in the rate of residential development in this area of the City. In 1953, the Board of Education of the City of Niagara Falls purchased the Love Canal from Hooker. In 1954 an elementary school was built immediately adjacent to the Canal- around which time waste disposal at the Love Canal ceased. Also, 97th and 99th streets and public utilities were installed that ran parallel (north-south) and at some distance from the Canal. Read Avenue and Wheatfield Avenue were also constructed and ran directly across the Canal.

By the mid-1970's approximately 100 homes stood on lots that were immediately adjacent to the abandoned hazardous waste dump. Children from this area

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attended a public school (the 99th Street School) built at the very edge of the dump and often played on portions of the Canal.

Due to infiltration of precipitation accumulated in the landfill and carried chemically contaminated leachate to the surface where it migrated through the more permeable soils near the land surface into contact with basement foundations. In response to complaints from residents of homes abutting the Canal, NYSDEC and the New York State Department of Health (NYSDOH) with the assistance of the EPA, conducted studies on ground water pollution and basement air and sump water contamination in late 1977.

In April, 1978, on the basis of this initial study data, the Commissioner of the NYSDOH issued an order to the Niagara County Health Department to restrict access to the site and to remove surficial chemical contamination and cover exposed areas. Additional monitoring studies by NYSDEC, NYSDOH and EPA in 1978 led the NYSDOH Commissioner to declare a state of emergency at Love Canal on August 7, 1978. President Carter also declared an environmental emergency at the Canal which enabled the Federal government to provide financial assistance to the State for the initiation of remedial measures.

6.4.0 THE PROBLEM

An understanding of the geology and the hydrogeology of the Love Canal area are very important in order to understand the mechanisms that allowed the buried wastes to become a serious threat to the health and the environment of the Love Canal neighborhood.

The Love Canal was excavated in unconsolidated lacustrine sediments. The upper 5 feet of these sediments vary in texture from a clayey silt to a sandy silt with some zones near the base of this zone grading to a fine sand. This upper zone appears to be the most permeable sediment at the Canal.

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Beneath the upper silt zone lies approximately 18-20 feet of varved silty clays. It is most likely that these clays were the bottom of the original canal. Premeabilities of these clays have been reported to be very low.

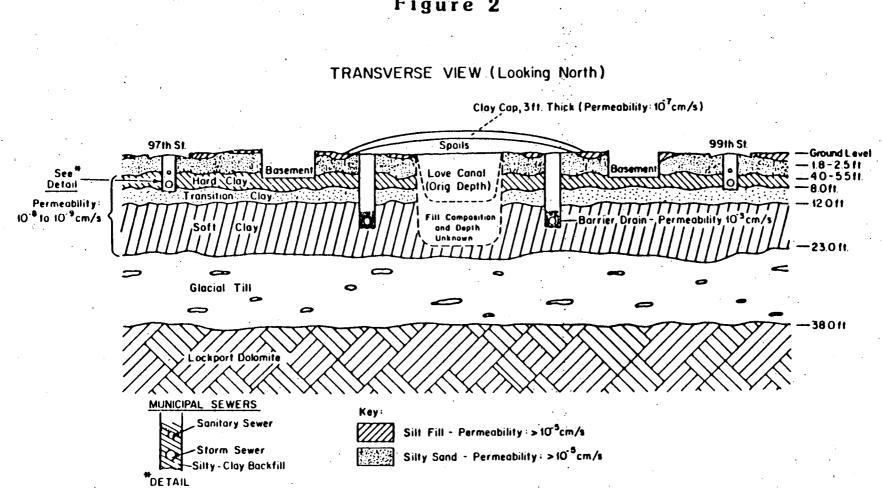
The presence of such a thickness of clay is often considered a desirable geologic setting for waste disposal. However, careful inspection of the clay revealed that it was also part of the problem. The upper 5 to 6 feet of the clays had been exposed and dried at some time following their deposition. However, beneath the desiccated clays lie another 10-15 feet of unaltered lacustrine clays. These clay beds are of very low permeability and are believed to retard migration of contaminants into the underlying bedrock.

Beneath the clays lie approximately 10-15 feet of glacial till also having low permeability. Bedrock is encountered at depths of 35-40 feet and is composed of the Lockport Dolomite (Upper Silurian). Figure 2 presents a typical geologic section of the Love Canal area.

There are two separate groundwater regimes at the Love Canal. The upper groundwater regime occurs within the upper silts and clay. The water table within the upper silt fluctuates seasonally. The area near the Love Canal is relatively flat and is generally poorly drained, and at times the upper zone is completely saturated. Late in the summer the upper groundwater system may be entirely depleted. The deeper regime, a confined system, occurs within the Lockport Dolomite. The piezometric surface lies roughly 10 feet below ground surface.

It is this hydrogeologic setting that allowed chemical wastes to escape from the Love Canal. Over the years infiltrating precipitation mixed with the buried wastes. The underlying clays retarded further downward migration of the now contaminated groundwater (leachate), and in time the wastes became completely saturated.

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Figure 2

Water grossly contaminated with toxic chemicals and liquid wastes pooled at the landfill's surface. Runoff from the site carried contaminants into area sewers and into the yards of adjacent homes. Differential settlement of the landfill exposed buried wastes at the surface. Volatile compounds and contaminated dust exposed at the surface escaped into the air. Leachate migrated slowly through the upper silts and the desiccated clays, eventually reaching the basements of the homes adjacent to the Canal. Figure 3 presents a schematic of the main routes by which chemicals escaped the Canal.

6.4.1 INVESTIGATION OF THE PROBLEM

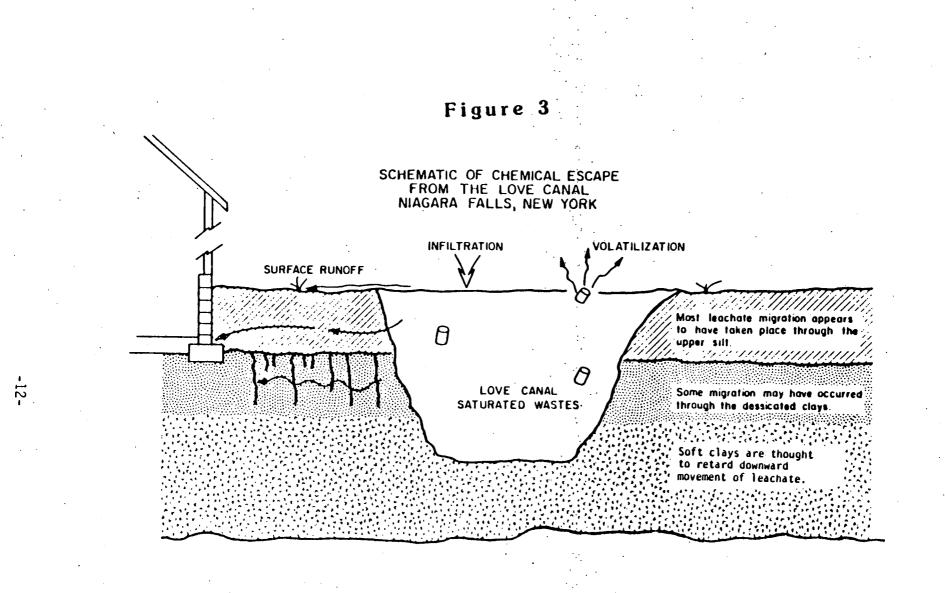
In the spring of 1978, following a series of complaints by local residents, a number of studies were begun to investigate the health and environmental problems at the Love Canal. A preliminary hydrogeologic investigation of the site was conducted by the City of Niagara Falls. The NYSDOH and NYSDEC collected and analyzed samples of soil, groundwater, water from basement sump pits, and air within the homes. An epidemiological study was begun by the State Department of Health.

In August 1978, based upon the results of these studies, then Commissioner Robert Whalen, M.D., NYSDOH, declared that a health emergency existed **at** the Love Canal. Among other things, Commissioner Whalen ordered that a pollution abatement program be initiated.

6.4.2 THE RESPONSE

On August 7, 1978, President Carter issued a declaration of emergency making federal disaster assistance funds available to the City of Niagara Falls to begin remedial construction. Governor Carey directed that people living closest to the Canal be evacuated. During the fall of 1978, the homes of over 230

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families were purchased by the State of New York and the families living nearest the Canal were relocated in preparation for the remedial construction.

6.5.0 DESCRIPTION OF THE REMEDIAL PROGRAM

The Love Canal Remedial Action Project was initiated to reduce the environmental and health hazard that resulted from the escape of toxic chemicals from the dump. The initial objective of the Love Canal Remedial Program (Phase I) was to contain the chemical waste at the site. More specifically, the initial objectives of the remedial program were:

- 1. Prevent further discharge of chemical contaminants into the shallow groundwater system where the chemical contaminants could migrate offsite.
 - 2. Reduce the potential for discharge of chemical contaminants into the bedrock groundwater system.
 - 3. Prevent surface runoff from carrying chemical contaminants offsite.
 - Prevent atmospheric emissions of volatile contaminants and fugitive dust.
 - 5. Prevent direct contact with wastes which had been exposed at the surface of the canal.

More recently, additional remedial work (Phase II) has been performed to meet the following objectives:

- 1. Further reduce the amount of precipitation infiltrating the site.
- Reduce the long term costs of operation and maintenance of the leachate collection and treatment system at the site.
- 3. Eliminate manmade pathways from the site which had in the past allowed chemical migration offsite.

The objectives of the remaining remedial work at Love Canal (Phase III) are to clean up areas beyond the site which have been identified as being impacted by chemical waste migration from the Love Canal, and to develop a long term monitoring program. The objectives of this work are:

- Identify the extent to which sewers and surface streams which drain the Love Canal area have been contaminated by the Love Canal.
- 2. Design and carry out remedial programs to remove chemical contaminants found in the sewers and the streams which drained the Love Canal area.
- 3. Design and install a permanent monitoring program to evaluate the effects and the effectiveness of the Love Canal remedial programs to determine the extent to which Love Canal chemicals have migrated with the groundwater, and to provide sufficient information to determine if any additional effort is needed to address groundwater contamination attributable to the Love Canal Site.

6.5.1 DESCRIPTION OF THE REMEDIAL WORK - PHASE I

The first phase of remedial construction at the Love Canal site consisted primarily of the following elements:

- a. A perimeter "Barrier Drain" system was constructed outside of and completely surrounding the Love Canal. The barrier drain served as a hydraulic barrier to prevent the further escape of chemical contaminants in the upper groundwater system. The drain also provided a means of removing leachate from the canal in order to dewater it, and to a limited extent recovered contaminants that had migrated beyond the location of the drain.
- b. The entire landfill was covered with a minimum of three feet of well compacted clay. The clay prevented human contact with the waste and prevented further escape of volatiles and fugitive dust from the landfill's surface. The clay cap also greatly reduced infiltration of

precipitation and therefore reduced the production of leachate.

c. A treatment plant was built onsite and leachate collected by the barrier drain system is pumped to the plant for onsite treatment.

6.5.2 <u>CONDUCT OF THE REMEDIAL WORK</u>

The first phase of remedial construction at the Love Canal Site was carried out in two separate stages. The City of Niagara Falls was responsible for stage one and contracted with the engineering firm, Conestoga-Rovers and Associates, Waterloo, Ontario to prepare detailed plans and specifications for the work. Following review of the plans and specifications by local, state and federal agencies, the City of Niagara Falls entered into a contract with Newco Chemical Waste Systems, Inc. (now CECOS International, Inc.) to conduct the remedial construction on the southern portion of the canal. This work started in October of 1978 and was substantially complete by October 1979. The work performed by the City included installation of a portion of the barrier drain system along the east and the west sides of the southern section of the Love Canal and the placement of a three foot thick clay cap over the southern section. Please refer to Figure 2. The southern section of the Canal posed the greatest environmental health hazard and the remedial work focused on the "worst-first."

The second stage of the remedial construction was carried out by the NYSDEC. Again, plans and specifications for the remedial work were prepared by Conestoga-Rovers and Associates, Inc. Following the receipt of competitive bids, the NYSDEC entered into a contract with SCA Chemical Waste Services to complete the installation of the barrier drain system along the central and northern sectors of the canal and to complete the installation of the clay cap over the central and northern sectors of the Love Canal. The Department also entered into a contract with the Albert Elia Building Company to construct a permanent leachate treatment plant at the site.

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Installation of the drains and clay cap along the central and northern sectors of the canal began in May of 1979 and was substantially complete by November of 1979. Construction of the treatment plant began in September of 1979 and was substantially complete in December of 1979. During the fall of 1980, the clay cap was regraded, recompacted, top soil was placed over the clay and grass was sown to protect the cap from erosion.

6.5.3 MAJOR ELEMENTS OF THE REMEDIAL WORK

6.5.3.1 THE BARRIER DRAIN

The Barrier Drain that now surrounds the Love Canal site consists of approximately 7,000 feet of extra strength perforated vitrified clay tile. The tile is of bell and spigot design with no seal at the joint. The tiles were installed using conventional construction techniques in a trench approximately three feet wide, ranging in depth from 12-20 feet below original grade. The tiles are bedded in and covered with a minimum of one foot of crushed stone. The remainder of the trench is filled with concrete sand. Manholes have been placed in the drain at each change of alignment and at 280 to 300 foot intervals on straight runs. Detailed plans and specifications describing the drain are available for public inspection at the Love Canal Public Information Office, 9820 Colvin Boulevard, Niagara Falls, New York.

In comparison to the adjacent soils, the granular materials used to backfill the barrier drain trench are very permeable. Leachate migrating away from the canal enters the barrier drain and readily percolates down to the crushed stone bedding. During high flows encountered during construction, liquids entered the perforated tile and flowed rapidly to wet wells where it was pumped out of the ground. Now that a cap is in place and infiltration into the site

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has been significantly reduced, it appears that the crushed stone bedding has a sufficient hydraulic capacity to transmit current leachate volumes to the pump chambers. Inspection of the manholes reveal little leachate migrating in the tile during normal operating conditions.

Although it was considered feasible to construct the barrier drain system without an underdrain pipe, it was decided that the pipe provided a needed margin of safety for the long term operation of the drain. The tile provided greater flow capacity and a path for leachate flow if a section of the sand and gravel filter materials were ever to become plugged due to migration of adjacent soil particles or if an unexpected chemical reaction occurred with the leachate. The manholes also provided a means to inspect the drain system and offer access to perform cleaning operations if necessary.

6.5.3.2 CLAY CAP AND GRASS COVER

Upon completion of the installation of the barrier drains along both sides of the canal, a three foot thickness of clay was placed over the canal. The cap was installed in six inch lifts and compacted to 90% of the maximum dry density. The final permeability of the cap material was to be less than 1×10^{-7} centimeters per second. Detailed plans and specifications describing the clay cap are available for public inspection at the Love Canal Public Information Office, 9820 Colvin Boulevard, Niagara Falls, New York.

During the installation of the clay cap on the southern sector it became obvious that the canal was not being drained quickly enough. As the clay was placed on the canal, leachate was forced to the surface contaminating parts of the clay cap and making proper compaction impossible. To hasten the draining of the canal in order that the clay cap could be properly installed, a series of lateral drains filled with gravel and sand were constructed that connected the

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barrier drain with the canal itself. Daily flows of leachate increased substantially as the laterals were completed and the canal was drained to the point where the clay cap could be placed and compacted properly. These lateral drains provide good hydraulic communication between the barrier drain system and the landfill itself.

6.5.3.3 LEACHATE TREATMENT PLANT

The leachate collected by the barrier drain contains a variety of different hazardous organic chemicals. Studies performed by the EPA and the City of Niagara Falls in 1978 and 1979 indicated that granular activated carbon was highly effective in removing the pollutants dissolved in the groundwater. These initial findings were substantiated by the successful performance of the two (2) temporary leachate treatment facilities which were used to treat leachate collected during the installation of the barrier drain. Both temporary facilities utilized granular activated carbon and both consistently produced an effluent which could be safely discharged to the sanitary sewers of the City of Niagara Falls.

In the spring of 1979 the NYSDEC contracted with Conestoga-Rovers and Associates to prepare bidding documents and performance specifications for the construction of a permanent leachate treatment facility. On August 28, 1979 the NYSDEC entered into a contract with the Albert Elia Building Company (AEBC) for the detailed design and construction of the treatment facility.

The treatment system designed by AEBC was approved by the NYSDEC and consists of the following major process units.

a. raw leachate is pumped from the leachate collection system into a large tank within the plant which provides storage needed to accomodate the difference in rates of leachate entering the plant and the rate of treatment;

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- raw leachate is transferred to a clarifier where settleable solids, if any, and immiscible organic liquids are separated from the contaminated groundwater;
- c. the clarified leachate flows into a surge tank and is then passed through a bag filter which removes suspended solids;
- d. the clarified and filtered leachate is passed through two beds of granular activated carbon. The two beds are linked in series and as the leachate passes through first one bed and then the second, organic pollutants dissolved in the groundwater are effectively removed; and
- e. hydrogen peroxide is injected into the effluent to oxidize the hydrogen sulfide generated by anaerobic bacteria which grow in the carbon beds.

Construction of the treatment plant was begun in September of 1979 and was substantially complete in December of 1979. Figure 4 presents a flow diagram of the leachate treatment process. A detailed set of plans and specifications describing the leachate treatment plant are available for public inspection. Manuals describing the operation and maintenance of both the leachate collection system and the leachate treatment plant are also available for public inspection.

The treatment process at the Love Canal Leachate Treatment Facility starts with pumping the leachate through a clarifier. The purpose of this clarifier is to separate the heavier chemical sludge and any suspended solids from the leachate. The residence time in the clarifier is approximately two hours. After clarification, the water is pumped through a bag filtration unit to remove any remaining suspended material which might otherwise clog the activated carbon system. Two 8,000 gallon downflow, activated carbon adsorbers, which are operated in series, are utilized to remove organic pollutants from the waste stream. Following the activated carbon treatment, hydrogen peroxide is injected

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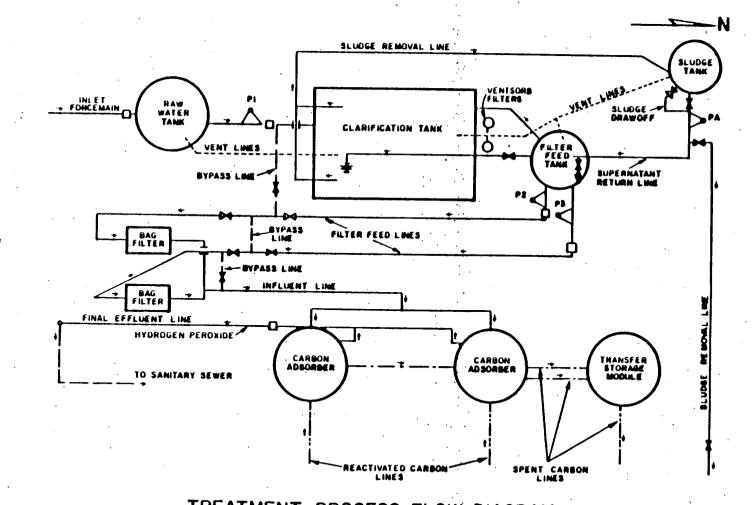


Figure 4

TREATMENT PROCESS FLOW DIAGRAM LOVE CANAL LEACHATE TREATMENT FACILITY

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into the effluent to control sulfur odors arising as a result of bacterial activity on the carbon. The effluent is then discharged to the City of Niagara Falls sanitary sewer system for additional treatment.

For over five (5) years the NYSDEC has been responsible for leachate treatment at the Love Canal site. During that time the quality of the effluent has been regularly monitored and has consistently been treated to a level allowing for a safe discharge to the City of Niagara Falls' sanitary sewers. A description of the treatment plant routine operations and performance is presented in Section 6.8.4 and Section 6.8.5.

6.6 DESCRIPTION OF THE REMEDIAL WORK - PHASE II

Monitoring of groundwater elevations and the chemical quality of the groundwater near the perimeter of the clay cap revealed that (a) a considerable amount of recharge was occurring at the toe of the cap, and (b) chemical contaminants were present in the groundwater beyond the zone of influence of the barrier drain system.

Precipitation running off the clay cap was by design allowed to run overland to the streets where it entered the storm sewers and was conveyed offsite. Monitoring of groundwater elevations indicated that a significant amount of runoff from the cap percolated into the ground just beyond the toe of the clay cap. An area of unusually high recharge was created at the toe of the cap due to the precipitation it received directly and also received as a result of the significant amount of runoff from the cap. The increased recharge at the toe of the cap resulted in large quantities of relatively clean groundwater entering the barrier drain due to increased infiltration occurring only a small distance from the drain. The increased infiltration also created a mound in the shallow groundwater system which tended during times of high recharge to move contaminated groundwater further away from the drain.

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6.6.1 CONDUCT OF THE PHASE II REMEDIAL WORK

At the request of the NYSDEC, in October, 1981 USEPA entered into a contract with CH2M Hill, Inc., Reston, Virginia to design an improved cap for the Love Canal Site that would improve the efficiency of the leachate collection system. Also included in the design provided by CH2M Hill were elements of work which would further isolate the contaminants in and around the Love Canal from the surrounding area. The major elements of this work included:

a. repairs to leachate collection system;

 b. expansion of the capped area and upgrading of the cap to include a synthetic membrane;

c. improved surface drainage in the vicinity of the Love Canal;

d. cleaning, abandonment and plugging of storm and sanitary sewers that drained in the Love Canal site;

e. new storm water drainage facilities for the Love Canal Site; and

f. a below grade concrete groundwater cutoff wall.

In July of 1982, NYSDEC entered into an Assistance Agreement with EPA to carry out the construction of the Phase II Remedial Work designed by CH2M Hill for EPA. In August, detailed plans and specifications were complete for the supplemental remedies, and in September 1982, NYSDEC received bids for the remedial construction. NYSDEC also negotiated a contract with CH2M Hill to provide engineering services (construction supervision, contract management) during the remedial construction. In December 1982, NYSDEC awarded a contract to Sevenson Construction Corporation to perform the remedial construction.

6.6.2 MAJOR ELEMENTS OF THE REMEDIAL WORK - PHASE II

Detailed plans and specification of all work performed as a part of the Phase II Remedial Work are available for public inspection. Below is a summary description of each of the major elements of the work included in Phase II.

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6.6.2.1 ABANDONMENT OF STORM AND SANITARY SEWERS

The storm and sanitary sewers which served the Love Canal area of the City of Niagara Falls were known to be contaminated with chemicals that had migrated from the Love Canal. The sewers immediately adjacent to the Love Canal Site were taken out of service, plugged, and cleaned. (The contaminated sediment and debris removed from the sewers is now stored in drums on the site until an acceptable means of disposal is found.) The plugging of these sewers prevents the continuing migration of chemical wastes from Love Canal to Black and Bergholtz Creeks, and the Niagara River.

The effluent from the Love Canal Leachate Treatment Plant previously discharged into the 97th Street sanitary sewer. Since the 97th Street sanitary sewer was abandoned and plugged, a new effluent line from the Love Canal Leachate Treatment Plant was constructed and connected with the 95th Street sanitary sewer. Effluent from the Love Canal Leachate Treatment Plant is conveyed to the City of Niagara Fall's wastewater treatment plant before it is discharged to the Niagara River.

6.6.2.2 REPAIRS TO LEACHATE COLLECTION SYSTEM

Before a new cap was constucted over the landfill, the barrier drain was cleaned, inspected, and necessary repairs were made. In the fall of 1982, NYSDEC had hired O.H. Materials to clean and inspect the barrier drain on the southern portion of the Love Canal. As a result of this work, a number of sections of the drain were found to need repairs. Subsequent cleaning and inspection of the barrier drain along the central and northern portion of the Love Canal also revealed a number of areas that required repair.

All areas of the drain requiring repair were removed, were replaced with new pipe, and the entire drain was cleaned. The drain was again inspected, and found to be acceptable. Contaminated sand, gravel, and debris resulting from

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the repair of the barrier drain were buried on-site. As with any operating facility, the barrier drain, the pumps, the controls, etc. that comprise the leachate collection system will required periodic maintenance and repair. NYSDEC will continue to routinely inspect and repair, as necessary, the leachate collection system.

6.6.2.3 IMPROVED CAP AND SITE DRAINAGE

To reduce the amount of precipitation which infiltrated the ground near the barrier drain, an improved and expanded cap over the landfill was constructed. The clay cap completed in 1980 was stripped of topsoil, regraded, and recompacted. Select soil was brought on-site, graded and compacted to provide a suitable base for the new "cap".

The new cap was a synthetic membrane composed of high-density polyethylene, .040 inches thick. The cap was expanded to cover an area of approximately forty (40) acres and now extends nearly 200+ feet beyond the barrier drain to the east and to the west. Additional select fill was placed over the liner to protect it from weather and sunlight.

The additional fill brought on-site and the spoiled materials from the repairs to the barrier drain created steeper slopes grading away from the land-fill. The steeper slopes and the synthetic membrane result in significantly less infiltration of precipitation into the landfill. Precipitation now runs off the site and is collected by a new surface drainage system at the edge of the cap. Surface drainage which is uncontaminated, is conveyed to area storm sewers by a system of new storms which were built for this purpose. The new cap should result in less leachate generation and an expansion of the zone of influence of the barrier drain. Expansion of the zone of influence of the barrier drain should place under hydraulic control polluted groundwater, that without the

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expanded cap, would be beyond the hydraulic influence of the barrier drain. Recent monitoring shows the hydraulic influence of the drain to extend nearly to the edge of the expanded cap. (See Figure 5)

6.6.2.4 GROUNDWATER CUTOFF WALL

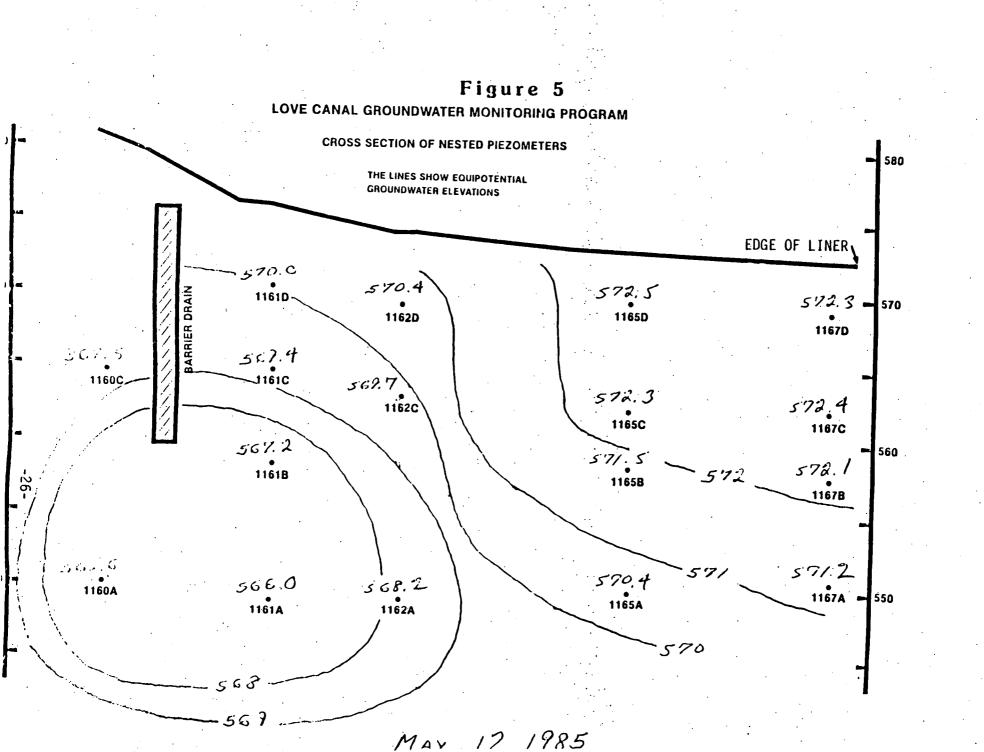
A below ground, concrete wall was included in the original design of the Phase II Remedial Work. The concrete wall was designed to prevent groundwater from migrating beneath the expanded cap toward the barrier drain. It was anticipated that cutting off the influx of relatively clean groundwater would reduce the amount of water treated at the Love Canal Leachate Treatment Plant and was thought to be a cost-effective means of reducing the long-term costs for operation and maintenance of leachate collection and treatment.

Subsequent analysis indicated that the cutoff wall would only slightly reduce the amount of leachate collected for treatment and therefore was not cost effective. Furthermore, the cutoff wall would prevent any groundwater contamination located outside the wall from ever being recovered by the barrier drain. For these reasons NYSDEC, with the approval of EPA, deleted the groundwater cutoff wall from the remedial work.

6.7 SITE MANAGEMENT - OVERVIEW

On August 2, 1978, then Commissioner of the NYSDOH, Robert Whalen, issued an order and directive to the Niagara County Board of Health and the Niagara County Health Commissioner; the City of Niagara Falls; and the City of Niagara Falls Board of Education. Among the directives included in this order were that appropriate and necessary corrective actions be taken to abate the public health nuisance existing at the Love Canal chemical waste site and that the City of Niagara Falls and the County of Niagara Board of Health take all appropriate steps to implement a "Pollution Abatement Plan" subject to the approval of the

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Commissioner of NYSDEC. On the same date, then Governor Carey established the Love Canal Interagency Task Force chaired by the Commissioner of the New York State Department of Transportation. The Task Force became the management board responsible for carrying out the Commissioner of Health's orders. By spring of 1979, the initial phase of remedial work at Love Canal was substantially complete and families living in the immediate area of the canal had been relocated. By this time, the NYSDEC had entered into a Cooperative Agreement with the EPA to complete the remedial program begun by the City of Niagara Falls and in the fall of 1979, the NYSDEC assumed all responsibility for the remedial activities at Love Canal.

In assuming responsibility for the remedial activities at the Love Canal Site, the NYSDEC carried out its general functions, powers, and duties as described in Article 3. Title 3 of the New York State Environmental Conservation The Law reads in part that the NYSDEC shall provide for prevention and Law. abatement of all water, land and air pollution (Article 3, Title 3, Section 3-0301.1(i)). Furthermore, guidance is provided to the NYSDEC in Article 27, Title 13 of the New York State Environmental Conservation law, which states in part, "the Department may develop and implement an inactive hazardous waste disposal site remedial program for such site". The purpose of both the State and Federal Superfund Statutes is to facilitate remediation, by the appropriate State agencies, of abandoned or inactive hazardous waste sites, including appropriate operation and maintenance. The NYSDEC must carry out its statutory responsibilities and will continue to implement an inactive hazardous waste disposal site plan at the Love Canal. Execution of this plan has required and will continue to require the following activities:

a. Investigations of problems attributable to Love Canal;

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- Design of appropriate remedial programs to abate pollution attributable to Love Canal;
- c. Execution of remedial construction to abate pollution attributable to Love Canal;
- d. Operation and maintenance of facilities built to abate pollution of Love Canal; and
- e. Monitoring of the effects and the effectiveness of remedial programs implemented at the Love Canal Site.

Such responsibilities will be carried out in accordance with all state and federal rules and regulations by the NYSDEC. Relief from such responsibility may result from the ongoing litigation against Hooker Chemicals and Plastics Corporation now known as Occidental Chemical Corporation (which the State joined in 1980).

Until such time as the NYSDEC has obtained appropriate relief, it shall continue to carry out its statutory obligations and retain full responsibility for the remedial program at the Love Canal Site.

6.7.2 ROLE OF THE DEC DIVISION OF SOLID AND HAZARDOUS WASTE

Within the NYSDEC, responsibility for the development and implementation of the inactive hazardous waste disposal site remedial program for Love Canal has been assigned to the Division of Solid and Hazardous Waste. Since the time at which the NYSDEC accepted responsibility for the Love Canal site, the remedial programs at Love Canal have been under the direct administrative control of Mr. Norman H. Nosenchuck, P.E., Director, Division of Solid and Hazardous Waste. More recently, Mr. Nosenchuck has established the Bureau of Western Remedial Action within the Division of Solid and Hazardous Waste. This Bureau is responsible for carrying out the inactive hazardous waste disposal site remedial

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program at the canal. Within the Bureau there are two sections that are responsible for remedial activities at Love Canal. The Bureau's Special Projects Section is responsible for the day to day operation and maintenance of the facilities at the canal and for research into new technologies which may have application at the canal. The Bureau's Remedial Section A is responsible for the investigation, design, and execution of remedial construction projects found necessary at Love Canal and for monitoring the effects and the effectiveness of these remedial programs. (See Figure 6 - organizational chart of the NYSDEC).

6.7.3 LOVE CANAL TECHNICAL REVIEW COMMITTEE (TRC): PURPOSE AND FUNCTIONS 6.7.3.1 TRC

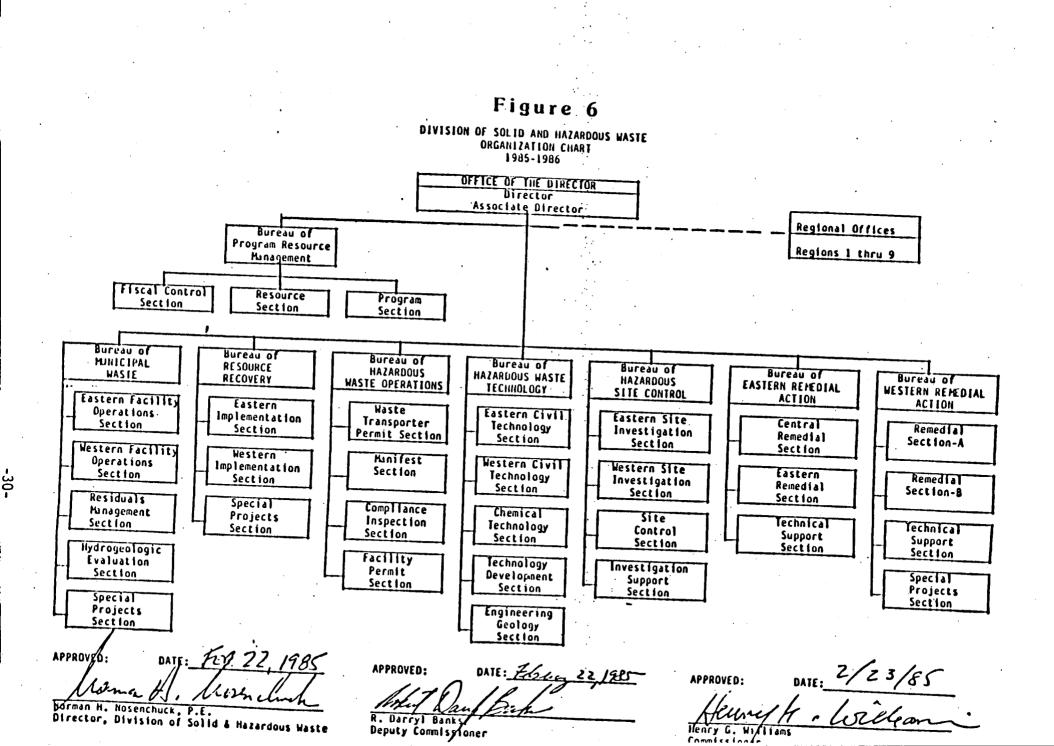
- The TRC, established in 1984, is a group formed by Federal and State agencies involved in addressing the issues of habitation of the Love Canal EDA and remediation of the site.
- Its purpose is to act as a Management Group, coordinating the many interrelated governmental activities necessary to resolve these very complex issues.
- o The TRC members are:

William Librizzi - Director, Office of Emergency and Remedial Response, EPA Region II, New York, N.Y. (Chairman) Robert Ogg - Chief, Hazardous Waste Branch, EPA Region II, New York, N.Y. (Alternate Chairman)

Vincent Pitruzzello - Environmental Engineer, Hazardous Waste Branch, EPA Region II, New York, N.Y.

Daniel Van der Meer - Associate Director, Center for Environmental Health, Centers for Disease Control, U.S. Department of Health and Human Services (DHHS), Atlanta, GA.

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Thomas Welty M.D. (Member from beginning thru Spring, 1985) – Medical Epidemiologist, Cancer Branch Chronic Diseases Division, Centers for Disease Control, U.S. Department of Health and Human Services (DHHS), Atlanta, GA.

Robert Huffaker - Associate Director, Office of Public Health, New York State Department of Health (NYSDOH), Albany, N.Y. Norman Nosenchuck - Director, Division of Solid and Hazardous Waste, New York State Department of Environmental Conservation (NYSDEC), Albany, N.Y.

6.7.3.2 USE OF CONSULTANTS

To assist the TRC in performing many of its activities, EPA has contracted with the consulting firm of CH_2M -Hill. This consultant will assist in the data collection, quality assurance, data computerization activities and provide other support as required by the TRC.

CH₂M-Hill will work with EPA HQ's Office of Research and Development, located in Washington D.C., to formulate Quality Assurance Methodologies for proper evaluation of the quality of the data avialable for addressing the habitation issues.

In addition, CH₂M-Hill will be the mechanism for procurement of the expert scientists selected by DHHS/NYSDOH for assistance in the development of habitability criteria. This was done to expedite the procurement of services. The scientists will not be reporting to or under the direction of CH₂M-Hill, but will be working directly with DHHS/NYSDOH. CH₂M-Hill's function in this activity is solely to procure their services and provide support to DHHS/NYSDOH and the scientists as needed.

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6.8.0 ONGOING WORK - OPERATION AND MAINTENANCE

The New York State Department of Environmental Conservation has been assigned responsibility for direct administrative control of the Love Canal site and the operation and maintenance of all remedial facilities at the Site. The following presents an overview of the operation and maintenance of the facilities at the Love Canal Site.

6.8.1 BARRIER DRAIN/LEACHATE COLLECTION SYSTEM

As described previously, a drain which serves as a barrier to leachate migration in the near surface groundwater system completely surrounds the landfill. Leachate which enters the drain system, flows to one of four wet wells included in the drain system. From the wet wells, the leachate is pumped to underground storage tanks which are also located within the perimeter of the drain. From the underground storage tanks, leachate is pumped into the on-site leachate treatment plant for processing. Figure 7 presents a plan view of the leachate collection system.

Like any other buried utility, the leachate collection (including the barrier drain, pumps, storage tanks, etc.) requires continuous maintenance and periodic repair. Pumps, wet wells, and other appurtances comprising the leachate collection system are regularly inspected. Routine maintenance of these facilities includes such activities as lubrication of pumps and motors and replacement of worn or defective parts.

During the summer of 1984, the entire barrier drain was inspected, cleaned, and repaired. The periodic inspection, cleaning, and repair to the leachate collection system will be required as long as the Love Canal Site produces leachate, which it will for an indefinitely long period of time. The State of New York will continue to assure the proper functioning of the system unless and until another responsible entity might be assigned the responsibility.

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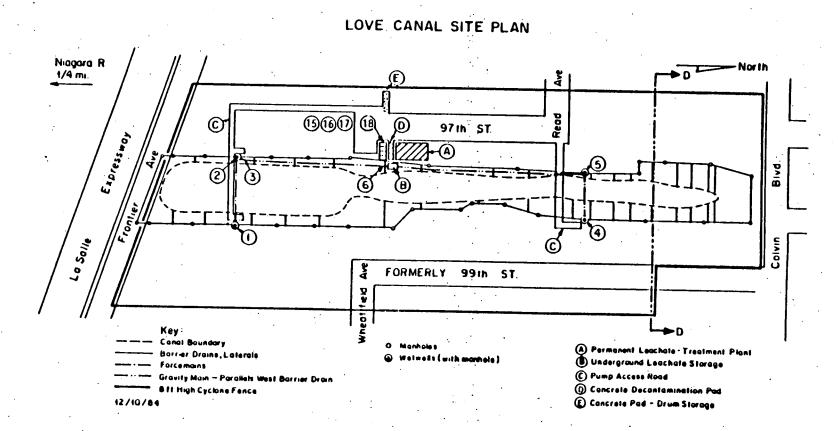


Figure 7

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Additional details describing the operation and maintenance of the leachate collection system are presented in the "Operation and Maintenance Manual, Love Canal Remedial Action Project, Leachate Collection System and Treatment Facility, NYSDEC, Dec. 1980, Volumes I and II" which are available for public inspection.

6.8.2 LEACHATE TREATMENT PLANT

As described previously, the leachate treatment plant provides for the gravity separation of the contaminated water from the settleable solids and immiscible fluids collected by the leachate collection system. Removal of chemical contaminants from the water is achieved by passing the contaminated groundwater through large tanks filled with granular activated carbon (see Figure 4)

Currently, the NYSDEC has a contract with CECA, Inc. of Tulsa, Oklahoma to provide fresh activated carbon. The carbon is delivered to the plant by truck and is available within two weeks after placement of the order. The activated carbon has a finite capacity for the adsorbtion of chemical contaminants from the leachate. Once that capacity is used (the carbon is "spent"), the carbon is removed from the adsorption vessel and in the past has been transferred to trucks for disposal at CECOS, International, Inc., a secure chemical landfill located in Niagara Falls, New York.

It appears now, that after July 15, 1985 under the Hazardous and Solid Waste Act Amendments of 1984, the spent carbon can no longer be transported to CECOS for disposal and instead will have to be stored at the Love Canal site.

The leachate treatment process also requires the collection of samples for chemical analysis, and the operation of numerous pumps, valves, control devices, air compressors, etc. All these appurtances require regular maintenance and periodic repair or replacement. In addition, the leachate treatment plant building has lighting, heating, and plumbing facilities which must be maintained in proper working order.

Much of this work is performed by NYSDEC staff. Those tasks which cannot be performed by NYSDEC staff are performed by qualified electricians, plumbers, mechanics, etc. under contract with the Department.

Additional details describing the operation and maintenance of the leachate treatment facility are presented in the "Operation and Maintenance Manual, Love Canal Remedial Action Project, Leachate Collection System and Treatment Facility, NYSDEC, Dec. 1980, Volumes I and II" which is available for public inspection at the Love Canal Public Information Office, 9820 Colvin Boulevard, Niagara Falls, New York.

In addition, as experience has been gained in the operation and maintenance of both the leachate collection system and the leachate treatment plant, modifications have been made to improve the ease, the efficiency, and the safety of operations and maintenance. For example, recently an improved ventilation system was installed in the leachate treatment plant to improve working conditions within the plant. Currently plans are designed for another building to be constructed near the leachate treatment plant (see Section 6.10.7). The new building will provide space for storage of tools and equipment, office space, and improved hygiene facilities for increased worker safety and a safe area for equipment repair and maintenance.

6.8.3 RESOURCES

Operation and maintenance of the leachate collection system and the leachate treatment plant is the direct responsibility of the Special Projects Section within the Bureau of Western Remedial Action. Nicholas Kolak, Ph.D., is

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the supervisor of the Special Projects Section. The Special Projects Section has a staff of seven (7) composed of scientists, engineers, and technicians. All members of the section are trained in and capable of operating the leachate collection and treatment systems.

The leachate collection and treatment systems are normally operated five (5) days per week, eight (8) hours per day. The facilities are operated and maintained by two full time NYSDEC employees hired for this specific purpose. Other staff in the Special Projects Section serve as back-up operators and provide support assistance as required. The on-site operators and all other staff in the Special Projects Section are also familiar with facility contingency plan and are on-call on a continuous basis to handle any problems which may arise.

The NYSDEC currently spends over \$500,000 a year on operation and maintenance of the leachate collection and treatment systems. This sum is spent in the following major categories:

o Personnel services

o Operating costs

carbon

carbon disposal

heat/light/phone

o Maintenance/Repairs

o Improvements

Funding for these activities is approved each year by the New York State Legislature. Such approval is expected each year as long as there is a need to operate and maintain these facilities in order to protect the health and welfare of the people and environment at this site.

6.8.4 DESCRIPTION OF ROUTINE OPERATIONS

Operation of the facility commences each day when the leachate collection system pumps are turned on. Leachate is pumped from the barrier drain to the underground storage tanks. Once the liquid level in the storage tanks warrants processing, the treatment facility is activated and leachate is pumped from the storage tanks into the treatment plant. During the operation, the operators continuously monitor tank levels, pump outputs and various pressure and flow readings as well as taking samples of the process for laboratory analysis. When there is insufficient leachate to require operation of the plant, the operators perform maintenance activities on the system as prescribed in the Operation and Maintenance manuals.

During the plant operation, the quality of the effluent is always monitored through periodic sampling. Samples are taken from the activated carbon influent, the midpoint (between carbon beds) and the effluent. The effluent is discharged directly to the sanitary sewers of the City of Niagara Falls under permit (see Attachment II). In this way, the effectiveness of each carbon bed can be assessed continuously. The first set of samples is taken after 5,000 gallons of leachate have been processed. This procedure ensures the receipt of better data by allowing the system to be flushed of process water which has stood from the preceeding day.

One of the more important decisions made regarding plant operations is to determine the need to change the activated carbon. This decision is based on the performance of the activated carbon and the concentration of pollutants in the effluent. Influent, midpoint, and effluent data are interpreted relative to the plant's discharge permit with the City of Niagara Falls which calls for a limit of 50 pounds of soluble organic carbon (SOC) and 6.25 pounds of total suspended solids (TSS) per day as a quarterly average. The maximum daily load

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is 75 pounds per day SOC and 16 pounds per day TSS. At a flow rate of 30,000 gallons per day, the latter limits correspond to a concentration of 300 ppm of SOC and 64 ppm TSS. When the SOC concentration in a sample taken between the carbon beds reaches a level which would result in non-compliance with the permit, then a judgment is made whether to change the carbon in the primary tank. In the meantime, the carbon in the polishing tank continues to remove contaminants during the time required to receive a fresh load of carbon.

A data summary for SOC and TSS for 1984 is presented in Table 6.8.4(1).

Table 6.8.4(1)

CARBON EFFLUENT PERMIT PARAMETERS

Concentrations (ppm)

·		•	<u>No. Data Points</u>	Low	<u>High</u>	2nd Highest	<u>Average</u>
	TSS		41	< 2	120	20	6.8
	SOC		40	22	320	290	145

Overall, the data show that TSS values are always well within the permit limit. There was one value at 120 ppm which exceeded the permit but which averages out over time. This single high value is unexplained.

The SOC data illustrate permit compliance as well. The value of 320 ppm and 290 ppm lie on either side of the maximum daily SOC concentration of 300 ppm. Again, these data could be associated with disturbances in the field but the frequency of such events is sufficiently low to not warrant concern. In general, plant operations are readily able to meet the permit conditions to insure the highest performance in decontamination of the leachate.

To further provide for continuous and effective plant performance, the State of New York has entered into a three year contract with CECA, Inc. Tulsa, Oklahoma, for the supply of carbon. Under this contract, the carbon is supplied

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within two weeks upon receipt of order. Disposal of the spent carbon is handled under a contract with CECOS International, Inc. Notification to the contractor results in scheduling disposal operations within two weeks.

Other types of work performed at the facility include the construction activities required to modify and upgrade the facility. As experience is gained through the operation of the facility, modifications are proposed with the objective of increasing safety and plant performance. This work encompasses equipment and structure or safety modifications which cannot be performed by the treatment facility staff. Subsequent to design, such work is normally performed by private contractors. An example of this type of work is the recent construction of modifications to the ventilation system at the plant. The end result was increased convenience and safety at the plant.

Currently under design is a project to replace the pumps in the south pump chambers. When completed, this project will result in increased operator safety and reduced maintenance and repairs. Also under design is a new administration building. This building will be kept clean from contamination and provide improved shower facilities, increased clean storage space and a small laboratory room to provide for some analyses outside of the treatment plant.

6.8.5 PERFORMANCE

Flow data represent the volume of leachate being pumped through the carbon beds when the plant is in operation. The need to operate the plant daily is determined by the on-site operators and is based upon the quantity of leachate which has accumulated in the underground storage tanks.

The plant capacity of 160 gallons per minute and an eight hour day is sufficient to process the leachate which is produced throughout the year, including the peak volume which occurs during the spring thaw. The average flow processed

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detected and are consistently present. For the volatile category, 12 of 27 over each operating day in the past five years is 31,000 gallons; the total leachate volume treated as of March 19, 1985 is 21,951,230 gallons. NYSDEC has never had to operate a second or third shift at the plant to accomodate the volume of leachate produced by the landfill. If the need arose to process an unusually large amount of leachate, the treatment plant is designed and can operate three shifts per day.

To fulfill the need to monitor the chemistry of the chlorinated hydrocarbons within the leachate, samples have been collected every operating day from November 1980 to date. Samples are obtained from the influent, midpoint, and effluent stations and submitted to the NYSDOH for analysis. All samples were analyzed using a gas chromatograph-mass spectrometer for positive identification of chemical components.

The priority pollutants which are monitored consist of 113 components which are categorized as follows:

Base Neutrals	61
Acid Extractables	12
Volatiles	27
Metals	
Total	113 Components

Prioritory Pollutant Categories and Components

As a result of compiling this data over four years, it is evident that many of these priority pollutant components are not present in the influent samples collected at the treatment plant. In the case of base neutrals, only 9 of 61 components have been observed at levels above the detectable limits established by the laboratory. For acid extractables, only 4 of 12 chemicals have been

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chemicals are normally observable; in the case of trace metals, none of the 13 components was consistently present to warrant continued monitoring. Therefore, analysis for trace metals has been discontinued.

Most of these chemicals readily adsorb onto the activated carbon and are easily removed from the leachate. For the base neutral category, the 9 components observable in the influent samples at concentrations of several thousand parts per billion are at or below detectable limits in the corresponding midpoint and effluent analyses. Materials such as chlorinated benzenes (including lindane) and a chlorinated napthalene are examples of this category where binding to activated carbon is very strong. Similarly for the acid extractable category, the four observable components are represented by phenols and its chlorinated derivatives, e.g. 2,4,5-trichlorophenol (2,4,5-T). The average range in the influent for these materials reaches 2000 ppb while the corresponding results in the effluent are at the detectable limits of 10 ppb. Such data demonstrate high removal efficiencies for the higher molecular weight components, examples of which are presented in Table 6.8.5(1).

Table 6.8.5(1)

Typical Removal Results for Base Neutral and Acid Extractable Components

	Influent		Effluent		
:	nest Values ved (PPB) for 1982	Average Value (PPB) for 1982	Highest Values Observed (PPB) for 1982	Average Value (PPB) for 1982	
1,4-Dich1 benzene (Base neu	1300	382	11	10.1	
	 1983	1983	1983	1983	
2,4,6- Trichlord phenol (Acid ext	1700 01e)	562	38	11.4	

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As a result of such efficiencies evident over five years of monitoring, the base neutral and acid extractable categories are no longer analyzed routinely. Such sampling will be performed quarterly so that we can continue to monitor for any subtle changes in the composition of the leachate over time. The latter type of data also serves to meet the requirements of the discharge permit which has been authorized for the treatment plant by the City of Niagara Falls. In similar fashion, samples will also be submitted quarterly for analysis of total organic phosphorous and total phenols. While three years of data for the latter parameters only revealed levels at the detectable limits in the laboratory, quarterly monitoring will be sufficient to provide notice of any changes in the quality of the leachate.

The volatile priority pollutant chemicals in the influent samples represent the highest concentrations of all monitored components. Data for the three components benzene, toluene and chlorobenzene are presented here in Table 6.8.5(2) to illustrate concentration levels for the selected volatiles.

Table 6.8.5(2)

VOLATILE INFLUENT DATA FOR 1984

	Highest Values Observed (PPB)	Average Value (PPB)	
benzene	7,000	2,400	
toluene	70,000	17,600	
chlorobenzene	15,000	4,500	

Upon treatment with activated carbon, the volatile class of materials is removed from the leachate with more difficulty than the base neutral and acid extractable categories. Nevertheless, benzene, toluene, and chlorobenzene are reduced to laboratory detection limits in the effluent discharge stream (Table 6.8.5(3)), well within the requirements of the discharge permit. The treatment plant is operated in a conservative manner to insure removal of the greatest amount of contaminants, thereby producing the highest quality discharge.

Table 6.8.5(3)

VOLATILE EFFLUENT DATA FOR 1984

<i>x</i>	Highest Values Observed (PPB)	Average Value (PPB)	
benezene	4.2	4	
toluene	11	11	
chlorobenzene	8	8	

The chemicals which comprise the volatile category are normally used in industry as solvents. It should not be surprising that these materials possess a lower binding capacity with the activated carbon. Chloroform and methylene chloride are examples of two components which are not readily retained by carbon and "break through" into the effluent easily. Therefore, the data for these two parameters are constantly monitored to maintain plant operations within the permit limits. The data to date reflect that these two components and the entire class of volatiles have been controlled effectively under the discharge permit for the protection of the residents and the environment.

As discussed previously, materials such as tetrachlorodibenzodioxins (TCDD) and base neutrals bind tightly to the actived carbon and do not readily "break through" to the effluent as do volatile components. While all of the priority pollutants have been monitored in the past, noting that base neutrals and acid extractables have since been discontinued, overall plant performance is governed by SOC and TSS per requirement of the City of Niagara Falls. The latter two parameters are analyzed by RECRA Environmental Laboratories where

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results are communicated by telephone to the plant operator with a five (5) day turn-around. This time frame is reasonable for the laboratory and is satisfactory for the maintenance of plant operations. "Break-through" of the more toxic chemical components do not occur instantly relative to daily operations; monitoring of SOC and TSS assures that such chlorinated materials do not exceed the permit conditions. As the values for SOC and TSS rise, a decision by staff is made to change the primary bed of activated carbon. Upon replacement of the primary bed of carbon, the cycle starts new.

Treated effluent from the facility is discharged to the City of Niagara Falls sanitary sewer under a permit from the City. Under its industrial pretreatment program, the City has recently revised this permit (see Attachment II).

6.8.6 GROUNDWATER MONITORING PROGRAM

The NYSDEC has a contract with the E.C. Jordan Co., Portland, Maine, to design a long-term groundwater monitoring program. The monitoring program will provide data to evaluate the effects and the effectiveness of the leachate collection system. Please see Section 6.11.1. Until the permanent long-term monitoring program is operational, the NYSDEC has and will continue to use a system of approximately 94 wells to monitor the effects and the effectiveness of the leachate collection system. In fact, the Department's interim monitoring program has provided much useful data to assist in the design of the permanent system.

Monitoring wells are located around the Love Canal Site at varying distances (6-400 feet) from the drain. Figure 8 shows a plan view of the location of the wells currently being monitored. The wells are also installed to differing depths so that data specific to a particular soil or bedrock interval can be obtained.

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Generally, measurements of water elevations are made in every well once a month. The NYSDEC has also installed continuous water elevation recording devices on two wells. These devices are moved periodically in order to collect a continuous record of water elevation fluctuations at various locations. Approximately once every three (3) months water samples are collected from approximately twenty (20) wells, and these samples are chemically analyzed for volatiles and base/neutrals.

For the past two (2) years, quarterly reports have been prepared compiling the data collected. One (1) quarterly report is appended to this report. This report covers a period of time before the cover over the Love Canal Site was improved and extended.

Copies of all future quarterly reports will be available for public inspection within approximately three (3) months after the close of the quarter. A summary of the results of the interim monitoring program are presented in Section 6.9.0, "Effects and Effectiveness of the Remedial Programs."

6.9.0 EFFECTS AND EFFECTIVENESS OF THE REMEDIAL PROGRAMS

6.9.1 GROUNDWATER MONITORING

As described in Section 6.8.6 "Groundwater Monitoring Program," the NYSDEC has been monitoring groundwater elevations, and groundwater quality at the Love Canal Site since 1980. All data which has been collected by the Department have been and will in the future be provided to the Technical Review Committee. All data are available for public inspection.

6.9.2 SUMMARY OF FINDINGS

Groundwater Elevations

Groundwater elevations in the shallow groundwater system are lowered in the vicinity of the barrier drain. The amount of and the distance to which this

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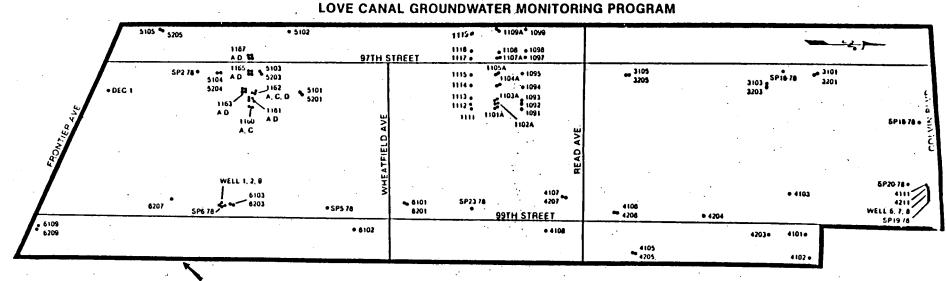


Figure 8

PLAN VIEW MONITORING WELLS

PERIMETER FENCE

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lowering is observed varies seasonally and with precipitation (2 to 6 feet). Prior to 1984 and the expansion of the cap over the Love Canal Site, the shallow groundwater system was affected by the drain to a distance of approximately 150 feet parallel to the barrier drain line. It is unlikely that the dewatering effect will extend any significant distance beyond the edge of the expanded cap (if at all) and it may take a number of years for water elevations in the shallow groundwater system beneath the expanded cap to reach equilibrium.

Groundwater elevations measured in the shallow groundwater system in the immediate vicinity of the drain indicate groundwater flow is converging on the drain from all directions. (see Figure 5)

The barrier drain acts as a sink for the shallow groundwater system and therefore will capture any leachate migrating horizontally out of the Love Canal wastes in the shallow groundwater system.

Chemical contaminants dissolved in the groundwater may be recovered by the barrier drain from those areas immediately adjacent to the drain.

6.9.3 CHEMICAL CONCENTRATIONS

From October 1980 through September of 1984, approximately 150 groundwater samples were collected from the 94 wells located within the fence surrounding the Love Canal Site. These samples were chemically analyzed and 13,040 concentration values were determined. Most of the values (93.6 percent) indicate that the concentration of the contaminants, if present, were below the detection limits of the sampling and analytical procedures used.

Tables 6.9.3 (1) and 6.9.3 (2) present lists of all the Love Canal Indicator Compounds as determined by the NYSDEC. The lists are made up of all the organic compounds found in the influent to the Leachate Treatment Plant plus four other compounds that showed a strong correlation with respect to distance from the canal.

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TABLE 6.9.3 (1)

Compounds Showing Good Correlation of Concentration With Respect to Distance

Compound Name	<u>N</u>	Corr. Coefficient	Alpha
1,2,4 Trichlorobenzene	114	-0.53687	0.0001
Benzene	114	-0.50549	0.0001
Chlorobenzene	114	-0.53565	0.0001
Chloroform	111	-0.55891	0.0001
Toluene	111	-0.52531	0.0001
Trichloroethylene	114	-0.49761	0.0001
1,2-Tran-dichloroethylene	66	-0.49459	0.0001
alpha BHC	32	-0.31558	0.0785
Bis (2-Et-Hexyl) phthalate	105	-0.25251	0.0094
delta BHC	31	-0.39184	0.0293
gamma BHC	32	-0.45845	0.0083
hexachlorobenzene	113	-0.31368	0.0007
methylene chloride	93	-0.25230	0.0147
phenol	98	-0.32742	0.0010
Tetrachloroethylene	105	-0.37233	0.0001
1,1,2-Trichloroethyane	112	-0.25620	0.0064
1,1,2,2-Tetrachloroethane	113	-0.35120	0.0001
1,2-Dichlorobenzene	113	-0.38974	0.0001
1,3-Dichlorobenzene	113	-0.25945	0.0055
1,4-Dichlorobenzene	113	-0.35442	0.0001
2-Chloronaphthalene	110	-0.27430	0.0037
2,4-Dichlorophenol	102	-0.26691	0.0067
2,4,6-Trichlorophenol	98	-0.30008	0.0027
4-chloro-3-methyl phenol	98	-0.27680	0.0058
hexachlorobutadiene	114	-0.25846	0.0055
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TABLE 6.9.3 (2)

Compounds Showing Poor Correlation of Concentration With Respect to Distance

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Compound Name	· · ·		
carbon tetrachloride	112	-0.16163	0.0887
Ethyl benzene	110	-0.20219	0.0341
Di-N-Butyl phthalate	104	-0.14469	0.1428
Di-N-Octyl phthalate	110	-0.02370	0.8058
naphthalene	110	-0.11291	0.2125
phrene	110	-0.11982	0.2125
2-Chlorophenol	98	-0.15444	0.1289
Endosulfar Sulfate	27	0.00000	1.0000
Fluoranthene	109	0.00000	1.0000
1,2 Dichlorophenol	108	0.00000	1.0000
2,4 Dimethyl phenol		0.00000	1.0000
4,4 DDT	27	0.0000	1.0000

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6.9.4 <u>SUMMARY OF FINDINGS</u>

For the compounds listed in Table 6.9.3 (1) there is a statistically significant correlation between concentration and distance from the sampling location to the Love Canal (Nonparametric, Spearman, correlation coefficient of <-0.25) for one section of the canal between the Love Canal Leachate Treatment Plant and Frontier Avenue on the west side of the canal. This correlation coefficient was chosen as not to exclude possible good indicators. These chemicals may be good indicators of the extent of groundwater contamination attributable to Love Canal.

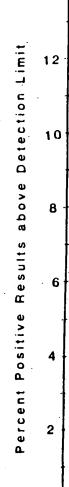
For the compounds listed on Table 6.9.3 (2) there was no statistically significant correlation between concentration and distance from the sampling location to the Love Canal (nonparametric, Spearman correlation coefficient of >-0.25). The absence of a significant correlation may be due to two reasons; (a) the concentration of the compound was generally below the detection limit and therefore not quantified, and (b) the detection of the compound was sporadic and the concentration varied randomly with distance from the canal. The compounds presented on Table 6.9.3 (2) would not be good indicators of the extent of groundwater contamination attributable to Love Canal.

At a distance of 100 feet from the barrier drain, 86 percent of all analyses were below the limit of detection of the sampling and analytical procedures used.

At a distance of 225 feet from the barrier drain, 95 percent of all analyses were below the limit of detection of the sampling and analytical procedures used. Figure 9 shows a plot of percent detects vs. distance from the barrier drain. Table 6.9.4 (1) lists the compounds that show up with positive results beyond 225 feet.

Variations in chemical concentration with distance from the barrier drain is best observed in closely spaced wells located close to the drain.

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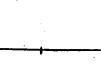


100'





200'



300'

Figure 9 Plot of Percent Positive Results vs. Distance from the Barrier Drain at Love Canal

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TABLE 6.9.4 (1)

Number of Positive Hits

2

1

1

4

2 3

4

1

1

5

Compounds in Rings I and II that had Positive Results Beyond 225 Feet from the Barrier Drain

Compound Name BHC alpha Benzene BHC beta Bis (2 Et-Hexyl) Phthalate Chloroform Chromium Ccpper BHC Delta Di-N-Butylphthalate Endosulfan Sulfate BHC Gamma (lindane) Methylene Chloride Phenol Tolune 4,4-DDT

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The NYDEC observed no statistically significant correlation between chemical concentrations observed in groundwater and time elapsed following installation of the barrier drain. Any correlation between chemical concentration observed in the groundwater and time elapsed following installation of the barrier drain can be best observed by analyses of samples collected very near the drain. Otherwise, most of the concentration values will be found to be below limits of detection or at concentrations too close to the limit of detection to allow for a measurement of any significant change.

6.10.0 CURRENT STATUS

The storm sewers continue to be a source of contamination, transporting contaminants to area waterways. Sanitary sewers also transport contaminated material through the sewer system with overflows and surcharging creating a potentially hazardous situation. As a result of the environmental monitoring study published by EPA in 1980, "Environmental Monitoring at Love Canal", a determination was made by U.S. Department of Health and Human Services (HHS) that the area surrounding the Canal (i.e., the EDA) would be no less habitable than other tested areas in Niagara Falls if the Canal itself were constantly safeguarded against future leakage and local storm sewers and their drainage tracts were cleaned of existing contamination.

In the fall of 1982, the sewers were severed at the Canal to deter future contaminant flow via these pathways. While the contamination that currently exists in the sewers should not increase, these pollutants could eventually migrate from the sewers and end up in creek and river sediments.

During the first three weeks of January 1983, an intensive field investigation was performed and nearly 1,000 samples were collected. Laboratory analysis and contamination assessments were performed and as a result, engineering

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alternatives to remediate the sewers and creeks were developed and evaluated. More recent sampling by the DOH was undertaken in April 1984 to confirm the presence of dioxin in Bergholtz Creek. This study revealed dioxin concentrations above 1 ppb in Bergholtz Creek sediments west of 93rd Street.

In addition, the EPA has established a process to work with various State and Federal agencies to evaluate the potential for habitation of the EDA. Initial results are expected in 1985.

During any remediation at Love Canal, special consideration will be given to the remedial activities under way at the 102nd Street Landfill, a CERCLA (Comprehensive Environmental Response, Compensation and Liability Act of 1980, Federal Superfund Program P.L. 96-510) site adjacent to the Canal. Remediation recommended for the 102nd Street outfall area will factor in the potential of contamination by this landfill and will be coordinated with any cleanup activities to be undertaken at the 102nd Street Site.

6.10.1 ALTERNATIVE EVALUATION

The Malcolm Pirnie investigation conducted for the NYSDEC, was divided into five (5) study areas:

o North storm and sanitary sewers

o Black and Bergholtz Creeks

o South storm and sanitary sewers

o 102nd Street outfall

o West storm and sanitary sewers

For each area, samples were taken of aqueous and sediment media to determine the levels of contamination. In addition, the bedding of materials encircling the sewers were also sampled. The basis for selecting a remedial alternative was the development of a contamination assessment which established. a ranking of remedial actions that incorporated both relative concentration and sampling location.

Subsequently, remedial alternatives were developed for each task area, and then evaluated with emphasis placed on effectiveness, reliability, worker safety, ease of implementation, environmental impacts and public acceptance. Feasible alternatives were then selected and reevaluated including cost to arrive at a recommended cost-effective alternative.

6.10.2 NO-ACTION ALTERNATIVE

The no-action alternative was considered for each study area, but was eliminated for the following reasons:

- o Prior to the initiation of the Malcolm Pirnie investigation, studies by EPA (Survey of Chemical Contamination in Love Canal Storm Sewers) identified the sewers leaving the Canal as pathways of contamination. A previous recommendation by the federal Centers for Disease Control (CDC) supported rehabitation if various remedial actions were initiated, including the cleaning of the storm sewers and contaminated sediment in the receiving waters.
- o As part of the initial cleanup under CERCLA, the storm and sanitary sewers were severed from the Canal area, thus deterring contamination from continuing to leave the site. It is the intention of the State and local authorities to continue to use the existing sewers if the area becomes rehabitated. With or without residential influence, contaminants in the sewers will continue to migrate due to area runoff as well as pipe infiltration. Storm sewers will discharge this hazardous material to area waterways, while sanitary sewers will transport the material to downstream points in its system that are subject to overflows to the storm sewer system.

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o The detailed sampling effort performed by Malcolm Pirnie provided evidence that contamination does exist, some at high ppm levels, within the sewer system. Within the samples taken, benzene and its derivatives were identified at 2,600 ppm, toluene up to 280 ppm, and trichlorobenzene at up to 310 ppm. Many inorganics such as arsenic and zinc were also identified at levels over 100 ppm. Metals were found throughout the study area and beyond at high concentration levels (ppm's). There is potential for deposition of these hazardous materials in the creeks. o Of major concern, however, is the presence of dioxin (2,3,7,8 TCDD) in the study area and, because of its toxicity, the potential harm to public health and the environment. The toxic effects of TCDD have been extensively studied in animals. These studies indicate that on a molecular basis TCDD is perhaps the most poisonous synthetic chemical. Human exposure to TCDD has induced chloracne, polyneuropathies, liver dysfunction, and enzyme induction. In animals, TCDD has been shown to be teratogenic, fetotoxic, and carcinogenic. Other chronic effects of TCDD in animals include hepatotoxicity (liver effects), renal toxicity, endocrine effects, immunologic effects (impairment of cellular immunity), and hematologic effects. TCDD has been also shown to accumulate and concentrate in aquatic and terrestrial organisms directly from water uptake as well as from food contaminated with dioxin. TCDD is suspected of being a human carcinogen because of multiple-positive animal carcinogenicity studies.

The EPA sampling effort (1980) detected dioxin in a number of storm sewer sediment samples at decreasing concentrations with distance from the Canal. Dioxin levels as high as 650 ppb were detected. The Malcolm Pirnie

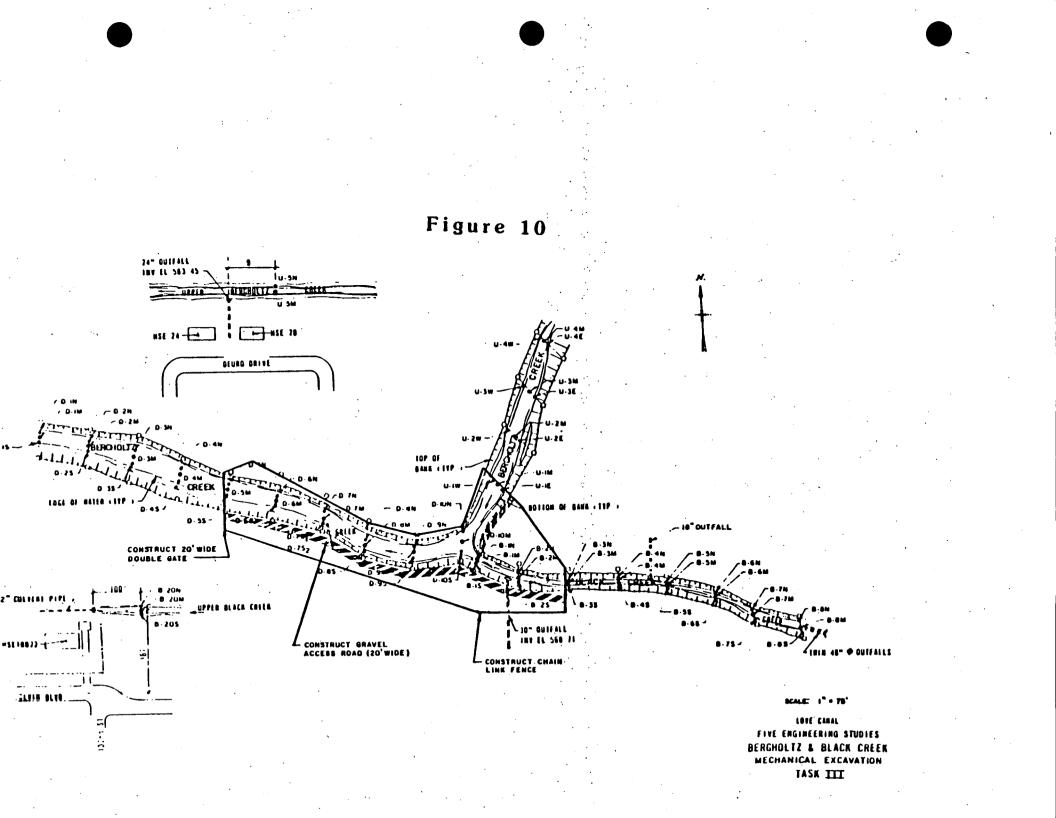
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study also identified dioxin in various creek and sewer sediments. Eleven samples proved positive, with six exceeding 1 ppb in the waterway sediments and five in the sewers. Figure 10 indicates where these positives were identified. Four sediment samples were taken by NYSDEC in the vicinity of the 93rd Street storm sewer outfall and analyzed by NYSDOH for dioxin during April 1984. Results revealed significant levels of dioxin (6.4-10.2 ppb). Sampling of Bergholtz Creek sediments by NYSDEC in the summer of 1984 indicated dioxin at 11 ppb as far downstream as 90th Street. The dioxin in the EDA has been found in sediment deposits. The potential has existed and will continue to be present for exposure since the location of the dioxin is found in creeks bordering residential areas. These are areas that are inhabited and are considered for rehabitation, and potential increased populations will subsequently increase the population at risk. Since dioxin is persistent in the environment; has been shown to bioaccumulate in the tissues of plants and animals; and has low solubility in water, the contamination will remain in the environment unless efforts are undertaken to contain it. This has been recognized in other cases such as U.S. v. Vertac, 489 F.SUPP. 870 (E.D. Arkansas, 1980), and in consent decrees, such as United States V. Hooker Chemicals and Plastics Corp., 450 F.SUPP. 1067 (W.D.N.Y., 1982), where Occidental Chemical Corporation agreed to clean up TCDD laden sediment from a local creek and clean out contaminated sediment in a storm sewer system. This consent decree demonstrates that TCDD remedial actions are feasible and have been ordered by the courts or agreed to by responsible parties.

There are several pathways of human exposure to contaminated waters and sediments, as summarized below:

- <u>Ingestion of fish.</u> A compelling rationale for the elimination of stream and sewer sediments as sources of TCDD is that the discharge of TCDD and TCDD-laden sediment from these sewers and streams is contributing to

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levels of TCDD in many fish in the Niagara River and Lake Ontario that exceed NYSDOH, Canadian, and Federal Food and Drug Administration health advisories (10 ppt, 20 ppt, and 25 ppt, respectively).

Chemical analyses of various species of fish indicate levels of TCDD up to 417 ppt (near Love Canal) and an average level of approximately 34 ppt. EPA and New York State have identified a limited number of sources of TCDD along the Niagara River and Love Canal is one of the most significant sources. TCDD concentrates at high levels in fish tissue from the water, sediment, and ingestion of other fish through what is known as biocon centration, bioaccumulation, and biomagnification. EPA, States, and other researchers have also detected significant levels of TCDD in fish near other TCDD sites, particularly sites in the State of Missouri and the State of Michigan.

The discharge of TCDD should, to the extent practicable, be eliminated from the streams and sewers to the Niagara River.

- <u>Sewer maintenance</u>. If maintenance is required on a typical sewer, standard practice would be to ventilate the sewers before entry and to use no special equipment, such as respirators. The no action alternative would necessitate the use of higher levels of protection for entry into the Love Canal EDA sewers in order to minimize worker exposure.
- Potential inhalation of volatile organics. Volatile organics were detected in some samples in the sewers. Although emissions through manholes or the outfalls will be dispersed to some degree by winds and atmospheric turbulence, there will remain the potential for the public to inhale volatile organics from the sewers.

- Surcharging of sediments to surface. Surcharging to within a few feet of the surface was observed in the manholes by Malcolm Pirnie. Surcharging of the sanitary sewers has been reported in the area of 91st, 92nd, 93rd Streets and Read Avenue during periods of high rainfall, and of the storm sewers to the surface along 93rd Street. Chemical concentrations in material surcharged to the surface will become diluted as mixing with water and surface material occurs. The amount of deposited sediment will depend on local conditions. Human exposure will depend on the duration of the condition (e.g., surface washing by city service, rain and chemical degradation will decrease concentrations), contact time, and the rates of soil ingestion, intestinal absorption, dermal absorption and inhalation of entrained soil. Potential backflow of sanitary sewer sediments to basements. Backflow preventers were not installed in the Love Canal EDA homes. Therefore. the potential exists that the sanitary sewer sediments may be discharged to the homes. If the discharge remains undetected, exposure to contaminated material may result.
- <u>Exfiltration to ground water</u>. The spread of contaminants that may have left pipes, may be enhanced in the Love Canal EDA by the absence of a drainage system to channel the groundwater away from the pipes. The shallow groundwater increases the potential release. Certain chemicals, such as benzene are highly soluble and may migrate with the groundwater.

Transport of creek sediment with stream flow will tend to decrease the concentrations over time, but this possibility is reduced by the continued loading from the storm sewer outfalls. Potential human exposure may occur in two scenarios:

- <u>Recreational activities.</u> Exposure will occur during swimming, wading or other recreation use of the creeks. Access is temporarily limited along Black and Bergholtz Creeks because of fencing along the banks down to the 93rd Street School grounds. While the general effect of fences is to reduce exposure, they can be breached, and therefore, are neither an effective nor a permanent remedy pursuant to CERCLA. Access to Cayuga Creek is open but the sediment here had the lowest concentrations. During recreational activities, water may be ingested or absorbed through the skin. The exposure factors and their uncertainty is much the same as discussed in the section on sewer surcharging. Ingestion of dried sediment along the creek banks is a potential additional exposure route.
- Potential migration to residential yards. A high rainfall rate and/or a high stage of the Niagara River could produce flooding of the creeks into local residential yards. The qualitative nature of the human exposure potential is much the same as discussed above for surcharged sewer sediments.

Correspondence (February 22, 1984) by the NYSDOH (Attachment I) states, "It is clear that the presence of Love Canal associated chemicals, especially dioxin, in the sewers and creeks does pose a direct threat to children playing in the creeks, and persons exposed to biota downstream subject to exposure to chemicals being washed down to them."

- The potential exists for contamination of the drinking water supply taken from the Niagara River through creek sediment transport and suspension of the 102nd Street outfall sediment.

The no-action alternative was thus eliminated based upon the existence of hazardous chemicals (especially dioxin) within the study area waterways and fish

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populations and the potential that exists for continued exposure to the local community.

6.10.3 SEWER REMEDIAL EVALUATION

The remedial options that are available for storm and sanitary sewers in surrounding areas are identical. Based on the sampling results, contamination exists at levels within the sewer sediments that warrant cleanup. The same sampling effort, however, indicated that the bedding material surrounding the sewers was quite clean and no remediation would be necessary for these areas. A positive note was that the sewers, barring minor defects, were structurally sound. As a result various alternatives were developed.

- o No-action While the no-action alternative for the sewer system has been rejected, portions of these lines were found relatively clean and would require no or minimal remediation.
- o Monitoring One option that exists is to periodically sample the sewers in lieu of a physical remediation measure. This may not be cost-effective in light of the high cost of analysis and the potential that a future cleanup may be required.
- o Abandonment in Place While this would be a detriment to future rehabitation efforts, cutting off or plugging the sewer lines and abandoning the system is a viable alternative. However, contaminant migration via exfiltration would remain a future threat. The structural integrity of lines is a major factor in evaluating the usefulness of the current system.
- o Television Inspection or Similar Methods Physical inspection of the sewers as a diagnostic tool should be performed in conjunction with any remediation. Defects such as offset joints, root intrusion, broken or collapse pipe and leaky connnections can be identified.

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- o Sewer Cleaning Numerous methods exist to remove accumulated sediment from existing sewer lines. Power rodding, hydraulic scouring and flushing, bucket dredging, suction cleaning with pumps or vacuums, chemical treatment or combinations of these are available.
- Sewer Repair Depending on the remedial option selected, sewer repair
 via grouting or pipe relining may be required to deter ground water
 infiltration and/or sewer exfiltration.
- o Removal and Replacement The actual excavation of portions of the sewers to remove contaminated pipe and bedding material followed by disposal is a possibility. This option is necessary when the degradation of the sewers and/or the degree of bedding contamination is sufficiently high to preclude current or future service via these

facilities.

The above alternatives were evaluated to arrive at a selected alternative. Certain assumptions were applied, many being derived from information accumulated during the sampling effort, these included;

- o The potential for sewer use to continue is high;
- o The physical, structural condition of the sewers is good;
- o The bedding material is basically uncontaminated;
- o The degree of contamination found in the sewers is significant;
- o The level of contaminants, though found in sediment (no standard exists), are high enough to present risk and, therefore, warrant concern;
- The creeks will continue to be the repository for this material if conditions remain unchecked;
- o Options selected would be consistent with remedial efforts at the 102nd Street Landfill to the degree feasible at this time.

The following recommendations were drawn from the evaluation:

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6.10.3.1 NORTH

All of the storm sewers (see Figure 11) should be cleaned utilizing a hydraulic flushing technique since this method would provide the most complete cleanup option. Of most concern are areas down gradient of Love Canal connection points located at 97th and 99th Streets. Also cleaned will be storm sewer tributary lines that may have been subject to surcharging and the 1,400 foot portion of Black Creek which is enclosed in corrugated metal pipes. All sanitary sewers (see Figure 12) will be cleaned.

6.10.3.2 SOUTH

All of the storm sewers (see Figure 13) in this area will be hydraulically cleaned. Of greatest significance are those lying down gradient of Love Canal connection points, i.e., 97th and 99th Streets and Wheatfield Avenue as well as tributaries to these areas. All sanitary sewers (see Figure 14) will be cleaned. Television inspection is recommended in three distinct locations to verify the presence of unknown connections and/or the existence and nature of structural pipe damage.

Of special concern is the relationship of this system to the 102nd Street Landfill. The Malcolm Pirnie report recommends cleaning of the storm sewers up to the landfill property line.

6.10.3.3 WEST

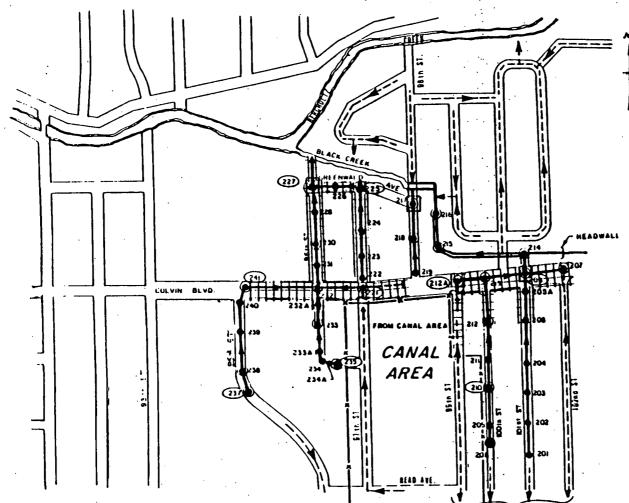
The storm sewers (see Figure 15) recommended to be hydraulically cleaned are those which have been contaminated due to overflow bypassing from the main intercepting sewer which collects all the wastewater flows from EDA. This bypassing occurs at Lift Stations No. 1, 4 and 5 and at 93rd Street and Colvin Boulevard. The majority of sanitary sewers (see Figure 16) will be cleaned and some television inspection will also be necessary. It should be noted that a

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Figure 11

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 (m) LINNE AND ESSINGLES CAMPLES
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- Cieve saure
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LEGEND

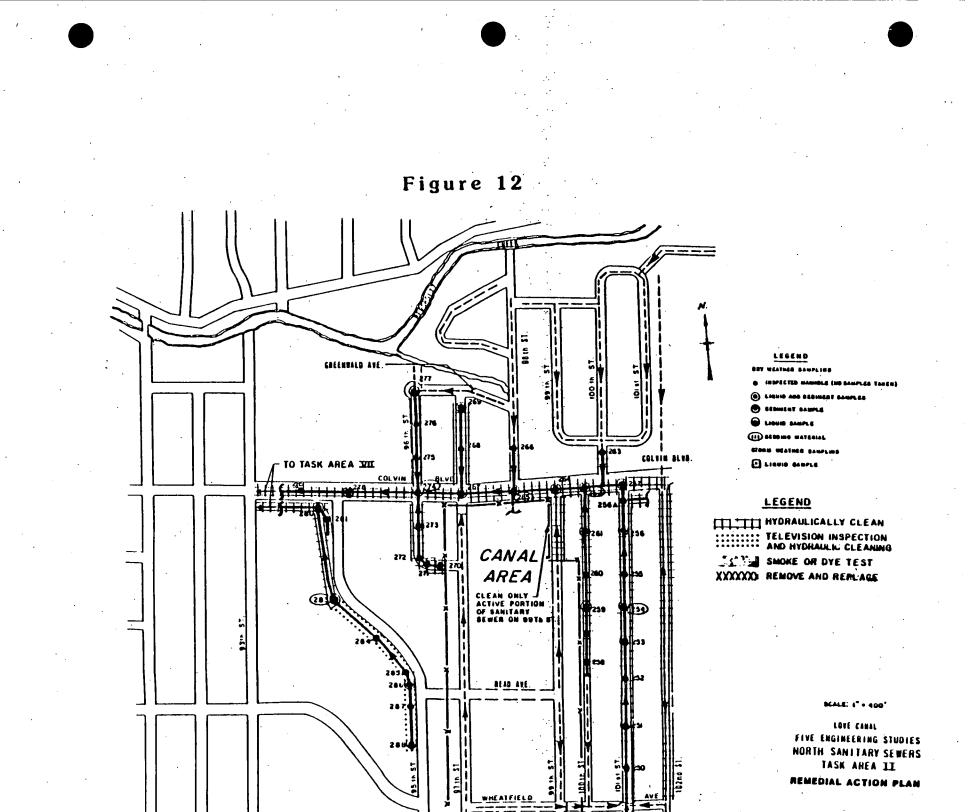
HYDRAULICALLY CLEAN HELEVISION INSPECTION AND HYDRAULIC CLEANING HELEVISION SMOKE OR DYE TEST

XXXXXXX REMOVE AND REPLACE

SCALE: 1" = 400"

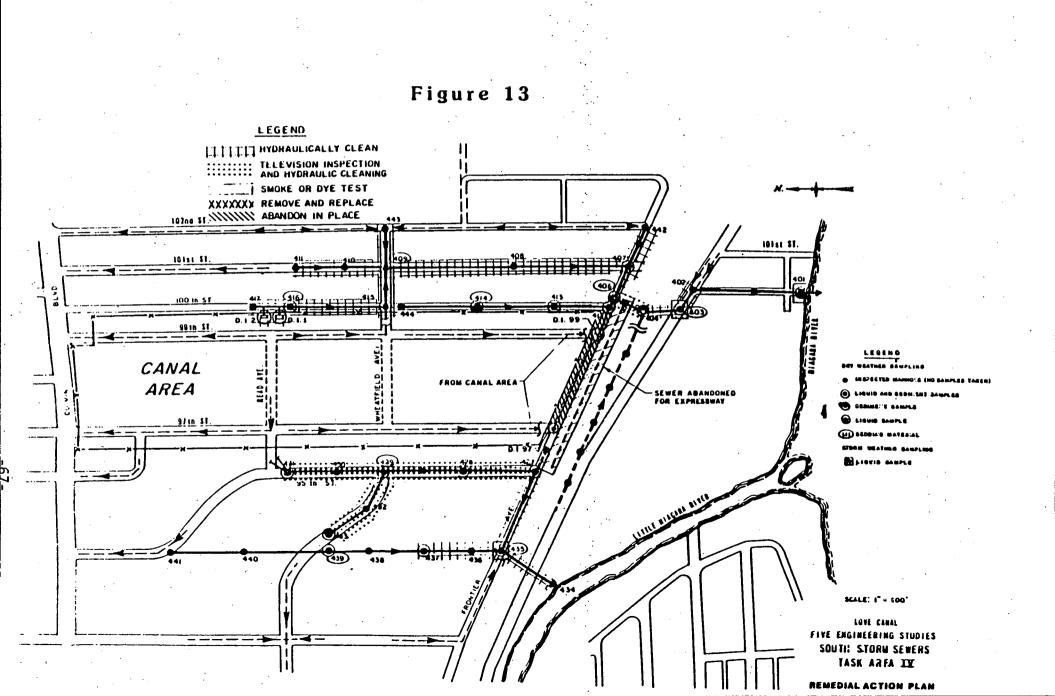
LOVE CANAL FIVE ENGINEERING STUDIES NORTH STORM SEWERS TASK AREA II

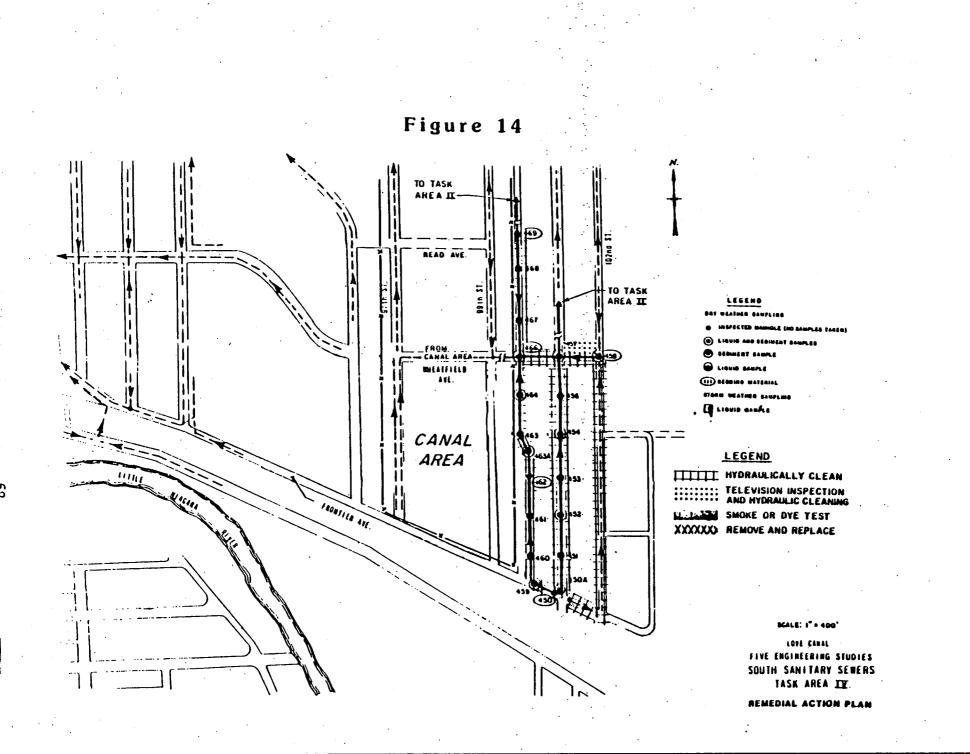
REMEDIAL ACTION PLAN

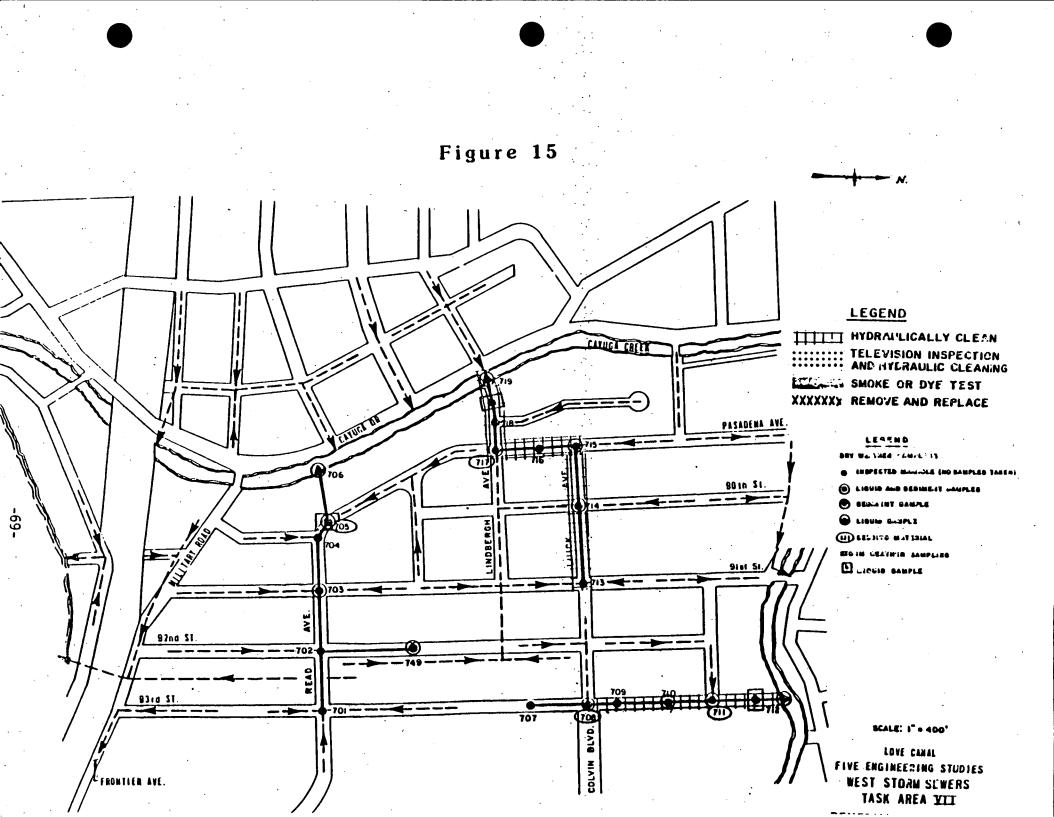


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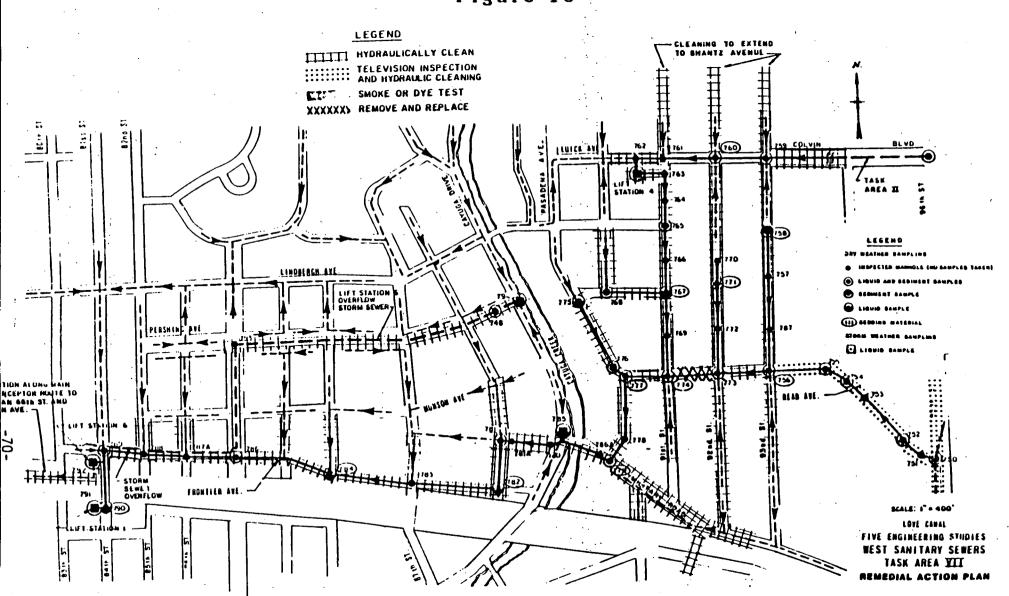


Figure 16

portion of the sewers recommended for cleaning are located outside the boundaries of the EDA.

Malcolm Pirnie had recommended that the segment of the main interceptor sanitary sewer from Lift Station No. 6 to the intersection of 66th Street and John Avenue be sampled for Love Canal related contaminants. CH₂M Hill, in their 1985 report, stated that due to the high probability that contamination will be found and remediation will be necessary, it appears to be more cost-effective to forego the costs of additional sampling (\$34,000) and proceed with the cleaning of this sewer segment (Approximate cost \$67,000). However, recent field investigations by the NYSDEC have shown that very little, if any, sediments are present in these downstream sections of sewer because the flows in these sewers are high enough to prevent sediment from settling out. NYSDEC will further investigate these sewers and if any sediments are found, the sediments will be sampled to see if they are contaminated.

6.10.4 BLACK AND BERGHOLTZ CREEKS REMEDIATION EVALUATION

The contamination assessment identified specific portions of Black and Bergholtz Creeks requiring remedial action. Cayuga Creek has been recommended for further sampling. The remedial alternatives assessed were included within the following major categories:

o No Action

o Restrict access

o Stabilization in-situ

o Removal and Disposal

o Combinations of the above

One major assumption applied was that any contaminated storm sewer or sanitary sewer overflows discharging to the creeks would be cleaned prior to implementing any creek remediation. Common to all alternatives would be the development of a detailed monitoring program to access the effectiveness of any option selected.

No Action - Beyond periodic sampling no remedial action in the creeks would involve leaving the sediment intact, therefore, this option is unacceptable for reasons explained above.

Restrict Access - This activity can be accomplished in numerous ways such as increasing public awareness, posting signs and erecting fences or a combination of these. The effectiveness of this option alone is considered very low. This is envisioned as a temporary measure.

In-Situ Stabilization - This involves the securing of contaminated sediments in place to minimize or prevent further contaminant migration. Options viable for this scenario would be the placement of small stones or filter fabric on the sediment, piping the creeks, and, treatment in place.

Removal and Disposal - Two major methods for creek sediment removal are hydraulic dredging and mechanical excavation. Various on-site and off-site disposal options exist which involve new (unproven) technologies. Transport to a secure landfill as well as interim storage at Love Canal are viable options.

The detailed evaluation included consideration of the following factors:

o Rehabilitation of the area is being evaluated and cannot be ruled out.

o There is presently an apparent stable population in the EDA.

o Creeks form the border of the EDA; therefore, there is a population that will always exist adjacent to the creeks.

o Dioxin has been found in the creeks at levels significantly higher than the one ppb CDC "action level" used at other sites. No standards currently exist for chemicals within sediment and, therefore, the impacts on the human population are unknown. Fish sampled in the study

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areas contain significant levels of dioxin, levels that exceed by over three times the FDA advisory levels.

Based on the above, the conclusion has been reached that the length of Bergholtz Creek from about 150 feet upstream of the confluence of Black Creek to the confluence of Cayuga Creek and the stretch of Black Creek from the 98th Street culverts to the confluence of Bergholtz Creek should be dredged. Of major concern is the dioxin that has been found in the sediment.

Sampling has indicated that the potential exists that Love Canal-related contaminants might have been discharged (or may be discharged in the future) to Cayuga Creek and ultimately the Niagara River. It is being recommended that Bergholtz Creek be cleaned to its confluence with Cayuga Creek, and that a sediment trap be placed there to deter the backflow of sediment. It has been assessed that Bergholtz Creek is just one point source of contamination, specifically dioxin, that may be entering Cayuga Creek. Additional sampling of Cayuga will determine a strategy for the remediation for this creek.

Black Creek must be mechanically excavated, because of engineering constraints associated with hydraulic dredging. The decision to go with either hydraulic dredging or mechanical excavation for remediating Bergholtz Creek will be finalized during the design phase. Both options have comparable capital costs. The selection will be dependent on technical considerations. If it is determined that the banks of Bergholtz Creek need to be cleaned, mechanical excavation can only be used since this method will adequately clean these sloped areas. Based upon settling tests that are planned during design to determine the filtering and dewatering characteristics of this clayey sediment, hydraulic dredging may be ruled out due to the high water content of the waste that will be generated.

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A significant issue associated with the removal of the contaminated sediment and debris from Black and Bergholtz Creeks is the disposition of these materials. At this time, no final decision has been reached regarding the disposition of these materials. The alternative that currently appears most promising is storage at the Love Canal Site until a facility is available for treatment (destruction) of the chemical contaminants (see Section 6.10.6).

6.10.5 102ND STREET OUTFALL REMEDIAL EVALUATION

Based on the contamination assessment performed by Malcolm Pirnie, an "action zone" map has been established which identified the areas of relatively high and medium contamination levels. Alternatives considered for alleviating the problem associated with contaminated sediments in this zone include:

- No action
- Temporary in-situ stabilization followed by removal and disposal or long-term stabilization
- Long-term in-situ stabilization
- Immediate removal and storage/disposal

A premise for the alternative evaluation was that the identified action zone lies adjacent to the 102nd Street Landfill site, which is currently being investigated in a separate CERCLA action. Since the contribution attributed to the 102nd Street Landfill site and the subsequent permanent, long-term remedial actions have not been established, the alternative selected here must be flexible to conform with effectiveness of the berm in containing all of the contaminant flow from the outfall. Also unknown is the percentage of contaminant that would overflow the berm considering the temporary nature of this structure. The discharge flow rate from the outfall must be determined and considered. The answers to these questions are necessary to adequately design the berm.

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Conceptually, however, this action provides for the mitigation of the sediment migration that is of the most concern.

If the rate of progress in the remedial progams under investigation by Occidental Chemical Corporation and Olin Corporation is satisfactory, and if the remedial program for the 102nd Street Landfill provides for remediation of the contaminated sediments in the Niagara River, then this task will be deleted from the Love Canal Superfund program.

6.10.6 STORAGE/DISPOSAL OF CONTAMINATED MATERIALS

The sediment which is proposed to be removed from the creeks and sewers is known to contain dioxin and therefore is subject to stringent disposal procedures. Approximately 16,000 cubic yards of sediment would be removed from the proposed cleaning of Bergholtz and Black Creeks and the sewers (280 cubic yards). The volume would increase to approximately 21,000 cubic yards if the creek banks are determined to require excavation. Removal to a secure landfill was considered, but no facilities were willing and/or able to take the wastes. Incineration was also considered but did not seem to be a viable alternative for the immediate future. However, these options may become more feasible and may prove to be the ultimate source of disposal.

Because the sediments can be removed more rapidly than they can be treated or disposed of, and because all treatment or disposal methods require preparation of the sediments (dewatering, sizing, etc.) all sediments must be stored. An interim secure storage facility meeting all technical requirements of RCRA appears to be the most promising alternative. The wastes will be stored until such time as one of the above means of disposal/destruction becomes available or until another method becomes technically feasible.

Construction of the storage facility could take place during the 1986 construction season with creek cleaning to follow and be complete in 1987.

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Since the sewer cleaning will take place in the fall of 1985 a dewatering facility similar to the one used for dewatering sediments during the first sewer cleaning operation at Love Canal is planned. The facility would have a double liner, leachate and leak detection systems, and would dewater from below. It would allow the sewer sediments to be removed during the fall of 1985, placed in a dewatering facility and eventually relocated to the interim storage facility upon its completion in 1986.

The type of storage facility, either earthen berm or concrete vault, will be determined during the design phase. The location of the facility must also be determined. Several places inside the Love Canal fence line are suitable. The potential locations for a concrete storage facility are restricted. The facility cannot be located over the capped areas of former residences within the fenced portion of Love Canal because of uncertain settlement problems. Also it is not desirable to place a concrete structure on the cap covering the canal proper because of uncertain settlement and potential slippage caused by the HDPE liner in the cap. The concrete storage facility can be located on the roadbed of 97th or 99th Street in the Canal area. An earthen berm facility would most likely be located in the southern portion of the Love Canal fenced area.

It should be noted that space requirements for the two types of facilities (concrete vs. earthern) are very different. The concrete facility would measure approximatley, 100 feet wide, 200 feet long, and 20-25 feet high, if placed on the road bed within the fence area at Love Canal proper. An earthern bermed facility used for hydraulically dredged sediments would measure approximatley 260 feet wide by 1250 feet long by 12 feet high. If used for mechanically excavated sediments an earthern berm facility could measure 260 feet wide by 12 feet high.

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A major factor influencing the selection of the type of facility will be the method which is finally chosen for dredging the creek sediments. Both options have comparable capital costs, therefore the selection will be based on technical considerations.

The increased surface area provided by the earthen berm facility (vs. the concrete vault design) is compatible with the dewatering and storage of sediment should they be hydraulically dredged. The greater surface suitable for efficient dewatering from below. If the facility is used to dewater hydraulically dredged sediments it may be a year or more before it could be closed.

Because of its lesser surface area a concrete vault would probable not be able to adequately dewater hydraulically dredged sediments. In the case where creek sediments where mechanically excavated, both the earthen berm and concrete facilities would be suitable for interim storage of the sediment.

6.10.7 CONSTRUCTION OF A PERMANENT ADMINISTRATION BUILDING

The existing on-site leachate treatment plant was completed in December 1979. During the 5+ years of plant operation, experience indicates that additional space is needed at the plant. Of major concern is the need for more space for storage of clean and contaminated equipment, materials, and supplies, and the need for additional facilities for personnel decontamination procedures.

Various options were evaluated. Rejected immediately were options that located an administration building off-site utilizing existing uninhabited structures, since the chance for off-site contamination would increase and security procedures would be more complex. On-site alternatives were evaluated that looked at the construction of additions to the existing facilities, erection of a new permanent building, or the placement of temporary (trailers) facilities.

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Since it is assumed that these facilities would be required for an indeterminate period of time and that a well constructed facility would be more costeffective than a lesser quality building that would require more frequent repair and/or replacement, the option to utilize temporary structures was dropped from consideration. In addition, a permanent facility would be in keeping with the long-term commitments made by the State of New York to maintain, indefinitely, the integrity of the Love Canal remedial work.

The new building will be constructed apart from the existing leachate treatment facility. The possibility of adding space to the existing leachate treatment facility is not an acceptable alternative for the following reasons:

- o There is no room adjacent to the existing facility. To the north of the plant is a parking lot/driveway which provides access to the carbon transfer platform behind the plant. To the east of the carbon transfer pad is the leachate collection drain. To the south are the sludge storage tanks and space dedicated to a proposed pilot scale plasma arc unit for use in the destruction of leachate treatment plant sludges. To the west is 97th Street.
- o By separating the two buildings, the chance of contamination of the proposed facilities is reduced. Despite all efforts and care in keeping the existing facility clean, there is a continuing potential for workers to carry contaminants on their person from the process room to the shower/toilet facilities and office.
- o Soils to the east of 97th Street are generally found to be chemically contaminated. The excavation of soils adjacent to the existing facility required to construct a foundation for an addition would likely result in the generation of contaminated soil requiring special handling and

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disposal. It appears possible to avoid the problem of contaminated soils by building on the west side of 97th Street.

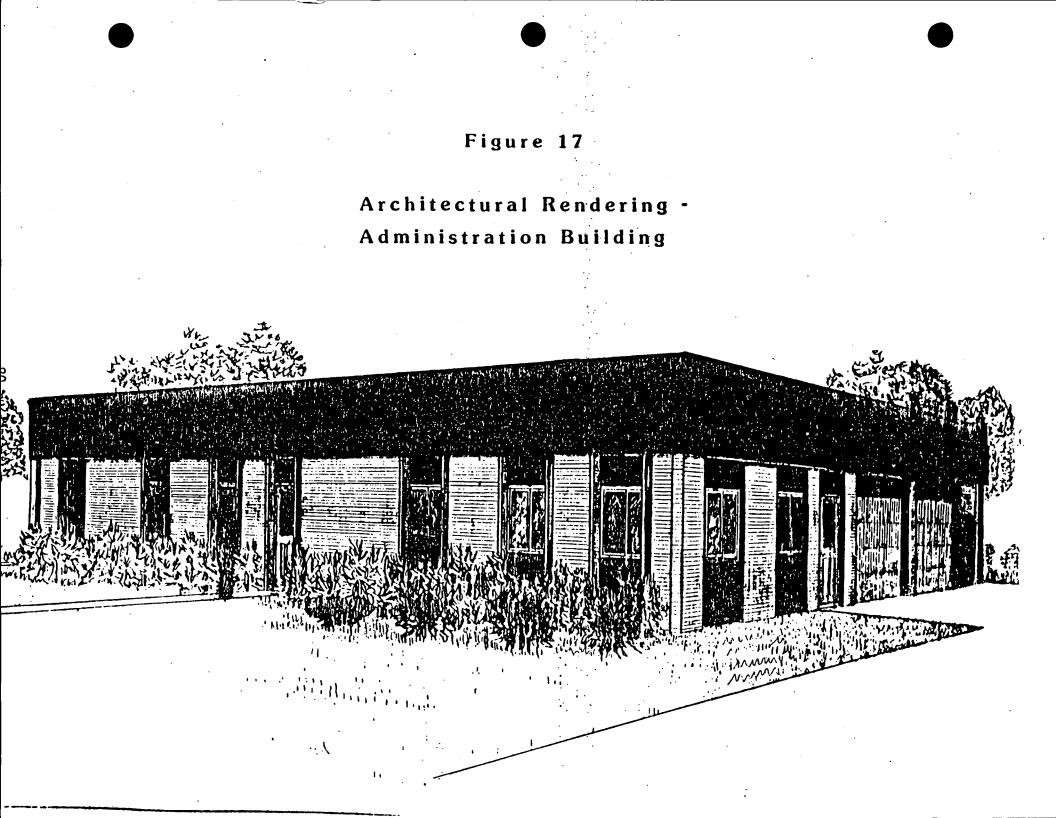
The NYSDEC has prepared plans and specifications for a permanent structure across from the existing leachate treatment facility (see Figures 17 and 18) that will include:

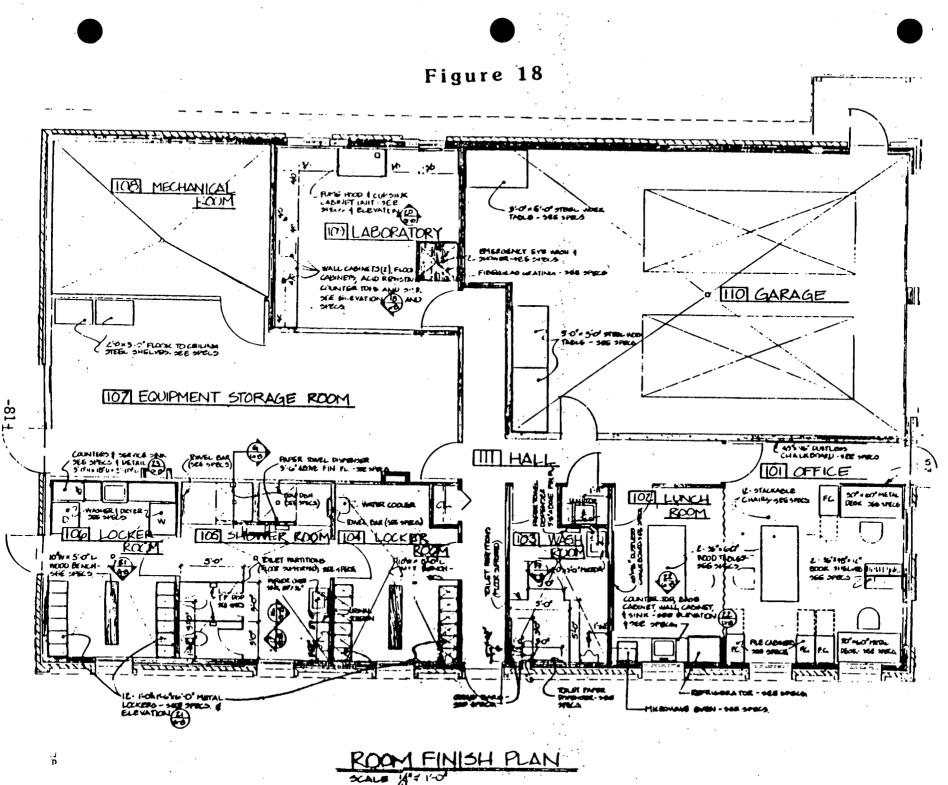
- Approximately 140 square feet of floor space for a locker room to store work clothes, work shoes, hard hats, etc., worn in the treatment plant and during maintenance activities on-site.
- Approximately 168 square feet of floor space for a clean shower/toilet area.
- o Approximately 140 square feet of floor space for a clean locker room to store clean clothing.
- Approximately 465 square feet of floor space for an office.
 Space is also provided within the office for a lunch room.
- Approximately 462 square feet of floor space for equipment storage and work space.
- o Approximately 704 square feet of floor space to serve to as a garage and workshop to house site dedication vehicles and equipment.
- o Approximately 210 square feet of floor space for utilities.
- o Approximately 222 square feet of floor space for a laboratory.

6.10.8 CONSISTENCY WITH OTHER ENVIRONMENTAL LAWS

This section compares the recommended action with the technical requirements established by other environmental laws (reference the proposed policy on CERCLA compliance with other environmental statues published in 50 FR 5928-32, February 12, 1985).

The recommended action, i.e., the cleaning of Love Canal sewers and creeks, have been reviewed for consistency with the technical requirements of the RCRA.





The remediation of the sewers and creeks will result in the collection of large amounts of contaminated material, complicated by the fact that it contains dioxin.

Currently, no RCRA permitted disposal facilities will accept the dioxin contaminated wastes, and at this time, there are no commercial incineration facilities for dioxin contaminated wastes. Therefore, this material will be placed in secure interim storage at the Love Canal site within the fenced in area. The interim storage facility will be consistent with the technical requirements of RCRA for the storage of dioxin contaminated wastes.

The facility will either be an earthen berm or a concrete vault. Design of the earthen bermed facility would include the following:

Installation of a synthetic membrane liner, e.g. high density polyethylene (HDPE) on the bottom of the facility to percent migration of wastes out of the facility. A compatability test using actual creek and sewer sediment leachate will be performed during detailed design to determine if HDPE is suitable for use as a liner for the storage facility.

- o Installation of both leak detection and leachate collection systems separated by a synthetic membrane liner. Sand will be utilized as the initial layer of the leachate collection system to facilitate sediment dewatering. A particle size distribution analysis of the sediment will be performed as part of the detailed design in order to properly size the sand and prevent blinding of the filter fabric and the leachate collection system.
- o Placement of a synthetic membrane liner along the inside and outside faces of the berms.

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- o Placement of drainage fabric along the inside face of the berm underneath the synthetic membrane liner to facilitate leak detection.
- Cap construction identical to the recently installed synthetic membrane liner system.

It is also possible for the contaminated material to be stored in a concrete facility. The concrete facility would also be constructed in a manner which is consistent with RCRA guidelines for storage of dioxin-contaminated wastes. Appropriate materials would be placed below the contaminated material to drain moisture out of the containment and keep groundwater from it. An impervious synthetic liner protected by layers of geotextile fabric on each side would be placed above the prepared base. Above this liner there would be a leak detection system. While this system should collect very little liquid, any liquid it did collect would be drained by gravity to a leak detection sump and pumped to the leachate treatment system.

A drainage collection system would be installed above the leak detection system and the concrete floor and would be covered with a layer of geotextile fabric. Collected leachate would also be sent to the leachate treatment system.

The concrete interim containment facility, when closed, would be covered with an impermeable cover to minimize water percolation, promote drainage, minimize erosion, accommodate settling, and minimize maintenance.

It should be noted that the storage facility location and design decided upon may impact possible plans for interim storage of sediments from possible future remediation of Cayuga Creek or the 102nd Street outfall.

The creek sediments will be placed directly into the facility while the sewer sediments would be dewatered and placed in the facility upon the completion of its construction. The sewer sediment dewatering facility itself will

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also be consistent with technical requirements of RCRA. The dewatering facility will be similar to the one originally used at the first sewer cleaning operation at Love Canal.

The approximately 650 drums containing hazardous waste presently at Love Canal will also be temporarily stored in accordance with technical requirements set forth in RCRA. Drums from 93rd Street School and used carbon from the Leachate Treatment Plant will also be stored at the Love Canal site in accordance with these requirements. The facility to store these drums will be within the fence area at the Love Canal and will be roofed. The drums will be placed on wooden pallets and underlain by a concrete pad. There will be walkways (two feet minimum) between drums to allow easy inspection. The drums may be moved to the larger interim storage facility when it is constructed in 1986.

The wastes will be stored until such time as on-site or off-site RCRA permitted incineration facilities are available or until a RCRA permitted landfill facility is willing to accept the waste. If the wastes are incinerated, the residue or ash will be disposed of at a RCRA permitted facility or retained on-site until the ash is delisted by EPA.

The remediation of the sewers and creeks will incur some temporary adverse environmental impacts. Table 6.10.8 (1) presents both short and long term impacts associated with the remedial alternatives. Work plans will address and incorporate measures to minimize possible effects of remedial activities.

6.10.9 RECOMMENDED ALTERNATIVES

The underlying goal of the remedial program at Love Canal has been to provide an environment as free of contamination as practically possible, within cost-effective guidelines. Actions that were selected for design and eventual implementation reflect activities necessary to protect the public and the environ-

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Table 6.10.8(1) Table 1-6 IMPACTS ASSOCIATED WITH LOVE CANAL REMEDIAL ALTERNATIVES

b) to mat fire			INPACTS
Alternative	Steps in Operation	Remedial Action Phase	Long-Term
1. <u>Sewers</u>			· · · · · · · · · · · · · · · · · · ·
a. No action	None	None	Continued sediment migration to creeks
			and sewage treatment facility. Continued potential public exposure to contaminants. See Chapter 3.
b. Hydraulically clean and repair.	 Run blower and plug sever section. 	Public contact minimized.	Potential for small amount of material to remain; minimized by TV inspection
	 Set up cleaning jet at downstream, collection manhole. 	Notice to residents of activity startup.	
	3. Perform cleaning operation (cleaning jet propels itself	Immediate cleanup if backup reported in house.	
х 	upstream and is then reeled back to collection manhole	Backflow to cleaned sever. Immediate cleanup if backup segments blocked.	
	 Manually or mechanically remove large debris (using shovels and buckets). 	Sewer demand decreased by per- forming action during dry season.	
	 Use suction equipment (sub- mersible pump and vacuum nozzle or vacuum truck) to remove sediments. 	Volatiles inside house minimized by opening windows.	
•	 Transport sediment/water to treatment/disposal facility. 	Dust emissions minimal because of sediment water content.	
	 Remove plugs from cleaned sewer section. 	Machinery noise during daylight work hours.	
	 Decon blower, jet cleaning equipment and truck, and tank truck. 	Truck Traffic to dewatering facility.	
	 Collect and treat decon wash water. 	Potential for discharge of cleaning water minimized by sewer plugs.	
	 TV inspection of cleaned segment. 		
2. <u>102nd Street Outfall</u>		• •	
a. No action.	Mone.	None.	Continued sediment migration. Continued aquatic life exposure. Continued poten- tial public exposure to sediments and contaminated fish. (See Chapter 3.)

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Table 1-6 IMPACTS ASSOCIATED WITH LOVE CANAL REMEDIAL ALTERNATIVES (Continued)

	Alternative			IMPACTS
		Steps in Operation	Remedial Action Phase	Long-Term
b.	Mitigate backflow * to sewer by repair to tidal gate.	 Remove rocks and debris from in front of headwall. 	One day of activity.	Mitigates potential backflow from outfall to storm sewer.
		 Mobilize backhoe and portable generator to top of headwall. 	Small disturbance of outfall sediment because any actions are at outfall.	Continued sediment migration in river.
	•	 Lower tidal gate into position on face of headwall. 	Negligible public exposure.	Continued aquatic life exposure.
		 Bolt tidal gate flange to headwall. 	Machinery noise at outfall during daylight work hours.	Continued potential public exposure to to sediments and contaminated fish. (See Chapter 3).
C.	* Immediate Stabiliza- tion			
	 Construct stone berm with timber sheeting. 	 Inspect intended berm location for large debris and remove debris as necessary (drill several borings along align- 	Little or no worker or equip- ment contact with sediment, unless when driving wall, debris or rocks are hit. Then	Berm/sheeting will need to be maintained to insure continued effectiveness.
•	•	 ment). 2. Beginning at shore line, use front end loader and bulldozer to transport and place stone. 	the wall will be pulled out, repositioned (or obstacle will be moved), and replaced. Some worker contact possible while repositioning sheeting.	
		 Use barge mounted pile driver to place timber sheeting (second barge may be necessary to guide sheeting). 	Sediments disturbed and possibly entrained during construction.	•
	2) Construct steel pile wall.	 Inspect wall location for debris, remove debris as necessary. 	See 2(c)1, except sediment disturbance lessened.	See 2(c)1.
		 Use barge-mounted drill rig to drill borings along wall align- ment to determine depth of river bed and identify locations of any buried debris. 		
		 Use barge-mounted pile driver to construct wall starting at shoreline (2nd barge will need to be used to guide sheet piling) 	•	

 * Work may be deferred pending implementation of 102nd Street Site Remedial Program

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Table 6.10.8(1) (cont'd) Table 1-6 IMPACTS ASSOCIATED WITH LOVE CANAL REMEDIAL ALTERNATIVES (Continued)

•			oncineed	•
	Alternative	Steps in Operation	Remedial Action Phase	IMPACTS Long-Term
d	d. Long-term remediation			Long-lena
	 In-place contain- ment (with 2(c)) or 2. 	 Construct stone berm or wall (See 2(c) 1 or 2 above). 	See 2(c)1.	See 2(c)1.
		 Dewater, backfill contained area and cap it. 	Haul trucks with fill.	None.
	2) 2(c) 1 or 2 follow- ed by removal using land based equipment		Potential for splashing workers as sediments are transferred from clamshell to truck.	None.
•		 Remove rip-rap along shore line and build berms or mud mats as necessary. 	Biota will be lost.	Biota community expected to reappear.
• • • • •		 Use shore-based drag line or clamshell on crawler crane to excavate sediments. 	Truck traffic to dewatering facility.	
87-		 Load excavated sediments into truck and transport sediments to dewatering/disposal facility. 		
•		 Excavate stone berm placing stone in truckstransport to disposal facility. Rebuild shore rip-rap to depth of excavation. 		•
	· · ·	 Decon dragline/clamshell, trucks, and/or other equipment. 		
3. <u>B</u>	lack Creek			
a	. No action.	None.	None.	Continued sediment migration. Continued potential public exposure. (See Chapter 3)

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Table 1-6 IMPACTS ASSOCIATED WITH LOVE CANAL REMEDIAL ALTERNATIVES (Continued)

	Altornativo			IMPACTS
	Alternative	Steps in Operation	Remedial Action Phase	Long-Term
b.	Mechanically excavate	 Construct access road along creek bank, clear, and grub. 	Public contact minimized o Restricted access during activities.	Potential for small fraction of contaminated sediment to remain.
		 Construct berms up and down- stream and dewater between using pumps. 	 Volatile emissions negli- gible because no volatiles detected in sediment. 	Creek blota community expected to renew.
		 Use backhoe to excavate sediments and place them in a watertight truck. 	o Dust emissions minimal - Wet state of sediment - Cleanup of spills on banks	
ı	· · · · · · · · · · · · · · · · · · ·	 Transport sediments to de- watering/disposal facilities. 	 Sediment transport will be in leakproof trucks operating over short distance. 	
		 Remove earth berms and dispose of at hazardous waste facility. 	Temporary haul roads.	
-		 Decon excavating equipment and truck, etc. 	Machinery noise during daytime work hours.	
			Creek blota will be lost.	
с.	Construct tidal gate or sediment trap at confluence conjunc- tion with 3.b. above.	 Excavate approximately 18 inches in Black Creek (at confluence with Bergholtz Creek). 	Negligible addition to 3.b.	Prevents backflow of Bergholtz Creek sediments to Black Creek if two creeks not cleaned concurrently or are cleaned by different methods.
·		 Mix and pour concrete to form tidal gate/sediment trap. 		by different methods.
		 Continue with steps 6 and 7 above. 		•
. <u>Ber</u>	gholtz Creek & Beyond			
a.	No action.	None.	None.	Continued sediment migration. Continued aquatic life exposure. Continued potential
				public exposure to sediment and contaminated fish. See Chapter 3.
b.	Mechanically excavate.	 Construct temporary berm at mouth of Black Creek to use as stream crossing. 	See 3.b. Numerous trips (more than 1,400) by haul truck to deposit sediments. Would block some streets at	Potential for small residential fraction of contaminated sediment to remain.
		 Follow steps 1-6 under 3.b. above, except use frontend loader and clamshells. 	times. Noise and possible dust emissions.	

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Table 1-6 IMPACTS ASSOCIATED WITH LOVE CANAL REMEDIAL ALTERNATIVES (Continued)

Alternative	Stong in Operation		IMPACTS Long-Term	
	Steps in Operation	Remedial Action Phase		
c. Hydraulically excavate.	 Construct temporary berm at mouth of Black Creek to use as stream crossing. 	Potential contact reduced because of closed transport in pipes.	Creek biota community expected to renew.	
	 Construct berms up and down- stream and dewater between. 	Potential pipeline leaks minimized by double walls.	Potential residual contamination; banks cannot be remedied using hydraulic dredge.	
	 Construct access road, clear, and grub. 	Volatile emissions minimal because no volatiles detected in sediments. (91st Street and Colvin Boulevard)	Dewatering facility may be open for year(s) to allow sediments to dewater and stabilize.	
	 Manually remove large debris; reflood. 	Bridges required where pipe crosses road.		
	5. Use mud cat to dredge sediments.	Machinery noise during work hours.		
	Dewater and inspect; reflood and redredge if necessary.	÷.,		
	 Remove earth berms and dispose of at hazardous waste facility. 	Creek biota will be lost.		
	 B. Transport sediment to disposal facility. 	Pipelines (two; each is one mile long) must be in place throughout; pumps will run continually. Haul trucks will carry debris through streets.		
	Dewater dredge spoils and treat filtrate.		•	
	10. Decon mud cat, truck, dewatering pump, piping, etc.			
Sediment Dewatering		· · ·		
a. Mechanically dewater.	 Transport sediment in water tight truck or pipe sediment to dewatering facility. 	Sediment compression may emit volatiles. Minimal dust emission because sediment still wet and is dropped into covered container.	Action is an intermediate stage of remedial action. Sediments are removed to Interim Storage (See #7). No long term impacts from action.	
	 Feed sediment onto vacuum filter and air press. 			
	 Remove filter cake and transport to disposal facility. 			

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6.

Table 1-6 IMPACTS ASSOCIATED WITH LOVE CANAL REMEDIAL ALTERNATIVES (Continued)

<u>n</u>
•
diments r a year;
l then.
O gallons) to itment facility ed sediments.
gallons) to itment facility ited sediments;
•
•
c dredging used, bed for over a enance needed for in be capped hlly excavated

4. Fine grade and install second synthetic liner.

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Table 1-6 IMPACTS ASSOCIATED WITH LOVE CANAL REMEDIAL ALTERNATIVES (Continued)

Alternative				
		Steps in Operation	Remedial Action Phase	IMPACTS
	5.	Place granular material and		Long-Term
		piping for leachate collection		· .
• • • •		system.		
	6.	Deposit sediments and decon all		
	. ••	contacted equipment.		• .
· · · ·	-			
	1.	Construct cover including instal	-	• · · · · ·
		Jacion of a synthetic liner		
		(May be some delay in covering in facility is used for dewatering).	f	
			•	•
•	8.	Topsoil and seed cover.		
b. Construct a concrete	1	Frequence and a second	·•• •	•
structure (Times	••	Excavate soils and install synthetic membrane.	See 7a.	See 7a.
Beach vault)		-, sener te memini dile.	·	Aesthetic impact different them a
			· ·	WINCE VOULL WOULD DA Pallage L.A
· .		. ,		Unity one-fifth as long Vanite and
· · ·	2.	Place drainage gravel and	·	capped sooner than 7a.
		geotextile layers.		
	_		•	
	3.	Pour 8" reinforced concrete		
		and coat with polymeric asphalt.	· ·	
.'	4.	Place drainage gravel and	· · ·	
·		geotextiles to act as loachate	•	
,		collection system.		
	5.	Similarly construct concrete		
		sidewalls.		•
· · ·			· ·	
· · · ·	6.	Follow steps 6-8 in 7.a.,	•	
· · · · · · · · · · · · · · · · · · ·		except no delay in covering.		
Offsite Disposal				
		•	·	
	· 1.	Open storage facility, remove	Opening of storage facility	• · · ·
		sediment.	and removal of sediments could	Facility must be maintained or demolished
· .			generate dust, release	once empty.
			volatiles. Will take several	
			openings to remove material. Many trucks required to make	
. ·			1,500 mile trip: possible	
			accidents/incidents. Treatment/	•
		(isposal should have no more	
· · ·		. (than "normal" impacts at disposal sites.	

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Table 1-6 IMPACTS ASSOCIATED WITH LOVE CANAL REMEDIAL ALTERNATIVES (Continued)

Alternative	Steps in Operation	Remedial Action Phase	IMPACTS
			Long-Term
	2. Load sediment on truck.	· · · · ·	
	3. Transport to site & unload.		
•	4. Treat or dispose.		
· · · ·	5. Decon all equipment.	•	
9. Incineration		· · · ·	
a. Construct facility onsite.	1. Construct incinerator.	If operated within the regula-	Several years to build; at least one year
	2. Open storage facility.	tions, emissions and incinerator operations should not pose a	of operation necessary; storage facility would essentially remain open entire
	 Transport dewatered sediment to incinerator. 	risk thresy to workers or residents. Materials must be prepared (ground up, dried). Handling and transport of	period. Landfilling of residual may necessitate construction of new facility at Love Canal, or transport to offsite facility (See 8).
· · · ·	4. Incinerate sediment.	sediment will release dust, volatiles, and will generate	
2	 Transport ash to secure landfill for disposal. 	noise. Incinerator will generate noise, ash, and steam. Must have building to house it.	

b. Use mobile incinerator

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Same as 9.a. except step 6 would involve demobilization of incinerator equipment.

6. Decon equipment.

Must have building to house it. Transport of ashcould result in spills. May require addi-tional area to accommodate all of equipment. Cooling water must be treated.

Sce 9.a.

Same as 9.a., except incinerator would be onsite from 1 to 29 years and mobilization would be much shorter.

ment from the hazardous situation that exists. The sewers should be cleaned and the contaminated creek sediments dredged as previously described.

There will be on-site interim storage of the contaminated sediment at the Love Canal site. To assure that this waste will remain secure on-site until ultimate disposal, the interim storage facilities will be constructed in accordance with the technical requirements of RCRA.

The construction of a permanent administration building will provide adequate and safe working conditions for site employees and will be consistent with the State's long-term commitment at the Canal.

6.10.9.1 COST

Table 6.10.9.1 (1) shows the costs associated with the feasible alternatives for remedial action as estimated by CH2M Hill. These costs are order of magnitude estimates and are expected to be accurate within a range of +50 and -30 percent.

The NYSDEC will continue as remedial lead agency on the project. Therefore, costs for NYSDEC's administration management activities have also been estimated. Under CERCLA, the site has been classified as a 90 percent Federal and 10 percent State cost-sharing site.

6.10.9.2 SCHEDULE

Commence Construction of the sewer sediment dewatering facility	Fall 85
Commence Sewer Cleaning Work	Fall 85
Commence Sampling of Cayuga Creek and the banks of Bergholtz and Black Creeks	Fall 85
Commence Construction of interim storage facility	Summer 1986
Creeks cleaned	Fall 1986 - Summer 1987
93rd Street School investigations	Spring 86
Commence Construction Administration building	Fall 85
Commence Construction Drum storage facility	Fall 85

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Table 6.10.9.1(1)

Table 1-7

SUMMARY OF ESTIMATED COSTS FOR FEASIBLE ALTERNATIVES

	Alternative	Total Present Worth (\$)
Sew	er Remediation and Repair	
1.	No Action	
2.	Cleaning	1,348,000
3.	Abandon in-place and replace with new line	7,080,000
102	nd Street Outfall Remediation *	•,
1.	Immediate Stabilization	
	- No Action	
	- Filter Fabric and Stone	207,000
	- Berm with Timber Sheeting	509,000
	- Steel Pile Wall	636,000
2.	Long Term Remediation	
_	- No Action Subsequent to Berm or Wall	
	- In-Place Containment	598,000
	- Removal Using	
•		
•	Shore Based Equipment	350,000
, Cree		350,000
	Shore Based Equipment	350,000
1.	Shore Based Equipment ek Remediation No Action	350,000
1.	Shore Based Equipment	
1.	Shore Based Equipment <u>ek Remediation</u> No Action Hydraulic Dredging of Bergholtz Creek - 1983 EID limits only	 700,000
1.	Shore Based Equipment <u>ek Remediation</u> No Action Hydraulic Dredging of Bergholtz Creek - 1983 EID limits only - 1983 EID limits plus 1st incremental reach	 700,000 798,000
1. 2.	Shore Based Equipment <u>ek Remediation</u> No Action Hydraulic Dredging of Bergholtz Creek - 1983 EID limits only - 1983 EID limits plus 1st incremental reach - Above Plus 2nd Incremental Reach (PROBABLE AREA)	 700,000
1. 2.	Shore Based Equipment <u>ek Remediation</u> No Action Hydraulic Dredging of Bergholtz Creek - 1983 EID limits only - 1983 EID limits plus 1st incremental reach	 700,000 798,000 1,026,000
1. 2.	Shore Based Equipment Ex Remediation No Action Hydraulic Dredging of Bergholtz Creek - 1983 EID limits only - 1983 EID limits plus 1st incremental reach - Above Plus 2nd Incremental Reach (PROBABLE AREA) Mechanical ExcavationLand-Based Clamshell - 1983 EID limits	 700,000 798,000 1,026,000 165,000
1. 2. 3.	Shore Based Equipment Ex Remediation No Action Hydraulic Dredging of Bergholtz Creek - 1993 EID limits only - 1983 EID limits plus 1st incremental reach - Above Plus 2nd Incremental Reach (PROBABLE AREA) Mechanical ExcavationLand-Based Clamshell - 1983 EID limits - 1983 EID limits	 700,000 798,000 1,026,000
1. 2. 3.	Shore Based Equipment Ex Remediation No Action Hydraulic Dredging of Bergholtz Creek - 1983 EID limits only - 1983 EID limits plus 1st incremental reach - Above Plus 2nd Incremental Reach (PROBABLE AREA) Mechanical ExcavationLand-Based Clamshell - 1983 EID limits	 700,000 798,000 1,026,000 165,000
1. 2. 3.	Shore Based Equipment Ex Remediation No Action Hydraulic Dredging of Bergholtz Creek - 1993 EID limits only - 1983 EID limits plus 1st incremental reach - Above Plus 2nd Incremental Reach (PROBABLE AREA) Mechanical ExcavationLand-Based Clamshell - 1983 EID limits - 1983 EID limits - 1983 EID limits plus 1st incremental reach Mechanical ExcavationTracked Front End	 700,000 798,000 1,026,000 165,000
1. 2. 3.	Shore Based Equipment Shore Based Equipment A Remediation No Action Hydraulic Dredging of Bergholtz Creek - 1983 EID limits only - 1983 EID limits plus 1st incremental reach - Above Plus 2nd Incremental Reach (PROBABLE AREA) Mechanical ExcavationLand-Based Clamshell - 1983 EID limits - 1983 EID limits plus 1st incremental reach Mechanical ExcavationTracked Front End Loader (and Clamshell as needed) - 1983 EID limits	 700,000 798,000 1,026,000 165,000 225,000 184,000
1. 2. 3.	Shore Based Equipment Ex Remediation No Action Hydraulic Dredging of Bergholtz Creek - 1983 EID limits only - 1983 EID limits plus 1st incremental reach - Above Plus 2nd Incremental Reach (PROBABLE AREA) Mechanical ExcavationLand-Based Clamshell - 1983 EID limits - 1983 EID limits - 1983 EID limits plus 1st incremental reach Mechanical ExcavationTracked Front End Loader (and Clamshell as needed) - 1983 EID limits - 1983 EID limits - 1983 EID limits plus 1st incremental reach	 700,000 798,000 1,026,000 165,000 225,000 184,000 248,000
1. 2. 3.	Shore Based Equipment Ex Remediation No Action Hydraulic Dredging of Bergholtz Creek - 1993 EID limits only - 1983 EID limits plus 1st incremental reach - Above Plus 2nd Incremental Reach (PROBABLE AREA) Mechanical ExcavationLand-Based Clamshell - 1983 EID limits - 1983 EID limits plus 1st incremental reach Mechanical ExcavationTracked Front End Loader (and Clamshell as needed) - 1983 EID limits - 1983 EID limits - 1983 EID limits plus 1st incremental reach Above, Plus 2nd Incremental Reach (PROBABLE AREA) - Black Creek only (PROBABLE AREA)	 700,000 798,000 1,026,000 165,000 225,000 184,000 248,000 1,178,000
1. 2. 3.	Shore Based Equipment Ex Remediation No Action Hydraulic Dredging of Bergholtz Creek - 1993 EID limits only - 1983 EID limits plus 1st incremental reach - Above Plus 2nd Incremental Reach (PROBABLE AREA) Mechanical ExcavationLand-Based Clamshell - 1983 EID limits - 1983 EID limits plus 1st incremental reach Mechanical ExcavationTracked Front End Loader (and Clamshell as needed) - 1983 EID limits - 1983 EID limits - 1983 EID limits plus 1st incremental reach Above, Plus 2nd Incremental Reach (PROBABLE AREA) - Black Creek only (PROBABLE AREA)	 700,000 798,000 1,026,000 165,000 225,000 184,000 248,000
, <u>Cree</u> 1. 2. 3. 4.	Shore Based Equipment Ex Remediation No Action Hydraulic Dredging of Bergholtz Creek - 1983 EID limits only - 1983 EID limits plus 1st incremental reach - Above Plus 2nd Incremental Reach (PROBABLE AREA) Mechanical ExcavationLand-Based Clamshell - 1983 EID limits - 1983 EID limits plus 1st incremental reach Mechanical ExcavationTracked Front End Loader (and Clamshell as needed) - 1983 EID limits - 1983 EID limits - 1983 EID limits - 1983 EID limits plus 1st incremental reach Loader (and Clamshell as needed) - 1983 EID limits - 1983 EID limits plus 1st incremental reach - Above, Plus 2nd Incremental Reach (PROBABLE AREA)	 700,000 798,000 1,026,000 165,000 225,000 184,000 248,000 1,178,000 120,000
1. 2. 3.	Shore Based Equipment Ex Remediation No Action Hydraulic Dredging of Bergholtz Creek - 1993 EID limits only - 1983 EID limits plus 1st incremental reach - Above Plus 2nd Incremental Reach (PROBABLE AREA) Mechanical ExcavationLand-Based Clamshell - 1983 EID limits - 1983 EID limits plus 1st incremental reach Mechanical ExcavationTracked Front End Loader (and Clamshell as needed) - 1983 EID limits - 1983 EID limits plus 1st incremental reach Mechanical ExcavationTracked Front End Loader (and Clamshell as needed) - 1983 EID limits - 1983 EID limits plus 1st incremental reach - Above, Plus 2nd Incremental Reach (PROBABLE AREA) - Black Creek only (PROBABLE AREA) Additional Sampling Bergholtz and	 700,000 798,000 1,026,000 165,000 225,000 184,000 248,000 1,178,000

Source: Love Canal Sewer and Creek, Remedial Alternatives, Evaluation and Risk Assessment, EPA 138.2105.0, Volume I, March 1985.

*Work may be deferred pending implementation of 102nd Street site Remedial Program.

On-Site Storage

1.	Above-Cap, Earthern Berm - Mechanical Excavation/5,000 cy - Hydraulic Dredging/5,000 cy - Hydraulic Dredging; 21,000 cy (Probable - Hydraulic Dredging/135,000 cy	803,000 829,000 Volume) 1,131,000 4,924,000
	Alternative	Total Present ¹ Worth (S)
2.	Concrete Vault - Minimum Volume, 5,000 cy - Probable Volume, 21,000 cy - Maximum Volume, 135,000 cy	509,000 1,135,350 7,298,000
Tran	sport of Sediment, Dewatering and Leachate V	later Treatment
1.	Sewer Sediments Dewatering/Love Canal Leachate Treatment Plant - Mechanical Dewatering - Clarification/Filtration/Mechanical	391,000
	Dewatering - Temporary Steel Walls/Passive Dewatering	683,000 280,000
2.	Transport and Dewatering of Mechanically Excavated or Hydraulically Dredged Creek Sediments Costs Are Contained in Creek Remediationand Interim Storage Costs.	12,900,000-18,060,000
<u>Off-</u>	Site Incineration	
1. 2. 3.	Rollins: 5,000 cy Rollins: 21,000 cy Rollins: 135,000 cy	7,900,000-9,400,000 18,000,000-31,500,000 206,900,000-247,400,000
<u>On-S</u>	ite Incineration	
1. 2. 3. 4. 5. 6. 7. 8. 9.	EPA Mobile Incinerator: 5,000 cy EPA Mobile Incinerator: 21,000 cy EPA Mobile Incinerator: 135,000 cy Huber AER: 5,000 cy Huber AER: 21,000 cy Huber AER: 135,000 cy ENSCO Mobile Incinerator: 5,000 cy ENSCO Mobile Incinerator: 21,000 cy ENSCO Mobile Incinerator: 135,000 cy	4,800,000-7,100,000 15,600,000-42,000,000 86,300,000-147,500,000 6,700,000-8,100,000 12,900,000-18,060,000 111,200,000-148,300,000 5,400,000 16,800,000 91,300,000

¹In 1984 dollars.

6.11.0 ADDITIONAL PHASE III REMEDIAL ACTIVITIES PLANNED FOR THE LOVE CANAL SITE

As previously discussed, additional remedial work (Phase III) is planned for the Love Canal area. This Section provides a brief description of each of the planned activities, a rough estimate of the cost, and a brief discussion of the factors which may affect the timely initiation and completion of the work.

Plans and specifications for all future work will be publicly presented and available for public inspection. Consideration will be given to all comments received in the finalization of plans.

6.11.1 TASK: PERIMETER SURVEY/IMPLEMENTATION OF THE LONG-TERM MONITORING PROGRAM

It is planned that the NYSDEC will initiate a "Perimeter Survey" and begin the implementation of the permanent long-term monitoring system for the Love Canal site in the fall of 1985. This task consists of the following elements of work which are intended to meet the objectives described below:

a. A number of shallow groundwater monitoring wells will be installed at locations surrounding and near the perimeter of the Love Canal Site (the green chain link fence). Water samples will be collected from these wells and analyzed to determine if the near surface groundwater system has been significantly contaminated by past migration from the Love Canal Site. If significant contamination attributable to Love Canal is found in any wells, then additional wells located at greater distance from the Love Canal will be installed until the areal extent of significant contamination in the shallow groundwater system is established by a series of monitoring wells completely encircling the site.

b. Once the extent of significant contaminant migration is determined in the shallow groundwater system, soil samples will be collected in the vicinity of these "perimeter" wells. These samples will be collected and analyzed to

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determine if soils which people might come into contact with are significantly contaminated with chemicals attributable to the Love Canal Site. If soils are found to be significantly contaminated with chemicals attributable to Love Canal, additional soil samples will be taken at greater distances from the site until the areal extent of significant surficial and near surface soil contamination is determined.

It is the intent of the NYSDEC to use the information collected pursuant to the perimeter survey (steps a and b) to determine the extent of significant contaminant migration away from the Love Canal Site via the shallow groundwater system and surface runoff. These wells would be periodically resampled to confirm that contaminants are not migrating further from the site via the shallow groundwater system. It is the NYSDEC's intent that this program would provide information sufficient to define the limits of an area where certain uses of the where certain uses of the land should be restricted. Such restrictions might include bans on or limitations on depths of excavations, bans or restrictions on use of the area for residential purposes, etc.

c. A number of wells will be installed directly into the Love Canal Site in order to monitor liquid elevations within the waste. The purposes of these wells are to better monitor the effectiveness of the leachate collection system to remove mobile liquids from the interior of the landfill. A number of wells will also be installed near the Love Canal site and completed at depths within the bedrock underlying the site to better evaluate if or what potential exists for the contamination of the bedrock groundwater system. The information obtained from these monitoring wells will also provide insight into the need and the feasibility of additional efforts to dewater the actual landfill.

d. At a number of locations a series of closely spaced wells will be installed at several different depths within the overburden. These wells will

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be installed relatively close to the barrier drain. Water elevations taken in these wells will better define the control the leachate collection system has on the shallow groundwater system. Water samples will also be collected from these wells periodically to monitor the effect the drain has on the chemical quality of the shallow groundwater system as time passes.

The estimated cost of this work is approximately \$2 million for the first year. Costs for subsequent years will be dependent on the number and types of chemical analyses which must be performed. The number and types of chemical analyses which must be performed will be better known after the first year's data are evaluated.

The factors which might affect the scheduling of this work are:

a. Procurement of a contract for the services required to carry out the perimeter survey and implement the long-term monitoring program. At this time the NYSDEC intends to extend its existing contract with the E.C. Jordan Company to perform this work. E.C. Jordan Company has already collected and analyzed a series of soil samples from around the Love Canal Site and is now (March 1985) finalizing a report presenting the design of a long-term groundwater monitoring program for the Love Canal Site.

b. Finalization of detailed protocols, plans and specifications for the installation of wells, collection and analysis of samples, and health and safety plans.

6.11.2 TASK: SEWER CLEANING

It is planned that the NYSDEC will procure a contractor to clean the storm and sanitary sewers which drained from the Love Canal Site or might have been contaminated by drainage from the Love Canal Site. This work is scheduled to begin in the fall of 1985. This task consists of the following elements of work:

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a. Contaminated sediments will be removed from the storm and sanitary sewers by hydraulically cleaning the sewers. If necessary, large accumulations of sediment and debris will be removed mechanically and then the sewers will be hydraulically cleaned.

b. The sewers will be inspected by remote television cameras to ensure that contaminated sediments are removed.

c. Sediment and debris removed from the sewers will be dewatered and indefinitely stored at the Love Canal Site until the final method of disposal is determined. The estimated cost of this work is approximately \$2.4 million.

The factors which might affect the scheduling of this work are:

a. Approval by USEPA of the NYSDEC's application for Federal funding pursuant to CERCLA.

b. Development of final contract and bidding documents describing the sewer cleaning; including health and safety plans.

c. Timely procurement of a contract with a responsive, responsible contractor to perform this work.

6.11.3 TASK: ADMINISTRATION BUILDING

It is planned that the NYSDEC will begin construction of a new building to supplement facilities provided in the Love Canal leachate treatment plant. The new building will be located immediately west of the leachate treatment plant and will be approximately 40 feet by 70 feet in size. The new building will provide the following necessary facilities:

a. Additional office and storage space;

Improve personal hygiene facilities for added worker comfort and safety;
 and

c. A small laboratory to perform some chemical analyses needed to monitor plant operations.

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The estimated cost for the construction of the new administration is approximately \$500,000.

The factors which might affect the scheduling of this work are:

a. Approval by USEPA of the NYSDEC's application for Federal funding pursuant to CERCLA;

b. Development of final plans and specifications for the building; and

c. Procurement of a contract with a responsive, responsible contractor for construction of the building.

6.11.4 TASK: REMOVAL OF CONTAMINATED SEDIMENTS FROM BLACK AND BERGHOLTZ CREEKS

It is planned that contaminated sediments be removed from Black and Bergholtz Creeks. This work is currently planned for commencement in late summer 1986.

Removal of the contaminated sediments from Black and Bergholtz Creeks involves the following major elements of work:

a. Collection and analysis of additional sediment samples to better define the areal extent of the contaminated sediments.

b. Removal of the contamination sediments from the creeks by hydraulic or mechanical dredging techniques.

c. Dewatering of the contaminated sediments and proper preparation for disposal.

The estimated cost of this work is unknown at this time. The costs are dependent upon the amount of the extent of contamination in and possible adjacent to the creeks and the means of disposal selected. The factors which affect the scheduling of this work are:

a. Approval by USEPA of the NYSDEC's application for Federal funding pursuant to CERCLA. The existing funding request should enable the extent of the problem to be better defined and a means of sediment disposal identified.

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b. Development of final plans and specifications for the work including an acceptable health/safety contingency plan.

c. Procurement of contractual services necessary to carry out the work.

6.12 TASK: PLASMA ARC

The NYSDEC entered into a contract with Pyrolysis Systems, Inc. (PSI) of Welland, Ontario, Canada, requiring PSI to design, construct, test, and demonstrate the full scale operation of plasma arc technology for the destruction of liquid hazardous wastes sludges at the Love Canal site.

Plasma arc technology involves passing compressed air through an electric arc, thus creating a high temperature plasma or ionized gas stream. This plasma reaches temperatures in excess of 10,000°C. The liquid hazardous waste sludge is injected into this high temperature plasma and the chemical constituents of the waste are subsequently reduced to the atomic state. The particulate carbon and acid gas resulting from the destruction of the wastes are removed in a conventional scrubber. The principal component of the scrubbed gas is hydrogen which is subsequently flared in a stack.

The plasma arc unit is expected to be used at Love Canal for the purpose of destroying the chemical sludge which is separated from the leachate and currently stored on site. The plasma arc unit is expected to have capacity to destroy the existing inventory of sludge.

A major portion of the effort in the plasma arc project involves obtaining the necessary permits. In order to ensure that the health and safety of the surrounding community is protected, permits must be obtained from both the EPA and the NYSDEC before operation can commence at the Love Canal Site. These permits require an extensive health and safety plan and integral fail-safe system as well as trial burns to demonstrate that the by-products of the waste destruction do not themselves pose a hazard. In addition, the project must also satisfy the requirements of the State Environmental Quality Review Act (SEQR) and an environmental impact statement must be prepared.

The estimated cost of developing this technology to the point where it is permitted and ready to be used at the Love Canal Site is over \$2,000,000. The factors which affect the conduct of this work are:

a. Obtaining the necessary funding to complete the project;

b. Development of acceptable contractual arrangements to complete the work;

c. Satisfactory completion of all testing to demonstrate that the plasma arc technology works properly:

d. Preparation and approvals of various permit applications including conduct of public hearings; and

e. Preparation and approval of an Environmental Impact Statement.

6.13.0 CITIZEN PARTICIPATION AT LOVE CANAL

Citizen participation at Love Canal is a dynamic, evolving program. The technical situation as well as the social, political and psychological situation have changed since the NYSDEC's first involvement and they will continue to change as the remedial program continues. The NYSDEC is constantly reviewing and evaluating all of the varying factors related to the Love Canal program and tailoring citizen participation to fit.

The overall design of the Love Canal Citizen Participation program is intended to develop an informed "public" and provide opportunity for the "public" to become an active participant in the decision-making process. A situation as complex as Love Canal affects a wide range of people (homeowners, state, federal and local government representatives environmental groups, pre-

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vious residents, etc.), and the development of an implementable solution requires the input and the effective acceptance of all of them. In the interest of finding and carrying out the best social, political, economic, and environmental solution to the Love Canal situation, the NYSDEC is committed to a comprehensive citizen participation program.

The cornerstone of the NYSDEC's citizen participation program at Love Canal is an "on-site" public information office. The office, located within the Love Canal Emergency Declaration Area (EDA) at 9820 Colvin Boulevard, is open to the public 9:00 a.m. to 5:00 p.m., five days a week. In addition, it is frequently open additional hours and days to accommodate the schedules and special interests of anyone interested in taking advantage of the office's services.

The office's full time staff includes a professional citizen participation specialist and a stenographer. Both are very knowledgeable about the Love Canal situation and provide assistance in finding specific information or interpreting difficult to understand documents or program aspects. One of the major goals of the citizen participation program is the promotion of effective two-way communication between all of the involved and affected interests. The office and its staff work toward accomplishing this by facilitating the transfer of information and attitudes not only from the public to the government but from the government to the public and between all the various groups and interests as well. The office serves as a document depository for Love Canal reports, information and correspondence and the numerous "publics" are encouraged to review, discuss and comment on them.

While the public information office is the focal point of the citizen participation program, it doesn't constitute the NYSDEC's whole effort. NYSDEC uses a variety of methods and techniques to fit the need of the affected interests and accomplish the program's goal of developing an informed "public"

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that is truly an effective and valuable component of the Love Canal decisionmaking process. Included are: 1.) publication of a newsletter; 2.) meetings between individuals and government officials; 3.) small group discussion sessions; 4.) public information meetings; 5.) telephone communication; 6.) drop-in visits to the Public Information Office; 7.) "at-home" visits and discussions; 8.) mailings of pertinent documents, meeting notifications, etc. 9.) briefings with local government officials, the press and special interest groups; 10.) development and distribution of responsiveness summaries, fact sheets, information documents and executive summaries; 11.) maintenance of a toll free "800" telephone; 12.) discussion opportunity sessions; 13.) news releases; and 14.) responses to letters. A more detailed description of each of these techniques follow.

6.13.1 <u>NEWSLETTER</u>

The Newsletter (Love Canal Update) is published periodically to inform the interested "publics" of planned and ongoing remedial work activities and projects at the Love Canal. Program problems are presented and alternatives reviewed. Lists of available documents and meeting notices are included in each newsletter. Each issue also includes telephone numbers and addresses for information on Love Canal and other hazardous waste sites.

The purpose of the newsletter is to promote and develop public understanding of the issues involved, to present information on the progress and results of the remedial actions, and to encourage involvement in the decision-making process.

6.13.2 MEETINGS BETWEEN INDIVIDUALS AND GOVERNMENT OFFICIALS

Government officials meet with individuals on a one-on-one basis to provide an opportunity for the individual to discuss his/her specific concerns. This allows for a detailed discussion that leads to a more complete understanding. It lets the discussion focus on very personal or individual concerns that might never surface at larger meetings. Working on problems together in this format also does a lot for improving the relationship between the various parties which, in turn, aids considerably in future discussions and problem-solving situation.

6.13.3 SMALL GROUP DISCUSSIONS

NYSDEC officials meet with various special interest groups to provide more detailed information on various aspects of the Love Canal Superfund program and other hazardous waste activities. These small group discussions promote the interchange of quite detailed information. They also allow for a better understanding and the particular interest group for each other's concerns and viewpoints.

6.13.4 PUBLIC INFORMATION MEETINGS

Large public information meetings are held to provide updates and presentations on large amounts of information to a fairly large number of people at once.

Public information meetings provide the public with an opportunity to express their concerns to government officials. It also provides an educational opportunity for all interested parties to hear the various concerns of other groups and individuals.

6.13.5 TELEPHONE CONTACTS

Telephone contact is used extensively for many purposes. It provides a quick method for immediate notification of available documents, test results, program changes, upcoming meetings, comment period dead-lines, etc. It also serves as a method of receiving and discussing concerns and questions from interested groups and individuals.

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6.13.6 DROP-IN VISITS

The Public Information Office is open daily to interested individuals and groups. Visitors are welcome to "drop in" for information on the history and major events that developed as a result of the Love Canal. Local residents and concerned interest groups also visit the office regularly to stay informed on the most recent developments and to discuss issues of concern.

6.13.7 AT-HOME VISITS

To communicate with those individuals unable or reluctant to "drop in" at the Public Information Office, at-home visits are often arranged. These visits allow for a personalized discussion of concerns and activities that most directly influence or concern the specific individuals.

6.13.8 MAILINGS

Mailings are used for the release of information and for meeting notifications. A comprehensive mailing list has been developed to include a large number (600-700) and wide variety of people including Love Canal homeowners, special interest groups, media representatives, government officials, and concerned and interested citizens.

6.13.9 BRIEFINGS

Press briefings are often held to accommodate media deadlines and to provide the press with a specific question-and-answer period. Local elected officials and special interest groups are also briefed on major findings, proposed activities, and other particularly significant program aspects.

6.13.10 <u>RESPONSIVENESS SUMMARIES, FACT SHEETS, INFORMATION DOCUMENTS, EXECUTIVE</u> Summaries

Responsiveness summaries are public documents written to document government responses to input and comment. It allows those that make comments or are

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interested in impact of input on the decision-making process. The responsiveness summary also serves as a review method for the agency to verify for themselves that all pertinent comments have been addressed. Comments and input included in a responsiveness summary may come from internal sources, as well as external, and may be reviewed very informally or during more formalized means--like specifically identified comment periods.

Fact sheets and information documents are developed for specific program aspects. They are used for handouts at meetings or included in mailings. Executive summaries are written for major documents. They highlight the major aspects of the total document and allow for a general understanding of the document's contents in a much shorter and more easily read format.

6.13.11 TOLL FREE TELEPHONE

A toll free "800" telephone number is maintained in the DEC central office. This serves as a backup for the Love Canal Information Office and provides a direct link to the central office for interested publics in the Love Canal area at no cost.

6.13.12 DISCUSSION OPPORTUNITY SESSIONS

These sessions are designated periods (usually both afternoon and evening) where representatives of government agencies and/or their consultants make themselves available for individuals to stop by and discuss a specifically designated program aspect. This technique allows for individuals' schedules to be accommodated and still provides sufficient opportunity to speak directly with experts in particular program areas.

6.13.13 NEWS RELEASES

Periodically, there are specified program information, documents available, or meetings to announce that are brought to public attention through the

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distribution of news releases to the media. Newspaper, television and radio spots, and articles generated reach a great number of people. Media representatives often respond to news releases with follow-up calls to acquire more detailed information.

6.13.14 RESPONSES TO LETTERS

The NYSDEC receives numerous letters from interested and concerned "publics." These letters raise concerns and question various aspects of the Love Canal program. Each letter receives a written response from the NYSDEC if appropriate, or is forwarded to the appropriate source most capable of responding. This exchange of correspondece provides an opportunity for on-going, quite detailed communication.

6.13.15 CITIZEN PARTICIPATION PROGRAM SUMMARY

The aforementioned methods constitute the majority of the specific techniques that the NYSDEC uses in its citizen participation program; however, there is a great deal of less formalized activity that works in concert with these techniques to accomplish the citizen participation program goals.

The citizen participation program at Love Canal encourages public involvement in the decision-making process so that the full range of individual and community concerns are considered in determining the most appropriate course of action. At the core of the citizen participation program is the encouragement and promotion of effective "two-way" communication between various "publics" and the government agencies responsible for the Love Canal remedial program. Providing up-to-date accurate information fostering the exchange of both facts and feelings, and developing an atmosphere and opportunity for useful and effective input from all interested and involved parties summarize the NYSDEC's citizen participation program at Love Canal.

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ATTACHMENT I

DEPARTMENT OF HEALTH OFFICE OF PUBLIC HEALTH

CORNING TOWER DAVID AXELROD, M.D. THE GOVERNOR NELSON A. ROCKEFELLER EMPIRE STATE PLAZA

ALBANY, N.Y. 12237

LINDA A. RANDOLPH, M.D., M.P.H. Director

> WILLIAM F. LEAVY Executive Deputy Director

February 22, 1984

Norman H. Nosenchuck, P.E. Director Division of Solid and Hazardous Waste Department of Environmental Conservation 50 Wolf Road Albany, New York 12233-0001

Dear Mr. Nosenchuck:

Re: Malcolm Pirnie Report: "Site Investigation and Remedial Action Alternatives - Love Canal

You asked if the subject report provides sufficient information for us to make an assessment of public health risk; whether we will make such an assessment that may be useful in determining the appropriateness of the remedial programs proposed for streams and sewers in the area; and how much time we would need to do the job.

The assessment of potential public health risk was made by the US Department of Health and Human Services when they declared the EDA to be habitable subject to clean up of contaminated sewers and their drainage tracts (see attached). The Malcolm Pirnie investigation was directed at locating the contaminated areas of the sewers and their drainage tracts the areas where cleaning was needed and these areas are identified in their report.

The Health and Human Services report did not make a "numerical risk-assessment" to estimate the increased morbidity and mortality that would result if the sewers and creeks were not cleaned. However, the report is direct and unambiguous in making the clean-up of the sewers and creeks a condition of habitation. It is clear that the presence of Love Canal associated chemicals, especially dioxin, in the sewers and creeks does pose a direct threat to children playing in the creeks, persons using yards subject to flooding from the creeks, and persons exposed to biota downstream subject to exposure to chemicals being washed down to them.

Sincerely,

Robert H. Huffaker, DVM, MPH Associate Director Office of Public Health

Attachment

Attachment II

City of Niagara Falls Department of Utilities

WASTEWATER DISCHARGE PERMIT

Permit No. 16

In accordance with all terms and conditions of Chapter 250 of the City of Niagara Falls Municipal Code; Sewer Use Ordinance, as adopted by City Council on July 25, 1983; et seq. and also with all applicable provisions of Federal and State law or regulation;

Permission is Hereby Granted TO: <u>LOVE CANAL TREATMENT SYSTEM</u>-NEWYORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

located at: 97th Street

classified by SIC No(s):

for the contribution of wastewater into the City of Niagara Falls Publicly-Owned Treatment Works (POTW).

Effective this $\frac{37}{28^{TH}}$ day of $\frac{MARCH}{FERNARY}$, 1985 To expire this $\frac{28^{TH}}{28}$ day of $\frac{FERNARY}{FERNARY}$, 1990

Director of Utilities

WASTEWATER DISCHARGE PERMIT REQUIREMENTS FOR:

- A. Discharges to the City Sewer System
- Identification of all discharges to the City Sewer System on a current plant sewer map certified by a New York State licensed professional engineer.
- 2. Identification of each contributing waste stream to each discharge to the City Sewer System clearly marked on, or referenced to, a current plant sewer map certified by a New York State licensed professional engineer.
- 3. Elimination of all uncontaminated discharges to the City Sewer System. All uncontaminated flows should be clearly identified on a current sewer map certified by a New York State licensed professional engineer.
- Identification of control manhole or monitoring location for each uncontaminated discharge diverted to storm or Diversion sewer.
- 5. Consolidation of all contaminated discharges through no more than two monitoring stations. Each additional monitoring station requires approval by the Director and will be surcharged accordingly.
- Establishment of a control manhole that is continuously and immediately accessible for each discharge to the City Sewer System.
- Identification of, and reduction or elimination of, on-site excessive infiltration/inflow, certified by a New York State Ticensed professional engineer.

ACTION REQUIRED REQUIRED DATE OF SUBMISSION

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None NA

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- B. Wastewater Discharge Management Practices
- 1. Detailed compliance schedule for attainment of wastewater discharge permit limits.
- 2. Schedule for optimization of existing pretreatment facilities.
- Submission of plan for equalization, scheduling or improved process control of semi-continuous, batch or slug discharges.
- Identification of responsible person(s) (day-to-day and in emergencies).
- 5. Submission of inspection, maintenance and testing schedules and outline of attendant recordkeeping requirements for all pretreatment and monitoring facilities. Identification of a contact person responsible for maintaining in-plant inspection, maintenance and testing records for all process and pretreatment facilities.
- 6. Submission of an outline of housekeeping, construction and demolition procedures including truck, and equipment washing and washwater collection, pretreatment, and discharge to City sewer(s).

REOUIRED OF SUBMISSION

REQUIRED DATE

None

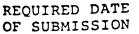
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- C. <u>Spill Prevention Control</u> And Countermeasures**
- A facility which has experienced one or more spill events within twelve months prior to the effective date of this Permit should submit a written description of each spill, corrective action taken and plans for preventing recurrences.
- 2. Where a reasonable potential for equipment failure exists (such as tank overflow, :upture, or leakage), a statement identifying the equipment and contents, including a prediction of the direction and rate of flow, and total quantity which could be discharged from the facility as a result of each major type of failure will be submitted.
- 3. Installation of appropriate containment and/or diversionary structures or equipment to prevent a spill from reaching the City sewer system.
- 4. When it is determined that the installation of the aforementioned structures or equipment to prevent spills from reaching the City sewer system is not practicable then the SIU should clearly demonstrate such impracticability.
- Each SIU shall provide a spill contin-5. gency plan including a definition of the authorities, responsibilities and duties of all persons which could be involved in an accidental discharge; establishment of notification procedures for the purposes of early detection and timely notification of City Wastewater Treatment Plant personnel; a current list of names, telephone numbers and addresses of the responsible persons and alternates on call; an estimate of the equipment, materials and supplies which would be required to remove the discharge; and provisions for well-defined and specific actions to be taken after discovery of an accidental discharge.

ACTION REQUIRED



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None

ACTION REQUIRED REQUIRED DATE OF SUBMISSION

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6. A written committment for a responsible party of manpower, equipment and materials required to expeditiously control and remove any harmful quantity discharged.

- ** This section applies to all compounds limited by the City's SPDES Permit and all prohibited wastewater discharges (See Section 250.5.1-A of Sewer Use Ordinance).
- D. Supplementary Agreements:

1. Discharges shall not exceed 100,000 gettens pro day. 2. See attachment

2. Supplemental Agreement

RIGHTS OF ENTRY AND AUTHORITY OF INDUSTRIAL MONITORING INSPECTORS

The City's Right of Entry is established by the Sewer Use Ordinance. However, the City agrees that its employees will:

- 1. Present valid identification cards on request.
- 2. Sign in as required.

6.

3. Abide by SIU's general safety rules including wearing hard hats, safety shoes and safety glasses with side shields.

4. Be accompanied by escort provided by SIU.

Notify in edvance.

5. Abide by SIU's rules regarding photography on the premises.

Billing Agreements

For billing purposes Flow will be, determined by dividing the tatal it integration rectings each month by the number at days in that month. Suspended Solids and Soluble Ergenic Carbon will be except from charge.

Revised May 7, 1985 Revi

For Love Canel Treatment System NYSDEC Permit No. 16 Treatment System Effluen Discharge Point: 97 th Located at:

MONITORING REQUIREMENTS

Parameter	Monitoring Requirements
Flow	1
Total Suspended Solids	1
Schuble Organic Carbon	+
V	
Volotile Priority Pollutants	2
Acid Priority Pollyteats	2
BasetNeuter Privity Pethutants	2
Total Phenols	2
Monochloro tolucres	2
Menochlorobenzotrithepride	Z

General Monitoring Requirements: 1. Determination of quartities shall be based upon analyses of the effluent during each discharge. Volume of each discharge must be reparted. 2. Grab samples of effluent for each sample type, all

from a single discharge, once per quarter.

Permit No. <u>Ho</u> for <u>Lave CANAL TREATMENT 545 TEM / N4SDEC</u> Permit Limits for sum of discharges from: <u>Treatment System Efficient</u>

•		•
Wastewater	Discharge	Limits

Parameter	Quarterly Average Load (lbs/day)	Maximum Daily Load (lbs/day)	Maximum Dail Conc. (ug/l)
Flow (MGD)		0.075	
Total Suspended Solids Soluble Organic Carbon	6.25	16	170 mg/1
Soluble Organic Carbon	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	75	170 mg/1 820 mg/
		· · ·	
		••••• ••••••••••••••••••••••••••••••••	

General Wastewater Discharge Permit Conditions

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- 1. Flow monitoring should be performed concurrently with any Wastewater Discharge Permit sampling and should be reported at the same time as analytical results. If it is not feasible to perform flow monitoring, an estimate of flow (and the means by which it was established) should be submitted with the analytical results.
- All sampling for billing and pretreatment compliance purposes shall be coordinated through the Chief of Monitoring and Enforcement.
- 3. All analyses must be performed by a laboratory using analytical methods and quality control provisions approved by the City Chief Chemist prior to the sampling. The laboratory must obtain those detection limits specified on the User's Initial Wastewater Discharge Permit unless otherwise authorized by the City Chief Chemist prior to the sampling.
- 4. An estimate of relative production levels for wastewater contributing processes at the time of any pretreatment compliance sampling shall be submitted upon request of the Director of Utilities.
- All samples shall be handled in accordance with EPA-approved methods. Chain of custody records shall be submitted with all sampling results.
- 6. Any discharge in excess of the loads or concentrations specified in this permit, may be considered a non-compliance event and subject to penalty or fines as outlined in Section 250.9 of the City's Sewer Use Ordinance.
- 7. Sampling frequency for any permitted compounds may be increased; but a minimum of five per quarter for flow, total suspended solids (TSS) and soluble organic carbon (SOC), and once per quarter for substances of concern is required. If the permitee monitors more frequently than required under this permit, all results of this monitoring must be reported.

Attachment III

Division of Solid and Hazardous Waste New York State Department of Environmental Conservation Albany, New York 12233

LOVE CANAL MONITORING REPORT

APRIL 1, 1984 - OCTOBER 31, 1984

During this period, risers were put on 40 wells, outside the fence, to facilitate sampling and obtaining groundwater elevations in the winter. A map showing the location of these wells is in Figure 2. All of these wells were sampled to determine the extent of contamination from Love Canal. A summary of the results is enclosed in Table 2 along with the United States Environmental Protection Agency's (USEPA) results from the same wells, four (4) years ago.

Nine (9) wells were sampled on March 28, 1984 and four wells were sampled on April 6, 1984. A summary of these results are enclosed in Table 2.

An Interim Groundwater Monitoring Program was established in August as a guideline for sampling and groundwater (elevation) monitoring until E.C. Jordan submits its recommendations for a long-term groundwater monitoring program. A copy of the interim program is in Attachment A.

The groundwater elevations on the 40 wells (with risers) outside the fence and all the wells inside the fence have been monitored on a monthly basis since August. This ongoing monitoring is to determine the effect of the barrier drain on the local water table.

As a part of the Interim Groundwater Monitoring Program, 24 wells inside the fence were sampled on September 17 and 18, 1984. These samples were sent to the New York State Department of Health (NYSDOH).

On August 8, 1984, some of the wells inside the fence were resurveyed by Mr. Robert Senior and Mr. Stephen Barlow. Several of the wells showed elevations differing from the previous survey by approximately one (1) foot. This would explain the anomalies that show up in in cross-sectional views for elevation of both the New York State Department of Environmental Conservation (NYSDEC) wells and the piezometers. The Attorney General's Office was surveying the wells outside the fence at this time and finished surveying the wells inside the fence. At this time, the Attorney General's survey data is not available.

Groundwater Monitoring USEPA Monitoring Wells

Overburden Wells - The monitoring data is presented in Table 1. Plots of this data are presented in Attachment C. Figures 1 and 2 are maps depicting the locations of the monitoring wells, on-site and off-site (with risers). When appraising the data from the wells, it should be kept in mind that they were screened over a large interval. Had they been screened at specific intervals, covering individual soil layers, they would give a truer picture of the flow patterns in the area.

The plots from this data, when they do show a distinctive flow pattern, show a flow away from the cap. Looking at the cross-section map of the NYSDEC piezometers, it looks like ths trend starts from 97th out on the west side of the cap and probably does the same from the 99th out on the east side of cap.

-1-

Bedrock Wells - The monitoring data is presented in Table 1. The plots are in Attachment D. The bedrock aquifer system shows only a small gradient over the area. The flow pattern is from west to east.

NYSDEC Monitoring Wells - The values obtained from the groundwater monitoring are in Table 1. Plots of the data are in Attachment F. Figure 1 shows the locations of these wells. The plots show a consistent drawing down of the water surface in the vicinity of the barrier drain. The effect west of 97th Street fluctuaties from a flow towards the cap to a flow away from the cap.

<u>Piezometers</u> - The nested piezometers were constructed to monitor different substrata for water quality and water elevations. The data taken during this time period and plots of the data presented in Table 1 are displayed in Attachment B. From the plots, three observations can be made. First, the plots show that there is a lower head potential (water elevation) for those wells which are screened for lower horizons. Secondy, the amount of water elevation depression is greatest near the barrier drain. Third, the nested wells furtherest from the canal exhibit heads at approximately the same elevation except for the B Level wells. These wells, constructed in the nondesiccated silty clay soil layer, show a draw down west on 97th Street. This could be from a local sewer line. The drawing down of the water table near the barrier drain is in agreement with the data gathered from the NYSDEC wells.

Because the barrier drain is working and dewatering the aquifer, the effects upon the groundwater regimes are greatest in the vicinity of the drain, and least further away.

Water Quality Sampling - At the time of this writing, analytical results from the 40 wells outside the fence, the nine (9) wells sampled March 28 and four (4) wells sampled April 6 have been received.

Included in Table 2 are copies of results from the same 40 wells outside the fence, the 13 wells inside the fence, and from analyses performed for the USEPA. A table of comparison of these results is included with Table 3.

This table lists only compounds that have shown up at or above detection limit and list only the wells that have results from both NYSDEC and USEPA.

This table of comparison is broken into three (3) groups of chemicals.

I. Pesticides

II. Metals

III. Volatiles, Base/Neutrals and Acid Extractables.

Group I show fluctuations of decreasing in some wells and increasing in others. It is difficult to say if they are attributed to the Love Canal Site since pesticides are so widely used.

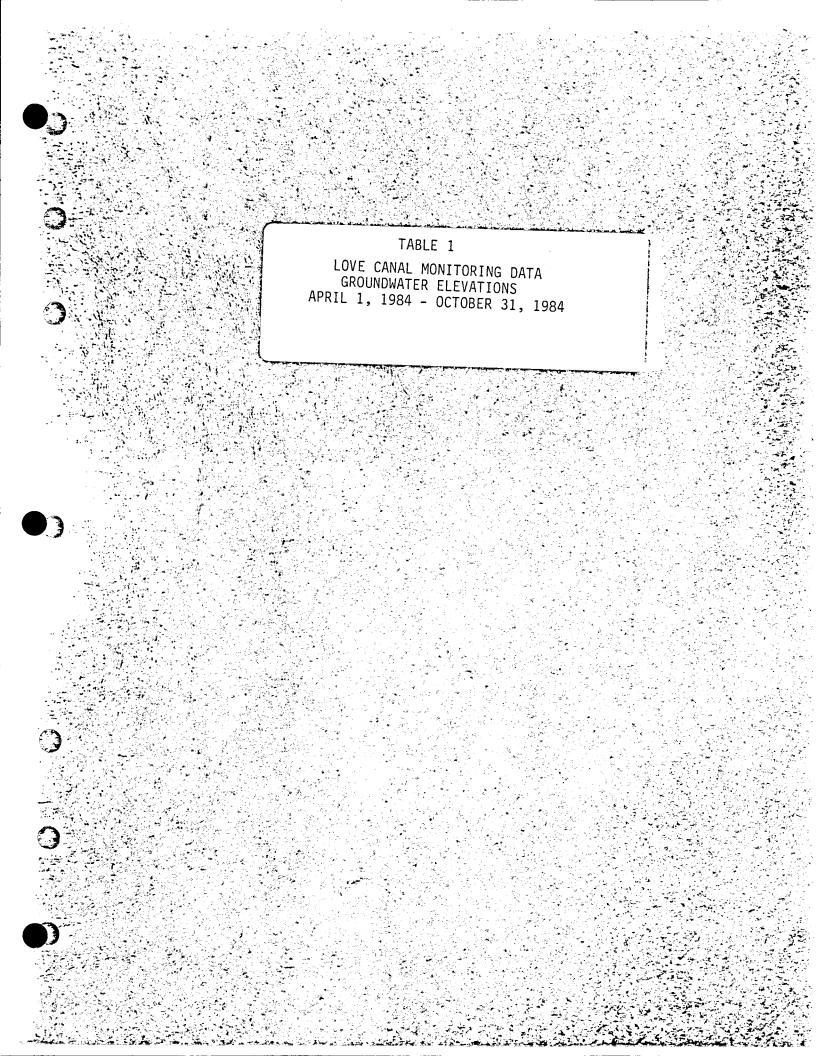
Group II shows an increase in most cases. Again with the metals, it is hard to attribute to Love Canal some of the metals may be attributed to degredation of the well casing.

-2-

The third group which is most directly attributable to Love Canal shows concentrations either decreasing or remaining the same in all cases except one. That was the presence of Methylene Chloridé at 42 ug/l in Well Number 5211.

The map included in Table 3 shows wells with any organic pollutants detected from USEPA with red circles around them. The wells in blue are those that show any organic pollutants now. The only wells shown on this map are the 40 with risers outside the fence.

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DEPARTMENT OF ENVIRONMENTAL CONSERVATION

LOVE CANAL WATER LEVEL MONITORING DATA

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DEPARTMENT OF ENVIRONMENTAL CONSERVATION

LOVE CANAL WATER LEVEL MONITORING DATA

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LOVE CANAL WATER LEVEL MONITORING DATA

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NEW FORE STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

LOVE CANAL WATER LEVEL MONITORING DATA

SAMPLING DATE

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4111		. 0	• 0	. 0	570,17	. 0	570,25	. 0	566.03	569,76	• 0
4115	•	. 0	. • 0	569.28	. 0	. 0	5/0123	. 0	571.00	570,17	• • • • • • • • • • • • • • •
4121		• 0	. 0	. 0	569,04		. 0	, u 569,34	, Q	. 0	• 0
4192 -		571.14	• 0	. 0	, 0	. ŭ	0	. 0	571.43	571.45	• • • • •
4133	:	571.20	• 0	. 0	. 0	. 0	0		. 0	. 0	• • • • • • • • • • • • • • • • • • • •
4134		. 0	. 0	. 0	567.98	. 0	. 0	, 0 567,08	0	• • •	O
4135		• 0	• 0	. 0		0.	. 0	80,186	566,35	565.62	
4141		. 0		. 0	. 0	. 0	. 0	. 0	, 0	• 0	• • • • • • • • • • • • • • • • • • • •
4151		569.36	• • 0	. 0	0	, • 0	. 0	•	. 0	. 0	. 0
4152		566.04	. 0	. 0	. 0	. 0	, 0	. 0	+ 0	• 0	• 0
4155		568.16	· 0	, Ö	. 0	. 0		• 0	, 0	• 0	· · · · · 0
4161		• 0	• 0	570,50	, 0	. 0	. 0	• 0	. 0	, 0	. 0
4162	. :	570.60	•. 0	. 0	· • 0	. 0	, 0	. 0	• <u>0</u>	• 0	0
4163		. 0	• 0	. 0	. 0	. 0	. 0	• U • D	· • 0	. 0	• • • •
4204		۰ C	• 0	. 0	564.85	. 0	563.42	• 0	. 0	• 0	* • 0]
4205		• 0	, 0	. 0	564,65	. 0	563,33	. 0	563.60 563.46	562,85	· · · · 0

LOVE CANAL WATER LEVEL MONITORING DATA

									•	SAMPLI	NG IAT	ΪĒ							i,	
	84061	2	540	613	840)614	84	0801	84(0829	84(0830	E	0831	840	919	841	011	8410	12
WELLNUMBER	ELEV (F	EET)	ELEV	(FEET)	ELE∨	(FEET) ELEV	(FEET)	ELEV	(FEET)	ELEV	(FEET)	ELEV	(FEET)	ELEV	(FEET)	ELEV	(FEET)	ELEV (FEET
4205		. 0		. 0		• • • •	 0	564.65				563,36		0		563.63		562,85		
4207		. Û		, Ū		•	o	563,68		0		562.45		. 0		562.62		561.81	· .	
4211	-	. 0		• 0				564.67			·· .	563.50	• ••• •	· • 0		563.74		562.93		يتم المرجون
4215		. 0		, 0		566.12		564,98		. 0		. 0		563.60		563.88		563.18		N (24)
4221		• 0		. 0				564.71		. 0		. 0		563,20		564.85		562,53		
4231		8,15		ιŬ		• (• 0		. 0		. 0		0		. 0		, 0		
4283 4283		6.53.		. 0		. (. 0		. 0		. 0		• Q		• • 0		i 0	\ :	
4235		6.59		. 0		. (. 0		• 0		• 0		. 0		. 0		, 0		
4230		, 0 8,75		, 0 564,28		. (. 0		. 0		. 0		• 0		. 0		. 0		· · · · ·
4282		6.11				• .(. 0		. 0		. J		• 0		. 0		. 0	• .	
4258		6.40		. 0		. (. 0		. 0		. 0		· 0		. 0	•	. 0		13 • [
4254 		6.55		. 0		• • •		. 0		• 0		. 0		. 0		• 0		• 0		3. C
- 고양주 - 귀양양동		7.76		. 0		• (. 0		. 0 . 0		. 0		. 0		. 0		· • 0	:	•
4261		. 0		. 0		566.54		· · · · · · · · · · · · · · · · · · ·		. 0		0		. 0		• 0		. 0		• .'
4262		2.09		. 0		- JOD - J-		. 0		• • 0		• 0		. 0	•	ý,		. 0	,	•, '
4253	37	. 0		. 0		. (. 0		• 0		• 0		. 0		. 0		. 0	•	• • •
5101		. 0		. 0		(568.99		. 0		569,46		. 0		• 0		. 0		••_
5102		. 0		. 0		. (-	575.55		. 0		569,96		. 0		569.41		, 0		71.5
5103				. 0		. (572.59		:.0		572,17		. 0		564.52		. 0		66.1
5104						. (571.61		. 0		571.94		. 0		572.03		• 0		71.6
5105		. 0						569.85		. 0		559.50		. 0		572.44		• 0		73.2
5111		. 0		570.32		. (569,28		568.56		101.10		. 0		568.39		, 0 567,97	5/	70.0
5112		. 0		571.31				568.73		. 0		. 0	•	567.12		568.37		568.11	<i>.</i>	
5118		. 0		571.08		. (. 0		. 0		. 0		. 0		. 0		. 0		्यात्र करता । जन्म
3114		. 0		571.13		. i		569.43		. 0		. 0		562,82		569,41		569.19	· •,	
512)		. 0	1	569.54		. (Ď	564.30		. 0		. 0		, 0		0		. 0		
5122		. 0	Į	570.17		• (- D	569,71		569.32		. 0		, 0		559.87		569.92		
5128		. 0	ŗ	569.95		, (. 0		564.24		. 0		0		567.70		567.17		
51-24		. 0		. 0		. (. 0		. 0		. 0	•	. 0		. 0		. 0		
5201		. 0		. 0		, (564.83		0		563,35		. 0		563,58		. 0		62.7
SEOS		. 0		. 0				565.00				563.65				563.77		. 0		63.0
5204		• 0		. 0		. (565.12		Ō		563,93		. 0		564.17		. 0		63.3
52 05		• 0		. 0		. (565.13		, õ		564,60		0		567.58		. 0		64.10
5211	•	. 0		566.52				564,99	•	563,64		. 0		. 0		563.70		562.44		
5212		. 0		555,90		. (3	365.74		. 0		, o		554.11		552.40		563.22	••••	
5213		. 0		565,80		. (-	565.03		564.50		. 0		. 0		564.78		564.08	· .	
5214		• C	5	555.94		. (5	565.12		. 0		. 0		564,62		564.75		564:12	;·'	
522)		, C		555.78		. (561.34		. 0		. 0				JUT1/J		JO 4 1 /	•	

EPARTMENT OF ENVIRONMENTAL CONSERVATION

LOVE CANAL WATER LEVEL MONITORING DATA

									SAMPLI	NG DAT	E				••••	
115	1.1.211.HAT.TT		0612	840613		514	840801		829	540	830	840831	840919	841011	 841	1012
		ELEV	(FEET)	ELEV (FEET)	ELEV ((FEET)	ELEV (FEET)	ELEV	(FEET)	ELEV	(FEET)	ELEV (FEET)	ELEV (FEET)	841011 ELEV (FEET)		/ =====
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52			. 0	· 0 · · · · · · · · · · · · · · · · · ·		. 0	• 0		564.58		• 0	. 0		562.86 564.02	. •	• • (
52			. 0	• 0	5	566.14	• • •		0		• 0	• •		. 0		• • •
52- 61-			• 0	, 0		65.96	. 0		. 0		• 0	1 0	۰ O	• 0		
61			• 0	• 0		• 0	571.63		. 0		571.12	. 0	0	, 0		
610			· U	· 0		• 0	569,49		. 0		563.80	. 0	0,0100	571,42	١	
G 1 (0.9					• 0	570,78		. 0		570.29		567,58 570,53	570.02	\	
ē 1 :				. 0		• 0	559770				569715	······································	······································	570,19		. 0
61.	,		. 0	. 0		. 0	567,97 569,57		• 0		• 0	567,83	568,24	567,98		• 0
61) St:			. 0	• 0		, ŭ	, C , E O C		· 0		. 0	569.43	571,02	569.96		
	• •		. 0	, 0		• 0	. 0		. 0		• 0	569.28	571.89	570.75	•	
61.	- ,		• 0	. 0		• 0	564.34				. 0	569.13 , C	570.25	570,60		. 0
613		•	569.54	• J		• 0	• 0		. Ō		• 0	568,60	, 0 569,96	. 0		• 0
613			000104	. 0		. 0	• 0	• •	• 0		. 0	+ 0	203,30	568,19		e (++ 0
ē 1 +			, 0	569,12		. 0	, 0 568,90		, 0		• 0	• 0	, 0	· · · · · · · · · · · · · · · · · · ·	,	• 0
61-		·	. 0	. 0	·	• 0	564.35	:	568.82		• 0	. 0	569,24	569,05	•	. 0
61- 61-			• '0	564.88		. 0	. 004.00		• 0		• 0	• 0	• 0	. 0		
E 14			• 0	571,59		• 0	• 0		. 0		. 0	• 0	, 0	• 0	•	. 0
620			• 0	. 0		• 0	· · 0		. 0		. 0	. 0	. 0	• 0		. 0
6 2 G			. 0	· 0		• 0	564.41		. 0	5	563,19	. 0	. C 363,42	. 0		. 0
620				· · · · ·		· 0 · 0	564.83		. 0		63,45	. 0	563.51	562,52 562,73	1	0
620	-		. 0	• 0		. ö	564,83 564,77		• 0		63,80	• 0	563,83	563,77		0
621			. 0	• 0	•	. 0	564,79		• 0 • 0	5	64.05	• 0	563,98	565.29		
621 621			• C	• • 0		• 0	564.83		. 0		• 0	563.11	563,31	562,47		. 0
621			• 0	. 0		. 0	. 0	•	. 0		. 0	563,13 565,49	563,43	562.52		0
622			• 0	• 0	•	• 0	• 0		• 0		. 0	561.44	556,69	562,31	· :	• 0
622			. 0	+ U + G		. 0	561.47		0		. 0	. 0	562,81	562,44		• 0
623		5	557.81	. 0		. 0 . 0	• 0		• 0		, 0	564,09	564,10	, 0 563,42	:	• ;0]
623		5	68.44	. 0		. 0	+ 0 + 0		. 0		• 0	• 0	. 0	. 0		· · · · · ·
624 624)	-		. 0	566.19	`	. 0	565.05	5	· 0 64.13		. 0	. 0	• O	, õ	•	
624) 624)	-		• 0	• 0		. 0	560.88	J	• 0		, 0 , 0	. 0	564,24	563.46		. 0
624	-		• Ü	565.90		• 0	. 0		. 0		. 0	• 0	, 0	• 0	`	. 0
6249			• 0 • 0	565,93		• 0	• 0		0		. 0	0	• 0	• 0		01
			• U	· Ŭ		• 0	• 0		• Q		, õ	0	• 0 • 0	• 0	• •	• • • •
• .					•								• •	. J		• 0'

EPARTMENT OF ENVIRONMENTAL CONSERVATION

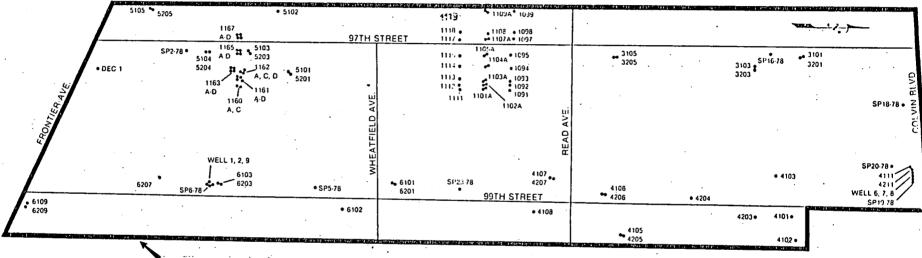
LOVE CANAL WATER LEVEL MONITORING DATA

,		54	0612	84(0613	84	0614	84	0801	84	0829	84	 0830	 84	0831	84	 0919	 	 84	1012
WEL	LNUMBER	ELEV	(FEET)	ELEV	(FEET)	ELEV	(FEET)	ELEV	(FEET)	ELEV	(FEET)	ELEV	(FEET)	ELEV	(FEET)					
624	6		567.10		, 0		• 0		• 0		; 0		· · · · · · · · · · · · · · · · · · ·		• 0		 , 0	, 0		
			· · · · ·		\$													 ·	مىتىتى مەربى	د از با و مدر بد مدر د ا موسط با مدر د د ا معرف مدر م
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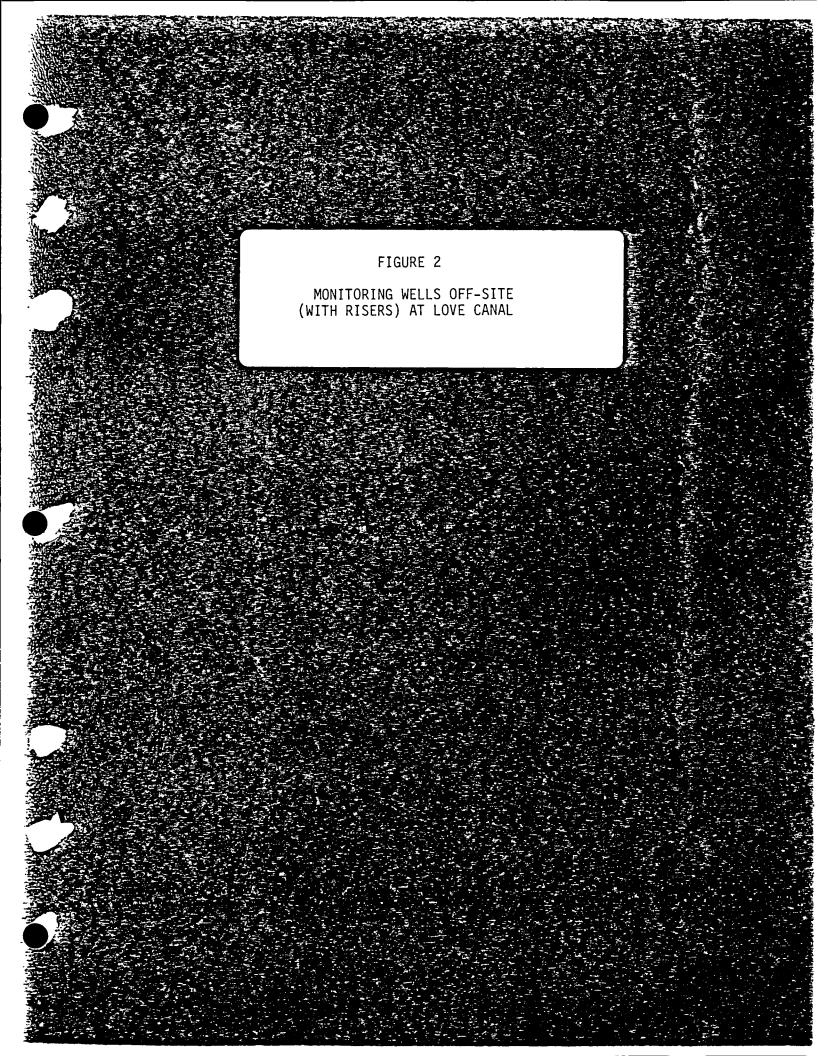
FIGURE 1 MONITORING WELLS (ON-SITE) AT LOVE CANAL

FIGURE B.1

LOVE CANAL GROUNDWATER MONITORING PROGRAM

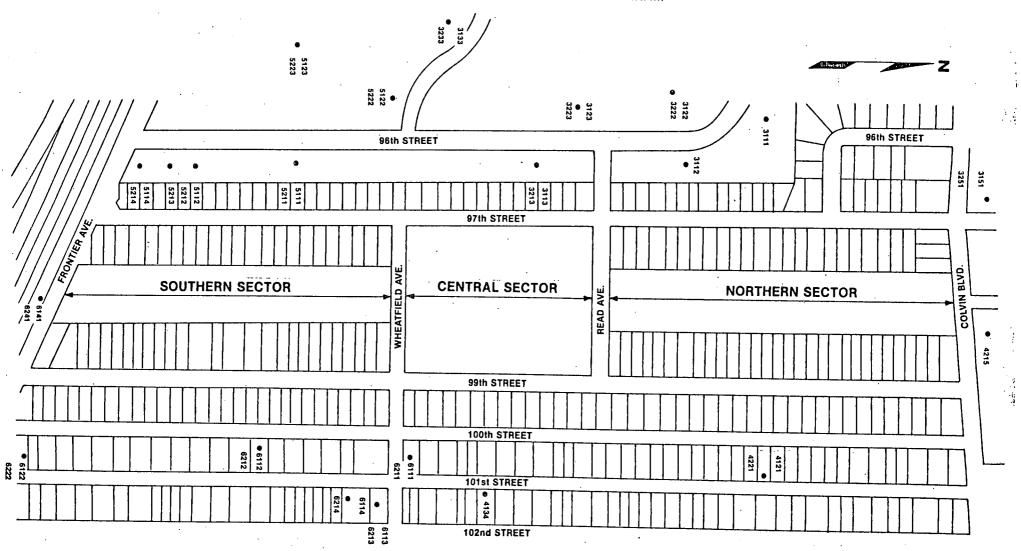


PERIMETER FENCE



LOVE CANAL GROUNDWATER MONITORING PROGRAM

i.



WELLS WITH RISERS (OUTSIDE THE FENCE)

Table 2

8.0

Analytical Results of Monitoring Wells at Love Canal

sampled July 11th, 1984

DATA SUMMARY

WCT-NEII-mc

Sample #: 3/// RR84 002 001

METALS RESULTS

· · ·	·			PROJECT #:	
	•			LAB #:	4920
PARAMETER	ICP DETECTION LIMIT (28/2)	SAMPLE CONCENTRATION (Mg/Q)	PARAMETER	FURNACE DETECTION LIMIT (ug(L)	SAMPLE CONCENTRATION (المريوس)
Ag	3	< 3.	As	10.	16.
Be	<u> </u>	1.5	<u> </u>	0.2	<0.2
Cđ	10.	< 10.	Se		<10.
Cr	4.	84	<u>SP</u>		< 10.
Cu		190.		10.	<10.
Ni	15.	198.		•. •	يديد ويوني مراجع
Pb	50.	212.			
Zn	3.	224			
				<u>·</u>	
•					
OMMENTS:		••	•		
Hg by CVAA					
•				<u></u>	-

Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

Robert Maxfleld, Lab Manager

Wershi.

Sample #: 311之 RR184 002 002

METALS RESULTS

		•			-21-84
i			· •	PROJECT #: LAB #:	<u>857-42</u> 4 921
•	ICP			FURNACE	<u>,,,</u>
ARAMETER	DETECTION LIMIT	SAMPLE CONCENTRATION	PARAMETER	DETECTION LIMIT (44/2)	SAMPLE CONCENTRATION (ug/L)
Ag	3.	< 3.	As	<u> </u>	
Be	<u> </u>		<u>Hg</u> *	0.2	<0.2
۵۵	10.	<10.	<u> </u>	10.	<10.
Cr	4	78			
Cu	2	82.	T1		<10.
Ní	15.	124.		.	•••••••
РЪ	50.	329.	·	·. 	
Zn	3.	279.			·
······································	· · · · · · · · · · · · · · · · · · ·	•			
					
OMMENTS:		- -	· .	•	
Hg by CVA.	A		· · ·		·
			• • •		· · ·

Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

Versain

Sample # :	3113	
RR84	002 003	

METALS RESULTS

1 · · · ·				PROJECT <i>\$</i> : LAB <i>\$</i> :	<u>857-42</u> 4922
PARAMETER	ICP DETECTION LIMIT (49/2)	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT (114 /L)	SAMPLE CONCENTRATION (ug/L)
Ag	3.	<u> </u>	As		/
Be	<u> </u>	1.4	Hg #	0.2	<u>a21</u>
Cđ			<u>Se</u>		<10.
Cr	4.	52	<u> </u>		<10.
Ċu	2	85.	T1		<10.
Ní		1.26.			
РЪ	50.	260.			
Zn	<u> </u>	310.			<u> </u>
		<u> </u>			·
			· · · · · · · · · · · · · · · · · · ·		

....

*Hg by CVAA

Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

Versen.

Sample # :	36.1	3
RR 84	002	004

DATE: _

8-21-84

METALS RESULTS

		•		PROJECT #:	<u>857-42</u> 49 23
	ICP		1 .	FURNACE	•
PARAMETER	DETECTION LIMIT (Mg/g)	SAMPLE CONCENTRATION	PARAMETER	DETECTION LIMIT (44/R)	SAMPLE CONCENTRATION (سور (ا
Ag	3.	< 3.	As	10,	12.
Be	<u> </u>	1.8	Eg *	0.2	<0.2
Cd	10.	<10.	Se	10.	<10
Cr	4.	9.9	<u></u>		<10.
Cu	2	26.	T1		< <u>10</u>
Ni	15			1 - 1 - 1 - 1 - 1 - 1	
РЪ	50.	239.		· · · · · · · · · · · · · · · · · · ·	
Zn	<u>. 3</u> .	127.			
				•	
	· · · · · · · · · · · · · · · · · · ·				
CMMENTS:		-			
Hg by CVAA	<u> </u>		<u> </u>	<u>. </u>	

Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

Robert Maxfreld, Lab Manager

Versu:

Sample	#: 51	11
RR84	002	005

METALS RESULTS

				DATE: 8	-21-84
			·	PROJECT #:	
				LAB #:	4924
	ICP		Г. Ч.	FURNACE	. .
PARAMETER	DETECTION LIMIT (2)(2)	SAMPLE CONCENTRATION (Mg/L)	PARAMETER	DETECTION LIMIT (110/2)	SAMPLE CONCENTRATION (up/2)
Ag	3.	<u> </u>	As		< 10.
Be	<u> </u>		<u> </u>	0.2	<0.2
Cđ	10.	<10.	<u> </u>	10.	<10
Cr	4.	6.4	<u>Sb</u>		<10.
Cu	2.	26		10.	<u> <10.</u>
Ni	15.	35.	·	• • • • • • • • • • • • • •	
РЬ	50.	107.	· · · · ·	· ·	
Zn	3.	209			
	· · · · ·				
COMMENTS:		•	8		
*Hg by CVAA					

Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

Wersen.

Sample **#**: 5211 RR84 002 006

METALS RESULTS

				PROJECT #:	<u>-21-84</u> 857-42 4925
PARAMETER	ICP DETECTION LIMIT # (4%)(2)	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT (ug/D)	SAMPLE CONCENTRATION (4)
Ag	6.	<u> </u>	As	10.	21
Be	2	2.6	<u> </u>	0.2	<0.2
Cđ	20.	< 20.	Se	10	<10.
Cr	8.	22	55		<10.
Cu	4.	52	<u></u>	10.	<10,
Ni	30.	162.			· ·
РЪ	100.	472.			
Zn	6.	495			
<u> </u>					

COMMENTS:

*Hg by CVAA

etection limit changed due to sample dilution. ⊈‡

Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

Versie:

Sample #: 5//3 RR84 002 007

METALS RESULTS

		. ·		DATE: <u>8</u> PROJECT # : LAB # :	
PARAMETER	IC? DETECTION LIMIT (Mg/Q)	SAMPLE CONCENTRATION (Mg/L)	PARAMETER	FURNACE DETECTION LIMIT (up/L)	SAMPLE CONCENTRATION
Ag	3	2.	As		<10.
Be	<u> </u>	<1.	<u> </u>	0.2	<0.2
Cđ	10.	< 10.	Se	10.	<10.
Cr	<u> </u>	21	<u>S5</u>		<10
Cu	2.	45.	T1		<10.
Ni	15.	68.			
Pb		198.			
_Zn	3.	198.			
	. 			·	
-,;;					
COMMENTS:			2	. .	
Hg by CVAA					
	······································				

Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

Weis:

Sample #: 52/3 RR 84 002 008

METALS RESULTS

	•			DATE:A PROJECT #: LAB #:4	
	ICP		1	FURNACE	/~/
ARAMETER	DETECTION LIMIT	SAMPLE CONCENTRATION	PARAMETER	DETECTION LIMIT (44/2)	SAMPLE CONCENTRATION (عراص)
Ag	3.	< 3.	As	(<i>P</i>)=) 	_<10.
Be	<u> </u>	<1.	<u> </u>	0.2	50.2
Cd	10.	<10.	Se	10.	510,
Cr	4.	9.5	<u>Sb</u>	10.	<10.
Cu	2	32	<u></u>		<10,
Ni	15.	20.		· 	=
РБ	50.	568.			
Zn	3.	171.			·
					
• • • • • • • • •		<u> </u>			
DAMENTS:			1		
Ig by CVAA	· ·				
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Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

Robert Maxfjeld, Lab Manager

Verse:

Sample #	: 51	51	
RR 84	002	009	

DATE: 8-21-94

METALS RESULTS

					┈╩┷─────────────────────────────────
•	•			PROJECT #:	857-42
	· · ·				4928
					F120
	ICP	· .	1	FURNACE	· . ·
	DETECTION	SAMPLE		DETECTION	SAMPLE
PARAMETER	LIMIT	CONCENTRATION	PARAMETER	LIMIT	CONCENTRATION
	(ug/e)	(ug/l)	· · ·	(ug pg)	(49/2)
Ag	3	<u> </u>	<u>As</u>		<10.
Be	<u> </u>	<u> </u>	Eg *	_02_	<0,2
Cd	10.	< 10.	Se		<10.
<u>Cr</u>	<u> </u>	22.			<10.
Cu	<u> </u>	20.	<u></u>		<10.
NÍ	<u> 15. </u>	66.			
РБ	50.	242.		· · · · · · · · · · · · · · · · · · ·	
Zn	3.	121.			
f a÷iaia - i i, i	•	· <u> </u>		· · · · · · · · · · · · · · · · · · ·	
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DMMENTS:			•		
Hg by CVAA		· · · · ·			
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Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

Wersa.

Sample #: 5221 RR84 002 010

DATE: 8-21-84

METALS RESULTS

				PROJECT #:	<u>857-12</u> 4929
PARAMETER	ICP DETECTION LIMIT (M8/g)	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT	SAMPLE CONCENTRATION
Ag	3.	< 3.	As	10:	<10
Be	<u> </u>	1.4	<u> </u>	02	0.21
Cđ	10.	26.	<u>Se</u>	10.	<10.
Cr	<u> </u>	9.8	<u> </u>	10.	<10.
Cu	2.	24	. <u></u>	10.	<10.
N1	15.			• · · · · · · · · · · · · · · · · · · ·	• • • • • • • • • • • • • • • • • • • •
РЪ	<u> </u>	170.			
Zn	3:	112.			
					<u> </u>
					-
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COMMENTS:

*Hg by CVAA

Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

Robert Maxfreld, Lab Manager

Versam

Sample #: 5/주옷 RR84 002 011

METALS RESULTS

					2-21-84
				PROJECT #:	4930
	ICP DETECTION	SAMPLE		FURNACE DETECTION	SAMPLE
PARAMETER	LIMIT (US/1)	CONCENTRATION	PARAMETER	LIMIT (March)	CONCENTRATION
Ag	3.		<u>As</u>		<10.
Be	<u> </u>	<1.	<u> </u>	0.2	<02
Ca	<u> </u>	2.1.	<u> </u>	10.	<10.
Cr	4.	5.4	<u></u> <u>55</u>		<10.
<u>Cu</u>	2.	25		10.	<10.
N.L.	15.	35.			· · ·
РЪ	50:	82.			
Zn	3.	33.			· · · · · · · · · · · · · · · · · · ·
	· · ·				
	- <u></u>				
	<u></u>				
OMMENTS:	•				
	· · · .			•	
Hg by CVAA	<u> </u>		· · · · · · · · · · · · · · · · · · ·		
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Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

Versa:

	Sample #: 5222
•	RR84 002 012
METALS RESULTS	3
	DATE: 8-21-84

PROJECT #: 857-42

•	· ·	. •		LAB #:	4931
PARAMETER	ICP DETECTION LIMIT (Mg/L)	SAMPLE CONCENTRATION (Mg/L)	PARAMETER	FURNACE DETECTION LIMIT (up/p)	SAMPLE CONCENTRATION (مرجعه)
Ag	3.	<u> </u>	As	10.	
Be	1.	1.3	<u> </u>	_0.2_	<0.2
Cđ	10.	27	Se	10.	<10.
Cr	4	6.2	<u></u>		<10.
Cu		18		10.	<10.
Ni	15.	32			
РЪ	50.	338.			
Zn	3.	136.			· · ·
		· ·			
	- <u></u>			4,=,i	
					
COMMENTS: Bg by CVAA		-	:		
<u> </u>				· ·	······································
				<u>.</u>	

Procedures in accordance with: Test Methods for Evaluating Solid Wastes, Sw-846, 2nd Edition, USEPA, Washington, D.C. 1982

Robert Maxf101d, Lab Manager

857.002-42

BNA DATA SUMMARY

FIELD#	3NA COMPOUNDS DETECTED
RR-84-002-001 3///	ND
RR-84-002-002 3112	ND
RR-84-002-003 311 3	ND
RR-84-002-004 3213	ND
RR-84-002-005 5111	ND
RR-84-002-006 52/1	ND
RR-84-002-007 511 3	ND
RR-84-002-008 52/3	ND
RR-84-002-009 5121	ND
RR-84-002-010 5221	ND
RR-84-002-011 5122	ND
RR-84-002-012 5222	ND

ND= NONE DETECTED

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857.002-42

FIELD=		 ·	VOA COMPOUN DETECTED	IDS.
RR-84-002-001	3111		ND	
RR-84-002-002	3112		ND	:
RR-84-002-003	5115		ND	
RR-84-002-004	3213		ND	· .
RR-84-002-005	5111		ND	
RR-84-002-006	5211		Methylene	Chloride 42 ppb
RR-84-002-007	5113		ND	
RR-84-002-008	5213		ND	
RR-84-002-009	5121	N	ND	
RR-84-002-010	522		. ND	
RR-84-002-011	5122		ND	
RR-84-002-012	5=22		ND	

المجاريبي سيدر الجريا معجمه معكم الداري

VOA SUMMARY

ND=NONE DETECTED

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Matrix: <u>WATE</u> Units: <u>Am/L</u>				3 ¹¹ ~	N. r.	^- ∖`	(h) 17	· · · ·	ίς ι	14		`` \	N.	<u>2- 4-</u> . /			
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A-BHC		0.28					•	1				<u> </u>		/		Í	
LINDANE	0.74						•	:	!		0,56	0.53			İ		
B-BHC					·		;	· · · · · · · · · · · · · · · · · · ·									(
HEPTACHLOR					,	:	• ;	·									
D-BHC		2.0				; ;			:								
LDRIN					1											•	1
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6350 VERSAR CENTER 0 P.O. BOX 1549 0 SPRINGFIELD, VIRGINIA 22151 0 TELEPHONE: (703) 750-3000 . TELEX: 901125

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QC SUMMARY

				:	WAT	ER SURROGA	PERCENT	RECOVERY S	ілінаяч	•		
	1.0	in HO.	<u> </u>	- 42	•	D. LEVEL	VERSAR IN	•		HLGH I		066
		TER REPÜRT-B	<u>×</u> hi. <u>851</u>	.2-42				· · · · · ·		UTHER	(SpecIly)	
			-Volati	le11		56	nal-Væleti	e][Pentlalde][Dfor [n]
		D _B Toluene	BF0 (85	D ₄ -1,2- Dichloro- ethane	Dj- Hitro- benzene	2-Fluoro- blphenyt	phenyl	Dj - Pheno L	2-Fluoro- phenol	plieno t	Dibutyl - Chloren - date	1,2,3,4- TCDD
	<u> </u>	(86-119) 1021.88		<u>(11-120)</u> <u> </u>	<u>(41-120)</u> <u>80</u>	(44-119)	<u>(19-128)</u> <u>87</u>	<u>(15-96)</u> <u>90</u>	<u>(23-107)</u> <u>89</u>	<u>(20-1(5)</u> <u>75</u>	(67-114)**	(23-148)
	115 002-001	111	<u> </u>	<u> </u>	-+8	65	14		<u> </u>			
	1.181-002-002 1171-002-003	100	<u></u>	102	<u></u>	<u>80</u> 70	<u> </u>	<u>, 85</u>	<u>78</u> <u>70</u>	<u> </u>	·	
Defen ATF	CARY-002-00 5				74	<u> </u>	108	- 8/2	82			
MATRIX SPIC	R. 81.002-003	100	10	109	<u>.56</u> <u>10</u>	<u>- 10'</u> 	· · 31#	<u> </u>	<u>88</u>	<u> </u>	······································	
	CAR4-002-005	101	1N A	<u> 102 </u> <u> </u>	91		<u> 12'i </u>	82	<u> </u>	15	······································	
	(1.11-002-006 (PE) 001-007	101	x128 M135	4122	92	- 24	<u> </u>	<u> </u>	83	<u> </u>		· · · · · · · · · · · · · · · · · · ·
	RR84 002-008		94	20		<u>80</u> 65	<u>81</u> <u>55</u>	8']	81	12.3#		···· • • • • • • • • •
	1.84.002.00		¥.131	<u> </u>	82		3.8			<u></u>		· · · · · · · · · · · · · · · · ·
	11.81 ADZ 010 P.681-007-011	101	4133 8137	3			58 12	86	81		· · · · · · · · · · · · · · · · · · ·	
	KI(34:062.66	92	91	<u></u>	<u>80</u>	23	31 *	16	- 36	40		
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	Commenta	<u> </u>	<u>) Urrog</u>	ote Spi		ncentrat	ion C	.honged	from	100 ppb	b 50ppb	
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	Din 1			it of;	outside of	QC Limito				1.1	mits Revis	2/83
											•	11/84

MATRIA SPIKE DUP GECATE/RÉCOVERY ه. ب:

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CASE NO. 851.2 - 42	CONTRACTOR V	Etsaz	CONTRACT NO. COOOGG
WATER X	HED. LEVEL		HIGH LEVEL
QC REPORT NO. <u>857.2-42</u>	1		UNITS (Circle) ug/kg ug/D

1

		COLC. SPIKE	CONC.	CONC.			W. TEFCORE		
FRACTION	CONFORMD	ADDED	HS RZC.		REC	RPD	RPD WATER	RY LIHITS*	
	l,1-Dichloroethylene	25	26 1700				<i>1</i> 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 	5011.	COMMENTS
VOA	Trichloroethylene	.95	2/ 100	·			<157 71-120	62-111	······· ··· ··· ··· ··· ·
	Chlorobenzene	251					ZISE 1 73-130		
RR34 02 012	Toluene	2.5	1 17 1		i		ZISZ 1 76-125	<u> </u>	·
	Benzene	. 25.	20 80	i i	i i	i	(152 76-127	66-142	
	1,2,4-Trichlorobenzene	100	56 56	·/	·	<u> </u>	302 39- 99-	38-107	· · · · · · · · · · · · · · · · · · ·
B/H	Acennphthene ·	100	71 74	i\	i}/i	-1	301 46-118	31-137	
	2,4-Dinitrotoluene	100	38 38		it-7 i	/i	(50x 24- 96-	28- 89	· · · · · · · · · · · · · · · · · · ·
<u>ER81-002-003</u>	Di-H-Butylphthnlate	100	210 26	<u>i - X - i</u>	++	-+-1-	307-11-17-	29-135	
	Pyrene	100	51 51	j-1:\-		-1-7-	(5 0X - 26-127	35-142	
	N-Nitrosodi-N-Propylamine	100	74 74		-¥-i		302 41-116	41-126	·
	1,4-Dichlorobenzene	100	60 60	8-1	$-\Lambda$		302 36-97	20-104	
1.010	Pentachlorophenol	200	116 58	17-11	ITTI		(402 9-10]	17-109	
ACID	Phenol	: 100	67 67	17	1711		<402 12- 09	26- 90	·i
6.001	2-Chlorophenol	100	67 67	V	17-11	7×1	7402 27-123	25-102	·i/
<u>KR84-002-003</u>	P-Chlor-H-Cresol	100	69 69	· .]	Y\I	1-11	<40X 23-91	26-103	il
	4-Nitrophenol	200	65 33		l	//	2402 1 TO- AO	11-114	i1
PEST	Lindane	. 5		5.5	110	</td <td>(402 56-123</td> <td>76-127</td> <td>j [</td>	(402 56-123	76-127	j [
	lleptachlor		3.8 76	3.3	66	14	(40x 40-1)1	35-130	
1R84-002004	Aldrin	. 5	3.6 72	2.8	56		(401 40-120	34-132	11
Ne j-wiry	Endrin	<u>. 5</u>	4.5 170	4.2 .	M	6	(40x 1 52-126	31-134	I[
	P.p-DDT	<u> </u>	4.1 82	4.2	64		(40X 56-121 1	42-139	I
			4.8 26	2.6	52	574	(402 39-127	23-134	

' ^AAsterløked values are outside QC limits.

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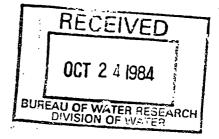
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outside of QC limits outside of QC limits outside of QC limits , outside of QC limits

Advisor Linits Revi: (2/83

Jack Ryan Room 317 Bureau of Water Research NYS Dept. Environmental Conservation 50 Wolf Road Albany, New York 12233-0001

Reference: Versar Report Number 857-45



Jack:

Please find enclosed our report for sample numbers;

RR84-002-13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24

Received from <u>S. Barlow</u> on 7/13/84.

Should you have any questions concerning these data please contact me at your earliest convenience and refer to the above report number.

Sincerely, Robert Maxfield

Program Manager Applied Chemistry Division

6850 VERSAR CENTER . P.O. BOX 1549 . SPRINGFIELD, VIRGINIA 22151 . TELEPHONE: (703) 750-3000 . TELEX: 90112



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METALS DATA

Versa:

Sample #:	6141
RR84 0	02 13

METALS RESULTS

	1 .	UAI 175 =	PROJECT #:	DATE: <u>8-30-84</u> PROJECT 8 : <u>857-45</u> LAB 8 : <u>5117</u>			
PARAMETER	ICP Detection Limit	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT	SAMPLE CONCENTRATION		
Ag		< 10.	As		<10.		
Be		< 1.	<u>Hg</u> *	0.2	<0.2		
Cđ			Se	10.	<10.		
Cr	<u> </u>	8.5	<u>Sb</u>	10.	0.</td		
Cu		23	T1	10.	<10.		
Ni	20.	29.					
РЪ	50.						
Zn					·		
					·		
COMMENTS:					· · · · · · ·		

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*Hg by CVAA

Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

Vernam.

Sample #: 624RR84 002 14 METALS RESULTS DATE: 8-30-84 PROJECT #: 857-45 илпо=ид/ LAB #: 5118 ICP FURNACE DETECTION SAMPLE DETECTION -SAMPLE PARAMETER LIHIT CONCENTRATION CONCENTRATION PARAMETER LIMIT <10. <10. 10. Ag As 10. 1. 0.2 <1. Be 10.2 Hg. * 10. 11. <10. 10. Cđ Se 5.3 4. Cr [0. <10. SЪ <10. <20. 10. 20. Cu T1 20. <20. N1 184. 50. PЪ 79. 10. Zn COMMENTS: *Нд Ъу СУАА 5

Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

Robert Maxfleid, Lab Manager

ert Maxileiu, Lau M

Verbæi.

Sample #: 6112 RR84 002 15

METALS RESULTS

		LNA	5= Mg/L	PROJECT #:	<u>857-45</u> 119
PARAMETER	ICP DETECTION LIMIT	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT	SAMPLE CONCENTRATION
Ag	10,	<10.	As		<10.
Be	1	<u> </u>	<u> </u>		<0.2
Cđ	10.	<10.	Se		<10.
Cr	4	28	<u>Sb</u>		<10.
Cu	20	58.	T1		0.</td
NÍ.	20	58			
РЪ	50.				
<u>Zn</u>		120.			
					ې د د د مېر د د د د د د د د د د د د د د د د د د د
COMMENTS:	· · ·		•		•
Hg by CVA	A				
				·	· .

Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

Versa:

Sample #: 6212 RR84 002 16

METALS RESULTS

DATE: 8-30-84 PROJECT #: 857-45 UNITS = Ma/L LAB #: 5120 ICP FURNACE DETECTION SAMPLE DETECTION SAMPLE CONCENTRATION PARAMETER CONCENTRATION PARAMETER LIMIT LIMIT <10. <10. Ag 10. 10. As <u><1.</u> Be 1. 0.2 <0.2 Hg * 10. Cđ D. <10. Se <10. 4. 6.7 10. <10. Cr SЪ 20 22. 10. <10. Cu T1 <20. 20. Ní 50. 52. PБ 65. 10. Zn COMMENTS: *Hg by CVAA

Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

Versa.

Sample #: 6111 RR84 002 17

DATE: 8-30-84 PROJECT #: 857-45

LAB #: 5121

METALS RESULTS.

UNITS= ug/L

PARAMETER	ICP DETECTION LIMIT	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT	SAMPLE CONCENTRATION
Ag	20.	<20.	As	10.	<u>د د د د د د د د د د د د د د د د د د د </u>
Be	2.	2.2	<u> </u>	_0.2_	0.21
Cd		< 20.	Se		<10.
Cr	8.	236	<u></u>		<10.
Cu	40			10,	<u> </u>
Ni	40.	304.			
<u> </u>	[00.	696.	<u> </u>		4
Zn	20.	348.			<u> </u>
	- <u></u>			· · · · · · · · · · · · · · · · · · ·	
		·	·		
COMMENTS:					

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COMPLEXIS:

*Hg by CVAA

Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

Versein

			1	4 002 1	I
		HETALS	RESULTS		· .
				DATE: 6	
	· .	4N17	s= sig/	PROJECT #:	, , , , , , , , , , , , , , , , , , , ,
ARAMETER	ICP DETECTION LIMIT	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT	SAMPLE CONCENTRATION
Ag		<10.	As	<u> </u>	<10.
Be	<u> </u>	<u> </u>	<u>Hg</u> *	0.2	_<0.2
ca		<10.	Se		<18.
Cr	<u> </u>		<u>\$b</u>		<10.
<u>Cu</u>		< 20	T1		
N1	_20	< 20		<u> </u>	
РЪ		<u> </u>			
Zn				- <u></u>	
					<u></u>

COMMENTS:

*Hg by CVAA

Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

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Verser

Sample #: 6122 RR84 002 19

METALS RESULTS

		LAI	TS= ug/L	DATE: <u>8-70-84</u> PROJECT #: <u>857-45</u> LAB #: <u>5123</u>			
PARAMETER	ICP DETECTION LIMIT	SAMPLE	PARAMETER	FURNACE DETECTION LIMIT	SAMPLE CONCENTRATION		
Ag		<10.	As		<10.		
Be		<1	<u> </u>	0.2	<0.2		
Cđ		<10.	Se		<10.		
Cr	<u> </u>	. 14.	<u></u>		<10.		
Cu		<u> </u>	T1		< 10		
NI	20.	23		·			
РЪ	50	206.			- <u></u>		
<u>Zn</u>	10.	109.					
<u> </u>	<u> </u>	· · · · · · · · · · · · · · · · ·					
COMMENTS: *Hg by CVA	A			•			

Procedures in accordance with: Test Methods for Evaluating Solld Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

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Vcr N 21.

	•			ple #: 6222 284 002 20				
		•	RR					
		METALS	RESULTS					
		•	· .	DATE:	8-31-84			
	· ·	U.A.	TS = Ma /L	PROJECT #:				
ARAMETER	ICP DETECTION LINIT	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT	SANPLE CONCENTRATION			
Ag	10	<10.	<u>As</u>		<10.			
Be	<u> </u>	</td <td><u> </u></td> <td>0.2</td> <td>< 0.2</td>	<u> </u>	0.2	< 0.2			
Cđ		<10.	Se		<10			
Cr	<u> </u>	6.9	<u>\$b</u>	10.	<10.			
Cu	20.	21	<u></u> <u></u>	10.	<10-			
Ni	_20,	<20.	Pros.	· · · · · · · · · · · · · · · · · · ·				
РЪ	50.	78		•				
Zn	10.	56		• • •				
		<u> </u>						
<u> </u>	······			• • • • • • • • • • • • • • • • • • •	• ••••••••••••••••••••••••••••••••••••			
OMMENTS:			-					
Hg by CVA	A				·····			

Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

Versa.

Sample #: 4134 RR84 002 21

METALS RESULTS

		UNIT	IS= Ma/L	DATE: <u>8-30-84</u> PROJECT #: <u>857-45</u> LAB #: <u>5125</u>			
PARAMETER	ICP DETECTION LIMIT	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT	SAMPLE CONCENTRATION		
Ag		<10.	As		<10.		
Be	<u></u>	<u> </u>	<u> </u>		<0.2		
Cđ	10	<10.	Se		<10.		
Cr	4	21	<u></u>		<10.		
Cu	20.	<10.	T1		<u> </u>		
Ni	20	<u> </u>					
РЪ	50.	142.			· · · · · · · · · · · · · · · · · · ·		
Zn				· · · · · · · · · · · · · · · · · · ·			
		·					
COMMENTS:					•		

Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

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CTNST.

Sample #: 4/2/ RR84 002 22

METALS RESULTS

•		and	TS= Jug/L		CT #: 857-45			
PARAMETER	ICP DETECTION LIMIT	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT	SAMPLE Concentration			
Ag		<10.	As	10.	<u> </u>			
Be	_1		<u> </u>	0.2	0.46			
Cd			Se		<10.			
Cr		182.	<u>Sb</u>		< 10.			
Cu	20.		<u> </u>		< 10.			
Ni	_20.	207			<u></u>			
РБ	50.	265	· · · · · · · · · · · · · · · · · · ·	•				
Zn	10.							
	- <u></u>				· · · · · · · · · · · · · · · · · · ·			
	•							
					•			

COMMENTS:

*Hg by CVAA

Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846. 2nd Edition, USEPA, Washington, D.C. 1982

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Sample ∦:	49	21	÷
RR84	002	23	

METALS RESULTS

DATE: 8-30-84 PROJECT #: 857-45 UNITS= 119/L LAB #: 5127 ICP FURNACE DETECTION DETECTION SAMPLE SAMPLE PARAMETER LINIT CONCENTRATION PARAMETER LIMIT CONCENTRATION <10. <10. 10. 10. Ag As <0.2 <1. 0.2 Be /. Hg * <10. <10. Cđ · 10. Se 10. < 10 . 4. <4. 10: Cr ŞЪ <10. 28. 10. 20. Cu τ1 <20. 20. Ní 67. ΡЪ 50. 64. 10. Zn

COMMENTS:

*Hg by CVAA ́

Procedures in accordance with: Test Methods for Evaluating Solid Hastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

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Vernar.

Sample #: 42/5 RR 84 002 24

METALS RESULTS

		CINI	TS=Mg/L		DATE: <u>8-30-84</u> PROJECT #: <u>857-45</u> LAB #: <u>5128</u>			
PARAMETER	ICP DETECTION LIMIT	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT	SAMPLE CONCENTRATION			
Ag	10	<10.	As		<10.			
Be	<u> </u>	<1.	<u></u>		< 0.2			
Cđ	10.	<10.	<u> </u>		< 10.			
Cr	4	4.2	<u>\$</u> Ъ	10.	<10.			
Cu	20.	<u>~20.</u>	T1		<10			
Ni	20.	<20.						
РЪ	50.	- 150.						
Zn					·			
· · · · · · · · · · · · · · · · · · ·		<u></u>						
·				·	······································			
DAMENTS:	•			·				
Hg by CVA.	A	<u></u>		. <u></u>				

Procedures in accordance with: Test Methods for Evaluating Solid Wastes, SW-846, 2nd Edition, USEPA, Washington, D.C. 1982

METALS QUALITY ASSURANCE

FURNACE

DATE: 8-30-54

BATCH: 857-45

LAB: _VERSAR, INC.

EPISODE:

					(ug/L)				
		د .	As	Hg	Se	Sb	TL	•	
[REFERENCE STANDAND	FOUNS	27.	4.8	19.	90.	· 45.	T	
	SOURCE EPA	TRUE	27.	4.35			50.4		
		REL. Z ERR.	and the second se	10.	<u>5.</u>	-8.	- 11.	· · · ·	
	CALB. BLANK	AESULTS		50.2	510.	<10.	<u></u>		
	REG. BLANK 1	NEEALIS	510.	<0,2	<i><10.</i>	<10.	< <i>1</i> 0.		
	REG. BLANK 2	RESULTS	······································						
. [INST. CALB.	10040	104.	5.2	90.	70,	90.	1	1
	VERIFICATION	INUE	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$						
	HANCE: T-D-PC-STIK	REL. 7 ERR.	<u> </u>	<u>4.</u>	-10.	0.	-10.		
	SWIRATE	SAMPLE RESULT	<10.	<0.2	<10.		< 10.		
J	SWINATE LABY COR 21								
	RR84 00215-frag	N/8 X	÷.		-		~		
				•		<60.			
-	SAMPLE NO. RRBY 002 16	BUPLICATE RESULT				510.			
		R78 %			•			• • • • •	
		BAMPLE RESULT	<10.	<0.2	×10.		<10.		
'	BANKE 1 AR BY 002 21	Brine Result	105.	1.7	90.				
		WIRE ADDER		2.0	100.	<i>·</i> ··	100,		
	RR84 002 18	% RECOVERY			مهيني بجرار بمنفق فالتقالي			·	
		SAMPLE RESULT				<10.			1
2	WHE E RABY 00 2 16	SPIKE RESULT	1						1
	TANY LE NO	STIKE ADDER			· · · · · · · · · · · · · · · · · · ·			1	
		X RECOVERY				- A REAL PROPERTY AND A REAL PROPERTY A REAL PROPERTY AND A REAL PROPERTY AND A REAL P			1

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METALS QUALITY ASSURANCE

(ug/L)

ICP

DATE: <u>8-30-84</u>

LAB: VERSAR, INC.

EPISODE:

BATCH: 857-45

		Ag	Be	cd	Cr	Ċu	Ni	PL
AFFERENCE	FOUND	32.	ويتقابل ويستعد مروحاتها المتكافي		•			
STANDARD	1808	34.	243.	<u> </u>	<u> </u>	<u> </u>	203.	
SOURCE: EPA	REL. 7 ERR.	<u></u>	3.	-14.	2.	2.	207.	
CALB. BLANK	WEBAFIB	<3.	<1.	<10,	<4.	<20.	- <u>2</u> . <20.	РЬ <u>436</u> <u>490</u> <u>-9</u> <u><50</u> <u><50</u> <u>4499</u> <u>490</u> <u>52</u> <u>97</u> <u>52</u> <u>97</u> <u>52</u> <u>97</u> <u>52</u> <u>97</u> <u>52</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>51</u> <u>97</u> <u>51</u> <u>97</u> <u>51</u> <u>51</u> <u>97</u> <u>51</u> <u>51</u> <u>97</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u> <u>51</u>
REG. BLANK 1	VEBALTS	<3.	<1.	<10.	<4,	<20.	<20.	
REG. BLANK 2	REIULIS				<u> </u>			
INST. CALB.	LOANG	35.	239.	41,	305,	390,	211.	449
VERIFICATION	TAVE	34.	235.	43.	311.	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		
LOVACE: EPA	REL. 7 ERR.	3.	2.	-5,	- 2.			
BIPLICATE 1	SAMPLE RESULT	<10.						
EANTLE REPY DOD 16	R 16 DWFLYEATE RESULT <10, <1. <10, B.6 24. <20.							
	R/8 %	······································			25.	9,	-	0. 97.
BUPLICATE 2	SAMPLE RESULT							
SAMPLE RO	DWELICATE RESULT			··· ·				
	RFU X							
RR84 002 16	EVMATE VETATE	0.</td <td><1.</td> <td><10</td> <td>6.7</td> <td>22,</td> <td><20</td> <td>52.</td>	<1.	<10	6.7	22,	<20	52.
•	BRIKE RESULT	167.	186.	174.	184.	204.	/82,	
1AMPLE #0	WIRE ADDED	200.	200.	200.	200.	200,	200	
	% RECOVERY	84.	93.	87.	89.	91.	91.	
	SAMPLE RESULT			K				<i>4</i>
MIKE T	SPIKE NESULT			•				
SAMPLE #0	THE ADDED			· ·				415 400.
	X AECOVERY	******					· · · · · · · · · · · · · · · · · · ·	

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METALS QUALITY ASSURANCE

Icp

LAB: VERSAR, INC.

EPISQDE:

DATE: 8-30-84

BATCH: 857-45

ALTERTHE	FOUND	Zh			- 0.			
REFERENCE BTARDARD	TRUE	410.					1	1
sounce: EPA	REL. Z ERR.	<u>418.</u> -2.		ļ				┼───
CALB. BLANK	AESULIS	<10,		Ì		-		+
REG. BLANK 1	AESULTS	<10.						
REG. BLANK 2	RESULTS		<u> </u>					
INST. CALB.	FOUND	416.	<u> </u>		- <u> </u>	_		1
VERIFICATION	TRUE	418.	<u></u>					
Munte:-L-F-P	REL. 7 ERR.	<[.						
SWINCATE I LAWRIE NO. R.R. BT002 K		65.			1			
	DUPLICATE RESULT	61.			<u> </u>			
	RFB X	6.		·	<u> </u>			
	SAMPLE RESULT					+		
SAMPLE RO	BUPLICATE RESULT							
	RFB %							
	SAMPLE RESULT	65,						
SAMPLE NO. RR BY 002 16	MIKE VEZAFL	236.					ll	
	WIRE ADDED	200.				· [······		
	% RECOVERY	86.						
wme z	SAMPLE RESULT							_
SAMPLE NO	STIRE RESULT							
	MIRE ADDED							
	X RECOVERY							



WCE'N DE INC.

GC/MS DATA

WCI'S DInc.

COMMENTS ON 857-45 GC/MS DATA

A number of the pesticide chromatograms contained large peaks which didnot correspond well to any of the priority pollutant pesticides. The large peaks had a very characteristic pattern which was similar to another group of samples we analyzed recently for you (Batch 857-42). Along with the large peaks, some of the chromatograms contained some peaks which had retention times similar to the retention times of certain priority pollutant pesticides, usually lindane, alpha and beta NBC, and heptachlor. The retention time for lindane was usually shifted earlier than the corresponding peak in the standards, while the retention times for all of the other compounds were usually shifted later than the standards. Because of the shifting retention times, we are not convinced that these pesticides are truly in the samples. Thus, we have listed their concentrations as tentative identifications in the report.

We can deduce some information about the large peaks with the characteristic pattern which were in these samples and the earlier samples from Batch 42. In the pesticide cleanup process, the sample is divided into three fractions based on the polarity of the compounds. The large peaks always appeared in the least polar fraction. The other compounds eluting in this fraction include PCB's, DDT, the BHC isomers, chlordane, heptachlor, toxaphene. and others. These are all quite nonpolar compounds. The compounds appeared to be less volatile than DDE. The compounds are also capable of responding on an electron capture detector, so they must contain some electron capturing group, such as halogens, sulfur, nitrogen, or double bonded oxygen. The compounds had very assymetrical peak shapes, which is usually characteristic of compounds which are either thermally unstable, highly reactive, or polar. Thus, we suspect that the compounds are rather nonpolar compounds containing electron capturing groups, less volatile (lower vapor pressure) than DDE, and that they may be either thermally unstable or reactive.



The following GC/MS information is provided in this report:

- I. DATA SUMMARY
- II. QUALITY CONTROL SUMMARY
- III. SAMPLE DATA
 - 1. Results
 - Chromatogram
 Spectra
- IV. STANDARDS DATA
 - 1. Standards Chromatograms
 - 2. Initial Calibration Curve Form
 - 3. Calibration Curve Check Form
- V. QUALITY CONTROL DATA
 - 1. Calibration/System Performance Check
 - 2. Reagent Blanks
 - Duplicate Samples 3.
 - 4. Matrix Spike Samples
- VI. SAMPLE PREPARATION DATA
 - 1. GC/MS Injection Logsheets
 - 2. Extraction Forms/Notebook Pages



DATA SUMMARY



BNA DATA SUMMARY

FIELD NUMBER	PRIORITY POLLUTANT BNA Compounds Detected
RR84-002-13 6141	None detected
RR84-002-14 624 /	None detected
RR84-002-15 6112	None detected
RR84-002-16 6212	None detected
RR84-002-17- 6///	None detected
RR84-002-18 6211	None detected
RR84-002-19 612 2	None detected
RR84-002-20 6222	None detected
RR84-002-21 4134	None detected
RR84-002-22 4121	None detected
RR84-002-23 4221	None detected
RR84-002-24 4215	None detected



HSL VOA DATA SUMMARY

FIELD NUMBER

RR84-002-13	6141
RR84-002-14 6	5241
RR84-002-15 @	5112
RR84-002-16 G	212
RR84-002-17 6	SU 1.
RR84-002-18 6	211
RR84-002-19 <	5/22
RR84-002-20 6	222
RR84-002-21 5	4134
RR84-002-22	4121
RR84-002-23	4221
RR84-002-24 <	4215

PRIORITY POLLUTANT

RR84-002-23 Duplicate 4221

70 ppb methylene chloride

	P	-				NC.															·	·			
\bigcirc							ł	Pesti	icic	de	Dat	ta	Sum	na	ry							,			
Matrix: Wate																		^ /	,	2	357.2	-45	- /	•	
Matrix: Wate Units: <u>19/1</u>					,	.\		xÌ.	1	ν,	V	,	1	. \		V	N	ν v	sk		21	No	رآر		
-					(0)	((No/	1 - 6	1. / (n'	≯	(₀)	N		44	¥ (0	V . >	· X	′ ا بر /	<u>`</u> &`		VX	r v j	1	/
				4	3/,	Ĵ)	/	5/	16	/.	\$	/	\$,(Ŵ.	.2/	8	Y	2	٧.	X			/	/
			.x/	0	L D	יע ע'	d'	<i>7.6</i>	¥/ 	,000	י ע'	θ ₃		¥/	1/0/		\mathbb{Y}	1.0%	×_7	.ø	× 5 . v 2	¥ /		/ · ·	
•		f.		e l	2° d	¥	¥	<u>}</u>	12	4	Ŷ	É.	¥	Q	27 E		L'	A A	J'	Å	\$ P	/ ,		/	/
A-BHC	X	10	M	۵	13 (o) 13 (o) 1 (o)	M) .	35	M	ט	N	2	0.5E	;] 2	9.64	19	M	מי	M	0					
LINDANE					2.0			2.4					0.36	.0	1.19	6.5									
B-BHC					3			5.3	\Box				2.]		//	18									
HEPTACHLOR					0.58			A	\Box				MD		32	حک									
D-BHC					ND			ND					2.8		ND	ND									
ALDRIN					2.1								Ъ	þ	1,89	•									
HEPT.EPOX					ND				\prod].		ND										
AENDOSULFAN									Π				ŕ												
DIELDRIN														ŀ											
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ENDRIN	ľ																					·			
ENDOSULFAN																									
ממם ' מַק									$\left[\right]$			\square						ŀ							
DDT																									
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ENDOSULFATE																					•				
	`				V	V		V.	J	,	\Box	. و	V		1	J		<u>}</u>		5					
·	2	به مع	Jes	•	conter	te-	ᆂ		L	ide	kt!	£id	atio		Gre		<u> </u>	ten	tat	زسو	, see	text	f		
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6850 VERSAR CENTER @ P.O. BOX 1549 @ SPRINGFIELD, VIRGINIA 22151 @ TELEPHONE: (703) 750-3000 . TELEX: 901125



QA SUMMARY

HATRIX SPIKE DUP LICATE/RECOVERY

CASE NO.	851.2-45
LOW LEVEL	X.
WATER	X
QC REPORT N	0. 857.2-45

CONTRACTOR	VERSAR
HED. LEVEL	· · · · · · · · · · · · · · · · · · ·
SOIL/SED.	
	······································

000661	
ug/kg	UB/L

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			CONC. SPIKE	CONC.	6	CONC.	6			OC TRECOVE	RY LIHITS*	11
	FRACTION	COMPOUND	ADDED	HS	REC.	HSD	REC	RPD		WATER	SOIL	COMMENTS
	·	1,1-Dichloroethylene	25	22	88	24	96	9	<15X	61-145	59-177	
	VOA	Trichloroethylene	25	22	88	24	96	9	<15X	71-120	62-137	
4221		Chlorobenzene	25	23	92	25	100	8	<15X	75-130	60-133	· i
1771	RR84-002-23		25	24	96	25	100	4	<15X	76-125	59-139	· · · · · · · · · · · · · · · · · · ·
		Benzene	25	- 21	84.	24	96	13	<15X	76-127	66-142 .	
		1,2,4-Trichlorobenzene	100	6	61	57	571	7	502	39- 98	38-107	· · · · · · · · · · · · · · · · · · ·
	B/N	Acensphthene •	100	87	87-1	83	83	5	<5 0X	46-118	31-137	· · · · · · · · · · · · · · · · · · ·
001		2,4-Dinitrotoluene	100	96	96	93	93	3	<5 0X	24- 96	28-89	· · · · · · · · · · · · · · · · · · ·
4221	<u>K84.00</u> 2.23	DI-N-Butylphthalate	100	17	17	18	181	6	<5 0X	1 11-117	29-135	i
	Į į	Pyrene	100	103	103	97	97	6	<5 0X	26-127	35-142	j{
	, i	N-Nitrosodi-N-Propylamine	100	77	77	67	671	14	S 0X	41-116	41-126	·i1
		1,4-Dichlorobenzene	100	65 1	65	53	53	20	502	36-97	28-104	· []
· .		<u>Pentachlorophenol</u>	200	172	86	181	91	(0	<40X	9-103	17-109	· · · · · · · · · · · · · · · · · · ·
	ACID	Phenol	100	62	62	62	62	Ď	<40X	12- 89	26- 90	·i{
4221		2-Chlorophenol	100	55	55	58	58	.5	<40X	27-123	25-102	i1
4721	<u>RR84.00</u> 2.23	P-Chlor-H-Cresol	JOU	74	74	74	141	0	<40X	23-97	26-103	· · · · · · · · · · · · · · · · · · ·
		4-Nitrophenol	200	192	96	204	102	6	<40X	10-80	11-114	· · · · · · · · · · · · · · · · · · ·
		Lindane	5	4.9	98	/			<40X	56-123	46-127	·i1
	PEST	lleptachlor	5	3.7	71	WA7		WY	<40X	40-131	35-130	i
1		Aldrin	5	8,3	166	V		X	<40%	40-120	34-132	· j [
6141	RB#1-002-13	Dieldrin	5	4.5	86	\square	\square	7	<40X	52-126	31-134	i
		Endrin	5	4.3	86	$\overline{\Lambda}$	7	$7 \times$	<40X	56-121	42-139	· · · · · · · · · · · · · · · · · · ·
	· · ·	P,P-DDT	5	2.0	40		V	<u> </u>	<40 X	39-127	23-134	i

WATER SURROGATE PERCENT RECOVERY SIMHARY

Case No. <u>857.2-45</u> LOW LEVEL <u>×</u> WATER <u>×</u> QC REPORT NO. <u>857.2-45</u>	CONTRACTOR VERSAR INC. HED. LEVEL	CONTRACT HO. <u>COOO66</u> HICH LEVEL OTHER (SpecIfy)

stile ------][-----][Pesticide]--1-------Vo 1

		Dg Toluene	BFB	D ₄ -1,2- Dichloro- ethane	D5- Nitro- benzene	2-Fluoro- blphenyl		D5 Pheno L	2-Fluoro- phenol	2,4,6- Tribromo- phenol	Dibutyi- Chioren- date
6141	No. [[84-002-13	<u> </u>	<u>94</u>	86	· 57		76	67	73	81	.45
6241	RR84-002-14	100	96	90	84		59	78	<u>- 75</u> FF	96	64
6112	1884-002-15	- 80	100		66	69	105	65	63	92	88
6212	RR84-002-16 RR84-002-17	178	102	<u> </u>	69	64	52	<u> </u>	<u> </u>	<u> </u>	64
6111 4211	RL84-02-18	94	101	80	<u> </u>	- 67 - 78	65	77 80		<u> </u>	76
6122	Rest002-19	. 90	94	76	63	64	114	76	83	94	72
6222	EKSt-202-20	90	92	72	94	88	96	83	85	100	68 1
4134 4121		<u>90</u> 98	108	86	72	79	41	68	78	99	72
	6684-002-22 1084-002-23		106	83	<u></u>	67-	79	<u> </u>	<u>lela</u>	<u>88</u>	40
MATAY SPIKE	EPS+02-23		94	80	72	69	65		<u> </u>	79	- <u>+0</u> Na
MARX SALE	1/04.002-23	90	96	82	- 7 0	69	68	53	48	85	NA
MATRIX SALE DUPLICATE 4215	RAS/ 02 24	84	106	83	67	60	70	73	68	103	40
	<u>LB</u>	98	106	90	90	66	85	76	72	90	77 55
Digical	REF1002-13 RES1002-13										66
INFIETCY X											
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	0822 MEW YORK STATE DEPARTMENT OF HEAT	С Г H	
	WAUSWORTH CENTER FUR LABURATORIES AND	PRSEARCH	
3		K J D G A S C A	1
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	PAGE 1 RESULTS OF EXAMINATION	FINAL REPORT	`
			-
	SAMPLE ID: 43585 SAMPLE RECEIVED: 84/08/29	97.09 B	
	PROGRAM: 650: UEC SOULD WASTES		
	SOURCE ID: MEG8P113 ORATNAGE BASIN:01	GAZETTEER CODE:3102	
÷			1
		COUNTY: NIAGARA	- C
		Z DIRECTION:	
	LOCATION: VIAGARA FALLS, LOVE CANAL, BEDROCK NOND	LTORING WELLS	4
	DESCRIPTION: AEGL (#3222)		10
			- N
	REPURITING LAB: TOX: LAB FOR ORGANIC ANALYTICAT TEST PAITERN: PPEP:F.R.METHUDS 625,601 AND EF		
	TEST PAITERN: PPEP:F.R.MEIHUDS 625,601 AND EF	PA METH 503.1	12
1	SAMPLE IYPE: 250:GRUUND WATER		
	TIME OF SAMPUING: 84/08/28 11:30		
	3110 00 DR (FUIRD, 37/03/20 11.30	DATE PRINTED:84/10/16	. 4 M
-			_
5	PARAMETER	RESULT	
	162009 CHLOROMETHANE	< 1. MCG/L	
	T61809 BRUMUMETHANE	-	
-		< 1. MCG/L	-
31 4	T41009 VINYE CHLORIDE		ч (–
	T70209 UICHUORODIFUUOROMELHANE		
	T61909 CHLORDETHANE		<i>t</i>
7	T61709 IRICALOROFLUORUMETHAWE		
-			. (
	123809 DICHLORDMETHANE	< 1. MCG/L	· • • •
	T50909 1,1+DICHGORDETHENE	< 1. MCG/L	÷.,
*	T51909 1,1-DICHLORDETHANE	< 1. MCG/L	
3			
	T61209 TRANS-1,2-DICHLORDETHENE	< 1. MCG/6	· ·
	T39009 CHLOROFORM	< 1. MCG/L	
₹	ISO809 1,2-DICHLORDETHANE	< 1. MCG/L	(
	T23609 1,1,1-TRICHDORUETHANE	< 1. MCG/L	~
			:
2	I36609 CARBON TETRACHLORIDE	< 1. MCG/L	1.
7	T38909 BROMODICHLUROMETHANE	< 1. MCG/L	- (C
	T61309 1,2-DICHLOROPROPANE	< 1. 4CG/L	
	T61509 IRANS-1, J-DICHLOROPRUPENE		
-	• • •	< 1. MCG/L	
Ţ	141109 TRICHLORDETHYDENL	< 1. MCG/G	1C.
	T44909 DIBROMOCHLORDMETHANE	< 1. MCG/L	11
	T61409 CIS-1,3-DICHLORDPROPENE	< 1. MCG/L	
ζ			
Ż	T51709 1,1,2-IRICHLOPDETHANE	< 1. MCG/L	i C
	T61109 2-CHUORDETHYLVINYL FTHER	< 1. MCG/L	
	T42109 BRUMUFURM	< 1. MCG/L	
1	I51809 1,1,2,2-IETRACHLORGETHANE	< 1. MCG/L	C
	T41209 FETRACHLORDETHENE	1	
-	T40909 CHLOROBENZENE	< 1. MCG/L	2.5
1	149709 1,3-DICHLOROBENZENE	< 1. MCG/L	(
	T44109 1,2-DICHLORDBENZENE	< 1. MCG/L	
	T44209 1,4-DICHLOROBENZENE		
1		-	, e
{	I34409 BENZENE	< 1. MCG/L	
	T39209 TOLUENE	< 1. MCG/L	-
	TS1009 ETHYLBENZENE	< 1. MCG/L	
(T85209 1-CH40ROCYCLOHEXENE-1	< 1. MCG/L	
×			C.
	**** CONTINUED ON NEXT PAGE ****		,
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-{ ¹	COPIES SENT ID: CO(2), RO(0), LPHE(0), FED(0), T	NED-P(0), INED-L(0)	C
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	MR. S. BRASWELL	السينية من من من من من من من من من من من من من	
	BUREAU OF SOLID WASTES	· .	6
	N.V.S.DEPT. OF ENVIRONMENTAL CONSERVATIO	SUBMITTED BY:BARLOW	-
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	0823		UPK STATE DEPAR CENTER FOR DABD					(
	PAGE 2 (3222	RESULTS OF MX				AL REPORT	(
	SAMPLE ID:	43585	SAMPLE RECL	TUP::::::::::::::::::::::::::::::::::::	229209			a r
			LAGAKA FALUS C.	E 4 50 2 0 40 10	COUNTY:M	IAGARA		Ľ
	LOCATION:	VIAGARA PAD	LS, LOVE CANAL,	SEDRUCK #	ADWITDRING W	ELLS		ς
	TIME OF SA	MPDING: 84/08	/28 11:30				:84/10/16	`€
								-
	F7040 9	PARAMETER Para-Xydene			RESULT	MAGA	1	ø
1) META-XYDENE				MCG/L MCG/L		
		JRTHD-XYLFNE				MCG/L		
2		CUMENE				MCG/L		•
		STYRENE			< 1.	MCG/L	•	
		P-BRUMOFLUOR				MCG/G		
3		N-PROPYLBENZ			-	MCG/L		
		- TERT-BUTYLBE - O/P-CHUDROID				MCG/L		
) - <u>-</u>		BRUMOBENZEGE				MCG/L MCG/L		(
3		MEIA-CHLOPUT.	រកបខដន			MCG/L		e.
		1,3,5-18IMET				MCG/L		
1		1,2,4-1RIMET	TYLBENZENE			MCG/L		¢
		P-CYMEUE				4CG/6		-
7		CYCLOPROPYLB:				MCG/L		-
7. a.d.		SEC-BUTYLBEN, W-BUTYLBENZE:				MCG/L		Ł
		2,3-BENZOFUR				MCG/L MCG/L		
* 2 1			RADTEME (C-46)			MCG/L		(
		1,2,4-PRICAL	-			MCG/L		•
	-	NAPHIHADENE				MCG/L	•	
<u>{</u>		1,2,3-TRICHA	JRUBENZENE		-	MCG/L		
		PHENOL .			< 10.			~
7		2-CHLOROPHLN:				MCG/L	•	
7		2=NITROPHENO(2,4=DIMETHYD				MCG/L MCG/L		(
		2,4-01CHLOKO			< 10.			
1		4-CHLDKD-3-ME			< 10.			(
-	r67209	2,4,6-TRICHLC	DRUPHENOL .		< 10.			
-		2,4,5-TRICHLE				MCG/L	•	•
1		2,4-DINITROPH			< 10.			Ċ
		4-NITRUPHENDI				MCG/L.		
t		PENTACHLOROPH	DINITROPHENOU		< 10.			
7		BENZUIC ACID			< 10.	46676	NA	C
			SUPROPYL)ETHER		< 10.	MCGZI	(A H	
	I63909	BIS(2-CHLORDE	THYL)ETHER		< 10.			.(
			-PROPYDAMINE .		< 10.	MCG/L		
		HEXACHLOROETH	IANE	·	< 10.		· · · · · · · · · · · · · · · · · · ·	
A.		NITROBENZENE ISOPHORONE	,		< 10.		•	· (
			THOXY) METHANE		< 10.4			•
(¹²	;		GOPENTADIENE (C	-56)	< 10.			1
► 1 10	T64109	2-CHLORDWAPHI			< 10.			C
	I64909	2,6-DINITROTO		. .	< 10.			
		ACENAPHTHYLEN			< 10.	MCG/L		e
,		DIMETHYLPHTHA	LATL		< 10.		• , [•]	-
۰ ۱	163009	ACENAPHIHENE		T 01 7 5 4 -	< 10.0	MCG/L T		
€ 5 4			ONTINUED ON NEX	1 PAJE ##	₩ ₩			
- (-		and the second second second	· · ·					1
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	0824	NEW YORK STATE DEPARTMENT D		10 ·	
-		WADSWORTH CENTER FOR INBURATORIE	S AND RESEARCH		
					(
	PAGE 3	(3222) RESULTS OF EXAMINATI	NC	FINAL REPORT	
á					
	SAMPLE ID:	43585 SAMPLE RECEIVED: 34			(
		SUBDIVISION: NIAGARA FALLS C.			
	LUCATION:	NIAGARA FALLS, LOVE CANAL, BEDROC			
ż	TIME OF SA	MPGING: 84/08/28 11:30	DATE PR	INTED: 84/10/16	
,	T (4 3 0 0	PARAMETER	KESULT	-	~
í		2,4-DINITRUTOLUENE	< 10.5 MC		
		DIETHYLPHTHALATE	< 10.1 MC		
+	_	FLUORENE			-
[A-CHLOROPHENYL PHENYL ETHER	ų - 23	14 A	
		N-NITRUSODIPHENYLAMINE	< 10. MC		
+		1,2-DIPHENYDHYDRAZINE	< 10. MC		-
ĩ		4-BROMOPHENYL PHENYL FIHER	< 10. MC		
		HEXACHLOROBENZENE	< 10. MC		
		PHENANTHRENE	< 10. MC		-
1		ANTHRACENE	< 10. MC		
		DI-N-BUTYLPHTHALATE	< 10. MC		
*		FLUDRDANTHENE	< 10. MC		
		PYRENE	< 10. MC		
		BENZIDINE	< 200. MC	G/L	
•		BUTYL BENZYL PHTHALAIE	< 30. 40		
Ĩ.		BENZO(A)ANTHRACENE	< 30. MC		
		3,3,°-DICHLOROBEMZIDINE	< 30. MG		
	•	CHRYSENE	< 30. MC		
		BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MC	-	
		DIUCTYUPHTHAUATE	< 30. MC	G/L × P	•
×.		BENZU(B)FLUORANTHENE	بر مە	NA	
		BENZO(K)FLUORAN THENE	4	NA	(
	-	DENZD(A)PYRENE	< 30. MQ	· · · · · · · · · · · · · · · · · · ·	
		INDEND(1,2,3-CD)PYRENE	< 30. MC		
۹,		DIBENZO(A,d)ANTHRACENE	< 30, MC	G/L EQ	•
		SENZO(GHI)PERYLENE()	< 30, MC		
-		HCH, ALPHA	< 10, MC	G/L ·	
Ţ		HCH, BETA	< 10. ^w C		(
		HCH, GAMMA (LINDANE).	< 10. MC		
+		HCH, DELTA	- < 10. MC		
Ţ		nEPTACHLUR	< 10. MC		C
	107709		< 10. MC		-
		HEPTACHLOR FPOXTUE	< 10. *C		· .
1		ENDOSULFAN I	< 10. MC		(
•		DDE -PARA, PARA	< 10. MC		
		DIELDRIN	< 10. 40		•
(T08409		< 10. MC		
		DDD -PARA, PARA	< 10. 42		-
		ENDOSULFAN II	< 10. 40		
(ENDRIN ALDEHYDE	< 10. MC		(
		ENDOSULFAN SULFATE	< 10. 40		_
, 13	T14709	DDI -PARA, PARA	< 10. 40	G/L	
		**** END OF REPOR	<u>r</u> ****		C
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í.	0828 YER YORK STATE DEPARTMENT O	en aleration tr		(
m	WADSWORTH CENTER FOR LABORATOPIE	S AND RESEARCH		_
(PAGE 1 RESULTS OF EXAMINATI	2 M		(
_	PAGE 1 RESULTS OF EXAMINATI	۱۹۱۲.	FINAL REPORT	
	SAMPLE 1D: 43586 SAMPLE RECEIVED:84	104/00/00	•	-
Ý		/ / 8/ 29/ / 9		
	PROGRAM: 650:DEC SOLTD AASTES			
	SUURCE ID:NEGBRI13 DRAINAGE BASIN:01 Podificad subjivision:Niagara Fadus C.	COUNTY:N		
÷.				
	LUCATIONE: LONGIEUDE: LUCATIONE: MIAGARA FALLS, LOVE CANAL, BEDROC			
,	DESCRIPTION: HELL(#3251)	V MONTIORING A		
- Š	REPORTING LAB: IDX:LAB FOR ORGANIC ANAL	የመተረካተ ሮሀፍቲቲናቲ	5 V	
	TEST PATTLEN: PPEP:F.R.METHODS 525,601			
3	SAMPLE TYPE: 250:GROUND WATER	AND PLA WEIN DI	/3•1	
*	TIME OF SAMPLING: 84/08/28 11:00	5 B (0 D		C
	17WE DE 98 EATMO: 84/06/50 11:00	UALE	PRINTED: 84/10/16	
t	PARAMETER	RESULT		
- S _	T62009 CHLOROMETHANE	< 1.		
	T61809 BRUMUYETHANE		MCG/L	
Ţ	T41009 VINYL CHUDKIDE	-	MCG/L	•
-\$	T70209 DICHLORODIFLUOROMETHANE		MCG/G	
	T61909 CHLORDETHANE		MCG/G	
Ţ	T61709 TRICHLOROFLUOROMETHANE	~ 1.		(
*	T23809 DICHLOROMEIMANE		MCG/L	•
	T50909 1,1-UICHLOROZENENE		MCG/L	
₹.	T51909 1,1-DTCHLORDETHANE		MCG/L	(
	T61209 FRANS-1, 2-UTCHLOROETHENE		YCG/L	
	T39009 CHLOROFORM		MCG/L	
Z	150809 1,2-DICHLORDETHANE		MCG/L	(
	T23609 1,1,1-TRICHUORDETHANE		MCG/L	
	T36609 CARBON TETRACHLORTUE		MCG/L	
<	T38909 BRUMUDICHLÜRÖMETHANE		MCG/L	ſ
	T61309 1,2-DTCHLOROPRUPANE		MCG/G	
	161509 IRANS-1,3-DICHLOROPROPENE	< 1.	MCG/L	
1	T41109 PRICHLORUEIHYLENE	< 1.		(
	T44909 DIGROMOCHDOROMETHANE	< 1.	MCG/L	-
	T61409 CTS-1,3-DICHLORDPDPENE	< 1.	MCG/L	
£	T51709 1,1,2-TPICHLORDETHANE	< 1.	MCG/L	(
	T61109 2-CHLORDETHYLVINIL ETHER	< 1.	MCG/G	. –
	T42109 BROMOFORM	 < 1 	MCG/L	
(T51809 1,1,2,2-TETRACHDURUETHANE	< 1.	MCG/L	C
	T41209 TETRACHLORUETHENE	< 1.	MCG/L	
	T40909 CHLORDDENZENE		MCG/L	
L	T49709 1,3-DICHLOROBENZENE		MCG/L	(
	T44109 1,2-DICHLOROBENZENE		MCG/L	
1	T44209 1,4-DICHLORDBENZENE	-	MCG/L	
ſ	T34409 BENZENE		MCG/L	.(
•	IS9209 IDUUENE		MCG/L	
(T51009 ETRYLBENZENE T85200 t-CHUDANKARL	-	MCG/L	1
C	T85209 1-CHLOROCYCLOHEXENE-1		MCG/L	C
	**** CONTINUED ON NEXT PAGE	······································		
r .	COPIES SENT TO: CO(2), RU(0), LPHE(0), FED			i
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i	MR. S. BRASWELL	·		
	BUREAU OF SOLID WASTES			e
	N.4.S.DEPT. OF ENVIRONMENTAL CONSERVATIO	SHAMETI	ED BY:BARLOW	L
	50 WOLF RD., ROOM 417	000 TI	LU DISONNUN	
(ALBANY, N.Y. 12233		1	(
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		WADSWORTH	CENTER FUR DARD	PATORIES	AND RESEAR	СН	
PAG	E 2	(3251)	RESULTS OF EX	AMINAPIJN	•	ទ	INAL REPORT
~ • • •				T. Consider			
	-		SAMPLE RECE			AUTACADA	
		•	LAGARA FALLS C.				
-	ATION:	NINGARA PAU MPHING: 84/08	US, LOVE CANAL,	OPURACE			ED:34/10/1c
ιIm		WENTAGI GAVON	//8 11:00			IS CANE	PD * 94/10/10
		PARAMEIER			RESU	LT	
	T70409	PARA-XYLENE			<	1. MCG/6	
	T70309	META-XYLENC			< .	1. MCG/L	
	T51409	JRIHO-XYLENE			<	1. MCG/L	
	T 85309	CUMENE		· · .	<	1. MCG/L	
	T85409	STYRENE			<	1. MCG/L	
		P-BROMOFLUOR				1. MCG/U	
		N-PRUPYLDENZ				1. MCG/L	
		FERT-BUTYDBE				1. MCG/L	
		0/6-04004010	LUENE			1. MCG/6	
		- BROMUBENZENE				1. MCG/L	
		META-CHLORUT				1. MCG/6	
		1,3,5-TRIMET 1,2,4-TRIMET				1. MCG/L 1. MCG/L	
		P-CYMENE				1. MCG/L	
		CYCLUPROPYLB	ENZEGE -			1. 4CG/L	
		SEC-BULYLBEN				1. MCG/L	
		N-BUIYLBENZE				1. MCG/L	
		2,3-BENZOFUR				1. MCG/L	•
	-	-	PADTENE (C-45)			5. MCG/L	
		1,2,4-1P1CnL	•			5. MCG/L	
,	T65609	NAPHIHALENE			<	5. MCG/G	
	T43909	1,2,3-1RICH6	DRUBENZENE		<	5. MCG/L	
		FAENOP				0. 4CG/L	
		2-CHLORDPHEM				0. MCG/L	
		2-NIIRUPAENO				Ú. MCG/L	
		2,4-DIMETHYL				0. MCG/L	
		2,4-DIC460k0				0. MCG/G	
		4-CHLORD-3-M		•		0. MCG/L	
	_	2,4,6-1R1CHD 2,4,5-1R1CHD				0. MCG/L 0. MCG/L	
		2,4-DINIIRUP				0. MCG/L	
		4-NITRUPHENO				0. 4CG/6	
	-		-DINITROPHENOL			Ú, MCG/L	
		PENTACHLOROP				U. MCG/L	
		BENZUTE ACID				•••••	NΑ
			LSUPROPYL)ETHER		< 1	OU MAGZE	••
	T63909	BIS(2-CHLOKO	алауц) етаел		· < 1	0. 40675	
	F65909	N-NITROSODI-	N-PROPYLAMINE			0. 406/6	
	I65309	MEXACHLORDET	HANE		< 1	U. MCG/L	
	I65709	NITROBENZENE	•	•	< 1	0. 4CG/L	
	T65509	ISUPADRONE -				0. MCG/L	
		· · · · · · · · · · · · · · · · · · ·	ETHOXY) METHANE			U. MCG/L	•
			CLOPENTADIENE (C-56)		0. MCG/L	
		2-CHLORONAPH				0. MCG/L	
	-	2,6-DINIIROT				0. MCG/L	
	-	ACENAPHTHYLE				U. MCG/L	
		DIMETHYLPHIH	AUATE			0. MCG/L	<
	193003	ACENAPHIHENE				0. MCG/L	
		****	CONTINUED ON NE	AL KAJE, †	* * *		

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(and the state fronts	(
	0830 NEW YORK STATE UPPARTME		
	HADSHORTH CHATER FUR LABURAT	JRIES AND RESEARCH	-
£	PAGE 3 325 REDITE OF EXAMI	NATION FINAL REPO	
	PAGE 3 32 1 RESULTS OF EXAMPLE	MATEOR CIMPLICED	- K T
	SAMPLE ID: 43586 SAMPLE RECEIVE	D:84/08/29/09	(
-	PULITICAL SUBULVISION:NIAGARA FALLS C.	•	- (
	LOCATION: VIAJARA FALLS, LOVE CANAL, BE		
P	TIME OF SAMPLING: R4/UR/28 11:00	DATE PRINTED:84/10/	16
•			(
	PARAMETER	RESULT	
C	T64809 2,4-DINTTRUTURDENE	< 10. MCG/1	(
	T64609 DIETHYLPHTHALATE	< 10. MCG/L	
	165209 FLUDREWE	< 10. MCG/L	-
ł.	T68409 4-CHLOROPHENYL PHENYL ETHER	NA	•
	T66009 N-NTIROSUDIPHENYLAATNE	< 10. MCG/L	
	T65109 1,2-DIPHENYLHYDRAZINE	< 10. MCG/L	
1	T68309 4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L	
	T48809 HEXACHLOROJENZENZ	< 10. MCG/L	
	T66109 PHENANIHRENE	< 10. MCG/L	
ſ	T63209 ANTHRACENE	< 10. MCG/L	C
	T64409 UI-N-BUTYLPHIHALATE T68009 ELUORDANIHENE	< 10. MCG/G < 10. MCG/G	
7	T66209 PYRENE	< 10. 4CG/L	(
L	T63809 BENZIDINE	< 200. MCG/L	Ľ
	T64009 BUIYL BENZYL PHTHALATE	< 30. MCG/L	
ł	T63309 BENZD(A)ANIHRACENE	< 30. MCG/L	(
T	T64509 3,3 -DICHLURDBENZIDINE	< 30. MCG/L	
	T64209 CHRYSENE	< 30. MCG/L	
4	T67909 BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MCG/L	(
	165009 DIUCTYLPHTHAUATE	< 30. MCG/L	
<u> </u>	T63409 BENZO(B)FLUORANTHENE	NA	
٢.	T63509 BENZO(K)FLUORANTHENE	NA	(
	T63609 BENZO(A)PYRENE	< 30. MCG/6	-
	T65409 INDEND(1,2,3-CD)PYRENE	< 30. MCG/L	•
•	T64309 DIBENZO(A,H)ANTHRACENE	< 3U. MCG/L	(
	163709 BENZO(GHI)PERYLENE	< 30. MCG/L	
-	T15709 HCH, ALPHA	< 10. MCG/L	
•	T15809 HCH, BETA	< 10. 4CG/L	C
	F35609 HCH, SAMMA (LINDANE)	< 10. MCG/L	
	T15009 dCH, DELTA	< 10. MCG/L	
(TOBOO9 HEPTACHLUR To7709 Aldrin	< 10. YCG/L	a.a. 🕻
	TOTTOS ADDRIA Tottos repaired a constant	< 10, MCG/G < 10, MCG/L	
Ċ	T43309 ENDOSULFAN I	< 10. MCG/L	(
L	T14609 DDE -PARA, PARA	< 10. MCG/L	C
	TO8509 DIELDRIN	< 10. MCG/L	
(TO8409 ENDRIN	< 10. MCG/L	C
	T14909 DDD -PARA, PARA	< 10. MCG/L	
	T43409 ENDOSULFAN TI	< 10. MCG/L	-
(T67409 ENDRIN ALDEHYDE	< 10. MCG/L	C
-	T67309 ENDOSULFAN SUGFATE	< 10. MCG/L	
	TIATOS DOT -PARA, PARA	< 10. MCG/L	·.
C	**** ENU OF R		· (
	2		1
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0834	NEW YORK STATE ORPARTMENT DR	uest au
100	WADSWORTH CENTER FOR DABORATORIES	
) .		AND ROODARCE
PAGE 1	RESULTS OF EXAMINATION	FINAL REPORT
	ID: 43586 SAMPLE RECEIVED:84/0	8/29/09
	: 650:DEC SOUTO WASTES	•
	ID:NEGBRI13 ORAINAGE BASIN:01	GAZETTEER CODE:3102
	AL SUBDIVISION:NIAGARA FALLS C.	COUNTY:NIAGARA
LATITUD		Z DIRECTION:
LUCATIO		MONITORING WELLS
	FION: WELL (#3233)	
REPURTI	NG LAB: TOX: LAB FOR URGANIC ANALYT	
SYNDIC	ITERN: PPEP:F.R. 4EIHODS 625,601 AN IYPE: 250:GRUEND WAIER	U EPA MEIH 503.1
	SAMPLING: 84/08/28 12:30	○入伊戸 □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□
ITHC OF	242601831 84104128 18130	DATE PRINTED:84/10/16
	PARAMETER	RESULT
r 67	009 CHLORDMETHAME	< 1. MCG/L
	809 GRUMUMEIARAE	< 1. MCG/L
	009 VINYL CHLORIDE	< 1. MCG/L
	209 DICHEDRODTFEUDROMELMANE	< 1. MCG/L
	909 CHLORDETHANE	< 1. MCG/L
-	709 TRICHLUPDFLUDRUMETHANE	< 1. MCG/L
	809 DICHLORDMEIHANG	< 1. MCG/L
r 50	909 1,1-DICHLONDETHENE	< 1. MCG/L
	909 1,1-UTCHLORDETHANE	< 1. MCG/L
T61	209 IRANS-1,2-DTCHUDKDETHENE	< 1. MCG/L
	009 CHLORDFORM	< 1. MCG/L
	809 1,2-DICHLORDETHANE	< 1. MCG/G
	609 1,1,1-TRICHLURDETHANE	< 1. MCG/L
	609 CARBON TETRACYLORIUS	< 1. MCG/L
	909 BRUMODICHIUROMETHANE	< 1. MCG/L
	309 1,2-DICHUOROPRUPANE	< 1. MCG/L
	509 TRANS-1, 3-DICHLOROPRUPENE	< 1. MCG/L
	109 TRICHLORDELHYLENE	< 1. MCG/L
	DIBROMOCHLOROMETANS	< 1. MCG/L
	409 CTS-1,3-DJCHLDAOPROPENE	< 1. MCG/L
	709 1,1,2¤IRICHLORUETHANE 100 7-046 0000THAYE RUHID	< 1. MCG/6
~	109 Z-CHLORDETHYLVINIL EIHER 109 Bromdform	<pre>< 1. MCG/L </pre>
	809 1,1,2,2-TEIRACHLORDETHANE	< 1. 4CG/L < 1. 4CG/L
	209 IFIRACHLORDETHENE	< 1. VCG/L
	909 CHLORDBENZENE	< 1. MCG/L
	709 1,3-UICHLORDBENZENE	< 1. MCG/L
	109 1,2-DICHLORDBENZENE	< 1. MCG/L
	209 1,4-DICHLORDBENZENE	< 1. MCG/L
	409 BENZENE	< 1. MCG/L
	209 IJLUENE	< 1. MCG/L
	009 ETHYLBENZENE	< 1. MCG/L
	209 1-CHLORDCYCLOHEXENE-1	< 1. MCG/L
	**** CONTINUED ON NEXT PAGE **	-
COPT	ES SENT TO: CO(2), PO(0), LPHE(0), FED(0)), TNFO-P(0), INFO-L(0)
· ·	- C - DOACHELL	
	S. BRASWELL	
	REAU OF SOLID WASTES	
	(.S.DEPT. OF ENVIRONMENTAL CONSERVATIO	SUBMITTED BY:BARLOW
	WOLF RD., ROOM 417	
ς Αί -	BANY, N.Y. 12233	
		•

(0835 NEW YURK STATE DEPARTMENT DE HEALI	4	(
	WADSWORTH CENTER FOR LABORATORIES AND R		
Ĉ	PAGE 2 (3233) RESULTS OF EXAMINATION	FINAL REPORT	Ċ
		LINNU ALFURI	
	SAMPLE ID: 43588 SAMPLE RECEIVED: 84/08/29/	9	(
-7		DUNTY:NIAGARA	(
	LOCATION: NIAGARA FALLS, LOVE CANAL, BEDRUCK MONITO	DRING WELLS	
2	TIME OF SAMPLING: 84/08/28 12:30	DATE PRINTED:94/10/16	(
		· · · · · · · ·	
*	PARAMELER	RESULT	
C	T70409 PARA-XYLENE	< 1. MCG/L	(
	T70309 META-XYGENE T51409 ORTHO-XYGENE	< 1. MCG/L < 1. MCG/L	
ł	T85309 CUMENE		ł
-	T85409 STYRENE	< 1. MCG/L	
	T85509 P+BROMOFGUOROBENZENE	< 1. MCG/L	
1	T51109 N-PROPYLIBENZEME	< 1. MCG/G	
•	T85609 LERT-BUTYDBENZZNE	< 1. MCG/L	
-	T85709 O/P-CHLOROIDGNE	< 1. MCG/L	
I	T51209 BRUMOBENZENE	< 1. MCG/L	·
	IS0509 META-CHLURUTULUENE	< 1. MCG/L	
	T85809 1,3,5-IRIMETHYLBENZENE	< 1. MCG/L	1
ſ	T85909 1,2,4-IRIMETHYLBENZENE T86009 P-CYMENE	<pre>"< 1. MCG/G < 1. MCG/G</pre>	(
	T86109 CYCLUPROPYLPENZENE	< 1. MCG/6	
1	T85209 SEC-BUIYLBENZENE	< 1. MCG/L	(
7	T85309 N-BUTYLBENZENE	< 1. MCG/L	
	T86409 2,3-BEWZUFURAN	< 1. MCG/6	
1	152509 HEXACHLOROBUTADIENE (C-46)	< 5. MCG/L	· (
	T44009 1,2,4-IRICHDOROBENZENE	< 5. MCG/6	•
	T65609 NAPHIHALENE	< 5. MCG/6	
T	T43909 1,2,3-IRICALORUBENZENE	< 5. 4CG/L	(
	r67109 PHENDL	< 10. MCG/L	
æ	T66409 2-CHLOROPHENOD	< 10. MCG/G	
1	T66809 2-NITROPHENOL T66609 2,4-DIMETHYLPHENUL	< 10. MCG/L < 10. MCG/L	(
	T66509 2,4-0ICH40R0PHENUL	< 10. 4CG/L	
1	T66309 4-CHLORD-3-METAYUPHENDL	< 10. MCG/L	(
*	T67209 2,4,6-IRICAGUROPAENOL	< 10. 4CG/L	
	T49609 2,4,5-TRICHLORUPHENDL	< 10. MCG/G	
€	T66709 2,4-DINITROPHENOL	< 10. MCG/6	C
	166909 4=NTIRUPHENDL	< 10. 4CG/G	
-	T63509 2-METHYG-4,6-DINITROPHENOL	< 10. MCG/L	
£	T67009 PENTACHLURUPHENOL	< 10. MCG/L	C
	T85009 BENZUIC ACLD	NA NACIA	
1	T68109 BIS(2-CHLORDISOPROPYL)ETHER T63909 BIS(2-CHLORDETHYL)ETHER	< 10. MCG/L < 10. MCG/L	(
(T65909 N=NIIROSUDI=N=PROPYLAMINE	< 10. MCG/L	C
	165309 HEXACHLORDETHANE	< 10. MCG/L	
<	T65709 NITROBENZENE	< 10. MCG/1	(
*	T65509 ISUPADRONE	< 10. MCG/L	
,	T68609 BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L	
	T49209 HEXACHLORDCYCLOPENTADIENE (C=56)	< 10. MCG/G	(
• •	T64109 2-CHLORONAPHIHALENE	< 10. MCG/L	
	T64909 2,6-DINITROTOLUENE	< 10. MCG/L	~
	³ F63109 ACENAPHTHYLENE	< 10. MCG/L	C
	T64709 DIMETHYLPHTHALATE	< 10. MCG/L	
(T63009 ACENAPHTHENE **** CONTINUED ON NEXT PAGE ****	< 10. MCG/L	1
\$	5 TATT CONTINUED ON NEAT PAGE TITT		Ľ
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6			1
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ł	0836 NEW YORK STATE DEPARTMENT DE HEALTH		Ć
	WADSWORTH CENTER FOR LABURATORIES AND RESEARCH		
C			C
_	PAGE 3 (3233) RESILTS OF EXAMINATION	FINAL REP	PORI
	SAMPLE ID: 43586 SAMPLE RECEIVED: 84/08/29/09		-
A	V.SAMPLE ID: 43586 SAMPLE RECEIVED:84/08/29/09 POLITICAL SUBDIVISION:NIAGARA FATUS C. COUNTY:NIA		
	- LOCATION: - MIAGAKA FALLS, LOVE CANAL, BEDROCK MONITORING WEL		
£		RINTED:84/10	0/16
•		[V # 37 K balls: ₩ (+ + - m -	
	PARAMETER RESULT		
ſ	764809 2,4-DINTERUTOUUENE < 10. 4		(
	T64609 DIEFHYLPHTHALATE < 10. M		~
-	T65209 FLUDRENE < 10. M	CG/L	
T	T68409 4-CHLOROPHENYL PHENYL ETHER	NA	(
	T66009 N-NITRUSUDIPHENYLANINE < 10. M		
-	T65109 1,2-DJPHENYLHYDRAZINE < 10. M	ICG/G	_
₹			Ċ
	T48809 HEAACHLOROBENZENE < 10. M		
-	T66109 PHENANTHRENE < 10. M	ICG/L	
L	T63209 ANIHRACENE < 10. M		(
	T64409 DI-N-BUTYDPHTHAGATE < 10. M		
*	T68009 FLUDRDANTHENE < 10. M		
t	10. M		(
	T63809 BENZIDINE < 200. M		
-	T64009 BULYL BENZYL PHTHALATE < 30. M		
1	T63309 BENZU(A)ANTHRACENE		
	T64509 3,3 -DICHLUROBENZIDINE < 30. 40		
	T64209 CHRYSENE < 30. 40		
L	T67909 BIS(2-ETHYLHEXYL)PHTHALATE < 30. M		(
	T65009 DIUCIYLPHTHALATE < 30.000		
+	T63409 BENZO(B)FLUDRANTHENE	NA	-
L	T63509 BENZO(K)FLUORANTHENE	NA	. (
	I63609 JENZD(A)PYRENE < 30. M(
-	T65409 INDEND(1,2,3-CD)PYRENE < 30. M(
Ł	T64309 DIBENZO(A,H)AMIHRACENE < 30. M		C
	T63709 BENZO(GHI)PERYLENE < 30. M		
	T15709 HCH, ALPHA < 10. MC		
ſ	T15809 dCH, BFTA < 10. MC		(
	T35609 HCH, GAMMA (LINUANE) < 10. M(
4	T16009 HCH, DEGTA < 10, M(
ł	TOBODY HEPTACHEOR < 10. MC		jas C
	TO7709 ALDRIN < 10. MC		
(TO8309 dEPTACHLOR EPOXTDE < 10. MC		
7	T43309 ENDOSULFAN T < 10, 90		
	T14809 DDE -PAPA, PARA < 10. MG T08509 DIELDRIN < 10. MG		•
(
.			L
(· · ·		(
2	T67409 ENDRIN ALDEHYDE		C
			۰.
C			6
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		VC8AN, ************************************	•
3		20 NOEL RD., ROOM 417	
,	SUBARTIED BY BARROW WOULD WE AND A SUBARDA	N.Y.S. OEPT. OF ENVIRONMENTAL CONSERVATIO	
	an San ang manananan kana sana sana na manana na sana ang manana na sana sana sana sana sana sana	SATEAU OF SOLID WASTES	
,	· ·	MR.(S.).AM	
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	INE0+6(0) INE0-F(0)	in "COBIES SENT ID:"CO(\$) * BO(0) * THE(0) * LED(0) *	
7		11)
-		**** 32A9 TX3N NO 03UNITND2 ****	,
		Tessoo t-Chrokocycrohexene-t	
)	1/22k T >	L21006 ELHLCBENZENE)
	1/20h 1 >	L39209 TOLUENE	
	1/22 + T >	A STATE STAT	
)	<pre>1 ></pre>	144209 1 4-DICHPOROBENSENE)
-	2/22h -T >	144109 1'S-DIGHPOKOBENSENE	·
	1/92w • 1 >	I49709 1, 3-DICHLOROBENZENE	
)	7/93h · T >	I40909 CHLOROBENZENE)
	1/90h - T >	T41209 TETRACHLORDETHENE	
-		TELEVELOROETHANE	
2		I42109 BRONOLOGN	3
	1/90k - T >	Lettos 2-Chrokoethkrvingt Ether	
	1/00w 1 >	TS1709 1, 1, 2-TRICHLOROETHANE	_
)		Leitob Cis-1,3-Dichloroprogram)
		T44909 DIRADACHIONOGALANE	č
_	1/20h - T >	- 141108 LAICHPOROETHICENE	164.
)		T61509 TRANS-1, 3-DICHLOROPROPENE)[
-		T61309 1,2-DICHLOROPROPANE	
	7/90k "T >	I38909 BROMODICHLOROMETHANE	:
)	1/90k • • • >	T36609 CARBON TETRACHLORIDE)
	1/90h 1 7 >	I23609 1,1,1=TRICHLOROETHANE	_
-	1/90W - T >	TS0809 1,20DICHLOROETHANE	
)	7/90W)*1 >		7
	7/93w (* T >	T61209 TRANS-1, 2-DICHLOROETHENE	
_	7/90W PT >	TOTOTO TO TOTOTO TO TOTOTO TO TOTOTO TO	•
)		TOPOSOL STANDARD]
	<pre>< #Ce\P: < #Ce\P: </pre>	L53800 DICHFOROMETHANE 193800 DICHFOROMETHANE	
			•
)		T70209 DICHLORODIFLUOROMETHANE. T61909 Chlorodifluor	}
		110308 DICHROBUDIERINDDWEIHVNE	
•	1/55k () >	BUAHT3MOMOA8 608181	`
)		T62009 CHEDROMETHANE)
	KESULT.	SETENASA9	
•	.4 11320		2
)	DVIE BRINIED:84/10/22	TIME OF SAMPLING: 84/09/28 15:00	J
	a a a a a a a a a a a a a a a a a a a	SAMPLE TYPE: 250:GROUND WATER	
*	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	TEST PATTERN: PPEP:F,R,METHODS 625,601 AND I	3
	AL CHEMISTRY	REPORTING DINADRO ROA BAJ:XOT	2
>	MONILOKING METER	LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN	¥
	Z DIBECTION		*
	AAADAIN:YINUDD	DUNCE IDINECOBOJ DRAINAGE BASINIUI POLITICAL SUBDIVISIONINIAGARA FALLS C. LATITUDE: LONGITUDE:	
)	CAZETTEER CODE: 3102	SOURCE ID # NELCOBO3 DEVINECE BESIN:01	Y
J	a a sa sa a a a a a a a a a a a a a a a	PROGRAM: 650:0EC SOLID WASTES	5
	60/67	ZYWERE ID! 432/3 ZYWERE BECEINED:84/08/	
)			•
)	TROGER JANIT	PAGE 1 RESULTS OF EXAMINATION	
)	RESERVCH:	INA SEIROTAROBAJ ROF RETUED HIROWROAW	¥.
		0438 0438 DEPARTMENT OF HEI	
			3
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C					(
	0439	NEW YORK STATE DEPA	RTMENT OF HEALTH		
C		WADSWORTH CENTER FOR LAB			(
	PAGE 2	(6114) RESULTS OF E	XAMINAFION	FINAL REPORT	
					(
	SAMPLE ID:	43573 SAMPLE REC	EIVED:84/08/29/09		
		SUBDIVISTON:NIAGARA FALLS C	•		-
{	LOCATION:				(
	TIME OF SAM	PLING: 84/08/28 15:00	DATE	PRINTED:84/10/22	
I	•	PARAMETER	RESULT	• .	(
•	T70400	PARA-XYLENE		MCG/L:	
		META-XYLENE		MCG/L:	
ł		ORTHO-XYLENE:	-	MCG/L	(
-	T85309		< 1.1		
		STYRENE		MCG/L	
(P-BROMOFLUOROBENZENE	- ·	MCG/L	(
-		N-PROPYLBENZENE		MCG/L	
		TERT-BUTYLBENZENE		MCG/L	
		D/P-CHLOROTDLUENE	-	MCG/L	X.
		BROMOBENZENE		MCG/L	
-		META-CHLOROTOLUENE		MCG/L	
ί.		1,3,5-TRIMETHYLBENZENE	•	MCG/L	(
		1,2,4-TRIMETHYLBENZENE		MCG/L	
		P-CYMENE	-	MCG/L	-
C	T86109	CYCLOPROPYLBENZENE	< 1.	MCG/L	
	T85209	SEC-BUTYLBENZENE	< 1.	MCG/L	
	T86309	N-BUTYLBENZENE	< 1.	MCG/L	
	T86409	2,3-BENZOFURAN	< 1.	MCG/U	(
	T52509	HEXACHLOROBUTADIENE (C-46)	< 5.	MCG/L	
	T44009	1,2,4-TRICHLOROBENZENE	< 5.	MCG/L	,
		NAPHTHALENE	< 5.(MCG/L	(
		1,2,3-TRICHLOROBENZENE	< 5.(MCG/L	
	T67109			MCG/L	,
		2-CHLORDPHENOL		MCG/L	C
		2-NITROPHENOL		MCG/L	
		2,4-DIMETHYLPHENOL		MCG/L	,
	-	2,4-DICHLOROPHENOL		MCG/L	C
		4-CHLORO-3-METHYLPHENOL		MCG/L	
		2,4,6-TRICHLOROPHENOL	÷	MCG/L	ŕ
•		2,4,5°TRICHLOROPHENOL	< 10.1		C
		2,4-DINITROPHENOL		MCG/L	
		4-NITROPHENOL	(< 10₀€		(
•		2-METHYL-4,6-DINITROPHENOL	-	MCG/L	C
		PENTACHLOROPHENOL	< 10.0	NCG/L	
		BENZDIC ACID	D	NA	(
		BIS(2-CHLOROISOPROPYL)ETHE		NA	
		BIS(2-CHLORDETHYL)ETHER		MCG/L:	
		N=NITROSODI=N=PROPYLAMINE HEXACHLOROETHANE		MCG/L	Ć
		NITROBENZENE		MCG/L	
1		ISOPHORONE		HCG/L	
1				MCG/L	(
		BIS(2+CHLOROETHOXY)METHANE HEXACHLOROCYCLOPENTADIENE		MCG/L	
	147207	• • •		MCG/L	
,		2-CHLORONAPHTHALENE	< 10.6		e
		2,6-DINITROTOLUENE ACENAPHTHYLENE	-	MCG/L	•
	STEATOO	NTHETHYL PHTHALATE	- 1101	MCG/L	
_	5 TE2000	ACENAPHTHENE	< 10.0	MCG/L	(
	4	**** CONTINUED ON NI	$\mathbf{E} \mathbf{Y} \mathbf{T} = \mathbf{P} \mathbf{A} \mathbf{G} \mathbf{E}^{*} \mathbf{z} \mathbf{z} \mathbf{z} \mathbf{z}$		-
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	PAGE 3	6114	RESULTS D	F EXAMINATION		FINAL	REPORT
•	SAMPLE ID	43573	SAMPLE	RECEIVED: 84/08/	29/09		
	POLITICAL	SUBDIVISION:NI		s C.			
	LOCATION: TIME OF SA	NIAGARA FAUL Mpuing: 84/08/		NAL, OVERBURDEN		G WELLS Printed:84	/10/2
		•					-
		PARAMETER	· · · · · · · · · · · · · · · · · · ·		RESULT		
		2,4-DINITROTO				NCG/L	
		DIETHYLPHTHAL	ATE			MCG/L	
		FLUORENE			< 10.€	MCG/L	M 5
		4-CHLOROPHENY		INER -		MCG/L	NA.
) N-NITROSODIPH) 1,2-DIPHENYUH				WCG/L	
	÷ -	4-BROMOPHENYL	-	450	< 10.0		
		HEXACHLOROBEN			· · · · · · · · · · · · · · · · · · ·	MCG/L	
		PHENANTHRENE		,	< 10.0		
	—	ANTHRACENE				MCG/L	
		DI-N-BUTYLPHT	HALATE:		< 10.		
		FLUOROANTHENE				MCG/L	
		PYRENE				MCG/L	
		BENZIDINE			< 200.		
		BUTYL BENZYL	PHTHALATE			MCG/L .	
		BENZO(A)ANTHR			< 30.	MCG/L	
		3,3"-DICHLORD			<' 30.	MCG/L:	
	T64209	CHRYSENE			<' 30.	MCG/L:	
	T67909	BIS(2-ETHYLHE	XYL) PHTHAL	ATE	< 30.	MCG/L	
		DIOCTYLPHTHAL			< 30'.	MCG/L	
	163409	BENZO(B)FLUOR	ANTHENE				NA
	T63509	BENZO(K)FLUOR	ANTHENE				NA.
	I6360 9	BENZD(A)PYREN	E		•	MCG/L	
	T65409	INDENO(1,2,3-	CD)PYRENE		•	MCG/L	
) DIBENZO(A,H)A			-	MCG/L	
		BENZD(GHI)PER	YLENE			MCG/L	
		НСН,АЦРНА			-	MCG/L:	
		LHCH, BETA			-	MCG/L	
		HCH, GAMMA (LI	NDANE)		-	MCG/L	. :
	T16009	HCH, DELTA			< 10.0	MCG/L	· · ·
				·			
		ALORIN			•	MCG/L:	NC:
		HEPTACHLOR EP				MCG/L	NC:
		ENDOSULFAN I		•		MCG/L	NC.
		DDE -PARA, PA	RA			MCG/L:	NC:
		DIELDRIN ENORIN				MCG/L	NC
	1009UY	DDD -PARA, PA	•			MCG/L	NC.
		ENDOSULFAN II		• .	-	MCG/L	
		ENDRIN ALDEHY	DF		< 10.		
1		ENDOSULFAN SU	95 LFATE:	• • • • • • • •		MCG/L	- \
1		DDT -PARA, PA			< 10.0		
				ND OF REPORT. **			-
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	0444 NEW YORK STATE DEPARTMENT OF HEAL	TH	
ſ	WADSWORTH CENTER FOR LABORATORIES AND		(
	PAGE 1 RESULTS OF EXAMINATION	FINAL REPORT	
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	SAMPLE ID: 43574 SAMPLE RECEIVED:84/08/29		
3	PROGRAM: 650:DEC SOLID WASTES SOURCE ID:NFLCOBO3 DRAINAGE BASIN:01 POLITICAL SUBDIVISION:NIAGARA FALLS C. LATIFUDE:	GAZETTEER CODE: 3102	(
-	POLITICAL SUBDIVISION:NIAGARA FALLS C.	CDUNTY:NIAGARA	-
7	LATITUDE:	Z DIRECTION:	(
*	LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN M DESCRIPTION:WELL #5114	IONITORING WELLS	
-	REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL	CHEMISTRY	
1	TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EP	PA METH 503,1	(
	SAMPLE IXPE: 250:GROUND WATER TIME OF SAMPLING + 84/08/	DATE DEINTED.04/10/22	•
(TEST PAITERN: PPEP:F.R.METHODS 625,601 AND EP SAMPLE IYPE: 250:GROUND WATER TIME OF SAMPLING: 84/08/ : PAPAMETER		(
	PARAMETER	RESULT < 1. MCG/L < 1. MCG/L < 1. MCG/L	
(T62009 CHLOROMETHANE T61809 BRDMDMETHANE	< 1. 4CG/L	(
	T41009 VINYL CHLORIDE T70209 DICHLORODIFLUOROMETHANE	< 1. MCG/L	-
(170209 DICHLORODIFLUOROMEIHANE	< 1. MCG/L < 1. MCG/L	(
C	F61909 CHLORDETHANE T61700 DDTCHLODORETHANE		
	T23809 DICHLOROMETHANE	< 1. MCG/L	-
(T23809 DICHLORDMETHANE T50909 1,1-DICHLORDETHENE	< 1. MCG/L < 1. MCG/L < 1. MCG/L < 1. MCG/L	C
	T51909 1,1-DICHLORDETHANE T61209 TRANS-1,2-DICHLORDETHENE	< 1. MCG/L	-
á	T39009 CHLOROFORM	< 1. MCG/L	• (
	T50809 1,2-DICHLORDETHANE	< 1. MCG/L	
t	723609 1,1,1+TRICHLOROETHANE	< 1.º MCG/L < 1.º MCG/L	(
, %	T36609 CARBON TETRACHLORIDE T38909 BROMODICHLORDMETHANE	< 1. MCG/L < 1. MCG/L	Ν.
-		< 1. MCG/L	
Ē	T61509 TRANS-1, 3-DICHLOROPROPENE	< 1.(MCG/L	C
5	T41109 IRICHLORDEIHYLENE T44909 DIBROMOCHLOROMETHANE	< 1.(MCG/L) < 1.(MCG/L)	
(T61409 CIS-1,3-DICHLOROPROPENE	< 1. MCG/L	(
	T51709_1,1,2-TRICHLOROETHANE	< 1. (MCG/L	
L	T61109 2-CHLOROETHYLVINYL ETHER T42109 BROMOFORM	< 1. MCG/L	C
5 3 -	T51809 1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L:	•
(T41209 TETRACHLOROETHENE	< 1 . MCG/L	1
C	T40909 CHLOROBENZENE	< 1. MCG/L:	C
	149709 1,3-DICHLOROBENZENE 144109 1,2-DICHLOROBENZENE	< 1. MCG/L	
	T44209 1,4-DICHLORDBENZENE	< 1. MCG/L	C
		< 1. NCG/L	
(T39209 TOLUENE T51009 ETHYLBENZENE	< 1. MCG/L < 1. MCG/L	(
•.	T85209 1-CHLOROCYCLOHEXENE-1	< 1. MCG/L	
r	**** CONTINUED ON NEXT PAGE ****		,
~	COPIES SENT TO: CO(2), RO(0), LPHE(0), FED(0), I	NED-D(D), INFO-1(A)	C
	9	HIG-ECANA THEO-OFOL	
	MR. S. BRASWELL		e
	BUREAU OF SOLID WASTES N.Y.S.DEPT. OF ENVIRONMENTAL CONSERVATID	- SUBMITTED BY: BARLOW	
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	PAGE 2	(EIIA) RESULTS OF EXAMINATION		FINAL REPORT
		SIT		(
	SAMPLE ID:	43574 SAMPLE RECEIVED: 84/08/2	29/09	•
7	POLITICAL	SUBDIVISION:NIAGARA FALLS C.	COUNTY:NIAGA	RA
٩.	LOCATION:	VIAGARA FALLS, LOVE CANAL, OVERBURDEN	MONITORING WE	LS
	TIME OF SA	MPLING: 84/08/	DATE PRI	TED:84/10/22
ł				
	770400	PARAMETER PARA-XYLENE	RESULT	
		META-XILENE	<'1. MCG, < 1. MCG,	
L		ORTHO-XYLENE		
		CUMENE.	< 1. MCG	
~		STYRENE	< 1. MCG	
{		P-BROMOFLUOROBENZENE	< 1. MCG	
	T51109	N-PROPYLBENZENE	< 1. MCG/	-
c		TERT-BUTYLBENZENE	< 1. " "CG	ነ ይ
C		0/P-CHLOROIDLUENE	< 1. (MCG/	
		BROMOBENZENE	< 1. MCG/	
(META-CHLOROTOLUENE	< 1. MCG/	
*		1,3,5-TRIMETHYLBENZENE	< 1. MCG/	
		1,2,4-TRIMETHYLBENZENE	< 1. MCG/	
Ł		P-CYMENE	< 1. 400	
-		CYCLOPROPYLBENZENE SEC-BUTYLBENZENE	< 1. MCG/	
		N-BUTYLBENZENE	< 1. MCG/	
4		2.3-BENZOFURAN	< 1. MCG/ < 1. MCG/	
		HEXACHLOROBUTADIENE (C-46)	< 5. MCG/	
_		1,2,4.TRICHUOROBENZENE	< 5. MCG/	
(NAPHTHALENE	< 5. MCG/	
		1,2,3-TRICHLOROBENZENE	< 5. MCG/	
		PHENOL	< 10. MCG/	•
(T66409	2-CHLOROPHENOL	< 10. HCG/	
		2-NITROPHENOL	< 10.6 MCG/	L .
· /	T66609	2,4-DIMETHYLPHENOL	< 10. MCG/	Έ.
(,		2,4-DICHLOROPHENOL	< 10. MCG/	Ъ C
		4-CHLORO-3-METHYLPHENOL	< 10. MCG/	
(2,4,6-TRICHLOROPHENOL	< 10. MCG/	
*		2,4,5-TRICHLOROPHENOL	< 10. MCG/	
		2,4-DINITROPHENOL	< 10. MCG/	
(4-NITROPHENOL 2-METHYL=4,6-DINITROPHENOL	< 10.1 MCG/	
•		Z-MEINIG4, B-DINITKOPHENOL PENTACHLOROPHENOL	< 10, MCG/	
		BENZDIC ACID	< 10,0 MCG/	
(BIS(2-CHLOROISOPROPYL)ETHER		NA: C
-		BIS(2-CHLORDETHYL)ETHER	< 10, MCG/	
		N-NITROSODI-N-PROPYLAMINE	< 10. MCG/	
(T65309	HEXACHLDROETHANE	< 10. MCG/	,
		NITROBENZENE	< 10. MCG/	
	² T65509	ISDPHORONE	< 10. MCG/	
()	¹ 168609	BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/	
1	° . 749209	HEXACHLOROCYCLOPENTADIENE (C-56)	< 10. MCG/	
		2-CHLORONAPHTHALENE	< 10. MCG/	
	T64909	2,6+DINITROTOLUENE	< 10. MCG/	
	T63109	ACENAPHTHYLENE	< 10, MCG/	
			< 10. MCG/	
	163009	DIMETHYLPHTHALATE Acenaphthene That constructs on Next Bace that	< 10, MCG/	L C
		**** CONTINUED ON NEXT: PAGE: ****	والمستنا فلأوا والمستنا والمستنا والمستنا والمستنا والمستنا والمستنا والمستنا والمستنا والمستنا والمستنا والمست	And the second second second second second second second second second second second second second second second
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	WADSWORTH C	ENTER FOR LABO	RATORIES AN	D RESEARCH		
PAGE 3 (5114)	RESULTS OF EX	AMINATION		FINAL	REPORT
		SAMPLE RECE AGARA FALLS C.			CAPA	
LOCATIONE		S, LOVE CANAL,				
	MPLING: 84/08/	-			RINTED:84	1/10/22
						•
	PARAMETER	1.110.110		RESULT	cc / t	
	2,4-DINITROTO DIETHYLPHTHAL			<'10.(M <'10.(M		
	FLUORENE	- 1		< 10. M		
		L PHENYL ETHER				NA.
	N-NITROSDDIPH			< 10. M	CG/L	17 PG -
	1,2-DIPHENYLH			< 10. M		
• • •		PHENYL ETHER		< 10. M		
	HEXACHLOROBEN			< 10. 4		
_	PHENANTHRENE			< 10. M		
	ANTHRACENE.			< 10.5 M		
	DI-N-BUTYLPHI			< 10. M		
	FLUORDANTHENE	· ·		< 10. M		
- T66209	• • • •	•		< 10. M		
-	BENZIDINE			< 200.1 M		
	BUTYL BENZYL			< 30. 4		
	BENZD(A)ANTHR			< 30. M		
	3,3° - DICHLORD CHRYSENE	DENGLUINE		< 30° M < 30° M		
	BIS(2-ETHYLHE	YVI IDHTHALATE		< 30, 4		
	DIDCTYLPHTHAL			< 30.4		
	BENZO(B)FLUOR					NA
	BENZO(K)FLUOR					NA .
	BENZO(A)PYREN			52 . 4	C.G/L	NC.
	INDEND(1.2.3-			< 30. 4		
	DIBENZO(A,H)A			< 30, E M	CG/L	
	BENZO(GHI)PER			< 30. M		
	HCH, ALPHA			< 10.4		
	_HCH,BETA			< 10. 4		
	HCH, GAMMA (LI	NDANE)		< 10. M		
T16009	HCH, DELTA			11./ M		NC: Card
T08009	HEPTACHLOR	· · · · · · · · · · · · · · · · · · ·			• • •	NC .
	ALDRIN UEDTACHIOR ED	OVIDE		49. M		NC.
	HEPTACHLOR EP Endosulfan I	UNIDE		30° M		NC
	DOE -PARA, PA	 Da		13. M - < 10. M		NC
	DIELDRIN			14. M		NC:
T08409			_ .	< 10. M		t¥ tu.
	DOD -PARA, PA	RA		< 10. M		
	ENDOSULFAN II		•	< 10. M		
	ENDRIN ALDEHY			< 10. M		. *
167309	ENDOSULFAN SU			< 10. M		
T14709	DDT -PARA, PA	RA		<.10.CM		
· · ·	• •	**** END 0	F REPORT **			
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	متحديد متنف بدرية والمتحديد والاست المتحدين		بالي والمقاد المنابعة من من المستحين	بیسو مانه استان به میدو وروه میچه از استان از این از	ېرىن مەرىم ۋە ۋرغۇر كىتىك ىتۇر بارى	فيتولج المعامات
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0459MEW YORK STATE DEPARTMENT DE MEALTH MADSADRTH CENTER FOR LABORATORIES AND RESEARCHPAGE 1RESULTS OF EAA4TNATIONFINAL REPORTSAMPLE ID:43575SAMPLE RECLIVED:84/08/29/09PROGRAM:650:DEC SOLTD WASTES SOURCE ID:NFLCDB03DRATNAGE BASIN:01GAZETTEER CODE:3102POLIFICAL SUBDIVISIOM:NIAGARA FALLS C.COUNTY:NIAGARA LATITUDE:LONGITUDE:COUNTY:NIAGARA LATITUDE:LOCATION:NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLSDESCRIPTION:WELLTAX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY TEST PATTERN:PPEP:C.R.METHODS 625,601 AND EPA METH 503.1SAMPLE (YPE:25J:JURUND WATER TIME OF SAMPLING: R4/UR/20 12:00DATE PRINTED:84/10/18PARAMETER T62009 CHUDROMETHANERESULT
SAMPLE ID:43575SAMPLE RECEIVED:84/08/29/09PROGRAM:650:DEC SOLID WASTES SOURCE ID:NFLCDB03DRAINAGE BASIN:01GAZETTEER CODE:3102POLIFICAL SUBDIVISION:NIAGARA FALLS C.COUNTY:NIAGARA LATITUDE:LONGITUDE:Z DIRECTION:LOCATION:NIAGARA FALUS, DOVE CANAL, OVERBURDEN MONITORING WELLSDESCRIPITON:WELL43123REPORTING LAB:TOA:LAB FOR ORGANIC ANALYTICAL CHEMISTRY TEST PATTERN:PPEP:F.R.METHODS 625,601 AND EPA METH 503.1SAMPLE LYPE:25J:GRUMAD WATCH TIME OF SAMPLING: R4/08/26 12:00DATE PRINTED:84/10/18CPARAMETER T62009 CHUDROMETHANERESULT < 1. MCG/L
PROGRAM:650:DEC SOUTD WASTES SOURCE 1D:NELCOBO3DRAINAGE BASIN:01GAZETTEER CODE:3102POLIFICAL SUBDIVISIOM:NIAGARA FALUS C.COUNTY:NIAGARA LATITUDE:LONGITUDE:Z DIRECTION: LONGITUDE:LOAGITON:NIAGARA FALUS, DOVE CANAL, OVERBURDEN MONITORING WELLSDESCRIPTION:WELL3123REPORTING LAB:TOX:LAD FOR ORGANIC ANALYTICAL CHEMISTRY TEST PATTERN:PPEP:F.R.METHODS 625,601 AND EPA METH 503.1SAMPLE (YPE:25J:JRUNND WATER TIME DF SAMPLING: R4/UR/26 12:00PARAMETER T62009 CHUDROMETHANERESULT < 1. MCG/L
PROGRAM:650:DEC SOUTD WASTES SOURCE 1D:NELCOBO3DRAINAGE BASIN:01GAZETTEER CODE:3102POLIFICAL SUBDIVISIOM:NIAGARA FALUS C.COUNTY:NIAGARA LATITUDE:LONGITUDE:Z DIRECTION: LONGITUDE:LOAGITON:NIAGARA FALUS, DOVE CANAL, OVERBURDEN MONITORING WELLSDESCRIPTION:WELL3123REPORTING LAB:TOX:LAD FOR ORGANIC ANALYTICAL CHEMISTRY TEST PATTERN:PPEP:F.R.METHODS 625,601 AND EPA METH 503.1SAMPLE (YPE:25J:JRUNND WATER TIME DF SAMPLING: R4/UR/26 12:00PARAMETER T62009 CHUDROMETHANERESULT < 1. MCG/L
SOURCE 10:NFLCDB03URAINAGE BASIN:01GAZETTEER CODE:3102POLIFICAL SUBDIVIGIOM:NIAGARA FAGUS C.COUNTY:NIAGARALATITUDE:UDWGLTUDE:Z DIRECTION:LOCATION:NIAGARA FAGUS, UDVE CANAL, OVERBURDEN MONITORING WELLSDESCRIPTION:WELL #3123REPORTING LAB:TDX:LAB FOR ORGANIC ANALYTICAL CHEMISTRYTESI PATTERN:PPEP:E.R.METHODS 625,601 AND EPA METH 503.1SAMPLE FYPE:25U:GRUND WATERTIME OF SAMPLING: R4/UR/20 12:00DATE PRINTED:84/10/18PARAMETERRESULTCPARAMETERT62009 CHLORDMETHANE< 1. MCG/L
POLIFICAL SUBDIVISION:NIAGARA FAGUS C.COUNTY:NIAGARA LATITUDE: LOCATION: NIAGARA FAGUS, DOVE CANAL, OVERBURDEN MONITORING WELLSLOCATION: NIAGARA FAGUS, DOVE CANAL, OVERBURDEN MONITORING WELLSDESCRIPTION:WELL 43123 REPORTING DAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1SAMPLE FYPE: TIME OF SAMPLING: R4/UR/20 12:00DATE PRINTED:84/10/18CPARAMETER T62009 CHLORDMETHANERESULT C 1. MCG/L
LATITUDE: UNWGLTUDE: E Z DIRECTION: LUCATION: NIAGARA FAGUS, HOVE CANAL, OVERBURDEN MONITORING WELLS DESCRIPTION:WELL 3123 REPORTING HAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY TEST PATTERN: PPEP:E.R.METHODS 625,601 AND EPA METH 503.1 SAMPLE TYPE: 25J:GRUNND WATER TIME OF SAMPLING: R4/UR/20 12:00 DATE PRINTED:84/10/18 PARAMETER RESULT 162009 CHUDROMETHANE < 1. MCG/L
LOCATION: NIAGARA FAGUS, DOVE CANAL, OVERBURDEN MONITORING WELLS DESCRIPTION:WELL #3123 REPORTING DAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1 SAMPLE TYPE: 25J:GRUMUD WATER TIME OF SAMPLING: R4/UR/26 12:00 DATE PRINTED:84/10/18 C PARAMETER T62009 CHLORDMETHANE
I DESCRIPTION:WELL#3123REPORITNG MAB:TOX:UAD FOR ORGANIC ANALYTICAL CHEMISTRYTEST PAITERN:PPEP:E.R.METHODS 625,601 AND EPA METH 503.1SAMPLE LYPE:25J:GRUMAD WATERTIME OF SAMPLING: R4/UR/20 12:00DATE PRINTED:84/10/18PARAMETERRESULTI f62009 CHUDROMETHANE< 1. MCG/L
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TIME OF SAMPLING: 84/08/20 12:00 DATE PRINTED:84/10/18 PARAMETER RESULT I62009 CHLORDMETHANE < 1. MCG/L
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T T61209 IRANS-1,2-DUCHLORDETBENE < 1. MCG/L
T39009 CHLOROFORM < 1. MCG/U
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Image: T23609 1,1,1-1RICHGOROETHANE< 1. MCG/LT35609 CARBON TETRACHLORIDE< 1. MCG/L
「35609 CARBON TETRACHÉORIDE < 1. MCG/L
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r I41109 IRICHLORDEIHYGENE < 1. MCG/L
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10 MR. NS. BRASWEI, U
BUREAU DE SOLID WASTES
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		HETA-XYRENE				1. MCG/		
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_						1. MCG/ 1. MCG/		
1		N-PROPYDBENZ						- (
		IERT-BUTYNBE				1. MCG/		
	-	DVP-CHUDROID		-		1. 406/		
		BRUMDBENZENE				1. MCG/		(
						1. MCG/		
		1,3,5=1R1MET				1. MCG/		
(1,2,4-TRIMET	HYUSENZENE			1. 4CG/		
	• • •	P-CYMENE				1. MCG/		
		CYCLUPRDPYLA	-			1. MCG/		
•		SEC-SUIYLREY				1. 4CG/		
-		H-BUTYLBENGE				1. MCG/		
		2. J-BENZUFUR				1. MCG/		:
1			TADIENE (C-45)		5. MCG/		• •
		1,2,4-1PLCHU	DROBENZENE			5. MCG/		
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à		- 2러인터 JUN				U. "CG/		
<u>.</u>		2-0460802468				U. MCG/		•
		2-NTISOPHEND				U. MCG/		• (
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2		2,4-0TCHLORD				0. YCG/		
(4-CHuDkD-3-M				U. MCG/		(
-		2. 4. 0-1R1Ch1.				0. MCG/		
		- 2,4,5-1RICHL				U. MCG/		
(2,4-DINJIROP				0. 4CG/		C
•		4-NEIROPHEND				0. 4CG/		1.412 ⁴
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(BIS(2-CHLORD				0. MCG/		(
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(NTIROBENZENE	·	•		U. MCG/		· (
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1			ETHOXY) METHAN			U. MCG/		-1
Ú, i			CLUPENIAUTENE	(C=5b)		U. MCG/		
•	10 F64109	2-CHLIRDNAPH				0. MCG/		
_	° 164909	2,6-OTNTTRUT		•		0. MCG/		
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	л. 163009	ACENAPHTHENE		· · ·		U. MCG/	C	
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C	PAGE 3 (3123) RESULTS OF EXAMINATION FINAL REPORT	; (
	SAMPLE 10: 43575 SAMPLE RECEIVED: 34/08/29/09	-
	POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA	C
	LUCAFION: MIAGARA FAULS, LOVE CAMAD, OVERBURDEN MONITORING WELLS	
(TIME OF SAMPGING: 84/08/28 12:00 JATE PRINTED:94/10/18	¹ C
	RESULT RESULT	
1	T64809 2,4-DINITROTODUENE < 10. 4CG/G	C
L	T64609 DIETHYUPHTHALAIE < 10. MCG/L	
	165279 FLUTRFRE < 10. MCG/G	
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	· r65109 1,2-urpdentedation < 10. MCG/G	
	T68309 4-BROMOPHENYL PHENYL ETHER < 10. MCG/L	1
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	T66109 PHENAMIHRENE CONTRACTOR CONTRACTOR CONTRACTOR	
3	T63209 ANTHRACENE < 10. MCG/L	(
*	T64409 DI+N-BUTYDPHIHADATE < 10. MCG/L	
	T68009 F6UDRDANTHEME < 10. MCG/6	
I	T65209 PYRENE	
	TEADOR BUTYL BERZYD PHTHNUATE	
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	COMPANY TO 4209 CHRYSENECT COMPANY COMPANY COMPANY COMPANY COMPANY COMPANY	
4	T67909 BIS(2-ETHYLHEXYL)PHTHALATE < 30. MCG/L	(
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	NA NA	
(IG3509 BENZO(K)ELUORANTHENE NA IG3609 BENZO(N)EVRENE SA CONCOLO	
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1	T63709 BENZD(SHI)PERYLENE < 30. MCG/L	
	тит Г15709 HCH, АЛРНА	
•	115809 dCH. BETA < 10. MCG/L	(
•	T35609 HCH, GAMMA (GENDANE) < 10. MCG/G	
	T15009 HCH, DELTA	
(TOBOD9 HEPTACHLUR < 10. MCG/L TO7709 AUDRIN 19. MCG/L NC	C
	TOB309 HEPTACHGOR EPOXIDE	
c	$\mathbf{T}_{43309} = \mathbf{V}_{0} \mathbf{U}_{0} \mathbf{U}$	1
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C	PAGE 1 RESTLINS OF EXAMINATION FINAL REPORT	r (
	SAMPLE ID: 43576 SAMPLE RECEIVED: 84/08/29/09	
	PROGRAM: 650:DEC SOLTD WASFES	
	SOURCE ID:NEGBRIIS DRAINAGE BASIN:01 GAZETTEER CODE: 3102	
7	POLITICAL SUBDIVISION: NIAGARA FADLS C. COUNTY: NIAGARA	(
•	LATIFUDE:	
	LUCATION: VIAGARA FALUS, LOVE CANAL, BEDROCK MONITORING WELLS Description:Well (#6213)	
1	REPORTING LAB: TOX: LAB FOR URGANIC ANALYTICAL CHEMISTRY	<u> (</u>
	TEST PAITERN: PPEP:F.R. METHODS 625,601 AND EPA METH 503.1	
1	SAMPLE LYPE: 250: GRUUND VATER	(
C	TIME OF SAMPOING: 34/08/28 11:30 DATE PRINTED:84/10/18	8
	PARAMETER RESULT T62009 CHLORDMETHANE < 1. MCG/L	i (
	T61809 BRGMOMETHANE IS IN THE STATE AND THE	
	T41009 VINYL CHURKIDE	
<	J70209 DICHLORODTELUOROMETHANE < 1. MCG/G	
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1	T50809 1,2-DICHLORDETHANE < 1. MCG/L T23609 1,1,1-TRICHGORDETHAME < 1. MCG/L	; (
	IZ3609 1,1,1-IRICHODORTHAME < 1. MCG/G I36609 CARGON TETRACHUORTOR < 1. MCG/G	-
_	T38909 SRUMUDICHLURUMETHANE CI. MCG/U	
Ľ.	T61309 1,2-JICHLOROPANE < 1. MCG/G	
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1	T41109 IRICHLOROETHYLENE < 1. MCG/L	
(144909 DIBROMOCHNOROMETHANE < 1. MCG/L	
	1. T61409 CTS-1,3-DTCH60R02R0PENET (1.1) (1	•
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	T61109 2-CHLOROETBYLVINYD EIHER < 1. MCG/U	
		}
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	T41209 TETRACHLORDETHENE < 1. MCG/L See T40909 CHURRDENZENE < 1. MCG/L See T49709 L. ABUTCHLORDERENZENE < 1 MCG/L	
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(IS4409 BENZENE C 1. MCG/L	i (
C	139209 FOLDENE < 1. MCG/L	
	TIT F51009 ETHYLBENZENE CONTRACTOR CONT	•
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	PAGE 2	6213) RESTURS OF EXAMPHALION	FINAL REPORT	
		43576 SAMPLE RECEIVED: 34/08/29/09	• • (
•			NIAGARA	
		MIAGNRA FALUS, LOVE CANAD, SEDROCK MONTTORING		
{	TIME OF SA	A527742: 64/06/59 T4:30 091	15 PRINTED:84/10/18 /	
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	· · · · · · · · · · · · · · · · · · ·	PARAMELER RESUL	ι Γ	
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•			. MCG/L	
	‴ T51409	0R1H0=XYURVE < 1	. MCG/L	
•	T82303	CTMENE (1	. YCG/L	
•	T85409	STYRENE < 1	. MCG/L	
	I 85509	P-BRUMOFLUUROBENZENE C 1	. MCG/L	
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PAGE	3	62	13	RESUL	TS UF	EXAMIN	ATTON	Į			-	FINAL	BEBO
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Γ	53809	BENZI	DINE						< 2	00.	MCG/	۲.	
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			(A)ANL4						<	30.	MCG/	ն	
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	54209	CHRYS	ยิพยิ		<u>-</u>	•					MCG/		
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T (55009	otocr	YUPHTHA	LATE					<	30.	406/	L	
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r:	65409	INDEN	011,2,3	-CU)PYR	ENE -				<	30.	MCG/	Ն	
r (54309	DIBEN	ZO(A,8)	ANTHRAC	ENE				<	30.	YCG/	L	
T (53709	BENZO	(GHI)PE	RYLENE					<	30.	MCG/	5	
· · · · · · Ť.	15709	HCH, AI	ибач						<	10.	MCG/	L	
T (5809	aCH. B	F [4						<	10.	MCG/	Ն	
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enser - Eg	16009-	° π CH;D!	ELTA: -			-			<	1Ų.	MCG/	t.	
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Γ	43309	EVUDS	ULEAN T						<	10.	MCG/	L	
T :	14809	00E 1	PARA, P	APA					<	10.	MCG/	L	
: r (08509	OTEGO	R14	، برو م و ه	•••••	• •• ••			<	10.	MCG/	L.	
) T l	08409	ENDRI	4						<	10.	MCG/I	ն	
			PARA, P						<	10.	MCG/	L	
• • • • • • • • •	13409.	ENDDS'	ፓሬምልላ ተ	1	······································	· · -			· <	10.	MCG/	L	
			N ALDEH				•		<	10.	MCG/I	L	
π.	67309	ENDOS!	ILEAN S	UGFAIR					<	10.	MCG/	L I	
•••••• F :	4709-	·0011	PARA, P	ARA	• • • •	، ه در موجد مر مو		•••••	<	10.	MCG/	ն	•
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	PAGE 1 RESULTS OF EXAMINATION	FINAL REP	ORIÌ
			•
	SAMPLE ID: 43589 SAMPLE RECEIVED: 84/08	/29/09	(
•	PROGRAM: 650:DEC SOLID WASTES		`
	SOURCE ID: DRAINAGE BASIN:01	GAZETTEER CODE: 3102	
L	POLITICAL SUBDIVISION:NIAGARA FALLS C.	CDUNIX:NIAGARA	(
	LATITUDE: LONGITUDE:	Z DIRECTION!	``
8	LOCATION: FIELD BLANK LOVE CANAL MONITORING WE	LL SAMPLES	
Υ.	DESCRIPTION: WITH SAMPLE #43573 TO 43588	· · · · ·	(
•	REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTI	CAL CHEMISTRY	•
	TEST PAITERN: VOL2:EPA METHOD 503.1 & F.R.	METHOD 601	
L	SAMPLE TYPE: 297:FIELD BLANK		(
	TIME OF SAMPLING: 84/08/21 :	DATE PRINIED: 94/09,	/17
•			
(PARAMETER System	RESULT	• • •
	T62009 CHLDROMETHANE	< 1. MCG/L	÷
(T61809 BROMOMETHANE	< 1. MCG/L	
L.	T41009 VINYL CHLORIDE	< 1. MCG/L	(
	170209 DICHLORODIFLUOROMETHANE	< 1. MCG/L	
•	T61909 CHLDRDETHANE	0.1. MCG/L	-
C	F61709 TRICHLUROFLUOROMETHANE	< 1. MCG/U	(
	T23809 DICHLORDMETHANE	< 1. MCG/L	
(T50909 1,1-DICHLORDETHENE	< 1. MCG/G	-
Ľ	T51909 1,1-DICHLORDETHANE	< 1. MCG/L	(
	T61209 TRANS-1, 2-DICHLOROETHENE	< 1. MCG/L	
5	T39009 CHLORNFORM	< 1. MCG/L	
	T50809 1,2-DICHLORDETHANE	< 1. 4CG/L	(
	T23609 1,1,1-TRICHLOROETHANE	< 1. MCG/L	
(T36609 CARBON TETRACHLORIDE	< 1. MCG/L	
C	T38909 BRUMODICHLORDMETHANE	< 1. MCG/L	() (
	T61309 1,2-DTCHLORDPROPANE	< 1. MCG/5	
	T61509 TRANS-1, 3-DICHLOROPROPENE	< 1. MCG/L	
.	T41109 TRICHLORDETHYLENE	< 1. MCG/L	(
	T44909 DIBRONOCHLORDMETHANE	< 1. MCG/L	
{	T61409 CIS-1, 3-DICHLORDPROPENE	< 1. MCG/L	
4	T51709 1,1,2-TRICHLOROETHANE	< 1. MCG/L	C
	T61109 2-CHLOROETHYLVINYL ETHER	< 1. MCG/L	
{	T42109 BROMOFORM	< 1. MCG/L	سد :
2	T51809 1,1,2,2-TETRACHLORDETHANE	< 1. MCG/L	122 C
	T41209 TETRACHLURDETHENE	< 1. 4CG/L	
C	T40909 CHLOROBENZENE T48709 1 JOHNSCHLOROBENZENE	< 1. 4CG/6	
K.	T49709 1,3-DICHLOROBENZENE	< 1. MCG/L	C
	T44109 1,2-DICHLORDBENZENE	< 1. MCG/L	
(T44209 1,4-DICHLOROBENZENE	< 1. MCG/L	
C	T34409 BENZENE T28200 FRUENE	< 1. MCG/L	1 C
	T39209 FOLUENE	< 1. MCG/L	
	T51009 ETHYLBENZENE T85209 L-CHLOROCYCLOREYENR-1	< 1. MCG/L	
•	T85209 1-CHLOROCYCLOHEXENE-1	< 1. 4CG/L	C
:.	**** CONTINUED ON NEXT PAGE ***	• •	
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	MR. S. BRASWELL Budfan de solto master		•
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. 7	MATADADOLTA OL CHATEONMENTAR CONDEKANTI	SUBMITTED BY:BARLOW	
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()	PAGE 2 field blank RESULTS OF EXAMINATION FINAL REPORT	(
Ų	SAMPLE ID: 43589 SAMPLE RECEIVED:84/08/29/09 POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA	(
(LOCATION: FIELD BLANK-LOVE CANAL MONITORING WELL SAMPLES TIME OF SAMPLING: 84/08/21 : DATE PRINTED:84/09/17	(
	PARAMETER RESULT	
(T70409 PARA-XYLENE < 1. MCG/L	(
	T70309 META-XYLENE < 1. MCG/L T51409 ORTHO-XYLENE < 1. MCG/L	
(T85309 CUMENE < 1. MCG/L	(
	T85409 STYRENE < 1. MCG/L	
(T85509 P-BROMOFLUOROBENZENE < 1. MCG/L T51109 N-PROPYLBENZENE < 1. MCG/L	(
(ISIIOS N-PROPIOENZENE CI. MCG/U	
	T85709 D/P-CHLOROTOLUENE < 1. MCG/L	
	T51209 BRUMDBENZENE < 1. MCG/L	Ç
	ISOSO9 MEIA-CHLORUIDLUENE < 1. MCG/L ISOSO9 1,3,5-IRIMETHYLBENZENE < 1. MCG/L	
(T85909 1,2,4-TRIMETHYLBENZENE C. 1. MCG/L	(
,	T86009 P-CYMENE < 1. MCG/L	
1	T86109 CYCLOPROPYLBENZENE < 1. MCG/L	ć
C	T86209 SEC-BUTYLBENZENE < 1. MCG/L T86309 N-BUTYLBENZENE < 1. MCG/L	· ·
	T86409 2,3-BENZOFURAN < 1. MCG/L	-
1	T52509 HEXACHLOROBUTADIENE (C-46) < 5. MCG/L	C
	T44009 1,2,4-FRICHLOROBENZENE < 5. MCG/U T65609 NAPHTHAUENE < 5. MCG/U	
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•	**** END OF REPORT ****	-
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. S	""""你你们的你们,你们就是你们的你们?""你你们的你们。""你们,你们们的你们,你们们的你们,你们们不是你们的你们。""你们,你们们不是你们的你们。""你们, "你们们你们们你们?""你们,你们们你们们你们们你们?""你们们你们们你们们你们们你们们你们们你们们你们们你们们你们们你们们你们们你们们	C
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	PAGE 1 RESULTS OF EXAMINATION FINAL	REPORT
	SAMPLE ID: 43580 SAMPLE RECEIVED: 34/08/29/09	(
	PROGRAM: 650:DEC SOLID WASTES	``
	SOURCE ID:NFLBR113 DRAINAGE BASIN:01 GAZETTEER CODE:310	2
(POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA	Ć
•	LATITUDE: . LONGITUDE: . Z DIRECTION:	``
	LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONIFORING WELLS	
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	REPORTING LAB: TOX: LAB FOR ORGANIC ANALYTICAL CHEMISTRY	Υ.
	TEST PAITERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1	
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(4 4 1 0 4 0 5
	TIME OF SAMPLING: 84/08/28 15:30 DATE PRINTED:8	1/10/20
1	PARAMETER RESULT	C
	T62009 CHLOROMETHANE < 1. MCG/L	
-	T61809 BRDMDMETHANE < 1. MCG/L	
(T41009 VINYL CHLORIDE < 1. MCG/L	(
	T70209 DICHLORODIFLUOROMETHANE < 1. MCG/L	
	I61909 CHLORDETHANE < 1. MCG/L	
(T61709 TRICHLOROFLUOROMETHANE	
•	T23809 DICHLOROMETHANE < 1. MCG/L	
	T50909 1,1-DICHLORDETHENE < 1. MCG/L	
(T51909 1,1-DICHLORDETHANE < 1. MCG/G	(
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	T61209IRANS-1,2-DICHLOROETHENE $\mathbb{R} \equiv \mathbb{C} \equiv \mathbb{I} \vee \mathbb{C} \longrightarrow \mathbb{I}$. MCG/LT39009CHLOROFORMT508091.2-DICHLORDETHANE	
4	T50809 1,2-DICHLORDETHANE < 1. MCG/G	. (
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	T36609 CARBON TETRACHLORIDE DUT DE 1884 < 1. MCG/L	4.
`.	I38909 BROMODICHLOROMETHANE	
C		- C -
;	r61309 1,2-DICHLOROPROPANE	
· .	T61509 TRANS-1,3-DICHLOROPROPENE	
(T41109 TRICHLORDETHYLENE < 1. MCG/L	(
1	T44909 DIBROMOCHLOROMETHANE < 1. MCG/L	
•	I61409 CIS-1, 3-DICHLOROPROPENE < 1. +CG/L	
•	IS1709 1,1,2-TRICHLOROETHANE < 1. MCG/L	(
·	T61109 2-CHLOROETHYLVINYL ETHER < 1. MCG/L	· ·
	T42109 BRDMDFORM < 1. MCG/L	
1	T51809 1,1,2,2-TETRACHLORDETHANE < 1. MCG/L	· E
-	T41209 TETRACHLORDETHENE < 1. MCG/L	-
	T40909 CHLORDBENZENE < 1. MCG/L	
(T49709 1,3-DICHLOROBENZENE < 1. MCG/L	(
-	T44109 1,2-DICHLORDBENZENE < 1. MCG/L	`
	T44209 1,4-DICHLOROBENZENE < 1. MCG/L	
(T34409 BENZENE < 1. MCG/L	(
•	T39209 TOLUENE < 1. MCG/L	~
	T51009 ETHYLBENZENE < 1. MCG/L	
	T85209 1-CHLOROCYCLOHEXENE-1 < 1. MCG/L	(
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NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

5212 RESULTS OF EXAMINATION FINAL REPORT SAMPLE ID: 43580 SAMPLE RECEIVED: 84/08/29/09 ſ POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY: NIAGARA LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS DATE PRINTED: 84/10/26 (TIME OF SAMPLING: 84/08/28 15:30 PARAMETER RESULT T70409 PARA-XYLENE < 1. MCG/L C T70309 META-XYLENE. < 1. MCG/6 **T51409 ORTHO-XYLENE** < 1. MCG/6 T85309 CUMENE < 1. MCG/L (**T85409 STYRENE** < 1. MCG/6 **T85509 P-BROMOFLUORDBENZENE** < 1. MCG/L **T51109 N-PROPYLBENZENE** < 1. 4CG/6 (**T85609 TERT-BUTYLBENZENE** < 1. MCG/G T85709 D/P-CHLOROTOLUENE < 1. MCG/U **T51209 BROMOBENZENE** < 1. MCG/6 C 150509 META-CHLOROTOLUENE < 1. MCG/G < 1. MCG/L T85809 1,3,5-TRIMETHYLBENZENE T85909 1,2,4-TRIMETHYLBENZENE 54 < 1. MCG/G (

T86009 P-CYMENE T86109 CYCLOPROPYLBENZENE T86209 SEC-BUTYLBENZENE TB6309 N-BUTYLBENZENE T86409 2,3-BENZOFURAN T52509 HEXACHLOROBUTADIENE (C-46) **I44009 1,2,4-TRICHLOROBENZENE** T65609 NAPHTHALENE. 143909 1,2,3-TRICHLOROBENZENE

< 5. MCG/L < 10. MCG/G **T67109 PHENOL** T66409 2-CHLOROPHENOL < 10. MCG/L T66809 2-NITROPHENOL < 10. MCG/G T66609 2,4-DIMETHYUPHENOL < 10. MCG/6 T66509 2,4-DICHLOROPHENDL < 10. MCG/L T66309 4-CHLORO-3-METHYLPHENOL < 10. MCG/G T67209 2,4,6-TRICHLOROPHENOL < 10. MCG/G T49609 2,4,5-TRICHLOROPHENOL < 10. MCG/L T66709 2,4-DINITRUPHENOL < 10. MCG/L

166909 4-NITROPHENOL < 10. MCG/6 T68509 2-METHYL-4,6-DINITROPHENOL < 10. HCG/L < 10. MCG/G 167009 PENTACHLOROPHENOL T85009 BENZDIC ACID **T68109 BIS(2-CHLOROISOPROPYL)ETHER I63909 BIS(2-CHLOROETHYL)ETHER** < 10. MCG/L < 10. MCG/L **I65909 N-NITROSODI-N-PROPYLAMINE 165309 HEXACHLOROETHANE** < 10. MCG/L 165709 NITROBENZENE < 10. MCG/U T65509 ISOPHORONE < 10. MCG/L **T68609 BIS(2-CHLORDETHOXY)METHANE** < 10. MCG/L 149209 HEXACHLOROCYCLOPENTADIENE (C-56) < 10, MCG/L T64109 2-CHUDRONAPHTHALENE < 10. MCG/L T64909 2,6-DINITROTOLUENE < 10. MCG/L **T63109 ACENAPHIHYLENE** < 10. MCG/L 764709 DIMETHYLPHTHALATE < 10. MCG/L T63009 ACENAPHTHENE < 10. MCG/G

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< 1. MCG/L < 1. MCG/U

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(PAGE 3	5212	RESULTS OF	EXAMINATION		_ F	INAL REPO	
	SAMPLE ID:	43580	SAMPLE R	CEIVED:84/0	8/29/09		. .	(
-		SUBDIVISION:NI			•	INIAGARA		(
	LOCATION:							
(TIME OF SA	MPLING: 84/08/					ED:84/10/	26 (
		PARAMETER			RESU	LT		
(T64809	2,4-DINITROTO	GUENE		< 1	U. YCG/L		(
•		DIETHYLPHTHAL			< 1	0. MCG/L		``
		FLUORENE				0. 4CG/6		
{		4-CHLORDPHENY	T PHENYL ET	IER (-	NA	(
•		N-NITROSODIPH			< 1	0. 400/6		
		1,2-DIPHENYLH				0. 4CG/L		•
{		4-BROMOPHENYL		CR	< 1	O . MCG/L		•
-	T48809	HEXACHLOROBEN	ZENE		< 1	0. MCG/L		-
	T66109	PHENANTHRENE			< 1	0. MCG/G		
	T63209	ANTHRACENE			< 1	0. MCG/G		(
•	T64409	DI-N-BUTYLPHI	HALATE		< 1	0. 4CG/6		-
	T68009	FLUOROANTHENE	,		< 1	0.: MCG/6		
•	T66209	PYRENE			ta < 1	0. 4CG/6		Ć
	163809	BENZIDINE			< 20	0.4CG/L		
	T64009	BUTYL BENZYL	PHTHALAIE		` < _3	0. MCG/L		
	F63309	BENZO(A)ANIHH	ACENE		< 3	U. MCG/L		(
	r64509	3,3'-DICHLORD	RENZIDINE		< 3	0. MCG/L		
		CHRYSENE			< 3	0. MCG/6		
	ľ67909	BIS(2-ETHYLHE	XYG)PHTHAGAD	E		Ú.+ MCG/L		÷
		DIOCIYLPHTHAL			< 3	0. 4CG/L		
	T63409	BENZO(B)FLUOR	ANTHENE				NA NA	
_		BENZO(K)FUUDR					NA	
•	T63609	BENZO(A)PYREN	E			0. 4CG/L		
	<u>r65409</u>	INDEND(1,2,3-	CD)PYRENE			0. 4CG/L		
	T64309	DIBENZO(A,H)A	NTHRACENE		< 3	0. MCG/6		(
-	F63709	BENZO(GHI)PER	YLENE		< 3	U. MCG/L		•
	Г15709	HCH, ALPHA			< 1	0. 4CG/6		
	F15809	HCH, BETA			< 1	0. MCG/L		(
-	735609	HCH, GAMMA (LI	NDANEJ		< 1	0. MCG/L		
	T16009	HCH, DELTA			< 1	0. MCG/L		•
(T08009	HEPTACHLOR			< 1	0. MCG/L		Ċ
-	T07709	ALDRIN			< 1	0. MCG/G		~
	IOB30 9	HEPTACHLOR EP	OXIDE		< 1	U. MCG/L		
		ENDOSULFAN I	•		- < 1	0. 4CG/G		(
-		DDE -PARA, PA	RA		< 1	0. MCG/G		-
		DIELDRIN		•	. < 1	0. MCG/L		
	T08409			•		O. MCG/L		(
	F14909	DDU -PARA, PA	RA		< 1	0. MCG/L		
		ENDOSULFAN TI				0. MCG/L		
_		ENDRIN ALDEHY	•		< 1	0. MCG/5		(
-		ENDOSULFAN SU			. < 1	U. MCG/L		•
12	T14709	DDT -PARA, PA				0. MCG/6		
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(PAGE 1 RESULTS OF EXAMINATION _ FINAL REP:	JRI
	SAMPLE ID: 43577 SAMPLE RECEIVED: 84/08/29/09	(
1		``
	PROGRAM: 650:DEC. SOLID WASTES	
	SOURCE ID:NFLCOB03 DRAINAGE BASIN:01 GAZETTEER CODE: 3102	
(POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA	C I
-	LATITUDE: . LONGITUDE: . Z DIRECTION:	
	LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS	
6		(
	REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY	-
•	TEST PAITERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1	
1		(
		/25
	TIME OF SAMPLING: 84/08/28 14:30 DATE PRINTED:84/10	~ ~ •
		(
(PARAMETER	L.
	r62009 CHLOROMETHANE < 1. MCG/L	
	T61809 BROMOMETHANE < 1. MCG/L	
(T41009 VINYL CHLORIDE < 1. MCG/L	C
	170209 DICHLORDDIFLUDROMETHANE < 1. MCG/L	
•	T61909 CHLORDETHANE < 1. MCG/L	
(T61709 TRICHLOROFLUOROMETHANE	(
	T23809 DICHLORDMETHANE < 1. MCG/L	-
	rsn909 1,1-DICHLORDETHENE < 1. MCG/L	
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(
	T39009 CHLOROFORM < 1. MCG/L	(
	T50809 1,2-DICHLORDETHANE < 1. MCG/G	
	T23609 1,1,1-TRICHLOROETHANE < 1.º "CG/L	
	T36609 CARBON TETRACHLORIDE < 1. MCG/L	
. (T38909 BROMODICHLOROMETHANE < 1. MCG/G	C
	T61309 1,2-DICHLOROPROPANE < 1. MCG/G	
	T61509 IRANS-1, 3-DICHLOROPROPENE: < 1. MCG/L	
	T41109 TRICHLOROETHYLENE	. C
	T44909 DIBROMOCHLORDMETHANE < 1. MCG/G	
Ċ.	T61409 CIS-1, 3-DICHLOROPROPENE < 1. MCG/G	
<u> </u>	T51709 1,1,2-TRICHLORDETHANE < 1. MCG/L	C
	T61109 2-CHLORDETHYLVINYL ETHER < 1. MCG/L	
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	I49709 1, 3-DICHLOROBENZENE < 1. MCG/L	C
	T44109 1,2-DICHLOROBENZENE < 1. MCG/L	
	T44209 1,4-DICHLORDBENZENE < 1. MCG/L	
(T34409 BENZENE < 1. MCG/L	
-	T39209 TOLUENE < 1. MCG/L	
	T51009 ETHYLBENZENE < 1. MCG/G	
(T85209 1-CHLOROCYCLOHEXENE-1 < 1. MCG/L	Ć.
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	MR. S. BRASWELL	. ب
	BUREAU OF SOLID WASTES	C -1
	7 N.Y.S.DEPT. OF ENVIRONMENTAL CONSERVATIO SUBMITTED BY: BARLOW	
	6 50 HOLF RD., RODM 417	. ,.
C	ALBANY, N.Y. 12233	C.
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						<i>.</i>
0376	NEW YORK STATE DEPARTMENT OF HE	ALTH				(
• • •	WADSWORTH CENTER FOR LABORATORIES AN					
PAGE 2	6113 RESULTS OF EXAMINATION		4	FINAL.	REPORT	Ċ
				6 4 17 79 44 1 14	RECONT	
SAMPLE ID						(
	SUBDIVISION:NIAGARA FALLS C.					
LOCATION:						
TIME OF S	AMPGING: 84/08/28 14:30	DATE	PRIN	TED:R4	1/10/25	(
	PARAMETER	RESULT				
F7040	9 PARA=XYLENE		MCG/	ն		(
T7030	9 META-XYLENE.	< 1.	MCG/	ն		-
T5140	9 ORTHO-XYLENE	< 1.	MCGZI	ն		_
	O CUMENE	< 1.	MCG/	G		(
T8540	9 SIYRENE	< 1.	MCG/	6		
	9 P-BROMOFLUOROBENZENE	< 1.	MCG/I	6		
	N-PROPYLBENZENE	-	MCGZI			€
) FERT-BUTYLBENZENE	-	MCG/1		·	
	D/P-CHLORDIOLUENE		MCG/I		•	
	BROMOBENZENE		MCG/			Ę
	9 META-CHLOROTOLUENE		MCG/			
	1,3,5-TRIMETHYLBENZENE		MCG/I			
	1,2,4-TRIMETHYLBENZENE	⁵²⁰ < 1.0				e
	P-CYMENE		MCG/			
-	CYCLOPROPYLBENZENE	-	MCG/			
	SEC-BUTYLBENZENE		MCG/I			
	N-BUIYLBENZENE		MCG/			
	2,3-BENZOFURAN		MCG/			1
	HEXACHLOROBUTADIÈNE (C-46)		MCG/			C
	0 1,2,4-TRICHLORDBENZENE	-	MCG/			
) NAPHIHALENE) 1,2,3-TRICHLOROBENZENE		MCG/			1
	9 PHENOL	< 10.				ľ
	2-CHLOROPHENOL	< 10.				
	2-NIIROPHENOL	< 10.			•	(
	2.4-DIMETHYLPHENOL	< 10.4				
	2,4-DICHLOROPHENOU	< 10.	-			
	- 4-CHLORD-3-METHYLPHENOL	< 10.				C
	2,4,6-TRICHLOROPHENDL	< 10.	-			
	2,4,5-TRICHLOROPHENOL	< 10.				
	2,4-DINTIROPHENOL	< 10.1				t
	4-NITROPHENOL	< 10.				
	2-MEIHYG-4,6-DINITROPHENOL	< 10.				
	PENTACHLOROPHENOL	< 10.				(
	BENZOIC ACID				NA	
	BIS(2-CHLORDISUPROPYL)ETHER				NA	
	BIS(2-CHLORDETHYL)ETHER	< 10.	MCGZ	f.e.		(
	N-NIIROSODI-N-PROPYLAMINE	< 10.				4
	HEXACHLOROETHANE	< 10.				
	NITROBENZENE	< 10.				(
	ISOPHORONE	< 10.				•
	BIS(2-CHLOROETHOXY)METHANE	< 10.				
T4920	HEXACHLOROCYCLOPENTADIENE (C-56)	< 10.				(
	2-CHLORONAPHTHALENE	< 10.				-
	2,6-DINITROTOLUENE	< 10.				
	ACENAPHTHYLENE	< 10.				e
	DIMETHYLPHTHALATE	< 10.				
	ACENAPHTHENE	< 10.				
1	**** CONTINUED ON NEXT PAGE ***					Ĺ
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	0377		K STATE DEPART NTER FOR LABOR		•			
Ĉ			WIGH CUR GABUE	NALUKIES AND	KESEAKCH		•	7
•	PAGE 3 (61	13)	RESULTS OF EXA	MINAFION		FINAL	REPORT	
	SAMPLE ID:	43577	SAMPLE RECEI	VED:34/08/2	9/09			(
	-		GARA FALLS C.			AGARA		`
-	LOCATION: N	VIAGARA FAULS	, LOVE CANAL,		MONITORING	NELLS		_
(TIME OF SAMPL	ING: 84/08/2	8 14:30		DATE	PRINTED: 9	4/10/25	C
		RAMETER	•		RESULT			
(4-DINITROTOL	UENE		< 10.	MCGZE		(
4		LETHYLPHTHALA			< 10.			ì
	T65209 FL				< 10.			
(PHENYL ETHER		•		NA	1
-		NITROSODIPHE	NYLAMINE		< 10.		•	
.æ		2-DTPHENYLHY			< 10.			
C		BROMOPHENYL			< 10.0			(
•	_	EXACHLOROBENZ	ENE		< 10.0			
r	_	ENANTHRENE			< 10.			1
	T63209 AN				< 10.			(
		UDBOANTHENE	ALATE		< 10.			5
(JUOROANTHENE			< 10. < 10.			(
r.	T66209 PY T63809 BE				< 200.			$\sum_{i=1}^{n}$
		ITYL BENZYL P	НТНАБАТЕ		< 30.			
(ENZO(A)ANTHRA		•	< 30.			(
*		3"-DICHLORDS			< 30.			٦,
	I64209 CH				< 30.			
		SC2-ETHYLHEX	YL)PHTHALATE		< 30.			(
	165009 DI	OCTYLPHTHALA	TE		< 30.			
-	T63409 BE	NZO(B)ELÜNRA	NTHENE				NA	
C		NZO(K)FUURA	NTHENE				NA	(
л		INZO(A)PYRENE			< 30.			
		DEND(1,2,3-C			< 30.			<u></u>
()		(BENZO(A,H)AN (NZO(GHI)PERY)	INKALENE Lene		< 30. < 30.			•
÷	163709 BE				< 10.			
	T15809 HC					MCG/L		ć
•		H, GAMMA (LIN	DANES		< 10.			*
	T15009 HC				< 10.			
(108009 HE					MCG/L		Ċ
-	F07709 AL	DRIN			< 10.			-
		PTACHLOR EPO.	XIDE		< 10.	MCG/L		-
(T43309 EN	IDDSULFAN I	-	-	< 10.			(
		E -PARA, PAR	A	-	< 10.	-		
e	T08509 DI				< 10.			
C	T08409 EN				< 10.			C
		D -PARA, PAR.	A		< 10.			
(IDOSULFAN II Idrin Aldruydi	.		< 10.			Ċ
Ľ	_	IDRIN ALDEHYD 100sulfan sul	—		< 10.			r
•		T -PARA, PAP			< 10.			
		а совла САЛ.	A . **** END OF	' REPORT ***	•			(
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NEW YORK STATE DEPARTMENT OF HEAUIH WADSWORTH CENTER FOR LABORATORIES AND RESEARCH Ć

P.	WADSWORTH CENTER FOR LABORATE	JRIES AND RESEARCH
	PAGE 1 RESULTS OF EXAMIN	VATION FINAL REPORT
	SAMPLE ID: 43578 SAMPLE RECEIVED	0:84/08/29/09
	PROGRAM: 650:DEC SOLID WASTES	
	SOURCE ID:NFLBR113 DRAINAGE BASIN:01	GAZETTEER CODE:3102
(POLIFICAL SUBDIVISION:NIAGARA FALLS C.	COUNTY:NIAGARA (
•		. Z DIRECTION:
	LOCATIONS: NIAGARA FALLS, LOVE CANAL, BED	RECK MONTTORING WELLS
Ċ	DESCRIPTION: WELL #3223	(
•.	REPORTING LAB: TOX:LAB FOR ORGANIC A	NALVITCAL CHENISTRY
	TEST PATTERN: PPEP:F.R. 4ETHODS 625,6	CALAND FOR HETH 533 1
1	SAMPLE IYPE: 250:GROUND WATER	JOT BUD DEW MOTU DASPI
	• • • • •	
	TIME OF SAMPLING: 84/08/28 12:08	DATE PRINTED:84/10/25
1		
(PARAMETER	RESULT
	T62009 CHLORDMETHANE	< 1. MCG/L
	T61809 BROMOMETHANE	< 1. 4CG/4
(T41009 VINYL CHLORIDE	< 1. MCG/L
	T70209 DICHLORODIFLUOROMETHANE	< 1. MCG/L
	T61909 CHLORDETHANE	< 1. MCG/L
(161709 IRICHLOROFLUOROMETHANE	1 < 1. MCG/6
-	T23809 DICHLOROMETHANE	< 1. MCG/4
	T50909 1,1-DICHLORDETHENE	< 1. MCG/4
(T51909 1,1-DICHLORDETHANE	< 1. MCG/L (
*	T61209 IRANS-1,2-DICHLORDETHENE	< 1. MCG/L
	T39009 CHLORDFORM	< 1. MCG/L
Ι		< 1. MCG/L (
	T50809 1,2-DICHLORDETHANE	
	T23609 1,1,1-TRICHLOROETHANE	< 1.º MCG/G
مي.	T36609 CARBON TETRACHLORIDE	< 1. VCG/L
Š,	I38909 BROMODICHLOROMETHANE	< 1. MCG/L
	C61309 1,2-DICHLOROPRUPANE	< 1. MCG/L
•	161509 IRANS-1, 3-DICHLOROPROPENE	< 1. MCG/U
I	F41109 TRICHLOROETHYLENE	< 1.: MCG/L
:	T44909 DIBROMUCHUOROMETHANE	< 1. MCG/L
£	161409 CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
1	T51709 1,1,2-TRICHLORDETHANE	< 1. MCG/L
	T61109 2-CHLORDETHYLVINYL ETHER	< 1. MCG/L
	T42109 BROMOFORM	< 1. MCG/L
1	T51809 1,1,2,2-TETRACHLOROETHANE	< 1. MCG/G
-	F41209 FETRACHLORDETHENE	< 1. MCG/L
	T40909 CHLOROBENZENE	< 1. MCG/L
۲.	149709 1,3-DICHLORDBENZENE	< 1. MCG/L (
	T44109 1,2-DICHLOROBENZENE	< 1. MCG/L
	r44209 1,4-DICHLOROBENZENE	< 1. MCG/L
<	T34409 BENZENE	< 1. MCG/L
	T39209 IDLUENE	< 1. MCG/L
	T51009 ETHYLBENZENE	
6	T85209 1-CHLORDCYCLOHEXENE-1	< 1. MCG/U < 1. MCG/U
(
	**** CONTINUED ON NEXT F	14 JG TTTT
-	•	
($r_{0}(0)$, $r_{0}(0) = h(0)$, $r_{0}(0) = 0$
	MR. S. BRASWELL	,
	BUREAU OF SOLID WASTES	t t
	N.Y.S. DEPT. OF ENVIRONMENTAL CONSERVA	ATIO SUBMITIED BY:BARLOW
	50 WOLF RD., ROOM 417	•
C	ALBANY, N.Y. 12233	
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NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER FOR LABORATORIES AND RESEARCH (

' • (
	PAGE 2	3223) RESULTS OF EXAMINATION	FINAL REPORT	r
	SAMPLE ID:	43578 SAMPLE RECEIVED: 84/01	8/29/09	(
		SUBDIVISION:NIAGARA FALLS C.		
	TIOCATION:	NIAGARA FALLS, LOVE CANAL, BEDROCK !	MONTTORING WELLS	
(TIME OF SA	MPLING: 84/08/28 12:08	DATE PRINTED:84/10/25	5 🔇
r		PARAMETER	RESULT	r
(PARA-XYLENE Meta-Xylene		C
	• • •	ORTHO-XILENE	< 1. MCG/L < 1. MCG/L	
(CUMENE	< 1. MCG/L	C
		STYRENE	< 1. MCG/L	
		P-BROMOFLUOROBENZENE	< 1. MCG/L	
(N-PROPYLBENZENE	< 1. MCG/L	Ċ
-		TERT-BUTYLBENZENE	< 1. MCG/G	
	T85709	O/P-CHLOROTOLUENE	< 1. MCG/G	_
(BROMOBENZENE	< 1. MCG/L	(
		META-CHLOROTOLUENE	< 1. MCG/L	
,		1,3,5-TRIMETHYLBENZENE	< 1. MCG/L	_
Ç		1,2,4-TRIMETHYLBENZENE	< 1. MCG/L	C
		P-CYMENE	< 1. MCG/L	
(CYCLOPROPYLBENZENE	< 1. MCG/L	(
Υ.		SEC-BUTYLBENZENE N-BUTYLBENZENE	< 1. MCG/L	C
		2,3-BENZOFURAN	< 1.4 MCG/L < 1.4 MCG/L	
*		HEXACHLOROBUTADIENE (C=46)	< 5. MCG/L	(
		1,2,4-TRICHLOROBENZENE		
		NAPHTHALENE	< 5. MCG/L	
Ś	•	1,2,3-TRICHLOROBENZENE	< 5. MCG/L	(
		PHENOL	< 10, MCG/L	-
	T66409	2-CHLOROPHENOL	< 10. MCG/L	
1	Г66809	2-NITROPHENOL	< 10. MCG/L	
		2,4-DIMETHYLPHENOL	< 10. MCG/L	
- -		2,4-DICHLOROPHENOL	< 10. MCG/L	
1		4-CHLORD-3-METHYLPHENDL	< 10. MCG/L	. (
	<u></u>	2,4,6-TRICHLOROPHENOL	< 10. MCG/L	
a t		2,4,5-TRICHLOROPHENOL	< 10.0 MCG/L < 10.0 MCG/L	C
L		2,4-DINITPOPHENOL 4-NITROPHENOL	< 10. MCG/L	
		2-METHYL-4,6-DINITROPHENOL	< 10.0 MCG/L	
1		PENTACHLOROPHENOL	< 10. 4CG/L	C
		BENZOTC ACID	NA	
		BIS(2-CHLOROISOPROPYL)ETHER	NA	
<		BIS(2-CHLORDETHYL)ETHER	< 10. MCG/L	C
	165909	N-NITROSODI-N-PROPYLAMINE	< 10. MCG/G	-
	165309	HEXACHLOROETHANE	< 10. MCG/L	
٢.		NITROBENZENE	< 10. MCG/L	
•	•	ISDPHORONE	< 10. MCG/L	
		BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L	
		HEXACHLOROCYCLOPENIADIENE (C-56)	< 10. MCG/L	C
- '		2-CHLORONAPHTHALENE	< 10. MCG/L	
		2,6-DINITROTOLUENE	< 10. MCG/L	e
<u> </u>		ACENAPHIHYLENE DIMEIHYLPHIHALAIE	< 10. MCG/G < 10. MCG/G	
		ACENAPHTHENE	< 10. MCG/G	
C		**** CONTINUED ON NEXT PAGE **		(
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NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

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	PAGE 3	(3223) RESULTS OF EXI	AMINALION	FINAL REPORT	•
	SAMPLE ID:		LVED: 84/08/29/09		(
	POLITICAL	SUBDIVISION:NIAGARA FALLS C.			
_	LOCATION:				
C	TIME OF SA	MPLING: 84/08/28 12:08	DATE	PRINTED:84/10/25 ((
		PARAMETER	RESULT	· · ·	
(T64809	2,4-DINITROTOLUENE	< 10.	MCG/L ((
-		DIETHYLPHTHALATE	< 10.		
		FLUORENE	< 10.		
(-	4-CHLOROPHENYL PHENYL ETHER		NA	
•		N-NITROSODIPHENYLAMINE	< 10.	MCG/G	
		1,2-DIPHENYLHYDRAZINE		MCG/L	
₹		4-BROMOPHENYL PHENYL ETHER	< 10.	MCG/L	
•		HEXACHLOROBENZENE		MCG/L	
		PHENANTHRENE		MCG/G	
(ANTHRACENE			(
•		DI-N-BUTYLPHTHALATE	< 10.		·
		FLUORDANTHENE		MCG/L	
(T66209		<i>t</i> a < 10.5		(
•	• • -	BENZIDINE	< 200.		
		BUTYL BENZYL PHTHALATE	< 30.		
(BENZO(A)ANTHRACENE	< 30.	MCGZU	(
		3,3'-DICHLOROBENZIDINE	< 30.		
		CHRYSENE	-	MCG/L	
1		BIS(2-ETHYLHEXYL)PHTHALATE	< 30.		(
		DIUCTYLPHTHALATE		MCG/L	
		BENZO(B)FLUORANTHENE	•	NA	
(BENZO(K)FLUDRANTHENE		NA	(
		BENZO(A)PYRENE	< 30.	MCG/L	-
		INDEND(1,2,3-CD)PYRENE	< 30.		
¨ (DIBENZO(A, H)ANTHRACENE	< 30.		(
-		BENZD(GHI)PERYLENE	< 30.		
e.		HCH, ALPHA		MCG/G	
Ċ		HCH, BETA			(
		HCH, GAMMA (UINDANE)		MCG/L	
		HCH, DELTA	< 10.		
(HEPTACHLOR		MCG/L	t
•		ALDRIN		MCG/L	
		HEPTACHLOR EPOXIDE		MCG/L	
(ENDOSULFAN I		MCG/L	(
		DDE -PARA, PARA		MCG/G	
		DIELDRIN		MCG/L	
C	T08409	ENDRIN		MCG/L	(
*		DDD -PARA, PARA		MCG/L	1
		ENDOSULFAN II		MCG/L	
(ENDRIN ALDEHYDE			C
*		ENDOSULFAN SULFATE		MCG/L	•
1		DDT -PARA, PARA		MCG/L	
(REPORT ****	(Ċ
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NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER FOR LABORATORIES AND RESEARCH C

	PAGE 2	3223 RESULTS OF EXA	MINALION	1	FIN	AU REPOR	r
	SAMPLE ID:						C
		SUBDIVISION:NIAGARA FALLS C.			LAGARA		
	LOCATION:						
()	TIME OF SA	MPLING: 84/08/28 12:08				:84/10/2	5 (
		PARAMETER		RESULT			
(T70409	PARA-XYLENE		< 1.			6
		META-XYLENE			MCG/L		(
		ORTHO-XYLENE	÷.		MCG/T,		
(CUMENE			MCG/G		(
▲.		STYRENE		· ••• •	MCG/U		
		P-BROMOFLUOROBENZENE			MCG/L		-
(N-PROPYLBENZENE			MCG/L		(
		TERT-BUTYLBENZENE			MCG/G		
•		O/P-CHLOROTOLUENE		-	MCG/L		
(BROMOBENZENE			MCG/L		(
		META-CHLOROTOLUENE		< 1.			
		1,3,5-TRIMETHYLBENZENE			MCG/L		
(1,2,4-TRIMETHYLBENZENE			MCG/L		(
		P-CYMENE			MCG/L		
		CYCLOPROPYLBENZENE			MCG/G		
1		SEC-BUTYLBENZENE			MCG/L		(
		N-BUTYLBENZENE		-	MCG/L		L.
		2,3-BENZOFURAN	•	< 1.		•	
7	T52509	HEXACHLOROBUTADIENE (C-46)		< 5.	MCG/L		(
		1,2,4-TRICHLOROBENZENE		< 5.	MCG/L		
		NAPHIHALENE		< 5.			
(1,2,3-TRICHGOROBENZENE		< 5.			(
	T67109	PHENOL		< 10.		•	
<u>.</u>	T66409	2-CHLOROPHENOL	•		MCG/L	· · ·	
÷(T65809	2-NITROPHENDL		< 10.			(
:		2,4-DIMETHYLPHENOL		< 10.			-
-					MCG/L		
Ċ	165309	2,4-DICHLOROPHENOL 4-CHLORO-3-METHYLPHENOL		-	MCG/G		•
	F67209	2,4,6-TRICHLOROPHENOL	•	-	MCG/U		•
		2,4,5-TRICHLOROPHENOL			MCG/L	• •	1
(2,4-DINITROPHENOL			MCG/L		C
-		4-NITROPHENOL		•	MCG/L		
	T69509	2-METHYL-4, 5-DINITROPHENOL			MCG/L		
	167009	PENTACHLOROPHENOL	•		MCG/L		(
	T85009	BENZOIC ACID				NA	
	T68109	BIS(2-CHLOROISOPROPYL)ETHER				NA	
C	T63909	BIS(2-CHLOROETHYL)ETHER		< 10.	MCG/G		Ć
	T65909	N-NTIROSODI-N-PROPYLAMINE		< 10.	MCG/L		-
	T65309	HEXACHLOROETHANE		< 10.	MCG/L		
(165709	NITROBENZENE		< 10.	MCG/L		Ć
	T65509	ISOPHORONE		< 10.	MCG/G		
1:	2 168609	BIS(2-CHLOROETHOXY)METHANE		< 10.	MCG/L		
()	149209	HEXACHLOROCYCLOPENTADIENE (C	-56)	< 10.	4CG/6		C
:•	164109	2-CHLORDNAPHTHALENE		< 10.	4CG/6		-
	r64909	2,6-DINITROTOLUENE		< 10.	MCG/L		
	F63109	ACENAPHTHYLENE		< 10.	4CG/6		e
;	T64709	DIMETHYLPHTHALATE		< 10.	₩CG/L		
	T63009	ACENAPHTHENE			MCG/L		
(''	i	**** CONTINUED ON NEX	T PAGE *	***			C
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SAMPLE ID:

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

FINAL REPORT

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3223 RESULTS OF EXAMINATION 43578 SAMPLE RECEIVED: 84/08/29/09 PULITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS TIME OF SAMPLING: 84/08/28 12:08 DATE PRINTED: 94/10/25 (

PARAMETER RESULT T64809 2,4-DINITROTOLUENE < 10. MCG/L **T64609 DIETHYLPHTHALATE** < 10. MCG/L **F65209 FLUDRENE** < 10. MCG/6 168409 4-CHLOROPHENYL PHENYL ETHER NA 166009 N-NITRUSODIPHENYLAMINE < 10. MCG/G **T65109 1,2-DIPHENYLHYDRAZINE** < 10. MCG/G T68309 4-BROMOPHENYL PHENYL ETHER < 10. MCG/G T48809 HEXACHLORDBENZENE < 10. MCG/G **T66109 PHENANTHRENE** < 10. MCG/L **T63209 ANTHRACENE** < 10. MCG/6 T64409 DI-N-BUTYLPHTHALATE < 10. MCG/6 < 10. MCG/L T68009 FLUORDANTHENE day < 10. MCG/L I66209 PYRENE **T63809 BENZIDINE** < 200. MCG/L T64009 BUTYL BENZYL PHTHALATE < 30. MCG/G < 30. MCG/L **T63309 BENZD(A)ANTHRACENE** 164509 3,3"-DICHLORDBENZTOTNE < 30. MCG/6 T64209 CHRYSENE < 30. MCG/L T67909 BIS(2-ETHYLHEXYL)PHTHALAIE < 30. 4CG/L **T65009 DIOCTYLPHTHALATE** < 30. MCG/L T63409 BENZO(B)FLUDRANTHENE NA T63509 BENZO(K)FLUDRANTHENE N A T63609 BENZD(A)PYRENE < 30. MCG/L 165409 INDEND(1,2,3-CD)PYRENE < 30. MCG/U **T64309 DIBENZO(A, H)ANTHRACENE** < 30. MCG/L T63709 BENZD(GHI)PERYLENE < 30. MCG/L T15709 HCH, ALPHA < 10. MCG/U T15809 HCH, BETA < 10. MCG/L **T35609 HCH, GAMMA (LINDANE)** < 10. MCG/G T16009 HCH, DELTA < 10. MCG/L TO8009 HEPTACHLOR < 10. MCG/G **T07709 ALDRIN** < 10. MCG/L T08309 HEPTACHLOR EPOXIDE < 10. MCG/L T43309 ENDOSULFAN T < 10. MCG/L I14809 DDE -PARA, PARA < 10. MCG/L T08509 DIELDRIN < 10. MCG/L T08409 ENDRIN < 10. MCG/G T14909 DDD -PARA, PARA < 10. MCG/L **T43409 ENDOSULFAN II** < 10. MCG/L < 10. MCG/L < 10. MCG/L T67409 ENDRIN ALDEHYDE T67309 ENDOSULFAN SULFATE T14709 DDT -PARA, PARA < 10. MCG/G **** END OF REPORT ****

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•	0390 NEW YORK STATE DEPARTMENT OF H	EALTH	
	WADSWORTH CENTER FOR LABORATORIES A	ND RESEARCH	
- Ĉ	·		C
-	PAGE 1 RESULTS OF EXAMINATION	FINAL REPORT	
	SAMPLE ID: 43579 SAMPLE RECEIVED:84/08	29/09	(
	PROGRAM: 650:DEC SOLID WASTES	- •	
		GAZETTEER CODE: 3102	
[COUNTY:NIAGARA	(
		Z DIRECTION:	
	LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDE		
ĩ	DESCRIPTION: WELL #3133)		(
•	REPORTING LAB: TOX: LAB FOR ORGANIC ANALYTIC	CAL CHEMISTRY	-
		in the second product of the second sec	
1	TEST PATTERN:PPEPIP.R.METHODS 625,601 ANDSAMPLE TYPE:250:GROUND WATERTIME: OF SAMPLING: 84/08/28 12:30		(
Ľ	TIME OF SAMPLING: 84/08/28 12:30	DATE PRINTED:84/10/25	i È
(PARAMETER	RESULT	(
,	T62009 CHLOROMETHANE	< 1. MCG/L	
	T61809 BROMOMETHANE	< 1. MCG/L	
1	T41009 VINYL CHLORIDE	< 1. MCG/L	•
Ľ	T70209 DICHLORODIFLUDROMEIHANE	< 1. MCG/G	. 🐝
	T61909 CHLORDETHANE	< 1. 4CG/L	
(T61709 IRICHLOROFLUDROMETHANE	< 1. MCG/L	(
Ľ	123809 DICHLOROMETHANE	< 1. MCG/L	
	T50909 1,1-DICHLORDETHENE	< 1. MCG/L	
ľ	T51909 1,1-DICHLORDETHANE	< 1. MCG/L	(
3	T61209 IRANS-1,2-DICHLOROETHENE	< 1. MCG/G	•
	I39009 CHLOROFORM	< 1. MCG/4	
Ä	T50809 1,2-DICHLOROETHANE	< 1. MCG/L	(
	T23609 1,1,1-TRICHLOROETHANE	< 1. MCG/L	•
	T36609 CARBON TETRACHLORIDE	< 1. MCG/L	
	T38909 BRUMODICHLORDMETHANE	< 1. MCG/L	6
>	T61309 1,2-DICHLOROPROPANE	< 1. MCG/U	
	TEISAG TRANS-1 3-DICHLAPADDADENE	< 1. MCG/L	
Ţ,	T41109 IRICHLORDETHYLENE	< 1. MCG/L	(
, b c	T44909 DIBROMOCHLORDMETHANE	< 1. MCG/L	
:	T61409 CIS-1,3-DICHLORDPROPENE	< 1. MCG/L	
7	T51709 1,1,2-TRICHUOROETHANE		(
.2	r61109 2-CHLOROETHYLVINYL ETHER	< 1. MCG/G < 1. MCG/G	
	T42109 BROMOFORM	< 1. MCG/L	
ζ	T51809 1,1,2,2-TETRACHLORDETHANE		C
2	T41209 TETRACHLORDETHENE	< 1. MCG/L	
	T40909 CHLOROBENZENE	< 1. MCG/L	
1	140909 CHECKDENZENE 149709 1.3-DICHLORDBENZENE	< 1. MCG/L	(
· 7	r44109 1,2-DICHLOROBENZENE	< 1. MCG/U < 1. MCG/U	C
	T44209 1,4-DICHLORDBENZENE		
Ç			C
	I34409 BENZENE	< 1. MCG/L	C
	T39209 TOLUENE	< 1. MCG/U	
•	T51009 ETHYLBENZENE	< 1. MCG/L	1
	T85209 1-CHLOROCYCLOHEXENE-1	< 1. MCG/L	C
	**** CONTINUED ON NEXT PAGE ***	• •	
•			7
		THEREFELDIT THEREF(0)	C
			C
	BUREAU OF SOLID WASTES	CITART BORD AVER	e
	N.Y.S.DEPT. OF ENVIRONMENTAL CONSERVATIO	SUBMITTED BY: BARLOW	
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NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

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ľ	PAGE 2	3133 RESULT	S OF EXAMINATION	—	FINAL REPORT	r ` 1
					· · · ·	
·		43579 SAMP				C
		SUBDIVISION:NIAGARA F				
*		VIAGARA FALLS, LOVE				
L	TIME OF SA	MPGING: 84/08/28 12:3	10	DATE PRIN	TED:84/10/25	5(
	• •					
7		PARAMETER		RESULT	-	(
l		PARA-XYLENE		< 1.º MCG/		C
		META-XYGENE		< 1. MCG/		
,		ORTHO-XYLENE		< 1. MCG/		(
(CUMENE		< 1. MCG/		
		STYRENE		< 1. MCG/		
		P-BROMOFLUOROBENZENE	• • • •	< 1. MCG/		C
•		N-PROPYLBENZENE		< 1. MCG/		C
		TERT-BUTYLBENZENE		< 1. MCG/		
1		J/P-CHLOROTOLUENE		< 1. MCG/		(
(BROMOBENZENE		< 1. MCG/		
	_	META-CHLOROTOLUENE		< 1. MCG/		
1		1,3,5-TRIMETHYLBENZE		< 1. MCG/ < 1. MCG/		(
(1,2,4-TRIMETHYLBENZE	NC	< 1. MCG/		
				< 1. MCG/		
r		CYCLOPROPYLBENZENE		< 1. MCG/		(
Ĺ	• · • •	SEC-BUTYLBENZENE N-BUTYLBENZENE		< 1. MCG/		
		2,3-BENZOFURAN		< 1. MCG/	r	
2		HEXACHLOROBUTADIENE	(0-45)	< 5. MCG/		(
		1,2,4-TRICHLOROBENZE		< 5. MCG/		x
		NAPHTHALENE		< 5. 4CG/		
Ĺ		1,2,3-TRICHLOROBENZE	NE	< 5. MCG/		(
7		PHENOL		< 10. MCG/		
		2-CHLOROPHENOL		< 10. MCG/		
		2-NIIROPHENOL		< 10. MCG/		(
		2,4-DIMETHYLPHENOL		< 10 . MCG/		
	T66509	2,4-DICHLOROPHENOL		< 10. MCG/		
(4-CHLORD-3-METHYLPHE	NOL	< 10. MCG/		•
- 1 3 -		2,4,6-TRICHLOROPHEND		< 10. MCG/		
	-	2,4,5-TRICHLOROPHENO		< 10. MCG/		
1		2,4-DINITROPHENOL	-	< 10, MCG/		E
.3		4-NIIROPHENOL		< 10. MCG/	•	-
		2-METHYL-4,6-DINITRO	PHENOL	< 10. MCG/		
1		PENTACHLOROPHENDL		< 10. 4CG/		C
36	· · ·	BENZOIC ACID			NA	-
		BIS(2-CHLOROISOPROPY	L)ETHER		NA	
1		BIS(2-CHLORDETHYL)ET		< 10. MCG/	′ Б -	
•	T65909	N-NITROSODI-N-PROPYL	AMINE	< 10. MCG/	΄υ	
	r65309	HEXACHLOROETHANE		< 10. MCG/	16	
1	I65709	NITROBENZENE		< 10. MCG/	1 ር	- C.
		ISOPHORONE	·	< 10. MCG/		
		BIS(2-CHLORDETHOXY)M		< 10. MCG/		<u>,</u>
5	T49209	HEXACHLOROCYCLOPENTA	DIENE (C-56)	< 10. MCG/		C
1	-	2-CHLORONAPHTHALENE		< 10. MCG/		
	• T64909	2,6-DINITROTOLUENE		< 10. MCG/		
	³ 163109	ACENAPHTHYLENE		< 10. MCG/	,	e
	7 T64709	DIMETHYLPHTHALATE		< 10. MCG/		
	• T63009	ACENAPHTHENE		< 10. MCG/	۲ ۵	,
C	5	#### CONTINUE	D ON NEXT PAGE ***	F #		·C
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NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 3 3133 RESULTS OF EXAMINATION FINAL REPORT SAMPLE ID: 43579 SAMPLE RECEIVED: 84/08/29/09 POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA LOCATION: NIAGARA FAULS, LOVE CANAL, OVERBURDEN MONITORING WELLS TIME OF SAMPLING: 84/08/28 12:30 DATE PRINTED:84/10/25 (PARAMETER RESULT. T64809 2,4-DINITROTOLUENE < 10. MCG/L (T64609 DIETHYLPHTHALATE < 10. MCG/L **I65209 FLUORENE** < 10. MCG/L 168409 4-CHLOROPHENYL PHENYL ETHER NΑ (T66009 N-NIIROSODIPHENYLAMINE < 10. MCG/L **T65109 1.2-DIPHENYLHYDRAZINE** < 10. MCG/L T68309 4-BROMOPHENYL PHENYL ETHER < 10. MCG/L (T48809 HEXACHLOROBENZENE < 10. 4CG/6 **166109 PHENANTHRENE** < 10. MCG/L Ľ. **I63209 ANTHRACENE** < 10. MCG/L (T64409 DI-N-BUTYLPHTHALATE < 10. MCG/L **T68009 FLUORDANTHENE** < 10. MCG/U T66209 PYRENE 24 < 10.6 MCG/G (**T63809 BENZIDINE** < 200. MCG/G 164009 BUTYL BENZYL PHTHALATE < 30. MCG/U T63309 BENZD(A)ANTHRACENE < 30. MCG/L (T64509 3.3 - DICHLORDBENZIDINE < 30. MCG/L T64209 CHRYSENE < 30. MCG/L 167909 BIS(2-ETHYLHEXYL)PHTHALATE < 30. MCG/L Ć T65009 DIOCTYLPHTHALATE < 30. MCG/U T63409 BENZO(B)FLUORANTHENE NA. 163509 BENZO(K)FLUORANTHENE NΑ Ć 163609 BENZO(A)PYRENE < 30. MCG/L T65409 INDEND(1,2,3-CD)PYRENE < 30. MCG/U **I64309 DIBENZD(A,H)ANTHRACENE** < 30. MCG/L Ć 163709 BENZD(GHI)PERYLENE < 30. MCG/L T15709 HCH, ALPHA < 10. MCG/L T15809 HCH, BETA < 10. MCG/L Ć **T35609 HCH, GAMMA (LINDANE)** < 10. MCG/L T16009 HCH, DELTA < 10. MCG/G T08009 HEPTACHLOR < 10. MCG/6 Ĉ T07709 ALDRIN < 10. MCG/G TOB309 HEPTACHLOR EPOXIDE < 10. MCG/L T43309 ENDOSULFAN I < 10. MCG/L C T14809 DDE -PARA, PARA < 10. MCG/U T08509 DIELDRIN < 10. MCG/U T08409 ENDRIN < 10. MCG/L (T14909 DDD -PARA, PARA < 10. MCG/6 T43409 ENDOSULFAN II < 10. MCG/L **T67409 ENDRIN ALDEHYDE** < 10. MCG/U C 167309 ENDOSULFAN, SULFATE < 10. MCG/L T14709 DDT -PARA, PARA < 10. 4CG/L 12 **** END OF REPORT **** 11

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0396	NEW YORK STATE DE	PARTMENT OF HEALTH	
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PAGE 1	RESULTS OF	'EXAMINATION _ FINAL R	EPORT
	•	· · · ·	
SAMPLE ID:	43591 SAMPLE R	ECEIVED: 84/08/29/09	
PROGRAM:	650:DEC SOLID HASTES		
SOURCE ID:	NELBRIIS DRATNAGE B	ASIN:01 GAZETTEER CODE:3102	
POLITICAL	SUBDIVISION:NIAGARA FALLS	C. COUNTY:NIAGARA	
LATITUDE:	LONGITUDE:	Z DIRECTION:	
LOCATION:		AL, BEDROCK MONITORING WELLS	
DESCRIPTIO	N: WELL (#6214)		
REPORTING	LAB: TOX:LAB FOR OR	GANIC ANALYTICAL CHEMISTRY	
TEST PATTE		S 625,601 AND EPA METH 503.1	
SAMPLE TYP		· · · · · · · · · · · · · · · · · · ·	
	MPRING: 84/08/28 15:00	DATE PRINTED: 84/	10/26
AT OF OF OW	THE THE THE THE TOTAL TOTAL	Unis Eximisuina/	10/25
	PARAMETER	RESULT	•
ተፋንስስሳ	CHLOROMETHANE	•• -	
	BROMOMETHANE	< 1. MCG/L	
		< 1. MCG/L	
	VINYL CHLORIDE	< 1. MCG/L	
	DICHLORODIFLUDROMETHANE	< 1. MCG/L	
	CHLORDETHANE	< 1. MCG/L	
	TRICHLOROFLUOROMETHANE	tar < 1. MCG/L	
	DICHLOROMETHANE	< 1. MCG/6	
	1,1-DICHLOROETHENE	< 1. MCG/L	
	1,1-DICHLOROETHANE	< 1. MCG/L	
	TRANS-1,2-DICHLOROETHENE		
	CHLOROFORM	< 1. MCG/L	
	1,2-DICHLORDETHANE	< 1. MCG/L	
	1,1,1-TRICHLOROETHANE	< 1.º MCG/L	
	CARBON TETRACHLORTDE	< 1. MCG/L	
	BROMODICHLOROMETHANE	< 1. MCG/L	
	1,2-DICHLOROPROPANE	< 1. MCG/L	
T61509	TRANS-1, 3-DICHLOROPROPEN	E < 1. MCG/L	
T41109	TRICHLOROFTHYLENE	< 1. MCG/L	
	DIBROMOCHUOROMETHANE	< 1. MCG/U	
	CIS-1, 3-DICHLOROPROPENE	< 1. MCG/L	
• •	1,1,2-TRICHLORDETHANE	< 1. MCG/L	
	2-CHLOROETHYLVINYL ETHER		
	BROMOFORM	< 1. MCG/L	
	1,1,2,2-TETRACHLOROETHAN		
	TETRACHLORDETHENE	8. MCG/L	
,	CHLOROBENZENE	< 1. MCG/L	
	1,3-DICHLORDBENZENE		
	1,2-DICHLOROBENZENE	< 1. MCG/L	
		< 1. MCG/L	
	1,4°DICHLOROBENZENE	< 1. MCG/L	:
	BENZENE	< 1. MCG/L	
	TOLUENE	< 1. MCG/L	
	ETHYLBENZENE.	< 1. MCG/L	
r85209	1-CHLOROCYCLOHEXENE-1		
• ·· · ·	**** CONTINUED ON	NRYT RACE ALLER	
12	· · · · · · · · · · · · · · · · · · ·		
II COPTES S	ENT TO: CD(2), RD(0), LP	HE(0), FED(0), INFO-P(0), INFO-L(0)	
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	BRASWELL		
	DE SOLID WASTES		
	DEPT. OF ENVIRONMENTAL C	ONSERVATIO SUBMITTED BY: BARLO	N .
	F RD., ROOM 417		
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NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 2 RESULTS OF EXAMINATION FINAL REPORT 6214 SAMPLE ID: 43581 SAMPLE RECEIVED: 34/08/29/09 POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY: MIAGARA LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS TIME OF SAMPLING: 84/08/28 15:00 DATE PRINTED:84/10/25 (PARAMETER RESULT (170409 PARA-XYLENE < 1. MCG/L 170309 META-XYLENE < 1. MCG/U 151409 ORTHO-XYLENE < 1. MCG/6 (T85309 CUMENE < 1. MCG/5 **T85409 STYRENE** < 1. MCG/G 185509 P-BROMOFLUOROBENZENE < 1.: MCG/6 (T51109 N-PROPYLBENZEME < 1. MCG/6 185609 TERT-BUTYLBENZENE < 1. MCG/6 185709 O/P-CHLOROIDLNENE < 1. MCG/6 (T51209 BROMOBENZENE < 1. MCG/L **T50509 META-CHLOROTOLUENE** < 1. MCG/L T85809 1,3,5-TRIMETHYLBENZENE < 1. MCG/6 ſ 185909 1,2,4-TRIMETHYLBENZENE < 1. MCG/L T86009 P-CYMENE < 1. MCG/L **T86109 CYCLOPROPYLBENZENE** < 1. MCG/U ₹ 185209 SEC-BUTYLBENZENE < 1. MCG/5 T86309 N-BUTYLBENZENE < 1. MCG/6 T86409 2,3-BENZOFURAN < 1. MCG/U T52509 HEXACHLOROBUTADIENE (C=46) < 5. MCG/L 144009 1.2.4-TRICHLOROBENZENE < 5. 4CG/6 165609 NAPHTHALENE < 5. MCG/G T43909-1,2,3-TPICHLOPOBENZENE < 5. MCG/D T67109 PHENDI, < 10. MCG/G 166409 2-CHLOROPHENOL < 10. MCG/G € T65809 2-NITROPHENDG < 10 . MCG/L K 165609 2,4-DIMEIHYUPHENOL < 10. MCG/G 166509 2,4-DICHLOROPHENOL < 10. MCG/L (T65309 4-CHLORD-3-METHYLPHENDL < 10. MCG/L 167209 2,4,6-TRICHLOROPHENOL < 10. VCG/G T49609 2,4,5-TRICHLOROPHENOL < 10. MCG/L < T66709 2,4-DINITROPHENDL < 10. MCG/G T65909 4-NITROPHENOL < 10. MCG/L I68509 2-METHYL-4, 6-DINITROPHENOL < 10. MCG/L € 167009 PENTACHLOROPHENOL € < 10. MCG/6 T85009 BENZDIC ACID MA. T68109 BIS(2-CHLORDISOPROPYL)ETHER NΑ T63909 BIS(2-CHLORDETHYL)ETHER < 10. MCG/L 165909 N-NITROSODI-N-PROPYLAMINE < 10. MCG/6 **T65309 HEXACHLOROETHANE** < 10. MCG/L 165709 NITROBENZENE < 10. MCG/G 165509 ISUPHORDNE < 10, MCG/L T68609 BIS(2-CHLOROETHOXY)METHANE 12 < 10. MCG/L C 11 T49209 HEXACHLOROCYCLOPENTADIENE (C-56) < 10. MCG/G 164109 2-CHLORDNAPHTHALENE : 2 < 10. MCG/G T64909 2,6-DINITROTOLUENE 2 < 10. MCG/L **T63109 ACENAPHTHYLENE** < 10. MCG/L T64709 DIMETHYLPHTHAGATE < 10. MCG/L 163009 ACENAPHTHENE < 10. MCG/L **** CONTINUED ON NEXT PAGE ****

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		NEW YORK STATE DEPAR	TMENT OF HEALTH	
. 7		WADSWORTH CENTER FOR LABO	RATORIES AND RESEARCH	
	PAGE 3			
· ·		(6214) RESULTS OF FX	AMINALION	FINAL REPORT
	SAMPLE ID:	43581 SAMPLE RECE		
		SUBDIVISION:NIAGARA FALLS C.	IVED:84/08/29/09	
	LOCATION:	NTAGARA FALLS LOVE CANAL	COUNTY:N	IAGARA
		NIAGARA FALLS, LOVE CANAL, MPLING: 84/08/28 15:00		
-			DATE	PRINTED:84/10/25
-		PARAMETER	RESULT	
	T64809	2,4-DINITROTOLUENE		4CG/6
	T6460 9	DIETHYLPHTHALATE		MCG/L
	F6520 9	FLUDRENE		
1		4-CHLOROPHENYL PHENYL ETHER		
	T66009	N-NITROSODIPHENYLAMINE	< 10	NA 6 MCG/L
_	F65109	1,2-DIPHENYGHYDRAZINE		MCG/L
1	T68309	4-BROMOPHENYL PHENYL ETHER		MCG/L C
	T 48809	HEXACHLOROBENZENE		
·	F65109	PHENANTHRENE		MCG/L
2		ANTHRACENE		MCG/L
		DI-N-BUTYLPHTHALATE		4CG/6 (
	T68009	FUUORDANTHENE		MCG/L
₹.	166209	PYRENE		4CG/6
		BENZIDINE		MCG/L (
		BUTYL BENZYL PHTHALATE	< 200.	
Ţ.	163309	BENZO(A)ANIHRACENE		4CG/L
-	J64509	3,3°-DICHIOROBENZIDINE		MCG/L (
	F64209	CHRYSENE	< 30.	MCG/L
ζ.		BIS(2-ETHYLHEXYL)PHTHALATE	< 30.4	
-	T65009	DIOCIYLPHTHALATE		MCG/L (
	T63409	BENZO(B)FLUORANTHENE	< 30.	
	163509	BENZO(K)FLUORANTHENE		NA
-	T63609	BENZD(A)PYRENE		VA (
	T65409	INDEND(1,2,3-CD)PYRENE	< 30.	
ζ.	I64309	DIBENZD(A,H)ANTHRACENE	< 30.1	
-	I63709	BENZO(GHI)PERYLENE	< 30.	
	F15709	HCH, ALPHA	< 30.	
1	T15809	HCH, BETA	< 10.	
-		HCH, GAMMA (LINDANE)	< 10.	•
	T15009	HCH, DELTA	< 10.	
ĩ		HEPTACHLOR	< 10.	
	107709		< 10.	S
		HEPTACHLOR EPOXIDE	< 10.	
ζ.	T43309	ENDOSULFAN I	< 10.	
		DDE -PARA, PARA	< 10.	
		DIELDRIN	< 10.	
(T08409		< 10.	
•		DDD -PARA, PARA	< 10.	
		ENDOSULFAN TI	< 10.	
< 1		ENDRIV ALDEHYDE	< 10.	
•		ENDOSULFAN SULFATE	< 10.	
:2			< 10.	MCG/L
	*14/03	DDT -PARA, PARA	< 10.	MCG/L
10		TTTT END OF	REPORT ****	L L L
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	WADSWORTH CENTER FOR LABORATORIES AND	RESEARCH	
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	PAGE 1 RESULTS OF EXAMINATION	_ FINAL REPORT	Ì
	SAMPLE ID: 43582 SAMPLE RECEIVED: 34/08/2	19/09	1
	PROGRAM: 650:DEC SOLTO WASTES	· · · · ·	`
		GAZEITEER CODE: 3102	
(CDUNTY:NIAGARA	1
•		Z DIRECTION:	N.
	LONGITUDE: LOCATION: NIAGARA_FALLS, LOVE CANAL, UVERBURDEN		
(DESCRIPTION: WELL (#3122)		1
	REPORTING LAB: TOXILAB FOR ORGANIC ANALYTICA	T PUFUTSTOV	
	TEST PATTERN: PPEP:F.R.METHODS 625,601 AND E	יסא אפידע בהס ז	
(- M METH 202 1	1
	TIME OF SAMPLING: 84/08/28 11:30	DATE PRINTED:84/10/25	
	1102 DF SK (FUING: 04/00/20 I(1)0	DATE PRIMIED:84/10/23	
(PARAMETER	RESULT	6
	T62009 CHLOROMETHANE		
	T61809 BROMOMETHANE	< 1. MCG/G	
· (T41009 VINYL CHLORIDE		1
ι,	170209 DICHLORDDIFLUDROMETHANE	< 1. MCG/L	đ
	T61909 CHLORDETHANE	< 1.º MCG/L < 1.º MCG/L	
	161709 TRICHLOROFLUOROMETHANE	< 1. MCG/6	
۰.	ISING IRICHLOROFLOORDHEIHANE		•
•	T50909 1,1-DTCHLORDETHENE	< 1. MCG/L < 1. MCG/L	
C	T51909 1,1-DICHLORDETHANE		1
1			
	T61209 IRANS-1,2-DICHLORDETHENE	< 1. MCG/L	
<u>,</u>	T39009 CHLOROFORM	< 1. MCG/L	
	F50809 1,2-DICHLORDETHANE	< 1. MCG/L	
	T23609 1,1,1-TRICHLORDETHANE	< 1. MCG/L	
	T36609 CARBON TETRACHLORIDE	< 1. MCG/L	
*	T38909 BRUMDDICHLORDMETHANE	< 1. MCG/G	
	T61309 1,2-DICHLOROPROPANE	< 1. MCG/L	
(T61509 TRANS-1, 3-DICHLOROPROPENE	< 1. MCG/L	
L	T41109 TRICHLORDETHYLENE	< 1. MCG/L	C
	T44909 DIBROMOCHLORDMETHANE	< 1. MCG/L	
(T61409 CIS-1,3-DICHLOROPROPENE	< 1. MCG/L	,
Ľ	T51709 1,1,2-TRICHLORDETHANE	< 1. MCG/G	C
	T61109 2-CHLORDETHYLVINYL ETHER	< 1. MCG/L	
(T42109 BROMOFORM	< 1. MCG/L	
C	T51809 1,1,2,2-TETRACHLORDETHANE	< 1. MCG/G	K.
	T41209 TETRACHLORDETHENE	< 1. MCG/G	
1	T40909 CHLORDBENZENE	< 1. MCG/L	
	T49709 1,3-DICHLORDBENZENE	< 1. MCG/L	C
	T44109 1,2-DICHLORDBENZEME	< 1. MCG/L	
1	T44209 1,4-DICHLORDBENZENE	< 1. MCG/1,	j
C	T34409 BENZENE	< 1. MCG/L	
	I39209 IDLUENE	< 1. MCG/L	
1	T51009 ETHYLBENZENE	< 1. MCG/G	
(T85209 1-CHUORDCYCLOHEXENE-1	< 1. MCG/G	(
	**** CONTINUED ON NEXT PAGE ****	. :	
, i:			
(ii	COPIES SENT TO: CO(2), RO(0), LPHE(0), FED(0),	INFO-P(0), INFO-5(0)	(
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,	N.Y.S.DEPT. OF ENVIRONMENTAL CONSERVATIO	SUBMITIED BY: BARLOW	~
6	50 WOLF RD., ROOM 417		
(s	ALBANY, N.Y. 12233		
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NEW YORK STATE DEPARTMENT OF HEALTH #ADSWORTH CENTER FOR LABORATORIES AND RESEARCH PAGE 2

RESULTS OF EXAMINATION _ FINAL REPORT 31.22

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		43582 SAMPLE RECEI				· .	(
		SUBDIVISION:NIAGARA FALLS C.					
		NIAGARA FALLS, LOVE CANAL.	OVERBURDEN				
(TIME OF SAM	MPGING: 84/08/28 11:30		DATE	PRINTED	:84/10/	25 (
				NPOUL B			
1	770400	PARAMETER		RESULT			
(PARA-XYLENE		< 1.			(
		META-XYLENE			MCG/L		
,		ORTHO-XYLENE		< 1.			
(T85309			š < 1		•	ć
		STYRENE		< 1.	MCG/U		· • •
		P-BROMOFLUORDBENZENE		< 1.	MCG/G		
(T51109	N-PROPYLBENZENE		< 1.	MCG/L		<i>(</i>
	T85609	IERT-BUTYLBENZENE		< 1.5	MCG/L		
	T85709	O/P-CHLOROIDLUENE		< 1.	MCG/L		
(T51209	BROMOBENZENE		< 1.			(
	T 50509	META-CHLORDTOLUENE		< 1.			
	185809	1,3,5-TRIMETHYLBENZENE			MCG/L		
\langle		1,2,4-IRIMETHYLBENZENE		2. 	MCG/L		(
•		P-CYMENE		< 1.4	MCG/G		•
		CYCLOPROPYLBENZENE		-	MCG/L		
~		SEC-BUTYLBENZENE			MCG/L		(
*		N-BUTYLBENZENE		-	MCG/L		ς.
		2,3-BENZOFURAN		< 1.			
-		HEXACHLOROBUTADIENE (C-46)		< 5.			(
		1,2,4-TRICHLOROBENZENE		< 5.			(
Ų		NAPHTHALENE		< 5.			
*•		1,2,3-TRICHUDRUBENZENE			MCG/L	•	(
· •	τ67109				MCG/L	NI CT	(
		2-CHLOROPHENOL				NC	•
5		2-NITRUPHENOL		< 10.			1
<u>`</u>		2,4-0IMETHYLPHENOL		< 10.			C
				< 10.			
1		2,4-DICHLOROPHENUL	•	< 10.			
7		4-CHLORD-3-METHYLPHENOL		< 10.			(
		2,4,6-TRICHLOROPHENOL		< 10.	· · · ·		,
		2,4,5-TRICHLOROPHENOL		< 10.			:
A.		2,4-DINITROPHENDL		< 10.			1 K
		4-NITROPHENOL		< 10.	-		
		2-METHYL-4,6-DINITROPHENOL		< 10.			
(PENTACHLOROPHENOL		< 10.	406/6		(
		BENZDIC ACID		•		NA-	
		BIS(2-CHLORDISOPROPYL)ETHER	· .			NĄ	•
(T63909	BIS(2-CHLOROETHYL)ETHER		< 10.	MCG/L		<u> </u>
	165909	N-NITROSODI-N-PROPYLAMINE		< 10.4	MCG/G		-
	T65309	HEXACHLOROETHANE		< 10.	4CG/5		•
1	F65709	NITROBENZENE		< 10.	MCG/L		(
	<u>.</u> 65509	ISOPHORONE		< 10.	4CG/6		•
• :		BIS(2-CHLOROETHOXY) METHANE		< 10.			
<u>,</u>		HEXACHLOROCYCLOPENTADIENE (C.	-56)	< 10.0			C
	T64109	2-CHLORONAPHTHALENE		< 10.			×.
		2,6-DINITROTOLUENE		< 10.			
		ACENAPHTHYLENE		< 10.			E
- ,		DIMETHYLPHTHALATE		< 10.			
á		ACENAPHTHENE					
(]		**** CONTINUED ON NEX		< 10.	"LU/U		1
		TTT LUNIINUGU UN NEX.	A ENJG TT ##		• • •		C

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

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PAGE 3 3122 RESULTS OF EXAMINATION FINAL REPORT SAMPLE ID: 43582 SAMPLE RECEIVED: 84/08/29/09 PULITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA LOCATION: VIAGARA FAGLS, LOVE CANAL, OVERBURDEN MONITORING AEULS TIME OF SAMPLING: 84/08/28 11:30 DATE PRINTED: 84/10/25 (PARAMETER. RESULT T64809 2,4-DINITROTOLUENE < 10. MCG/6 (**I64609 DIETHYLPHTHALATE** < 10. MCG/G **T65209 FLUORENE** < 10. MCG/5 ĩ **I68409 4-CHLOROPHENYL PHENYL ETHER** ONA (**T65009 N-NITROSODIPHENYLAMINE** < 10. MCG/G <u>ئ</u> T65109 1,2-DIPHENYLHYDRAZINE < 10.: MCG/G Ç 168309 4-BROMOPHENYL PHENYL ETHER < 10.6 MCG/L (**T48809 HEXACHLOROBENZENE** < 10. MCG/G **I66109 PHENANTHRENE** < 10. MCG/G 163209 ANTHRACENE < 10. MCG/G T64409 DI-N-BUTYLPHTHALATE < 10. MCG/T Έ **T68009 FLUORDANTHENE** < 10. MCG/G 4 < 10. MCG/L **T66209 PYRENE** 3.0 **T63809 BENZIDINE** < 200. MCG/L 0 T64009 BUTYL BENZYL PHTHALATE < 30. MCG/6 . ٦, 163309 BENZD(A)ANTHRACENE < 30. MCG/L 3 I64509 3,3 -DICHLORDBENZIDINE < 30. MCG/L 2. T64209 CHRYSENE < 30. MCG/L 2 T67909 BIS(2-ETHYLHEXYL)PHTHALATE < 30. MCG/L Ċ. **T65009 DIOCTYLPHTHALATE** < 30. MCG/L í. **163409 BENZO(B)FLUORANTHENE** NA **163509 BENZO(K)FLUDRANTHENE** C N A 163609 BENZO(A)PYRENE < 30. MCG/L INDEND(1,2,3-CD)PYRENE < 30. MCG/6 1 **T64309 DIBENZO(A, H)ANTHRACENE** < 30. MCG/L 9 T63709 BENZD(GHI)PERYLENE < 30. MCG/L 3 T15709 HCH, ALPHA < 10. MCG/L Ċ T15809 HCH, BETA < 10. MCG/G (. () - J35609 HCH, GAMMA (LINDANE) < 10. MCG/L I15009 HCH, DELIA < 10. MCG/L **F08009 HEPTACHLOR** < 10. MCG/G Ć T07709 ALDRIN < 10. MCG/6 T08309 HEPTACHLOR EPOXIDE < 10. MCG/L Ś T43309 ENDOSULFAN I < 10. MCG/G ð T14809 DDE -PARA, PARA < 10. MCG/L ្នែ T08509 DIELDRIN 3 [°] < 10. MCG/L < 10. MCG/L T08409 ENDRIN њ. <u>Т</u> T14909 DDD -PARA, PARA < 10. VCG/L T43409 ENDOSULFAN II < 10. MCG/G < 10. MCG/L **T67409 ENDRIN ALDEHYDE** 🕆 T67309 ENDOSULFAN SULFATE < 10. MCG/L T14709 DDT -PARA, PARA < 10. MCG/6 12 15 **** END OF REPORT **** 1.1

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NEW YORK STATE DEPARTMENT OF HEALTH ADSWORTH CENTER FOR LABORATORIES AND RESEARCH

<u>, , , , , , , , , , , , , , , , , , , </u>	WADSWORTH CENTER FOR LABORATORIES AND RESEARCH	
	PAGE 1 RESULTS OF EXAMINATION _ FINAL REP.	Rſ
٢.		
.	SAMPLE ID: 43583 SAMPLE RECEIVED:84/08/29/09	(
	PROGRAM: 650:DEC SOLID WASTES	
- [SOURCE ID:NELCOBO3 DRAINAGE BASIN:01 GAZEITEER CODE:3102	
	POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA	
	LATIFUDE: . LONGITUDE: . Z DIRECTION:	
- 1	LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS	
	DESCRIPTION:WELL #5112	(
1	REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY	
	TEST PAITERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1	•
	SAMPLE IYPE: 250:GROUND WATER	
1	TIME OF SAMPLING: 84/08/28 15:30 DATE PRINTED:84/10/	25
•		
	PARAMETER RESULT	
	T62009 CHLOROMETHANE < 1. MCG/L	
	T61809 BROMOMETHANE < 1. MCG/U	
	T41009 VINYL CHLORIDE < 1. MCG/L	
	T70209 DICHLORDDIFLUDROMEIHANE < 1. MCG/L	
	T61909 CHUORDETHANE < 1. MCG/L	
	T61709 TRICHLUROFLUDROMETHANE < 1. MCG/L	(
	T23809 DICHLORDMETHANE < 1. MCG/G	
	IS0909 1,1-DICHLORDETHENE < 1. MCG/L	
	T51909 1,1-DICHLORDETHANE < 1. MCG/U	
	T61209 TRANS-1,2-DICHLORDETHENE < 1. MCG/L	
	T39009 CHLORDFORM < 1. 4CG/L	
	ISOB09 1,2-DICHLOROETHANE < 1. MCG/L	
	T23609 1,1,1-TRICHLORDETHANE < 1. MCG/L	
	I36609 CARBON TETRACHLORIDE	
	F38909 BROMODICHLOROMETHANE < 1. MCG/G	
	T61309 1,2-DTCHLOROPPOPANE < 1. MCG/L	•
	T61509 IRANS-1, 3-DICHLOROPROPENE < 1. MCG/L	
	T41109 IRICHLORDEIHYLENE < 1. MCC/L	
	T44909 DIBROMOCHLOROMETHANE < 1. MCG/L	
	T61409 CIS-1, 3-DICHLOROPROPENE < 1. MCC/L	
		•
•		· ·
	T51809 1,1,2,2-TETRACHLURDETHANE < 1. MCG/L	•
	T41209 TETRACHLORDETHENE < 1. MCG/L	
	T40909 CHLOROBENZENE < 1. MCG/L	
	I49709 1,3-DICHLORDBENZENE < 1. MCG/L	
	T44109 1,2-DICHLORDBENZENE < 1. MCG/L	
	144209 1,44DICHLORDBENZENE < 1. MCG/L	•
	T34409 BENZENE < 1. MCG/L	
	T39209 IDLUENE < 1. MCG/L	
	T51009 ETHYLBENZENE < 1. MCG/L	•
	T85209 1-CHLOROCYCUOHEXENE-1 < 1. MCG/L	
	**** CONTINUED ON NEXT PAGE ****	
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:	COPIES SENT TO: CO(2), RO(0), LPHE(0), FED(0), INFO-P(0), INFO-L(0)	4
с 2	MR. S. BRASWELL	
9 2	BUREAU DE SOLID WASTES	
		(
;	N.Y.S.DEPT. OF ENVIRONMENTAL CONSERVATIO SUBMITIED BY: BARLOW	
ð	SU WULF RD., ROUM 41/	
5	ALBANY, N.Y. 12233	(
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PAGE 2 RESULTS OF EXAMINATION FINAL REPORT SAMPLE ID: 43583 SAMPLE RECEIVED: 84/08/29/09 POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA LOCATION: NIAGARA FAULS, LOVE CANAL, OVERBURDEN MONITORING WELLS TIME OF SAMPLING: 84/08/28 15:30 DATE PRINTED:84/10/25 (PARAMETER RESULT T70409 PARA-XYLENE < 1. MCG/L (170309 META-XYLENE < 1. MCG/G T51409 DRTHO-XYLENE < 1. MCG/6 I85309 CUMENE < 1. MCG/U **I85409 STYRENE** < 1. MCG/L 185509 P-BROMOFLUORDBENZENE < 1. MCG/6 - I51109 N-PROPYLBENZENE < 1. MCG/L (**T85609 TERT-BUTYLBENZENE** < 1. MCG/6 T85709 D/P-CHLOROTOLUENE < 1. 4CG/U **T51209 BROMOBENZENE** < 1. MCG/L 150509 META-CHLOROTOLUENE < 1.: MCG/L T85809 1,3,5-TRIMETHYLBENZENE < 1. MCG/5 185909 1,2,4-TRIMETHYLBENZENE . . . < 1. MCG/L 185009 P-CYMENE < 1. MCG/G **185109 CYCLOPROPYLBENZENE** < 1. MCG/L 186209 SEC-BUTYLBENZENE < 1. MCG/6 (186309 N-BUTYLBENZENE < 1. MCG/6 T86409 2,3-BENZOFURAN < 1. MCG/6 T52509 HEXACHLOROBUTADIENE (C-46) < 5. MCG/L T44009 1,2,4-TRICHLOROBENZENE < 5. MCG/6 165509 NAPHTHALENE. < 5. MCG/L 143909 1,2,3-TRICHLOROBENZENE < 5. MCG/6 T67109 PHENDL < 10. MCG/L 166409 2-CHLOROPHENDL < 10. MCG/L T66809 2-NTIROPHENOL < 10. MCG/G T65609 2,4-DIMETHYUPHENDL < 10. MCG/L T66509 2,4-DICHLOROPHENOL < 10. MCG/G T66309 4-CHLORD-3-METHYLPHENOL < 10. MCG/L (167209 2,4,6-TRICHLOROPHENOL < 10. MCG/U T49609 2,4,5-TRICHLOROPHENDL < 10. 4CG/L 166709 2,4-DINITROPHENOL < 10. MCG/L Ĉ I66909 4-NITROPHENDL < 10. MCG/L T68509 2-METHYL-4,6-DINITROPHENOL < 10. MCG/L 167009 PENTACHLOROPHENOL < 10. MCG/U C 185009 BENZDIC ACID NA **F68109 BIS(2-CHLORDISOPROPYL)ETHER** NA 163909 BIS(2-CHLOROETHYL)ETHER < 10. MCG/6 T65909 N=NITROSODI=N=PROPYLAMINE < 10. MCG/L **I65309 HEXACHLOROETHANE** < 10. MCG/L T65709 NIIRDBENZENE < 10. MCG/6. T65509 ISOPHORONE < 10. MCG/L 168609 BIS(2-CHLORDETHOXY)METHANE .12 < 10. MCG/L (11 T49209 HEXACHLOROCYCLOPENTADIENE (C-56) < 10. MCG/L 12 164109 2-CHLORONAPHTHALENE < 10. MCG/6 T64909 2,6-DINITROTOLUENE 2 < 10. MCG/6 163109 ACENAPHTHYLENE < 10. MCG/L 164709 DIMETHYLPHTHALATE < 10. MCG/5 **T63009 ACENAPHTHENE** < 10. MCG/6 **** CONTINUED ON NEXT PAGE ****

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

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<u>1</u>	PAGE 3	(5112)	RESULTS OF EX	AMENATION			_ F	INAT, RE	PORT
	SAMPLE ID:	43583	SANDLE RECE	IVED:34/08/	29/12				(
-		SUBDIVISION: NI				TV + M	LAGARA	•	
		NIAGARA FALL							•
1	TINE OF CA	MPGING: 84/08/	OF DIVE CANAD. Do tetodo	OAFK214DF*					avor (
1	TING OF SM	MEDING: 84/08/	28 12:30		·	DALE	PRIMI	ED:84/1	0725 (
		PARAMETER				- 111 - 1 1	•		
£	TC 4000					SULT			1
à.		2,4-DINITROTO		• •			MCG/L	•	(
		DIETHYLPHTHAL	ATE				MCG/L	· ·	
r		FLUORENE			j <	10.	♥CG/L		,
ζ.		4-CHLOROPHENYI			۰.			NA	(
		N-NIIROSODIPH					40676		•••
-		1,2-DIPHENYGHY			<	10.	MCG/L		
2	r68309	4-BROMOPHENYL	PHENYL ETHER		· K	10.	MCG/G	•	(
	T49809	HEXACHLOROBENZ	ZENE		<	10.	MCG/G		
	T66109	PHENANTHRENE			<	10.	4CC/L		
(T63209	ANTHRACENE	•				MCG/L		(
•		DI-N-BUTYLPHTH	HALATE				MCG/G		•
		FLUORDANTHENE				-	MCG/L		
-		PYRENE					MCG/L		(
•		BENZIDINE					MCG/L		
		BUTYL BENZYL P	Durbukr Amer				MCG/G		
((
		BENZO(A)ANTHR					MCG/L		(
		3,3°-DICHLORDS	BEVAIDINE				MCG/G		
7		CHRYSENE					MCG/L		
		BIS(2-ETHYLHE)					406/6		(
		DIOCIYLPHTHAL			<	30.	4CG/6		
A	T63409	BENZO(B)FLUOR	ANTHENE					NA	
۰.	I63509	BENZO(K)FLUOR	ANTHENE					NΑ	(
	T63609	BENZO(A)PYRENE	Ξ		<	30.	MCG/L	•	
	165409	INDEND(1,2,3-0	CD)PYRENE		<	30.	MCG/L		
		DIBENZO(A,H)AM			<	30.	MCG/L		(
•		BENZD(GHI)PER)				-	MCG/L		•
		HCH, ALPHA		•			MCG/L		
Ţ		HCH, BETA					MCG/L		(
		HCH, GAMMA (LIN	10 A F 1				MCG/L		Ø
		HCH, DELTA					MCG/G	1	-
-		HEPTACHLOR					MCG/L		-
		ALDRIN							E C
							MCG/L		
*		HEPTACHLOR EPC	JAIDE.				MCG/L		
f.		ENDOSULFAN I		• •	•	-	MCG/G		(
		DDE -PARA, PAR	R A				MCG/6		<u>.</u>
		DIELDRIN				-	MCG/U	•	
5		ENDRIN			<	10.	MCG/L		(
		DDD -PARA, PAR	RA	•	<	10.	405/6		-
	T43409	ENDOSULFAN II			<	10.	MCG/L		
	1 67409	ENDRIN ALDEHYD	DE				MCG/L		(
-	167309	ENDOSULFAN SUL	FATE		•		4CG/L	NC	
13		DDT -PARA, PAR					MCG/L	NC	
C ii		·· · · · · · · · · · · · · · ·		F REPORT ***	* *	~ ' •		· •	
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	WADSWORTH CE	NTER FOR D	ABORATORIES	AND RESEARCH	
PAGE 1		RESUGTS OF	EXAMINATIO	N	FINAL REPORT
SAMPLE 10:	43584	SAMPLE R	ECEIVED:84/	08/29/09	
PROGRAM:	650:DEC 50	LTD WASTES			
SOURCE ID:NFL	BR113	DRAINAGE B	ASIN:01	GAZEITEER	CODE: 3102
POLITICAL SUB	DIVISION:NIA	GARA FALLS	с.	COUNTY:NI	
LATIFUDE:		LONGITUDE:		Z DIRECTIO	••
BOCATION: N				MONITORING WEL	LS
DESCRIPTION:W	ELL #5214			· · · · · · · · · · · · · · · · · · ·	
REPORTING LAB	: Tox:	LAB FOR DR	GANIC ANALY	TICAL CHEMISTRY	•
TEST PATTERN:				ND EPA METH 503	

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250'SROUND WATER

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SAMPLE TYPT:

	PARAMETER	RESULT	·
T62009	CHLORDMETHANE		MCGZG
	BROMOMETHANE	< 1.	-
	VINYL CHLORIDE	< 1.	MCG/L
	DICHLORDDIFLUDROMETHANE	-	406/5
	CHLORDETHANE		MCG/I
T61709	TRICHLOROFLUOROMETHANE	< 1.	MCG/G
	DICHLORDMEIHANE	< 1.	
T50909	1,1-DICHLORDETHENE		MCG/I,
T51909	1,1-DICHLORDETHANE		400/1
E61209	IRANS-1,2-DICHLOROETHENE		MCG/L
	CHLORDFORM		MCG/G
T50809	1,2+DICHLORDETHANE	< 1.	
723609	1,1,1-TRICHLOROETHANE	< 1,	
T35609	CARBON TETRACHLORIDE		MCG/L
138909	BROMODICHLORDMETHANE	< 1.	MCG/L
T61309	1,2-DICHLOROPROPANE	< 1.	MCG/L
	TRANS-1,3-DICHLOROPROPENE.	< 1.	MCG/6
	TRICHGORDETHYDENE	< 1.	MCG/L
	DIBROMOCHLOROMETHANE	< 1.	MCG/L
	CIS-1,3-DICHLOROPROPENE	< 1.	MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1.	MCG/L
T61109	2-CHLORDETHYLVINYL ETHER	< 1.	MCG/L
	BROMOFORM	< 1.	MCG/L
151809	1,1,2,2-TETRACHLORDETHANE	< 1.	
141209	TETRACHLORDETHENE		MCG/L
	CHLORDBENZENE		MCG/L
	1,3-DICHLOROBENZENE		MCG/L
	1,2-DICHLOROBENZENE		MCG/L
	1,4-DICHUORDBENZENE		MCG/L
	BENZENE	< 2.	
	TOLUENE	-	MCG/L
	ETHYLBENZENE		MCG/L
185209	1-CHLOROCYCUDHEXENE-1 **** CONTINUED ON NEXT PAGE		4CG/U

COPIES SENT TO: CD(2), RO(0), LPHE(0), FED(0), INFO-P(0), INFO-L(0)

MR. S. BRASWELL BUREAU OF SOLID WASTES N.Y.S.DEPT. OF ENVIRONMENTAL CONSERVATIO 50 WOLF RD., ROOM 417 ALBANY, N.Y. 12233

SUBMITIED BY: BARLOW

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NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER FUR LABORATORIES AND RESEARCH

PAGE 2

5214

RESULTS OF EXAMINATION FINAL REPORT

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	SAMPLE ID: 43584 SAMPLE RECEIVED: 84/0	8/29/09	Ĩ
	POLITICAL SUBDIVISION:NIAGARA FALLS C.	COUNTYINIAGARA	
•	LOCATION: NIAGARA FALLS, LOVE CANAL, BEORDOK		
	TIME OF SAMPLING: 84/09/28 16:00	DATE PRINTED:84/10/25	(
	PARAMETER	RESULT	
-	T70409 PARA-XYLENE	< 1. MCG/L	,
	T70309 META-XYLENE		
	T51409 DRTHO-XYLENE	< 1. MCG/L	
•		< 1. MCG/6	
	IB5309 CUMENE	< 1. MCG/L	(
	I85409 STYRENE	< 1. YCG/L	
-	T85509 P-BROMOFLUORDBENZENE	< 1. 4CG/6	
	IS1109 N-PROPYLBENZEVE	< 1. MCG/L	(
	I85609 TERT-BUTYLBENZENE	< 1. MCG/L	
	T85709 D/P-CHLOROIDLUENE	< 1. MCG/L	
	T51209 BROMOBENZENE	< 1. MCG/L	(
	T50509 MEIA-CHLURUTULUENE	< 1. MCG/U	
	T85809 1,3,5-TRIMETHYLBENZENE	< 1.º MCG/L	
	T85909 1,2,4-TRIMETHYLBENZENE	< 1. MCG/L < 1. MCG/L < 1. MCG/L < 1. MCG/L	(
	T85009 P-CYMENE	< 1. MCG/L	
	T85109 CYCLOPROPYLBENZENE	< 1.º MCG/L	
	T85209 SEC-BUTYLBENZENE	< 1. MCG/G	(
	T85309 N-BUTYLBENZENE	< 1. MCG/G	•
	185409 2,3-BENZOFURAN	< 1. MCG/5	
	I85409 2,3-BENZOFURAN I52509 HEXACHLOROBUIADIENE (C-46)	< 5. MCG/L	{
	T44009 1,2,4-TRICHLOROBENZENE	< 5. MCG/L	`.
	T65609 NAPHTHALENE	< 5. MCG/L	
-	143909 1,2,3-TRICHLORDBENZENE	< 5. MCG/4	(
	T67109 PHENOL	< 10. MCG/5	
	T66409 2-CHLOROPHENDL	< 10. MCG/L	
	T66809 2-NITROPHENDL	< 10. MCG/L	Ċ
	T66609 2,4-DIMETHYLPHENOL	< 10. MCG/L	
	T65509 2,4-DICHLOROPHENOL		
	T65309 4-CHLORO-3-METHYLPHENOL	< 10. MCG/L	6
		< 10. MCG/L	(
		< 10. MCG/L	
	T49609 2,4,5-TRICHLORUPHENOL	< 10. MCG/L	
	T66709 2,4-DINITROPHENOL	< 10. MCG/L	C
	T66909 4-NITROPHENOL	< 10. MCG/L	
	T68509 2-METHYL-4,6-DINITROPHENOL	< 10. MCG/4	
	T67009 PENTACHLOROPHENOL	< 10. MCG/6	(
	T85009 BENZOTC ACID	NA	
	T68109 BIS(2-CHLORDISOPROPYL)ETHER	NA	
	T63909 BIS(2-CHLORDETHYL)ETHER	< 10. MCG/L	(
	T65909 N-NITROSODI-N-PROPYLAMINE	< 10. MCG/L	
	T65309 HEXACHLOROETHANE	< 10. MCG/L	
	I65709 NIIRDBENZENE	< 10. MCG/L	(
	T65509 ISOPHORONE	< 10. MCG/L	-
: 2		< 10. MCG/L	
11	T49209 HEXACHLOROCYCLOPENIADIENE (C-56)	< 10, MCG/1	C
10	T64109 2-CHLORDNAPHTHALENE	< 10. MCG/L	
?	I64909 2,6-DINITROTOLUENE	< 10. MCG/L	
- 0	T63109 ACENAPHTHYLENE	< 10. MCG/0	E
	T64709 DIMETHYLPHTHAGATE	< 10. 4CG/t	5
5		< 10. 4CG/L	
:	**** CONTINUED ON NEXT PAGE **		£
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1	PAGE 3			.,		-			
•		(5214) RESULTS OF EX	AMINALLJ	N			EMAIN R	EPD	8
	SAMPLE. ID:	43584 SAMPLE RECE		00100	•	•			
			1460:347						
1	LOCATION:	SUBDIVISION:NIAGARA FALLS C.			OUNTY:N.				
-		NIAGARA FALLS, LOVE CANAL, MPUING: 84/08/28 16:00	BEDADCK	WEEKELT					
	IT OF DA	MPUING: 84/08/28 10:00			DATE	PRINTE	20:947	107	S
		PARAMETER		·· .	RESILT	•			
-	T6480a	2,4-DINITROTOGUENE							
		DIETHYLPHTHALATE			< 10.				
		FLUDRENE			-	MCG/L			
					< ιυ.	MCG/G			
		4-CHLOROPHENYL PHENYL ETHER		• •			N	Α.	
		N-NIIROSODIPHENYLAMINE			< 10.			-	•
		1,2-DIPHENYLHYDRAZINE				MCG/L			
		4-BROMOPHENYG PHENYL ETHER			-	MCG/L			
		HEXACHLORDBENZENE				MCG/G			
		PHENANTHRENE		e .	< 10.				
		ANTHRACENE			< 10.				
		DI-N-BUTYLPHTHALATE			< 10.				
		FLUORDANTHENE			< 10.				
		PYRENE			···< ·10.	MCG/L			
		BENZIDINE			< 200.	MCG/L			
		BUIYL BENZYL PHTHALATE			< 30.	MCG/L			
·	T63309	BENZD(A)ANIHRACENE			< 30.	MCG/L			
	<u>r64509</u>	3,3'-DICHLORDBENZIDINE			< 30.	4CG/L			
		CHRYSENE			< 30.	MCG/L			۰.
	T67909	BIS(2-ETHYLHEXYL)PHTHALATE			< 30.				
•••	T65009	DIDCTYLPHTHALATE			< 30.	MCG/L			
	T63409	BENZO(B)FLUORANTHENE					N	A	
	T63509	BENZO(K)FLUORANTHENE					N		
	T63609	BENZO(A)PYRENE			< 30.	MCG/L			
	T65409	INDEND(1,2,3-CD)PYRENE			< 30.	MCG/G			
	T64309	DIBENZO(A,H)ANTHRACENE	•		< 30.				
		BENZO(GHI)PERYLENE			< 30.				
	T15709	HCH, ALPHA			< 10.				
		HCH, BETA			< 10.				
		HCH, GAMMA (LINDANE)			< 10.				
		HCH, DELTA			< 10.		· · ·		
		HEPTACHLOR			< 10.				
		ALDRIN			< 10.				
		HEPTACHLOR EPOXIDE	•		< 10.				
		ENDOSULFAN I			•				
		DDE -PARA, PARA			< 10.				
					< 10.				
		DIELDRIN			< 10.				
	108409				< 10.4			•	
		DDD -PARA, PARA			< 10.				
		ENDOSULFAN II			< 10.				
		ENDRIN ALDEHYDE			< 10.				
		ENDOSULFAN SULFATE			< 10.				
12	T14709	DDT -PARA, PARA			< 10.	MCG/L			
: 1		**** END 0	F REPORT	****	·.				
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MEN YORK STATE DEPARTMENT OF BEAULY WADSWORTH CENTER FOR LABURATORIES AND RESEARCH

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	SAMPLE ID: 841006155	LE RECHIVED: 34/08/			
	SOURCE ID:NEGRENIN POBIFICAD SUBDIVISION:NIAGARA E GATIFUDE:	GE BASIN:01 AGUS C. UDE:	COUNTY:NIA Z DIRECTIO	GARA In :	
3	DESCRIPTION: VIAGARA FAGUS, DOVE DESCRIPTION: NELL #3233	CANAL, GEACHAIE-IREA	ATMENT PLANI	1	3'A N
1	REPORTING LAB: 10:LABORA TEST PATTERN: 10-010:7054 - SAMPLE TYPE: 250:JRUNAD TIME OF SAMPLING: 94708728 12:3	AATER	· ·	LS RINTED:34/11/0	
_		·	DATE P	RIN(ED:34/11/0	19
7	PARAMETER Dizinc Dizlead Lead, Total		RESULT 0.11 M		
المربر والح	02BERYL BERYLLIDM, FOTAL 02COPPER COPPER; FOTAL		<pre>< 0.1 M < 0.02 M < 0.05 M</pre>	G/L	
-	O2NICKEL MICKEL, TOTAL O2SILVER SILVER, TOTAL O1MERCURY MERCURY		< 0.05 M < 0.02 M	5/L 5/L	
-	O2CADMEJM CADMEDA, FUTAD O2ANFEMDNY AMEEMDAY, COFAL O2CHROMEJM CHROMENN, FOFAL	··. · · · · · · · · · · · · · · · · · ·	<pre> < 0.02 4 < 1. 4</pre>	5/6 5/6	
li preset ind	OZTHAGGIUM THAGGIUM, FOTAG 22ARSENIC ARSENIC, TOTAG	· · · · ·	< 0.1 M < 1. M < 10.0 M	3/6 CG/6	·
- -	22SEGENIUM SEGENIUM, FORAL 06DIGESF DIGESFION DE MARER FO 012HENDE PHETOUS		< 5.0 M DDNE 1. M	CC/L	
3	OICYANIDE CYANIDES, HYDROGYZABI ****	LE * END OF REPORT ***	< 0.002 M	G/L .	. '
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	CJPIES SEVE TO: CO(2), RD(0),	LPdE(0), FED(0),	INFO-P(0),	LNFD-G(0)	
	MR. S. BRASWELL BUREAU DE SOLID WASTES N.Y.S.DEPI. DE ENVIRUMENTA 50 MOLE RD.,ROUM 417	IL CONSERVATIO	SUBMITTE	D BY:BARLOW	-
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	PAGE 1	RESULTS OF EXAMINATION	FINAL REPO	DRI
	SAMPLE ID: #41006157 PROGRAM: 550:0	SARPLE RECEIVED: 34708	2/29/11	i
-	SOURCE ID:NEGIPI11 POLITICAL SUBDIVISE: LATITUDE: LOCATION: VIAGARA	DRAINAGE BASIN:DI DINTAGARA FALLS C. LDIGITODE: FALUS.LOVE CAMAD.LEACHARE-TR	COUNTY:NLAGARA	1
а а	REPORTING GAB:	23 10:LABORATORY OF INDRGANIC -010:#988 - NPDES PRIORITY P	- ANALYTICAL CHEMISTRY - AL	(BAN)
	SAMPLE TYPE: TIME OF SAMPEING: RU	250:GROUD WATER	DATE PRINTED:34/11/	08
1. m.	PARAMETER DIZINC ZINC		RESULT 0.35 MG/L	(
(DIGEAU LEAD, COI OIBERYL SERYLLIUM OICOPPER COPPER, I	, PATAG	< 0.1 MG/L < 0.02 MG/L	. (
Ċ	02NICKEL NICKEL, I 02SILVER SILVER, I 01MERCURY MERCURY	OÍAG	< 0.05 MG/G < 0.05 MG/G < 0.02 MG/L	(
(02C404134 CADMIDA, 02ANTIMOTY ANIIMORY, 02CHROMIJA CARDATON,	F 🗇 1 A G	< 0.2 MCG/U < 0.02 MG/L < 1. MG/L	
	02THALLIUM (HALLIUM, 22ARSENIC ARSENIC, 22SELEVIUM SELENIUM,	ГОРАБ — — — — — — — — — — — — — — — — — — —	< 0.1 MG/L < 1. MG/L < 10.0 MCG/L	. (
	06DIGEST DIGESTION 01CYANIDE CYANIDES, 01PHENDL 24E4DLS	UF WATER FOR FUTAL METALS	<pre> < 5.0 MCG/L</pre>	(
1	· · · · · · · · · · · · · · · · · · ·	**** END OF REPORT **	***	
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	COPTES SENT ID: CO	0(2), R0(0), LPHE(0), FED(0),	, INFO-0(0), INFO-6(0)	. (
	AR. S. BRASWELL BUREAU DE SOLIU N.Y.S.UEPT. UE F 50 WOLF RD.,ROD ALBANY, Y.Y. 122	INVIRUNMENTAL CONSERVATIO 1 417	SUBMITTED BY:BARLON	€
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in the	PAGE 1 RE	SULTS OF EXAMINATION	FINAL REPORT	į
ļ	SAMPLE ID: 841006158 PROGRAM: 650:020 SDL1	SAMPLE RECEIVED: 84/08/2	9/11	
•	SOURCE ID:MFGTP111 000 POLIFICAG SUBDIVISION:MIAGA LATITUDE:	ATVAGE HASIN:01 (A FALUS C. (GITUDE:	COUNIX:NIAGARA 2 DIRECTION:	ŧ
·	DOCATION: NIAGARA FALUS, UU DESCRIPTION: NEUL #3222 REPORTING DAB: 10:040	(1)) (1)) (1)) (1)) (1)) (1)) (1)) (1))		Ç
P	TEST PAITERN: 10-010:403	SN + NPDES PRIDRIFX POLI	JUTANI METALS	•
	11.4 0F 94.501431 94/03/89 1	1:30	DATE PRINTED:34/11/08	
- -	PARAMETER 01ZINC ZINC		RESULT D.09 MG/L	(
الع ال	OZGEAD GEAD, TOTAG OZBERYG BERYGNIUM, TOTAG OZCOPPER COPPER, TOTAG		< 0.1 MG/L < 0.02 MG/L < 0.05 MG/L	(
-	OZNICKEL NICKEU, IDIAL Ozsilver silver, idial	· · ·	< 0.05 MG/L < 0.05 MG/L < 0.02 MG/L	đ
÷	01MERCURY HERCURY 02CADMIUM CÁUMIDA, TOTAU 02CADMIUM CÁUMIDA, TOTAU	· · · · · · · · · · · · · · · · · · ·	< 0.2 MCG/L < 0.02 MG/L < 1. M3/L	` ~
	O2CHROMIDA CHROMIUM, LDIAL O2THALLIUM THALLIUM, TDIAL		<pre>< 1. 43/5 < 0.1 43/6 < 1. 43/6 </pre>	í
	22ARSENIC ARSENIC, TOTAG 22SEGENIUM SEGRAIOM, TOTAG 05DIGESI DIGESTIDA OF MARE	De Desponsioner auchare	< 5.0 MCG/L	(
(OICYANIDE CYANDES, HYDRUUI OIPHENDL PHENDIS	ZABGE	00NE < 0.002 MG/L 1. MCG/L	(
•		**** 186938 FU GNB ****		(
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$\sum_{i=1}^{10}$	COPIES SEAT TO: CO(2), RO	(0), LPHE(0), FED(0), I	NFD-P(0), INFD-4(0) (-
	MR. S. BRASWELL BUREAU DE SDLED #ASTES N.Y.S.DEPE. DE ENVIRO400 50 HOLE RD.,RDDM 417 ALBANY,N.Y. 12233	EVTAL CUNSERVALLD	SUBMITIED BY:BARGOW	
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VER YURK STALE DEPARTNERP OF HEADIR #ADSHURTE CENTER FOR GAUDRATORIES AND RESEARCH

PAGE 1 RESURTS OF EXAMINATION FINAL REPORT SAMPLE ID: 841006159 SAMPLE RECEIVED: 54/08/29/11 PROGRAM: 650:DEC SOLID WASTES SOURCE LD:NEGIPI11 DRAIMAGE MAS18:01 GAZETTEER CODE:3102 COUNTY:NIAGARA LDCATION: VIAGARA FALLS, LOVE CANAL, LEACHAIE-IREAIMENT PLANT DESCRIPTION: NELL #3251 REPORTING DAD: 10:0400RATORY OF LOURGANCE REPORT TEST PATTERN: 10-010:000 - NPDES PREDRICY POLLUIANT METALS 10; LABORATORY OF INDRGANES ANALYTICAL CHEMISTRY - ALBANY TEST PAITERN: 10-010:40SN - NPDES SAMPLE TYPE: 250:GROUND SATER TIME DE SAMPLING: 84/08/28 L1: DATE PRINTED:84/11/08 PARAMETER RESULT DIZINC ZINC 0.17 MG/L J2LEAD LEAD, TOTAL < 0.1 MG/L OZBERYL BERYLLIUM, TOTAL < 0.02 MG/6 OZCOPPER COPPER, COLAL < 0.05 MG/L OZNICKEL NICKEL, TOTAL < 0.05 MG/L 02516VER STEVER, POTAL < 0.02 MG/L 01 MERCURY MERCURY < 0.2 MCG/L U2CADMIUM CADMIUM, POLAC < 0.02 MG/1 OZANTEMONY ANETHOMY. FOTAL . < 1. 45/6 < 0.1 MG/L OZCHROMIUM CHRUMINUM, PURAL < 1. MG/6 OZTHALLIUM THALLIUM, TOTAL 22ARSENIC ARSENIC, TUTAL < 10.0 MCG/6 22SELEVIUM SELEVIUM, IDIAL < 5.0 4CG/6 0601GEST DIGESTID. DE MATER FOR TURAL METALS BBBCC OICYANIDE CYANIDES, HYDPOLYZABLE < 0.002 MG/L 01PHENDL PHENDLS 2. MCG/6 **** EDD DF REPORT **** t

COPIES SENT 10: CO(2), RU(0), 4PHE(0), FED(0), INFO-0(0), INFO-6(0)

MR. S. BRASHELL BUREAU DE SOLID VASFES N.Y.S.DEPF. DE ENVIRONMENTAL CONSERVATIO 50 MOLE RD., ROOM 417 ALBANY, N.Y. 12233

SUBMITTED BY: HARLOW

VER YORK STATE URPARTNENT OF HEAUTH WADSWORTH CONTER FOR HABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT SAMPLE ID: 841006150 SAMPLE RECRIVED: 34/08/29/11 PROGRAM: 650:DEC SOLID WASPES SOURCE ID: NEULPIII DRATUÁGE BASIS:01 GAZETTEER CODE:3102 COUNTY:NIAGARA LUCATION: NTAGARA FALLS, LOVE CANAD, LEACHARS-TREATMENT PLANT DESCRIPTION: NELL #5112 REPORTING LAB: - 10:LABORATORY OF INDRGANIC ANALYTICAL CHEMISTRY - ALBANY TEST PAITERN: 10-010:4084 - HPDES PRIDRIFY POLLUTANT METALS SAMPLE TYPE: 250:GRUDND WATER TIME DF SAMPLING: 34/08/20 15:30 DALE PRINTED: 84/11/08 PARAMETER RESULT DIZINC ZINC 0.19 46/6 DEGEAD GEAD, POPAG < 0.1 45/1 DIBERTH BERYLLIUM, TOTAL < 0.02 MG/L 02COPPER COPPER, IDTAL ¢ 0.05 43/6 02NICKEL NICKEL, TOTAL < 0.05 #G/6 OZSILVER SIGVER, TOTAL < 0.02 45/L 01MERCURY MERCURY < 0.2 MCG/6 O2CADMIUN CADMIUN, DOPAG < 0.02 MG/L DATCH . YECKLIVE YVENDAY. POTAL < 1. MG/6 OZCHROMIUM CHROMIUM, TOTAL < 0.1 MG/L OZTHALLIUM THALLIUM, TOTAL < 1. MG/G ZZARSENIC ARSENIC, TOTAL < 10.0 MCG/6 22SEGENIUM SEGENIUM, POTAG < 5.0 MCG/4 05DIGEST DIGESTID, OF WATER FUR TUTAL METALS DONE UICXANIDE CYAPLOES, HYDROGYZABLE < 0.002 MG/L 012HENDL 2HENDLS < 1. MCG/6 · **** END OF REPORT **** COPIES SENT FO: CO(2), RU(0), LPHE(0), FED(0), INFO-P(0), INFO-L(1) MR. S. BRASNELL BUREAU DE SOUTO HASTES E N.Y.S.DEPT. OF ENVIRONMENTAL CONSERVATION SUBMITTED BY: BARLOW 50 NOLE RD., ROOM 417 AUBANY, N.Y. 12233

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<u>.</u>	0203 NEW YORK STATE DEPARTMENT OF HE WADSWORTH CENTER FOR LABURAFORIES AN	ID RESEARCH
	PAGE 1 RESULTS OF EXAMINATION	FINAL REPOR
	SAMPLE ID: 43587 SAMPLE RECEIVED: 34/08/	/) 9 / 0 9
	PRUGRAN: 650:DEC SOLID WASTES	
	SOURCE ID: DELCOBOR DEALWAGE BASIN: 01	GAZETTEER CODE:3102
	FOULTION SUBULVISION WINGARA FAMIS C.	COUNTY - NEACADA
	LAIIJUUL: . LONGITUDE: .	7 NTOFCTIAN.
	LOCATION: VIAGARA FALUS, LOVE CANAL, OVERBURDEN	MONITORING WELLS
	DESCRIPTION: NELL #3151	<u>.</u>
	REPORTING GAB: IDX: LAB FOR ORGANIC ANALYTIC TEST PATTERN.	AL CHEMISTRY
	TEST PATTERN: PPEP:F.R.METHODS 625,601 AND SAMPLE TYPE: 250:GROUND WATER	EPA (ETH 503.1
	TIME OF SAMPLING: 84/08/28 11:00	
		DATE PRINTED:84/11/0
	SAMPLE EXTRACT EXAMINED FOR HYDRUCARBONS	• GUBRICATING OIL
	PRESENT RHICH EDUTES THE SAME REGION	AS PRIDRITY
	POLLUTANT PESTICIDES. DR.A.RICHARDS INDV	84.
	PARAMETER	
	r62009 CHLOROMETHANE	RESULT
	T61309 BRUMDMETHANE	< 1. MCG/6
	C41009 VINYL CHLORIDE	< 1. MCG/G
	170209 DICHLORODIELUOROBEIHANL	< 1. MCG/G < 1. MCG/G
	161909 CHUDRDETHANE	< 1. "CG/L
	F61709 TRICHLOROFUUDROMETHANE	< 1. 4CG/4
	I23809 DICHLORDMETHANE	< 1. MCG/L
	150909 1,1-DICHLORDETHENE	< 1. MCG/L
	IS1999 L, L-DICHLORDEFHANE IS1999 TRANS-L DENIGU RECERT	< 1. MCG/L
	IS1209 TRANS-1,2-DICHLOROETHENE I39009 CHJORDFORM	< 1. MCG/L
	ISOBOO 1,2-DICHLORDETHANE	< 1. MCG/L
	123609 1,1,1-TRICHLORDETHANE	< 1. MCG/L
	136609 CARBON TETRACHLORIDE	< 1. MCG/L < 1. MCG/L
	T38909 BROMODICHLOROMERNAME	
	T61309 1,2-DICHLURDPROPANE	< 1. 4CG/L
	T61599 TRANS-1, 3-DICHLORDPRUPENE	< 1. MCG/L
	I41109 IRICHDORDEIHYDENE	< 1. MCG/L
	I44909 DIBROMOCHLORDMETHANE	< 1. MCG/L
	I61409_CIS=1,3=DICHGDROPROPENE 	< 1. MCG/L
	161109 2-CHUDRDETHYLVINYL ETHER	< 1. MCG/L
	T42109 BROMDFORM	< 1. MCG/L
	151809 1,1,2,2-TEIRACHLORDETHANE	< 1. MCG/6 < 1. MCG/6
	T41209 IETRACHLORDETHENE	< 1. MCG/6
	T40909 CHLOROBENZENE	< 1. MCG/L
	149709 1,3-DICHLORDBEHZERE	< 1. MCG/L
	f44109 1,2-DICHLORDBENZENE	< 1. 4CG/L
	C44209 1,4-DICHLORDBENZENE	
	**** CONTINUED ON NEXT PAGE ****	ι
	COPTES SENT D: CO(2), RO(0), LPHE(0), FED(0),	INFD-P(0), INFD-L(0)
	MR. S. BRASWELL	
	a management of the second secon	
	BUREAU OF SOLID WASTES N.Y.S.DEPT. OF ENVIRONMENTAL CONSERVATIO	SUBMITTED BY PARTON
	BUREAU OF SOLID WASTES	SUBMITTED BY: BARLOW

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NEW YORK STATE DEPARTMENT OF HEALTH MADSWORTH CENTER FOR LABORATORIES AND RESEARCH

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RESULTS OF EXAMINATION FINAL REPORT

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		RESOUTS OF EXT			FINAL REP	UKT
	SAMPLE ID:	43587 SAMPLE RECEI	1/80+24/08/2	9709		(
	POLITICAL SUS	DIVISION: MLAGARA FAMLS C.		2707 COMBR V • 9 T	1 C 1 P 1	
-	LOCATION: 0	IAGARA FALLS, LOVE CAMAN,		LUUNII	- JELLE	
^	TTME DE SAMPL	1944 - 90709799 - 11.666	ON EXCORTA	004110K144		() (
	ITUR DE DAMEN	193: 84/08/28 11:00		. UATE	PRINTED:84/11	/05
	DA	RAMERER				
÷	F24400 22	RAMEIER NZENE LUENE HYLBENZEHE CHLOROCYCLOHEXEME+1 CHLOROCYCLOHEXEME+1		RESULT		(
	134409 32	NGENE		< 1.	MCG/L	
	1.39503 1.3	LUENE		· < 1.	MCG/L	
÷	I51009 ET	HYL8ENZE4E		< 1.	MCG/G	(
	£85209 1-	CHCOROCYCLOHEXE08+1		< 1.	HCG/L	· · .
	170409 PA	RA-XYDENE		< 1.	MCG/L	
ħ.,	170309 ME			< 1.		
		THO-XYLENE.			MCG/L	
	T85309 CU					
,	T85409 ST			< 1.		
				ς Ι.	46.67 1	(
		BROMOFGUOROBEGZE4M		< 1.	MCG/L	
		PROPYLBENZENE		< 1.	MCG/L	
-	135609 FE	RI-BUTYLBENZENE		< 1.	ACG/G	(
	185709 J/	P-CHLOROTOLUEVE		< 1.	MCGZG	•
		JAJBENZENE		< 1.		
:*		EN-CHURDTORUENE		< 1.		£
-		3,5-TRIMETHYLBENZFOR			-	۲. ۲
				< 1.		
J.		2,4-TRIMETHYLBENZELE			MCG/L	
		CYNEWE -			4CG/6	Ę
		CLOPROPYLBENZEWE		< 1.		
	C86209 SEC	C-SUTYLBENZENE		< 1.	MCGZG	
-	T86309 N	SUIYLBENZEVE		< 1.	4CG/6	
	T85409 2,	3-BENZOFURAN		< 1.	MCG/G	•
	I52509 HE	(ACHLOROBUTADIENE (C-46)		< 5.	MCG/L	
		2,4-TRICHLOROBENZENE		< 5.		1
2	165509 NAL			< 5.		e e
		2,3-IRICHLORDBENZENE		< 5.		
ţ.	167109 PHE			< 10.		
د.		CHUDRDPHENDN				(
	165403 2=0	THUTKACHENAU		< 10.		
-	T56809 2-	VITROPHENOL H-DIMETHYLPHENOL		< 10.		:
Г З	ſ65509 2,≪	I-DIMETHYLPHENOL		< 10.	4CG/L	6
		H-DICHLORDPHENOL		< 10.	MCG/G	
	165309 4+0	HUDRO-3-METHYUPHENDL		< 10.	MCG/L	.
₹.	167209 2,-	4,6-TRICHLOROPHENOL		< 10.		(
_		, 5-TRICHLOROPHENOL		< 10.		
	-	-DINITROPHENOL		< 10.		
		IIROPHENOL				
-				< 10.		(
		ETHYL-4,6-DINITROPHENDL	.	< 10.		L L
•		LACHLOROPHENOL		< 10.	MCG/L	
Ę.	I85009 BEA		• •		NA	(
	I68109 BIS	(2-CHLORDISUPROPYL)ETHER		< 10.	MCG/L	-
;	2 T63909 SIS	(2-CHLORDEIHYL)ETHER		< 10.	MCG/L	
1		ITROSODI-N-PROPYLAMINE		< 10.	-	(
		ACHLORDETHANE		< 10.		
\sim	PCE 700 P			< 10.	•	
						۰. • بر
	a. (65509 150			< 10.		e
	7 168609 BIS	(2-CHLORDETHOXY) METHANE	5 ()	< 10.		
		ACHLOROCYCLOPENTADIENE (C	- 26)	< 10.		•
*	TEA100 0 0	HUDRONAPHTHALENE				
`~	5 X04109 Z=C	**** CONTENUED ON NEX		< 10.	96676	

MEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

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RESULTS OF EXAMINATION

FINAL REPORT

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	· · ·		DOUTO () C CV	111411100		r T N A	P KEADK	r .
.	SAMPLE ID:	43587	Sample recei	EVED:3420823	29/09			(
	POLITICAL	SUBDIVISION: NIAGA	KA FALLS C		COUNTY:N			
	LUCATION:	VLAGARA FALLS,	LIVE CLEAT	INTER ALBORN		LAGARA 7 JELLE		
7	TIME OF SA	MPGING: 84/08/28	11+00	O A SIX DO KD CH				(
			11.00		DALE	PRINTED:	84/11/0	15
Ċ,		PARAMETER			oreur T			
2	T64000	2,6-DINITROTOLUE	1. et		RESULT			(
			¥ P.		•	MCG/L		
-		ACENAPHINYLENE			< 10.	•		
-		DIGETHYDPHTHADAT	<u>.</u>		< 10.			(
		ACENAPHTHENE			< 10.	MCG/G		۰.
		2,4-0IWITRUTDUE	NE		< 10.	MCG/G	•	
		DIETHYLPHTHAGATE			< 10.	MCG/L		(
		FLUORENE			< 10.	MCG/G		``
	169409	4-СНЬОВОБНЕМАР Б	HENYL ETHER				NA	
	<u> </u>	N=N(TROSODIPHENY)	JAMTNE		< 10.	MCG/G		(
		1,2-DIPHENYGHYDR			< 10.			(
		4-BROMOPHENYL PHI			< 10.			
3		HEXACHGURDBENZEN		• .	< 10.			,
•		PHENANTHRENE	<i></i>		< 10.			(
		AUTHRACENE						
-		- DI-N-BUTYDPHTHAD/	T		< 10.			
·.			41 C		< 10.		_	(
		FUUORDANTHENE				MCG/L	NC	
		PYRENE				405/6	NC.	•
14		BENZIDINE			< 200.			(
*		BULAP PAZNER DALIG			< 30.			
	.1,6330.6	BENZO(A)ANTHRACE:	ε		< 30.	MCG/L		
,	T61509	-3,3°-DICHLORDBEN2	LEUINE		< 30.			(
	r64209	CHRYSERE			· < 30.			
	I67 909	SIS(2-ETHYDHEXYD)	PHTHALATE		< 30.			:
ેર્		DIOCTYLPHTHALATE	_		< 30.	MCG/L		(
•		BENZO(B)FLUORANTH	ENE	•			NA	6
		BENZO(K)FLUORANTH		••••				
7		BENZD(A)PYKENE			< 30	4CG/6	N A	4
		INDEND(1,2,3=CU)E	VODENE					(
		DIBENZO(A,H)ANTHR			< 30.		• • • • •	
+					< 30.			
ž	103/09	BENZU(GHI)PERYLEN	ις.		< 30.			6
•		HCH, ALPHA	· .		< 10.			
d .		HCH, BETA			< 10.		-	•
C		HCH, GAMMA (LINDAN	E)		< 10.			(
		HCH, DELTA			< 10.	MCG/G		•
_		HEPTACHLOR "				MCG/L	NC	•
1		ALDRIN				MCG/L	NC	1
	· I08309	HEPTACHLOR EPOXTO	3			MCG/L	NC	(
·		ENDOSULFAN I	• • • • •	···· · ·		MCG/L	NC	
<u>(</u>		DDE -PARA, PARA				MCG/G		•
-		DIEGORIN				ACG/G	NC	(
				· .	-		NC	
1			•••		< 10.			
7		DDD -PARA, PARA				MCG/L	NC	- (
1		ENDOSULFAN II			< 10,			-
		ENDRIN ALDEHYDE	•••		< 10.			
		ENDOSULFAN SULFAT	Ł		15.	MCG/L	NC	e
	· Γ <u>14709</u>	DDT -PARA, PARA			15.	4CG/6	NC	``
			· ··· · · · · · · · · · · · · · · · ·		•			
	MS-CONFIRM	MASS SPEC CONFIRM	ATION				NA	
	MS-CONFIRM F65809	MASS SPEC CONFIRM N-NTIRUSODIMETHYL		· .	· ,		N A N A	Ĺ

NEW-YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

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RESULTS OF EXAMINATION

FINAL REPORT

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SAMPLE 10:43587SAMPLE RECEIVED:84/08/29/09PULIFICAL SUBDIVISION:NIAGARA FALLS C.COUNTY:NIAGARALOCAFION:NEAGARA FALLS, LOVE CAMAL, OVERBURDEN MONITORING WELLSTIME OF SAMPLING:84/08/28 11:00DATE PRINTED:84/11/06

PARAMETER	RESULT
107310 GASDLINE	N D
107410 KERDSENE	< 0.1 MCL/L
ID7610 FUEL DIL	< 0.1 MCL/L
CO7510 DIL, LUBRICALING	PRESENT

**** END OF REPORT ****

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2	MPLING: PARAMET ZINC LEAD, T BERYLLI COPPER, NICKEL, SILVER, MERCJRY CADMIUH ANTIMON CHROMIU THALLIU ARSENIC SELENIU DIGESTI CYANIDE PHENULS	250:3 84/08/28 ER DIAL UM, TOTAL TOTAL TOTAL TOTAL Y, TOTAL Y, TOT	NOSN - N GROUND W S 15:30 AL L ATER FUR JLYZABLE ****	TOTAL M End of F	FDJSI *	< < < < < < < < < < < < < < < < < <	ESULT 0.25 M 0.02 M 0.02 M 0.05 M 0.02 M 0.02 M 0.02 M < 0.2 M < 0.1 M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1. M < 1.	G/L G/L G/L G/L G/L G/L G/L G/L G/L G/L	•
D2LEAD U2BERYL 02CUPPER 02NICKEL 02SILVER 01MERCURY 02CADMIUH 02ANTIMONY 02CHRUMIUM 02CHRUMIUM 02CHRUMIUM 02CHRUMIUM 02CHRUMIUM 02CHRUMIUM 02CHRUMIUM 02CHRUMIUM 02CHRUMIUM 02CHRUMIUM 02CHRUMIUM 02CHRUMIUM 02CHRUMIUM 02CHRUMIUM 02CHRUMIUM 02CHRUMIUM 02CHRUMIUM 02CHRUMIUM 02CHRUMIUM	MPLING: PARAMET ZINC LEAD, T BERYLLI COPPER, NICKEL, SILVER, MERCJRY CADMIUM ANTIMON CHROMIU THALLIU ARSENIC SELENIU DIGESTI CYANIDE	250:3 84/08/25 84/08/25 ER DIAL UM, TOTAL TOTAL TOTAL TOTAL Y, TOTAL Y, TOTAL Y, TOTAL Y, TOTAL Y, TOTAL Y, TOTAL Y, TOTAL Y, TOTAL S, HYDRU	WOSN - N GROUND W S 15:30 AL L L L L L L L L L L L L L L L L L L	TOTAL N	.	< < < < < < <	0.25 M 0.02 M 0.05 M 0.05 M 0.05 M 0.02 M 0.02 M 0.02 M 0.02 M 0.02 M 0.02 M 0.02 M	G/L G/L G/L G/L G/L G/L G/L G/L G/L G/L	•
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D2LEAD U2BERYL 02CUPPER 02NICKEL 02SILVER 01MERCURY 02CADMIUM 02ANTIMONY 02CHROMIUM 02CHROMIUM 02CHROMIUM 02CHROMIUM 02CHROMIUM 02CHROMIUM 02CHROMIUM 02CHROMIUM 04DIGEST 01CYANIDE	MPLING: PARAMET ZINC LEAD, T BERYLLI COPPER, NICKEL, SILVER, MERCJRY CADMIUM ANTIMON CHROMIU THALLIU ARSENIC SELENIU DIGESTI CYANIDE	250:3 84/08/25 84/08/25 ER DIAL UM, TOTAL TOTAL TOTAL TOTAL Y, TOTAL Y, TOTAL Y, TOTAL Y, TOTAL Y, TOTAL Y, TOTAL Y, TOTAL Y, TOTAL S, HYDRU	WOSN - N GROUND W S 15:30 AL L L L L L L L L L L L L L L L L L L	TOTAL N	.	< < < < < < <	0.25 M 0.02 M 0.05 M 0.05 M 0.05 M 0.02 M 0.02 M 0.02 M 0.02 M 0.02 M 0.02 M 0.02 M	G/L G/L G/L G/L G/L G/L G/L G/L G/L G/L	•
D2LEAD U2BERYL 02CUPPER 02NICKEL 02SILVER 01MERCURY 02CADMIUM 02ANTIMONY 02CHROMIUM 02CHROMIUM 02CHROMIUM 02CHROMIUM 02CHROMIUM 02CHROMIUM 02CHROMIUM 02CHROMIUM 04DIGEST 01CYANIDE	MPLING: PARAMET ZINC LEAD, T BERYLLI COPPER, NICKEL, SILVER, MERCJRY CADMIUM ANTIMON CHROMIU THALLIU ARSENIC SELENIU DIGESTI CYANIDE	250:3 84/08/25 84/08/25 ER DIAL UM, TOTAL TOTAL TOTAL TOTAL Y, TOTAL Y, TOTAL Y, TOTAL Y, TOTAL Y, TOTAL Y, TOTAL Y, TOTAL Y, TOTAL S, HYDRU	WOSN - N GROUND W S 15:30 AL L L L L L L L L L L L L L L L L L L	TOTAL N	.	< < < < < < <	0.25 M 0.02 M 0.05 M 0.05 M 0.05 M 0.02 M 0.02 M 0.02 M 0.02 M 0.02 M 0.02 M 0.02 M	G/L G/L G/L G/L G/L G/L G/L G/L G/L G/L	•
D2LEAD U2BERYL 02CUPPER 02NICKEL 02SILVER 01MERCURY 02CADMIUH 02ANTIMONY 02CHROMIUH 02CHROMIUH 02CHROMIUH 02CHROMIUH 02CHROMIUM 22ARSENIC 22SELENIUM 06DIGEST	MPLING: PARAMET ZINC LEAD, T BERYLLI COPPER, NICKEL, SILVER, MERCJRY CADMIUM ANTIMON CHROMIU THALLIU ARSENIC SELENIU DIGESTI	250:3 84/08/23 84/08/23 ER DIAL UM, TOTAL TOTAL TOTAL Y, TOTAL Y, TOTAL Y, TOTAL Y, TOTAL Y, TOTAL Y, TOTAL Y, TOTAL	NOSN - N Ground W 5 15:30 Al Al L L Ater for	TOTAL N	ETALS		0.25 M < 0.1 M 0.02 M 0.05 M 0.05 M < 0.2 M 0.02 M < 0.2 M < 0.2 M < 0.1 M < 1. M < 1. M < 1. M < 5. M DDNE	G/L G/L G/L G/L G/L G/L G/L G/L CG/L CG/	•
D2LEAD U2BERYL 02CUPPER 02NICKEL 02SILVER 01MERCURY 02CADMIUH 02ANTIMONY 02CHROMIUH 02CHROMIUH 02THALLIUM 22ARSENIC	MPLING: PARAMET ZINC LEAD, T BERYLLI COPPER, NICKEL, SILVER, MERCURY CADMIUH ANTIMON CHROMIU THALLIU ARSENIC	250:G 84/08/25 SER DIAL UM, TOTAL Total Total Total Y, Total M, Total M, Total M, Total	WOSN - N Ground W B 15:30 Al	ATER			0.25 4 < 0.1 4 0.02 4 0.05 4 0.05 4 0.02 4 < 0.2 4 < 0.2 4 < 0.2 4 < 0.1 4 < 1. 4 < 10. 4	G/L G/L G/L G/L G/L G/L G/L G/L G/L CG/L	•
O2LEAD U2BERYL O2CUPPER O2NICKEL O2SILVER O1MERCURY O2CADMIUH O2ANTIMONY O2CHRDMIUH	MPLING: PARAMET ZINC LEAD, T BERYLLI COPPER, NICKEL, SILVER, MERCJRY CADMIUM ANTIMON CHROMIU	250:3 84/08/25 ER DIAL UM, TOTAL TOTAL TOTAL TOTAL , TOTAL Y, TOTAL Y, TOTAL	WOSN - N Ground W 5 15:30 Al	ATER		< < < < <	0.25 4 < 0.1 4 0.02 4 0.05 4 0.05 4 0.05 4 < 0.2 4 0.02 4 0.02 4 < 1. 4	5/6 5/6 5/6 5/6 5/6 5/6 5/6 5/6	•
02LEAD 02BERYL 02CUPPER 02NICKEL 02SILVER 01MERCURY	MPLING: PARAMET ZINC LEAD, T BERYLLI COPPER, NICKEL, SILVER, MERCJRY	250:3 84/08/25 Ser Solal Um, Tota Total Total Total	WQSN - N Ground W 8 15:30 Al	ATER		< < < <	0.25 M < 0.1 M 0.02 M 0.05 M 0.05 M 0.02 M < 0.2 M	G/L G/L G/L G/L G/L G/L CG/L	•
OZLEAD UZBERYL OZCUPPER OZNICKEL	MPLING: PARAMET ZINC LEAD, T BERYLLI COPPER, NICKEL,	250:3 84/08/25 CER Cotal UM, Tota Total Total	wQSN — N Ground W 5 15:30	ATER		< < <	0.25 M < 0.1 M 0.02 M 0.05 M 0.05 M	5/6 5/6 5/6 5/6 5/6	•
J2LEAD	MPLING: PARAMET ZINC LEAD, T	250:3 84/08/25 CER 20146	wQSN — N Ground W 5 15:30	ATER			0.25 M < 0.1 M	5/L 5/L	•
A . 7 . 10	MPGING: PARAMET	250:3 84/08/25	NGSN - N Ground W	ATER					•
		250:3	NGSN - N Ground W	ATER					•
SAMPLE TYPE		10-010:**	ngsn - N	IPDES PR'				RINTED:84	- ALF
REPORTING 1	LAB:	10:1	10001-00	RY OF I	IORGANIC DRITY P		TICAL C	HEMISTRY	
LOCATION:	NIAGAR	RA FAGLS,	LONGITUD , LUVE CA	DE: Inal, Lea(HATE-TR	Z D EATMEN	IRECTID T PLANT	IN :	• •
SOURCE ID:	NEGTP111	0	DRAINAGE	BASIN:)1	GAZI CDU	EITEER NIY:NIA	CODE:3102 Gara	2
PROGRAM:	650	DEC SOL	LTŬ WAST	ES				•	
PAGE 1					0184208	/29/11			
			RESULTS	OF EXAM		1/29/11	•	FINAL	פרפיק
	SAMPLE ID: PROGRAM: SOURCE ID: POLIFICAL LATITUDE: LOCATION: DESCRIPTIO REPORTING TEST PATTE	PROGRAM: 650 SOURCE ID:NFUTP111 POLIFICAL SUBDIVIS LATIFUDE: LOCATION: NIAGAN DESCRIPTION:WELL F REPORTING LAB:	SAMPLE ID: 841006162 PROGRAM: 650:DEC SO SOURCE ID:NFGTP111 POLIFICAL SUBDIVISION:NIA LATITUDE: LOCATION: NIAGARA FALLS DESCRIPTION:WELL #5114	PROGRAM: 650:DEC SOLID WAST SOURCE ID:NFUTP111 DRAINAGE POLIFICAL SUBDIVISION:NIAGARA FAL LATIFUDE: LONGITUD LOCATION: NIAGARA FALLS, LUVE CA DESCRIPTION:WELL #5114 REPORTING LAB: 10:LABORATO	PROGRAM:650:DECSOLID WASTESSOURCEID:NFUTP111DRAINAGEBASIN:OPOLIFICALSUBDIVISION:NIAGARAFALLSC.LATITUDE:LONGITUDE:LONGITUDE:LOCATION:NIAGARAFALLS, LUVECANAL, LEACDESCRIPTION:WELL#5114REPORTINGLAB:	SOURCE ID:NFUTP111DRAINAGE BASIN:01POLIFICAL SUBDIVISION:NIAGARA FALLS C.LATIFUDE:LOCATION:NIAGARA FALLS, LUVE CANAL, LEACHATE-TRDESCRIPTION:WELL #5114REPORTING LAB:10:LABORATORY OF INORGANICTEST PATTERN:10-010:wOSN - NPDES PRIORITY PSAMPLE TYPE:250:GROUND WATER	SOURCE ID:NFGTP111DRAINAGE BASIN:01GAZPOLIFICAL SUBDIVISION:NIAGARA FALLS C.COULATIFUDE:GONGITUDE:LOCATION:NIAGARA FALLS, GUVE CANAL, LEACHATE-TREATMENDESCRIPTION:WEGL #5114REPORTING GAB:10:LABORATORY OF INORGANIC ANALYTEST PATTERN:10-010:WOSN - NPDES PRIORITY POLIDITASAMPLE TYPE:250:GROUND WATER	PROGRAM:550:DEC SOLID WASTESSOURCE ID:NFUTP111DRAINAGE BASIN:01GAZEITEERPOLIFICAL SUBDIVISION:NIAGARA FALLS C.COUNTY:NIALATIFUDE:LONGITUDE:IZLOCATION:NIAGARA FALLS,LUVE CANAL,LEACHAIE-TREATMENT PLANIDESCRIPTION:WELL #5114IU:LABORATORY OF INORGANIC ANALYTICAL CTEST PAITERN:10-010:WOSN - NPDES PRIORITY POLLUTANT METASAMPLE TYPE:250:GROUND WATER	SAMPLE ID: 841006162SAMPLE RECEIVED: 34/08/29/11PROGRAM:650:DEC SOLID WASTESSOURCE ID:NFUTP111DRAINAGE BASIN:01GAZEITEER CODE: 3102POLIFICAL SUBDIVISION:NIAGARA FALLS C.COUNTY:NIAGARALATITUDE:LONGITUDE:LOCATION:NIAGARA FALLS,LUVE CANAL,LEACHAIE-TREATMENT PLANTDESCRIPTION:WELL #5114

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		0450	NEW Y	DRK STATE DE	PARTMENT OF HE	EALTH		
	21		WADSWORTH (ISNTER FOR L	ABURATORIES AN	ND RESEARCH		(
		PAGE 1		RESULTS OF	EXAMINATION	· .	FINAL	REPORI
		SAMPLE ID: 8	341006163	SAMPLE P	ECEIVED:84/08	/29/11	· · · •	(
		PROGRAM:	650:DEC 5	SOLID WASTES	5			
	1+	PULITICAL SU	BOIVISION:NI	LAGARA FALLS	BASIN:01 5 C.	COUNTY:NI		(
•	ş		NIACARA FAL					(
•	4	DESCRIPTION:	WELL #5212 .			•	•	
	7	TESI PATTERN	10-010 ():LABORATORY):dosn = npc	OF INDRIANIC DES PRIDRITY PO	ANALYTICAL Dilutani mej	CHEMISTRY ALS	- ALBANY
	>	SAMPLE TYPE:	250 LING: 84/08/	;GROUND WAT	ER		PRINTED:84	112/07
	*	TTHE OF DAME	UTNG: 94/08/	X8 12:30		DAIC	EKINI DU194	(
	•	P 01ZINC Z	PARAMETER			RESULT		
· ·		OZLEAD L	EAD, TOTAL			< 0.1	45/6	· · · · · · · · · · · · · · · · · · ·
			SERYLLIUM, TO Sopper, Tofal			< 0.02 < 0.05		
	17 •	02NICKEL N	ICKEL, TOTAL	1		< 0.05	MG/L	(
	• • •	OZSILVER S Olmercury m	SILVER, TOTAL Ercury	• • • • • • • • • • • • • • • • • • •		< ù.02 < 0.2		•
	ing.	U2CADMIUM C	AUMIUM, TUTA Nginony, 101			< 0.02		C
		O2CHROMIUM C	HROMIUM, TOT	AL	· · ·	< 0,1	45/6	
	.	O2THALLIUM I 22ARSENIC A	HALLIUM, ID) R'SENIC, TUTA			< 10.		(
		22SELENIUM S	SELENIUM, TOJ	AG .	OTAL METALS	< 5. DONE		
	*	OIPHENDL P	HENDLS	· ·		16.	MCG/L	
	Æ	OICYANIDE C	YANIDES, HYD		D OF REPORT **	< 0.002	MG/L	(
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	•	COPIES SE	NT TO: CO(2)	, RU(0), LP	HE(0), FED(0),	INF3-P(0),	INFO-G(0)	
			BRASWELL		• •			۲
		BUREAU	OF SOLID WAS	TES Ronmental C	ONSERVATIO	SHAWITI	ED BY:BARL	_
	C	50 WULF	RD., ROOM 41	7	and an an an an an an an an an an an an an			
		ALBANY,	N.Y. 12233			· · · · · · · · · · · · · · · · · · ·		
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7)	0452 NEW YORK STATE DEPARTMENT OF HE WADSWORTH CENTER FOR LABORATORIES AN	
•	PAGE 1 RESULTS OF EXAMINATION	FINAL REPORT
	SAMPLE ID: 841006164 SAMPLE RECEIVED: 84/06/	29/11 -
2	PROGRAM:: 650:DEC SOLID WASTES Source ID;NFLTP111 Drainage Basin:01	GAZEITEER CODE:3102
·		COUNTY:NIAGARA Z DIRECTION:
2	LOCATION: - NIAGARA FALLS,LOVE CANAL,LEACHAIE-TRE DESCRIPTION:WELL #3122	
	REPURTING LAB: 10:LABORATORY OF INDRGANIC TESI PATTERN: 10-010:40SN - NPDES PRIJRITY PO	ANALYTICAL CHEMISTRY - ALBANY
ż	SAMPLE IYPE: 250:GROUND WATER	
7	TIME OF SAMPLING: 84/08/28 11:30	DATE PRINTED:84/12/07
-	PARAMETER Dizinc Linc	RESULT 0.73 MG/L
	OZLEAD LEAD, TOPAL	< 0.1 MG/L
	OZBERYL BERYLLIUM, TOTAL Ozcupper Copper, total	< 0.02 MG/L < 0.05 MG/L
	OZNICKEL NICKEL, TOTAL	< 0.05 MG/L
•	02SILVER SILVER, TOTAL	< 0.02 MG/L
	OIMERCURY MERCURY O2CADMIUM CADMIUM, TUTAU	< 0.2 MCG/L < 0.02 MG/L €
•	OZANTIMONY ANTIMONY, TOTAL	< 1. MG/L
بي	OZCHROMIUM, TOTAL	< 0.1 MG/L
	OZTHALLIUM PHALLIUM, TOTAL Zzarsenic Arsenic, Total	< 1.45/L (< 10.455/L
	22SELENIUM SELENIUM, TOTAL	< 5. MCG/L
	OBDIGEST DIGESTION OF WATER FOR TOTAL METALS	DUDE
	01PHENDL PHENDLS 01CYANIDE CYANIDES, HYDROLYZABLE	100. MCG/L < 0.002 MG/L
Į.	**** END OF REPORT ***	**
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		e e e e e e e e e e e e e e e e e e e
-	COPIES SENT TO: CO(2), RO(0), LPHE(0), EED(0),	INFJ-P(0), INFD-L(0)
	MR. S. BRASWELL	•
Ţ	BUREAU OF SOLID WASTES	
(N.Y.S.DEPT. OF ENVIRONMENTAL CONSERVATIO	SUBMITIED BY: BARLON
	50 WULF RD., ROUM 417 4 ALBANY, N.Y., 12233	
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857.2 - NEW YORK

QC SUMMARY PESTICIDE ANALYSIS BATCH 21

SURROGATE RECOVERY

WCI*SHINC

	Sample Number			Percent	Recoverv
	RB (Reagent Blank)				85%
4204	R-999-20	*			89%
4105	R-999-21	-			17%
7205	R-999-22				40%
	R-999-23	. · · · ·	••		50%
205	R-999-22 (DUP)				55%
	R-999-22 (MS)				37%

MATRIX SPIKE RECOVERY (Sample No. R-999-22 MS)

<u>Compound</u>	<u>Percent Recoverv</u>
Ə-BHC (Lindane)	57%
Heptachlor	68%
Aldrin	66%
Dieldrin	83%
Endrin	84%
pp-DOT	53%



sompled March 28, 1984

DATA SUMMARY

Section I

000004

6850 VERSAR CENTER • P.O. BOX 1549 • SPRINGFIELD, VIRGINIA 22151 • TELEPHONE: (703) 750-3000 • TELEX: 901125



Versar Project 857.2-16 & 20 NYS Contract No. <u>C000661</u>

	DATA SUMMARY		
Sample	Compounds Detected	Concentration ug/	L
6159 R-999-1	PCB 1260	2.23	
5207 R-999-2	acetone	250	
209 R-999-2 (VOA dup.)	acetone	270	••
0.10 3 R-999-4	toluene bis(2-ethylhexyl)phthalate	: 27	
ンロゴ R-999-4 (BNA dup.)	bis(2-ethylhexyl)phthalate	55	
۲۵ CR-999-5	bis(2-ethylhexyl)phthalate	16	
610 (R-999-6	bis(2-ethylhexyl)phthalate	34	
5201 R-999-7	bis (2-ethylhexyl)phthalate	10	
108 R-999-8	bis(2-ethylhexyl)phthalate	15	• ••
≤06 ^{R-999-10}	bis(2-ethylhexyl)phthalate	15	
d- R-999-12	δ-BHC	0.03	
Reagent Blank	none detected	ND	
🗇 🖓 መድረ (Pest. dup ሮ የ እር የ የ የ የ የ የ የ የ የ የ የ የ የ የ የ የ የ	.) none detected	۲D	

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6850 VERSAR CENTER • P.O. BOX 1549 • SPRINGFIELD, VIRGINIA 22151 • TELEPHONE: (703) 750-3000 • TELEX: 901125

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WEI SEI INC.

QUALITY CONTROL SUMMARY

Section II

000006

6850 VERSAR CENTER . P.O. BOX 1549 . SPRINGFIELD, VIRGINIA 22151 . TELEPHONE: (703) 750-3000 . TELEX: 901125



Project <u>857.2-16 & 20</u> NYS Contract No. <u>C000661</u>

Q.C. SUMMARY

Matrix Spike Recoveries							
Compound	% Recovery	EPA Recommended Limits					
1,1 dichloroethane	82	61-145					
benzene	73	76-127					
trichloroethene	71	71-120					
toluene	80	76-125					
chlorobenzene	79	75-130					
1,2,4-trichlorobenzene	70	39-98					
acenaphthene	91	46-118					
2,4-dinitrotoluene	108	24-96					
di-n-butylphthalate	141	11-117					
pyrene	105	26-127					
N-nitrosodi-N-propylamine	72	41-116					
1,4-dichlorobenzene	75	36-97					
pentachlorophenol	86	9-103					
phenol	41	12-89					
2-chlorophenul	88	27-123					
P-chloro-M-cresol	79	23-97					
1-nitropnenol	55	10-80					
lindane	75	56-123					
leptachlor	84	40-131					
ildrin	95	40-120					
lieldrin	114	52-126					
endrin .	109	56-121					
,p'-DDT	97	38-127					

000007

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				WAT	ER SURROGAT	E PERCENT I	RECOVERY	UHHARY			
LO WA	GE NO. ⁸⁵⁷ H LEVEL TER REPORT N	<u>×</u>			NTRACTOR	VERSAR INC	•		HIGH L	CT HO. <u>CO</u> LEVEL (SpecIfy)	0661
v -			le -		Se	emi-Volntile <u>¹a Rae</u>			11	Pesticide]	
Sample	Dy Toluene	BFB	D4-1,2- Dichloro- ethane	D5 - N1 t ro- benzene	2-Fluoro- ·biphenyl	Dja- p-Ter-	Dj- Phenol	2-Etuoro- phenol	2,4,6- Tribromo- phenol	Dibutyl - Culoren- date	
No. R. (11) 1 R. (11) 2 R. (11) 5 R. (11) 5 R. (11) 5 R. (11) 5 R. (11) 5 R. (11) 7 K. (11) 8 R. (11) 7 R. (11) 8 R. (11) 12 R. (11) 12	 	100 -97 -97 -97 -97 -97 -95 -95 -95 -92 -92 -92 -92 -92 -92 -92 -92 -92 -92	$ \begin{array}{c} 7.7 \\ 9.7 \\ 9.4 \\ 9.3 \\ 9.3 \\ 7.4 \\ 9.5 $		16 	$ \begin{array}{c} $	$ \frac{3}{32} \frac{3}{32} \frac{3}{32} \frac{3}{32} \frac{3}{32} \frac{3}{32} \frac{4}{32}	$ \begin{array}{c} $	$ \begin{array}{c} - 19 \\ - 89 \\ - 10 \\ - 65^{-} \\ - 82 \\ - 77 \\ - 77 \\ - 68 \\ - 63 \\$	$ \begin{array}{c} & 62 \\ & 87 \\ & 67 \\ & 60 \\ & 87 \\ & 65 \\ & 65 \\ & 65 \\ & 65 \\ & 73 \\ & 88 \\ & 57 \\ & 66 \\ & 97 \\ & & & \\ \end{array} $	

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Comments:

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Efmits Revi = 12/83

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13/21/84

* * RAW DATA LISTING * * THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82

> *** SITE DATA *** ****

SAMPLING AREA 03 STATION 512

COORDS 401053 E 1121805 N

QUAN SIZE

****	¥¥
*** SAMPLE DATA *	**
*****	**

SAMPLE-ID W20666 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/18/80 START TIME 1230 CONTRACTOR JRB WELL ID 006B DEPTH 37.80 FEET COMPOSITE SAMPLE WATER TEMP 0

5223

*** ANALYSIS RESULTS ***

METHOD ANION COMPOUND FLUORIDE

اللحمين وأرر

ANALYSIS LAB PJBL CAS PC CONCENTRATION REPORTED CONC 0-0-0 115 1100.000 UG/L

0.0 ML COMMENT SAMPLE VOL. 100

03

512

***** *** SAMPLE DATA *** ***

SAMPLE-ID W20779 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/18/80 START TIME 1230 CONTRACTOR JRB WELL ID .006B DEPTH 37.80 FEET COMPOSITE SAMPLE WATER TEMP 0

5223

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC NETHOD ANALYSIS LAB PJBL QUAN SIZE 999.9 ML CAS PC CONCENTRATION REPORTED CONC COMPOUND COMMENT PESTICIDES BELOW DETECTION LIMIT

> **** *** SAMPLE DATA *** *****

SAMPLE-ID W20802 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/18/80 START TIME 1230 CONTRACTOR JRB WELL ID 0068 DEPTH 37.80 FEET COMPOSITE SAMPLE WATER TEMP 0 5223

*** ANALYSIS RESULTS ***

SPECIFIC METHOD 34020

METHOD 624W CCMPCUND 1,1-DICHLCROETHENE CHLCROFORM BENZENE TOLUENE	SPECIFIC METHOD CAS 75-35-4 67-66-3 71-43-2 108-88-3	V03 V11 V22	TRACE	PJBL QUAN SIZE REPORTED CONC	5.0 ML COMMENT
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**** *** SAMPLE DATA *** ********************

SAMPLE-ID W20304 MEDIUM H20 SOURCE GRH20 SAMFLE DATE 09/18/80 START TIME 1215 CONTRACTOR JRB WELL ID 006A DEPTH 21.50 FEET COMPOSITE SAMPLE WATER TEMP Ω

5123

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*** ANALYSIS RESULTS ***

COMPOUND 1,1-DICHLOROETHENS BENZENS 1,1,2,2-TETRACHLOROETHANS	75-35-4 V03 71-43-2 V22 79-34-5 V28	TRACE TRACE TRACE	PJBL QUAN SIZE . Reported conc	5.0 ML COMMENT
TOLUENE	106-88-3 V34	TRACE		

* * RAW DATA LISTING * * THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 03 512

> ***** *** SAMPLE DATA *** *****

SAMPLE-ID W20907 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/18/80 START TIME 1230 CONTRACTOR JRB WELL ID 0068 DEPTH 37.80 FEET COMPOSITE SAMPLE WATER TEMP

*** ANALYSIS RESULTS *** 5223 ANALYSIS LAB PJBL QUAN SIZE 999.9 ML METHOD 625CW SPECIFIC METHOD CAS PC CONCENTRATION REPORTED CONC COMMENT COMPOUND TRACE 106-48-9 A03 91-20-3 B14 4-CHLOROFHENOL TRACE NAPHTHALENS TRACE 120-12-7 B33 ANTHRACENE ***

*** SAMPLE DATA *** *****

SAMPLE-ID W20811 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/23/80 START TIME 1215 CONTRACTOR JRB WELL ID 006A DEPTH 21.50 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

5123

212 3

ANALYSIS LAB PJBL QUAN SIZE 999.9 ML METHOD 606W SFECIFIC METHOD COMMENT CAS PC CONCENTRATION REPORTED CONC CAS PESTICIDES BELOW DETECTION LIMIT COMPOUND

***** *** SAMPLE DATA *** ******

ID 005A DEPTH 21.50 FEET COMPOSITE SAMPLE MATER TEMP 0 SAMPLE-ID W20812 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/23/80 START TIME 1215 CONTRACTOR JRB WELL ID 005A

ANALYSIS LAB PJBL QUAN SIZE 999.9 ML METHOD 625CW SPECIFIC METHOD CAS PC CONCENTRATION REPORTED CONC COMMENT COMPOUND 91-20-3 B14 TRACE NAFHTHALENS TRACE 120-12-7 633 ANTHRACEHE ACIDS BELOW DETECTION LIMIT

*** SAMPLE DATA *** ***

SAMPLE-ID W20835 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/23/80 START TIME 1215 CONTRACTOR JRB WELL ID 005A DEPTH 21.50 FEET COMPOSITE SAMPLE WATER TEMP

*** ANALYSIS RESULTS ***

ANALYSIS LAB ERCO QUAN SIZE 0.0 ML METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB ERCO QUAN SIZE OMFOUND CAS PC CONCENTRATION REPORTED CONC 0-0-0 115 920.000 UG/L COMMENT CONFOUND FLUCRIDE

* * R A W O A T A L I S T I N G * * THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82

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03

SAMPLE-ID W21300 MEDIUM H20 - SOURCE GRH20 SAMPLE DATE 09/29/80 START TIME 1130 CONTRACTOR JRB WELL ID 0068 DEPTH 37.80 FEET COMPOSITE SAMPLE WATER TEMP 0

5223

*** ANALYSIS RESULTS ***

METHOD COMPOUND BARIUM ZINC	ICPW	SPECIFIC	METHOD CAS 7440-39-3 7440-66-6	103	 JG/L	QUAN SIZE REPORTED CONC	0.0 ML Comment
							•

*** SAMPLE DATA ***

SAMPLE-ID W21335 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/27/80 START TIME 0905 CONTRACTOR JRB WELL ID 006A DEPTH 21.50 FEET COMFOSITE SAMPLE WATER TEMP 0

5123

*** ANALYSIS RESULTS ***

METHOD	ICPW -	SPECIFIC METHOD		ANALYSIS LAB	ERCO	QUAN SIZE	0.0 ML
COMPOUND		CAS	PC	CONCENTRATION		REPORTED CONC	COMMENT
BARIUM		7440-39-3	103	3.000 00	G/L		
COPPER		7440-50-8	107	8.000 UC	G/L		
ZINC		7440-66-6	I14	14.000 UG	G/L		

· ".

* * R A W D A T A L I S T I N G * * THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82

*** SITE DATA ***

SAMPLING AREA 06 STATION 018

COOPDS 402858 E 1123503 N

SAMPLE-ID W21803 MEDIUM H2D SOURCE GRH2O SAMPLE DATE 10/14/60 START TIME 1210 CONTRACTOR JRB WELL ID 051A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

4111

METHOD 624W SPECIFIC METHOD ANALYSIS LAB CHTL QUAN SIZE 5.0 ML CONFOUND CAS FC CONCENTRATION REPORTED CONC COMMENT VOLATILES BELOW DETECTION LIMIT

**** SAMPLE DATA ***

SAMPLE-ID W21804 MEDIUM H20 SCURCE GRH20 SAMPLE DATE 10/14/80 START TIME 1210 CONTRACTOR JRB WELL ID 051A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0 4/11/

*** ANALYSIS RESULTS ***

METHOD 625CH CONFOUND	SPECIFIC METHOD		ANALYSIS LAB	CHTL QUAN SIZE	999.0 ML
ACIDS	CAS BELOW DETECTION LINIT	PL	CONCENTRATION	REPORTED CONC	COMMENT
BASE/NEUTRALS	BELOW DETECTION LIMIT				

SAMPLE-ID W21805 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/14/80 START TIME 1210 CONTRACTOR JRB WELL ID 051A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0

4111

--- *** ANALYSIS RESULTS ***

METHOD 600W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 999.9 ML Compound cas pc concentration reported conc comment Festicides below detection limit

> ************************* *** SAMPLE DATA *** ******

SAMPLE-ID W21807 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/14/80 START TIME 1210 CONTRACTOR JRB WELL ID 051A DEPTH 14.00 FEET COMFOSITE SAMPLE WATER TEMP 0

4111

*** ANALYSIS RESULTS ***

 METHOD ANION
 SPECIFIC METHOD
 34020
 ANALYSIS LAB
 ERCO
 GUAN SIZE
 0.0
 ML

 CCMPOUND
 CAS
 PC
 CONCENTRATION
 REPORTED
 CONC
 COMMENT

 FLUGRIDE
 0-0-0
 I15
 1100.000
 UG/L
 NITRATE
 0-0-0
 I16
 3010.000
 UG/L

RAW DATA LISTING THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82

10 0,42

COORDS 402178 E 1120885 N

COMMENT

**************** *** SITE DATA *** *******

SAMPLING AREA 10 STATION 042

***************** *** SAMPLE DATA *** ******

SAMPLE-ID W25717 MEDIUM H20 SCURCE GRH20 SAMPLE DATE 10/15/80 START TIME 0915 CONTRACTOR JRB HELL ID 056A DEPTH 9.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6141

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*** ANALYSIS RESULTS ***

METHOD 624W COMFOUND VOLATILES

ANALYSIS LAB CMTL QUAN SIZE 5.0 ML SPECIFIC METHOD CAS PC CONCENTRATION REPORTED CONC BELOW DETECTION LIMIT

*** SAMPLE DATA *** ****

SAMPLE-ID W25718 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/15/80 START TIME 0915 CONTRACTOR JRB WELL ID 056A DEPTH 9.00 FEET COMFOSITE SAMPLE WATER TEMP ٥

6141

*** ANALYSIS RESULTS ***

COMPOUND

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 999.0 ML CAS PC CONCENTRATION REPORTED CONC COMMENT ACIDS BELOW DETECTION LIMIT BASE/NEUTRALS BELOW DETECTION LIMIT

***** *** SAMPLE DATA *** **************

SAMPLE-ID W25719 MEDIUM H20° SOURCE GRH20 SAMPLE DATE 10/15/80 START TIME 0930 CONTRACTOR JRB WELL ID 056A DEPTH 9.00 FEET COMPOSITE SAMPLE · WATER TEMP Ω

6141

*** ANALYSIS RESULTS ***

METHOD 608W COMPOUND PESTICIDES

DD ANALYSIS LAB CMTL QUAN SIZE 900.0 ML CAS PC CONCENTRATION REPORTED CONC COMM SPECIFIC METHOD COMMENT BELOW DETECTION LIMIT

> *** SAMPLE DATA *** *****

SAMPLE-ID W25720 MEDIUM H20 SCURCE GRH20 SAMPLE DATE 10/15/80 START TIME 0915 CONTRACTOR JRB WELL ID 056A DEPTH 9.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6141

METHOD COMPOUND *** ANALYSIS RESULTS ***

)	ICFW	SPECIFIC METHOD		ANALYSIS LAB ERC	Ó QUAN SIZE	0.0 ML
)		CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
		7440-39-3	103	10.000 UG/L		·,
		7440-43-9	I0 [°] 5	10.000 UG/L		
		7439-92-1	108	61.000 UG/L		
		7440-66-6	I14	48.000 UG/L		

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** RAH DATA LISTING ** THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82

10 042

SAMPLE-ID W25721 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/15/80 START TIME 0915 CONTRACTOR JRB WELL ID 056A DEPTH 9.00 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB ERCO QUAN SIZE 0.0 ML COMPOUND CAS PC CONCENTRATION REPORTED CONC COMMENT FLUCRIDE 0-0-0 I15 1500.000 UG/L NITRATE 0-0-0 I16 1900.000 UG/L

SAMPLE-ID W25722 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/15/80 START TIME 0930 CONTRACTOR JRB WELL ID 056B DEPTH 9.80 FEET COMPOSITE SAMPLE WATER TEMP 0

6241

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*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 5.0 ML COMPOUND CAS PC CONCENTRATION REPORTED CONC COMMENT VOLATILES BELOW DETECTION LIMIT

SAMPLE-ID W25724 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 0930 CONTRACTOR JRB WELL ID 056B DEPTH 9.80 FEET COMPOSITE SAMPLE WATER TEMP 0

6241

*** ANALYSIS RESULTS ***

METHOD 608W COMPOUND PESTICIDES

SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 600.0 ML CAS PC CONCENTRATION REPORTED CONC COMMENT BELOW DETECTION LIMIT

*** SAMPLE DATA *** *****************

SAMPLE-ID W25725 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/15/80 START TIME 0930 CONTRACTOR JRB WELL ID 0568 DEPTH 9.80 FEET COMPOSITE SAMPLE WATER TEMP 0

6241

*** ANALYSIS RESULTS ***

METHOD	ICPW	SFECIFIC METHOD		ANALYSIS LAB ERG	O QUAN SIZE	0.0 M
COMPOUND		CAS	PC	CONCENTRATION	REPORTED CONC	0.0 ML COMMENT
BARIUM		7440-39-	3 I03	16.000 UG/L	ALL DATED CONC	COMIENT
CADMIUM		7440-43-	9 IO5	27.000 UG/L		
ZINC		7440-66-	6 I14	18.000 UG/L	•	

RAH DATA LISTING THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82

09 019

COORDS 402996 E 1122098 N

*** SITE DATA *** *****

SAMPLING AREA 09 STATION 019

*** SAMPLE DATA *** ****

SAMPLE-ID W25658 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/15/80 START TIME 1630 CONTRACTOR JRB WELL ID 110A DEPTH 4.70 FEET COMPOSITE SAMPLE WATER TEMP 0

6113

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*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB CHTL QUAN SIZE CAS PC CONCENTRATION REPORTED CONC BELOW DETECTION LIMIT GUAN SIZE 960.0 ML Cettroutta COMMENT ACIDS BASE/NEUTRALS ... BELOW DETECTION LIMIT

**** *** SAMPLE DATA *** *******

SAMPLE-ID W25659 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/15/80 START TIME 1630 CONTRACTOR JRB HELL ID 110A DEPTH 4.70 FEET COMPOSITE SAMPLE WATER TEMP 0

6113

*** ANALYSIS RESULTS ***

COMPOUND PESTICIDES

ANALYSIS LAB CHTL QUAN SIZE 999.9 ML METHOD 608W SPECIFIC METHOD CAS PC CONCENTRATION REPORTED CONC COMMENT BELOW DETECTION LIMIT

> **** *** SAMPLE DATA *** ***

SAMPLE-ID W25560 MEDIUM H2G SOURCE GRH2D SAMPLE DATE 10/15/80 START TIME 1630 CONTRACTOR JRB DEPTH 4.70 FEET COMPOSITE SAMPLE WELL ID 110A WATER TEMP 0 6113

*** ANALYSIS RESULTS ***

METHOD	ICPW	SPECIFIC	METHOD		ANALYSIS LAB E	RCO QUAN	SIZE	0.0 ML
COMPOUND			CAS	PC	CONCENTRATION	REPORTED		COMMENT
BARIUM			7440-39-3	103	30.000 UG/			CONTENT
CACHIUM		•	7440-43-9	105		-		
CHRCHIUM			7440-47-3	106		-		
COFFER			7440-50-8		12.000 UG/	-		
LEAD			7439-92-1		71.000 US/	-		
NICKEL			7440- 2-0		74.000 UG/	-		
MERCURY			7439-97-6		0.200 UG/	-		
ZINC			7440-66-6	-	100.000 UG/	-		

*** SAMPLE DATA *** ****

6113

SAMPLE-ID W25561 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/15/80 START TIME 1630 CONTRACTOR JRB WELL ID 110A DEPTH 4.70 FEET COMPOSITE SAMPLE WATER TEMP 0

	ANION	SPECIFIC METHOD 340 CAS		ANALYSIS LAB E	RCO QUA REPORTED	N SIZE	0.0 ML COMMENT
FLUORIDE						LUNC	CURITENT
		0-0-0	112	2000.000 UG/	L.		
NITRATE		0- 0,0	I16	1550:000 UG/	'L		•
					-		

* * R A W D A T A L I S T I N G * * THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 02 041

> **** SITE DATA *** *** SITE DATA ***

SAMPLING AREA 02 STATION 041

COCRDS 401082 E 1123052 N

**** SAMPLE DATA ***

SAMPLE-ID W25203 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 0900 CONTRACTOR JRB WELL ID 031B DEPTH 6.30 FEET COMPOSITE SAMPLE WATER TEMP 0

9222

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB CHTL QUAN SIZE 5.0 ML CC::PCUND CAS PC CC::CENTRATION REPORTED CONC COMMENT CHLOROFORM 67-66-3 VII 11.000 UG/L

SAMPLE-ID W25205 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 0912 CONTRACTOR JRB HELL ID 031B DEPTH 6.30 FEET COMPOSITE SAMPLE WATER TEMP 0

3222 *** ANALYSIS RESULTS ***

METHOD 608H SPECIFIC METHOD ANALYSIS LAB CMTL GUAN SIZE 740.0 ML CCMFCUND CAS PC CONCENTRATION REPORTED CONC COMMENT PESTICIDES BELOW DETECTION LIMIT

*** SAMPLE DATA ***

SAMPLE-ID W25006 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 0910 CONTRACTOR JRB WELL ID 031B DEPTH 6.30 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD ANICH SFECIFIC METHOD 34020 ANALYSIS LAB ERCO QUAN SIZE 0.0 ML COMPOUND CAS PC CONCENTRATION REPORTED CONC COMMENT FLUORIDE 0-0-0 I15 \$00.000 UG/L

SAMPLE-ID W25207 MEDIUM H20 SGURCE GRH20 SAMPLE DATE 10/02/80 START TIME 0934 CONTRACTOR JRB WELL ID 0316 DEPTH 6.30 FEET COMFOSITE SAMPLE WATER TEMP 0

3222

2000

*** ANALYSIS RESULTS ***

. METHOD	ICFW	SPECIFIC	METHOD		ANALYSIS LAE	B ERC	G GUAN	I SIZE	0.0	ML .
CCHPCUND			CAS	PC	CONCENTRATION		REFORTED	CONC		COMMENT
BARIUM		•	7440-39-3	I03	7.000	UG/L				
COFFER			7440-50-8	107	7.000	UG/L	•	•		
ZINC		. •	7440-65-6	I 14	75.000	UG/L	. '			

112-20

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RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 02 041

*** SAMPLE DATA *** **** SAMPLE-ID W25208 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 0930 CONTRACTOR JRB WELL ID 031B DEPTH 6.30 FEET COMPOSITE SAMPLE WATER TEMP 0 3222 *** ANALYSIS RESULTS *** METHOD 624W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 5.0 ML CAS PC CONCENTRATION REPORTED CONC COMPOUND DAFOUND CAS VOLATILES BELOW DETECTION LIMIT COMMENT **** *** SAMPLE DATA *** **** SAMPLE-ID H25210 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 0952 CONTRACTOR JRB WELL ID 031B DEPTH 6.30 FEET COMFOSITE SAMPLE WATER TEMP 0 3222 *** ANALYSIS RESULTS *** METHCD 608W SPECIFIC METHOD ANALYSIS LAB CHTL QUAN SIZE 999.9 ML CAS PC CONCENTRATION REPORTED CONC COMPOUND COMMENT PESTICIDES BELOW DETECTION LIMIT **** ात्र सुष्ट्र *** SAMPLE DATA *** ******** SAMPLE-ID W25211 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 0935 CONTRACTOR JRB WELL ID 031B DEPTH 6.30 FEET COMPOSITE SAMPLE WATER TEMP 0 3222 *** ANALYSIS RESULTS *** METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB ERCO QUAN SIZE Compound Cas PC concentration reported conc IDE 0-0-0 II5 740.000 UG/L ANALYSIS LAB ERCO QUAN SIZE 0.0 ML COMPOUND COMMENT FLUORIDE **** . 4 *** SAMPLE DATA *** *** SAMPLE-ID W25212 MEDIUM H20 SCURCE GRH20 SAMPLE DATE 10/02/80 START TIME 0905 CONTRACTOR JRB WELL ID 031B DEPTH . 6.30 FEET COMPOSITE SAMPLE WATER TEMP 0 3222 *** ANALYSIS RESULTS *** METHOD ICPW SPECIFIC METHOD ETHOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML CAS PC CONCENTRATION REPORTED CONC COMME 7440-39-3 IO3 17.000 UG/L COMPOUND COMMENT BARIUM ZINC 7440-66-6 I14 32.000 UG/L **** *** SAMPLE DATA *** *** SAMPLE-ID W25213 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 0942 CONTRACTOR JRB WELL ID 0318 DEPTH 6.30 FEET COMPOSITE SAMPLE WATER TEMP - 0 3222 *** ANALYSIS RESULTS ***

METHCD 624W SPECIFIC METHCD ANALYSIS LAB EMSC QUAN SIZE 5.0 ML COMMENT CAS PC CONCENTRATION REPORTED CONC 67-66-3 V11 13.330 UG/L COMPOUND CHLOROFORM

* * RAW DATA LISTING * *

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SAMPLE-ID W25214 MEDIUM H20 SCURCE GRH20 SAMPLE DATE 10/02/80 START TIME 0940 CONTRACTOR JRB WELL ID 0318 DEPTH 6.30 FEET COMPOSITE SAMPLE WATER TEMP 0

3222

*** ANALYSIS RESULTS ***

METHOD	608W	SPECIFIC	METHCD		ANALYSIS LAB	EMSC	GUAN SIZE	0.0 ML
COMPOUND			CAS	PC	CONCENTRATION		REPORTED CONC	COMMENT
ALPHA-EHC			319-84-6	P01	0.050 0	G/L		:
GANMA-EHC			58-89-9	P03	0.012 U	G/L		
DELTA-EHC		•	319-85-8	P04	0.018 U	G/L	•	1
								•

SAMPLE-ID W25215 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 0946 CONTRACTOR JRB WELL ID 031B DEPTH 6.30 FEET COMPOSITE SAMPLE WATER TEMP 0

3222

*** ANALYSIS RESULTS ***

METHCD 625CW	SPECIFIC METHOD		ANALYSIS LAB	EMSC QUAN SIZE	999.9 ML
COMPOUND	CAS F	PC	CONCENTRATION	REPORTED CONC	COMMENT
2,4-DICHLOPOTOLUENE	95-73-8 E	B27	TRACE		
FHENANTHRENE	85- 1-8 E	332	TRACE		
CHRYSENE	218- 1-9 E	84 0	TRACE		
ACIES	BELOW DETECTION LIMIT				

SAMPLE-ID H25216 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 0947 CONTRACTOR JRB WELL ID 031B DEPTH 6.30 FEET COMPOSITE SAMPLE WATER TEMP 0

3222

*** ANALYSIS RESULTS ***

METHCO	ІСРН	SPECIFIC	METHCD		ANALYSIS LAB EMS	C GUAN SIZE	50.0 ML
COMPOUND			CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM		· .	7440-39-3	103	27.000 UG/L		
MERCURY			7439-97-6	I10	TRACE		
ZINC		•	7440-66-6	I 14	100.000 UG/L	·	

SAMPLE-ID WC5217 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 0950 CONTRACTOR JRB WELL ID 031B DEPTH 6.30 FEET CONPOSITE SAMPLE WATER TEMP 0

2200

COHTEM 2	ANION	SPECIFIC METHOD	34020	ANALYSIS LAB	EMSC	QUAN SIZE	125.0 ML	·
COMPOUND		CA	S FC	CONCENTRATION	REPOR	TED CONC	COMMENT	
FLUCRIDE		0 -	0-0 I15	870.000 L	JG/L		SAMPLEDISTILLED	
NITRATE		0-	0-0 I16	TRACE				

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 02 041

> ***** *** SAMPLE DATA *** *****

SAMPLE-ID W25471 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/08/80 START TIME 0945 CONTRACTOR JRB WELL ID 031A DEPTH 11.90 FEET COMPOSITE SAMPLE WATER TEMP Ω

3122

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*** ANALYSIS RESULTS ***

METHOD 624W Compound Volatiles	SPECIFIC METHOD CAS BELOW DETECTION LIMIT	FC	ANALYSIS LAB Concentration	ACEE GUAN SIZE REFORTED CONC	5.0 ML COMMENT
					•

***** *** SAMPLE DATA *** *****

SAMPLE-ID #25472 MEDIUM H20 SCURCE GRH20 SAMPLE DATE 10/08/80 START TIME 0950 CONTRACTOR JRB WELL ID 031A DEPTH 11.90 FEET COMPOSITE SAMPLE WATER TEMP 0

3122

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML COMPOUND CAS PC CONCENTRATION 103-95-2 A05 5.000 UG REPORTED CONC COMMENT PHENOL 5.000 UG/L BELOW DETECTION LIMIT BASE/NEUTRALS

**** *** SAMPLE DATA *** *****

SAMPLE-ID W25473 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/08/80 START TIME 0955 CONTRACTOR JRB WELL ID 031A DEPTH 11.90 FEET COMPOSITE SAMPLE WATER TEMP 0

3122

*** ANALYSIS RESULTS ***

METHOD	608W	SPECIFIC METHOD		ANALYSIS LAB	ACEE QUAN SIZE	999.9 MI
COMFOUND		C	AS PC	CONCENTRATION		
ALPHA-BHC			-84-6 F01		REPORTED CONC.	COMMENT
HEPTACHLOR		76	-44-8 FC5	TRACE		
DDE		72	-55-9 P10	TRACE		
000		72	-54-8 P15	TRACE		

****** *** SAMPLE DATA *** ***

SAMPLE-ID W25474 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/08/80 START TIME 0952 CONTRACTOR JRB WELL ID 031A DEPTH 11.90 FEET COMPOSITE SAMPLE WATER TEMP a

3122

	METHOD	ICPW	SPECIFIC	METHOD		ANALYSIS LAB ERCO QUAN SIZE 0.0 ML	
	COMPOUND			CAS	PC		
	BARIUM			7440-39-3			C(4)
	BERYLLIUM			7440-41-7	I04		
	CADHIUM			7440-43-9	I05		
	CHRCMIUM			7440-47-3	I06		
	COFFER			7440-50-8	I07	68.000 US/L	•
	LEAD			7439-92-1	108		
	NICKEL			7440- 2-0	I09		
:	ZINC			7440-66-6	I14		
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RAH DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 02

*********** *** SITE DATA *** ***********

SAMPLING AREA 02 STATION 043

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COORDS 401285 E 1122801 N

043

*** SAMPLE DATA *** ******

SAMPLE-ID W25270 MEDIUM H20 SOURCE GPH20 SAMPLE DATE 10/02/80 START TIME 1330 CONTRACTOR JRB WELL ID 034A DEPTH 23.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3123

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML COMPOUND PC CONCENTRATION CAS REPORTED CONC COMMENT VOLATILES BELOW DETECTION LIMIT

> **************** *** SAMPLE DATA *** ****

SAMPLE-ID W25272 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 1339 CONTRACTOR JRB WELL ID 034A DEPTH 23.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3123

*** ANALYSIS RESULTS ***

METHOD	608W	SPECIFIC	METHOD		ANALYSIS LAB	ACEE	QUAN SIZE	999.9 ML
COMPOUND			CAS	PC	CONCENTRATION	REF	ORTED CONC	CONMENT
ALFHA-BHC			319-84-6	F01	TRACE			
GAMMA-БНС			53-89-9	F03	TRACE			
HEPTACHLOR			. 76-44-8	P05	TRACE			
ALDRIN			309- 0-2	P06	TRACE			

*** SAMPLE DATA *** *******

SAMPLE-ID W25273 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 1335 CONTRACTOR JRB DEPTH 23.00 FEET COMPOSITE SAMPLE WELL ID 034A WATER TEMP 0

712 3

*** ANALYSIS RESULTS ***

METHCD	ICPW	SPECIFIC METHOD	ANALYSIS LAP	B ERCO QUAN SIZE	0.0 ML -
COMPOUND		CAS PC	C CONCENTRATION	REPORTED CONC	COMMENT
BARIUM		7440-39-3 IC	03 26.000	UG/L	
CHROMIUM		7440-47-3 IC	06 17.000	UG/L 9.9	
COPFER		7440-50-8 IC	07 34.000	UG/L 25	
LEAD		7439-92-1 IC	08 150.000	UG/L 259	
NICKEL		7440- 2-0 IC	09 52.000	UG/L 21	
ZINC		7440-66-6 II	14 240.000	US/L 127	

*** SAMPLE DATA *** ******

SAMPLE-ID W25276 MEDIUM H20 SOURCE GEH20 SAMPLE DATE 10/02/80 START TIME 1332 CONTRACTOR JRB DEPTH 23.00 FEET COMFOSITE SAMPLE WELL ID 034A WATER TEMP 0

3123

METHOD 625CW	SPECIFIC METHOD	ANALYSIS LAB ACEE QUAN SI	
COMFOUND	CAS FC	CONCENTRATION REPORTED CON	
PHENOL	108-95-2 AC5		-
FHENANTHRENE	85- 1-8 B32		

* * R A W D A T A L I S T I N G * * THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82

SAMPLING AREA 03 STATION 518

COORDS 401699 E 1121277 N

03

518

SAMPLE-ID W20363 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 1020 CONTRACTOR JRB WELL ID 039A DEPTH 26.10 FEET COMPOSITE SAMPLE WATER TEMP 0 5/14

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 CCMFOUND CAS PC FLUORIDE 0-0-0 115 NITRATE 0 0-0 015

0- 0-0 II6 300.000 UG/L

HOD 34020 ANALYSIS LAB ERCO QUAN SIZE 0.0 ML CAS FC CONCENTRATION REPORTED CONC COMMENT 0-0-0 I15 1000.000 UG/L

SAMPLE-ID W20865 MEDIUM H20 SOURCE GRH20 SAMPLE DATÉ 09/22/80 START TIME 0930 CONTRACTOR JRB WELL ID 0393 DEPTH 44.50 FEET COMPOSITE SAMPLE WATER TEMP 0 52.14

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 1.0 ML CCMPOUND CAS PC CONCENTRATION REPORTED CONC COMMENT PHENOL 108-95-2 A05 7.000 UG/L BASE/NEUTRALS BELOW DETECTION LIMIT

SAMPLE-ID W20866 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 0930 CONTRACTOR JRB WELL ID 0398 DEPTH 44.50 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD 608W COMPOUND GAMMA-EHC

D 608W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 1.0 ML D CAS PC CONCENTRATION REPORTED CONC COMMENT 58-89-9 P03 TRACE

SAMPLE-ID W20886 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 0930 CONTRACTOR JRB WELL ID 0398 DEPTH 44.50 FEET COMFOSITE SAMPLE WATER TEMP 0

بر المستحد المستحد

5214

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 AMALYSIS LAB ERCO QUAN SIZE 0.0 ML COMFOUND CAS FC CONCENTRATION REPORTED CONC COMMENT FLUORIDE 0-0-0 I15 610.000 UG/L NITRATE 0-0-0 I16 240.000 UG/L

RAH DATA LISTING THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82

03 518

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COMMENT

****** *** SAMPLE DATA *** *************

SAMPLE-ID W20888 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 0930 CONTRACTOR JRB WELL ID 0393 DEPTH 44.50 FEET COMPOSITE SAMPLE WATER TEMP 0 5414

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 THOD 34020 ANALYSIS LAB EMSC QUAN SIZE 125.0 ML CAS FC CONCENTRATION REFORTED CONC COMMENT 0-0-0 II5 750.000 UG/L SAMPLE DI COMPOUND COMMENT FLUCRICE SAMPLE DISTILLED NITRATE 0- 0-0 I16 TRACE

> ***** *** SAMPLE DATA *** ****

SAMPLE-ID W20890 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 0930 CONTRACTOR JRB WELL ID 0398 DEPTH 22.50 FEET COMPOSITE SAMPLE WATER TEMP · 0

5214

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*** ANALYSIS RESULTS ***

DD ANALYSIS LAB EMSC QUAN SIZE 999.9 ML CAS PC CONCENTRATION REPORTED CONC COMME LIMIT METHOD 608W SPECIFIC METHOD COMPOUND PESTICIDES BELOW DETECTION LIMIT

> ***** #** SAMPLE DATA *** ************************

SAMPLE-ID W20391 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 0930 CONTRACTOR JRB DEPTH 44.50 FEET COMPOSITE SAMPLE WATER TEMP 0 WELL ID 0395

5214

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB EMSC QUAN SIZE 999.9 ML COMPOUND CAS PC CONCENTRATION REPORTED CONC CONMENT ACIOS BELOW DETECTION LIMIT BASE/NEUTRALS BELOW DETECTION LIMIT

> ***** *** SAMPLE DATA *** ****

SAMPLE-ID W20392 MEDIUM H20 SCURCE GRH20 SAMPLE DATE 09/22/80 START TIME 0930 CONTRACTOR JRB WELL ID 0393 DEPTH 44.50 FEET COMPOSITE SAMPLE WATER TEMP 0

5214

*** ANALYSIS RESULTS. ***

COMFOUND CAS PC CONCEN CHLOROFCRM 67-66-3 V11 EROMODICHLOROMETHANE 75-27-4 V17	ALYSIS LAB EMSC QUAN SIZE 5.0 ML INTRATION REPORTED CONC COMMENT 12.350 UG/L TRACE TRACE
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RAH DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82

SAMPLE-ID W20916 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 1020 CONTRACTOR JRB WELL ID 039A DEPTH 26.10 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD 624W Compound Volatiles

5114

1.12

SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE CAS PC CONCENTRATION REPORTED CONC BELOW DETECTION LIMIT 5.0 ML COMMENT

SAMPLE-ID W20917 MEDIUM H20 SOURCE GPH20 SAMPLE DATE 09/22/80 START TIME 0930 CONTRACTOR JRB WELL ID 039B DEPTH 44.50 FEET CCMFOSITE SAMPLE WATER TEMP 0

5214

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML COMFOUND CAS PC CONCENTRATION REPORTED CONC COMMENT CHLOROFORM 67-66-3 V11 4.000 UG/L

> **** SAMPLE DATA *** *** SAMPLE DATA ***

SAMPLE-ID W21341 MEDIUM H20 SOUPCE GRH20 SAMPLE DATE 09/27/80 START TIME 1120 CONTRACTOR JRB WELL ID 0395 DEPTH 44.50 FEET COMPOSITE SAMPLE WATER TEMP 0

5214

5214

*** ANALYSIS RESULTS ***

ANALYSIS LAB ERCO - QUAN SIZE 0.0 ML METHOD ICFW SPECIFIC METHOD COMMENT CAS FC CONCENTRATION REPORTED CONC COMPOUND 7440-39-3 IO3 180.000 UG/L BARIUM 21.000 UG/L 7440-47-3 IC5 CHECKIUM 7440-50-8 107 59.000 UG/L COPPER ZINC 7440-66-6 I14 40.000 UG/L

SAMPLE-ID W21342 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/27/80 START TIME 1120 CONTRACTOR JRB WELL ID 039B DEPTH 44.50 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD	ICPW	SPECIFIC METHOD		ANALYSIS LAB	ERCO	QUAN SIZE	0.0 ML .
COMPOUND		CAS	PC	CONCENTRATION	RE	PORTED CONC	COMMENT
BARIUM	•	7440-39-3	103	160.000 U	G/L		
CHROMIUM		7440-47-3	I05	15.000 U	G/L		
COPPER		7440-50-8	107	56.000 U	G/L		
ZINC		7440-66-6	114	15.000 U	G/L		

1907

RAH DATA LISTING THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 03

> ***** +++ SAMPLE DATA *** *************

SAMPLE-ID W21344 MEDIUM H20 SOURCE GRHCO SAMPLE DATE 09/27/80 START TIME 1115 CONTRACTOR JRB WELL ID 039A DEPTH 26.10 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD COMPOUND	ICFW	SPECIFIC METHOD CAS	FC	ANALYSIS LAE		O GUAN SIZE REFORTED CONC	0.0 ML COMMENT
BARIUM		7440-39-3	103	7.000	UG/L		
CADMIUM		7440-43-9	105	5.000	UG/L	·	
CHROMIUM		7440-47-3	105	9.000	UG/L		
COFFER		7440-50-8	107	6.000	UG/L	· · ·	1
LEAD		7439-92-1	ICS	67.000	UG/L	•	•
ZINC		7440-66-6	Iļ4	52.000	UG/L.		•

***************** *** SAMPLE DATA *** ***********

SAMPLE-ID W21377 MEDIUM H2O SCURCE GRHCO SAMPLE DATE 10/01/80 START TIME 0920 CONTRACTOR JRB WELL ID 039A DEPTH 26.10 FEET COMFOSITE SAMPLE WATER TEMP 0

5114

5114

*** ANALYSIS RESULTS ***

METHOD 606W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML Compound cas pc concentration reforted conc comment Pesticides below detection limit COMPOUND

***** *** SAMPLE DATA *** ******

SAMPLE-ID W21378 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/01/80 START TIME 0920 CONTRACTOR JRB WELL ID 039A DEPTH 26.10 FEET COMFOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD

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5114

CAS ACIDS BELOW DETECTION LIMIT BASE/NEUTRALS BELCW DETECTION LINIT

HCD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML CAS PC CONCENTRATION REPORTED CONC COMME

COMMENT

513

* * R A W D A T A L I S T I N G * * THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82. 03

SAMPLING AREA 03 STATION 524

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COORDS 401681 E 1121448 N

524

*** SAMPLE DATA *** *** SAMPLE DATA ***

SAMPLE-ID W20900 MEDIUM H20 SCURCE GRH20 SAMPLE DATE 09/22/80 START TIME 1245 CONTRACTOR JRB WELL ID 049A DEPTH 21.40 FEET COMFOSITE SAMPLE WATER TEMP 0

5112

*** ANALYSIS RESULTS ***

METHOD 625CH SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 1.0 HL COMFOUND CAS PC CONCENTRATION REPORTED CONC COMMENT PHENOL 103-95-2 A05 8.000 UG/L BASE/NEUTRALS BELOW DETECTION LIMIT

**** SAMPLE ÔATA *** *** SAMPLE ÔATA ***

SAMPLE-ID H20901 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 1300 CONTRACTOR JRB WELL ID 0493 DEPTH 39.70 FEET COMFOSITE SAMPLE WATER TEMP 0

5212

*** ANALYSIS RESULTS ***

METHOD 625CH SPECIFIC METHOD ANALYSIS LAB ACEE GUAN SIZE 1.0 ML CC::FOUND CAS PC CONCENTRATION REPORTED CONC COMMENT PHENOL 103~95-2 A05 5.000 UG/L BASE/NEUTRALS BELOW DETECTION LIMIT

SAMPLE-ID W20902 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 1300 CONTRACTOR JRB HELL ID 0498 DEPTH 39.70 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 1.0 ML CONFOUND CAS PC CONCENTRATION REPORTED CONC COMMENT PESTICIDES BELOW DETECTION LIMIT

SAMPLE-ID W20920 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 1300 CONTRACTOR JRB WELL ID 0493 DEPTH 39.70 FEET COMPOSITE SAMPLE WATER TEMP 0

5217

5212

*** ANALYSIS RESULTS ***

METHOD 624W Compound Chloroform SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE CAS PC CONCENTRATION REFORTED CONC 67-66-3 V11 6,000 UG/L

5.0 ML CONMENT

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CAS PC CONCENTRATION REPORTED CONC 0-0-0 II5 670.000 UG/L

580.000 UG/L

ANALYSIS LAS ERCO QUAN SIZE

0.0 MI

COMMENT

COMMENT

*** SAMPLE DATA *** ******

SAMPLE-ID W20973 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 1300 CONTRACTOR JRB WELL ID 049B DEPTH 39.70 FEET COMPOSITE SAMPLE WATER TEMP 0

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0- 0-0 I16

5212

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 COMPOUND FLUORIDE NITRATE

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***** *** SAMPLE DATA ***

SAMPLE-ID W21384 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/01/80 START TIME 0940 CONTRACTOR JRB WELL ID 049A DEPTH 21.40 FEET COMPOSITE SAMPLE WATER TEMP 0

5112

*** ANALYSIS RESULTS ***

METHOD AASFW SPECIFIC METHOD 20410 COMPOUND BARIUM CADHIUH

CHROMIUM COPPER NICKEL SELENTUM ZINC

ANALYSIS LAB PJBL QUAN SIZE 200.0 ML CAS PC CONCENTRATION REPORTED CONC 7440-39-3 103 150.000 UG/L 6.000 UG/L 9.000 UG/L 8.000 UG/L 7440-43-9 IO5 7440-47-3 105 7440-50-8 IO7 25.000 UG/L 7440- 2-0 I09 7782-49-2 Ill 4.000 UG/L 7440-66-6 114 24.000 UG/L

**************** *** SAMPLE DATA *** *****

SAMPLE-ID W21385 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/01/80 START TIME 0940 CONTRACTOR JRB DEPTH 21.40 FEET COMPOSITE SAMPLE WATER TEMP . 0 WELL ID 049A

*** ANALYSIS RESULTS ***

METHOD	ANION	SPECIFIC	METHOD 34020	ANALYSIS LAB, PJB	L -QUAN SIZE	0.0 ML
COMPOUND	•		CAS PC	CONCENTRATION	REFORTED CONC	COMMENT
FLUCRIDE			0- 0-0 I15	1600.000 UG/L		SAMPLE VOL.100ML
NITRATE			0- 0-0 I16	100.000 UG/L		SAMPLE VOL.10ML
				• •		• •

100

**** *** SAMPLE DATA *** ****

SAMPLE-ID W21397 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/01/80 START TIME 0945 CONTRACTOR JPB WELL ID 049A DEPTH 21.40 FEET COMPOSITE SAMPLE WATER TEMP 0

5112

5112

*** ANALYSIS RESULTS ***

ANALYSIS LAB ACEE GUAN SIZE 999.9 ML METHOD 608W SPECIFIC METHOD REPORTED CONC PC CONCENTRATION COMMENT COMFOUND CAS BELOW DETECTION LIMIT PESTICIDES

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82

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COORDS 400520 E 1122860 N

**** *** SITE DATA *** ***********

SAMPLING AREA 03 STATION 526

***** *** SAMPLE DATA *** *****

SAMPLE-ID W25290 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 1440 CONTRACTOR JRB 0 WELL ID 032A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP

3133

*** ANALYSIS RESULTS ***

METHOD	624W	SPECIFIC	METHOD		ANALYSIS LAB			I SIZE		
COMPOUND			CAS	PC	CONCENTRATION		REPORTED	CONC	COM	MENT
BENZERE			71-43-2	V22	8.000	UG/L				
0-XYLENE			95-47-6	V30	18.000	UG/L				
M-XYLEHE			108-38-3	V31	18.000	UG/L				
TOLUENE			108-89-3	V34	37.000	UG/L				
ETHYL BENZENE			100-41-4	V39	7.000	UG/L				

***** *** SAMPLE DATA *** ******

SAMPLE-ID W25291 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 1448 CONTRACTOR JRB WELL ID 032A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3133

*** ANALYSIS RESULTS ***

METHOD	625CW	SPECIFIC METHOD		ANALYSIS LAB	-	QUAN SIZE	999.9 ML COMMENT
COMPOUND		CAS	FC	CONCENTRATION	REI	PORTED CONC	CONTERN
ACENAPHTYLENE		208-96-8	B19	TRACE			
PHENANTHRENE		85- 1-8	832	TRACE			
ACIDS		BELOW DETECTION LIHIT					

*** SAMPLE DATA *** ****

SAMPLE-ID H25292 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 1450 CONTRACTOR JRB WELL ID 032A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0

313	3	*** AN/	LYS	IS.RESULTS ***		
METHOD 60 Comfound Alfha-Ehc Beta-Ehc Gamma-Ehc Heftachlor Alcrin DDT	ew SPECIFIC	E METHCD CAS 319-84-6 319-85-7 58-69-9 76-44-8 309- 0-2 50-29-3	P02 P03 P05 P06	ANALYSIS LAB CONCENTRATION TRACE TRACE TRACE TRACE TRACE TRACE	ACEE QUAN SIZE REFORTED CONC	999.9 ML Comment

RAW DATA LISTING THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 03 526

*** SAMPLE DATA *** ***

SAMPLE-ID W25293 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 1445 CONTRACTOR JRB WELL ID 032A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3133

*** ANALYSIS RESULTS ***

, METHOD	ICPW
COMPOUND	
BARIUM	
CHROMIUM	
COPPER	
LEAD	
NICKEL	
ZINC	

THOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML CAS PC CONCENTRATION REPORTED CONC COMMENT 7440-39-3 IO3 25.000 UG/L 7440-47-3 IO6 24.000 UG/L 7440-50-8 IO7 27.000 UG/L 27.000 03/2 220.000 UG/L 39.000 UG/L 200.000 UG/L 7439-92-1 IO8 7440- 2-0 IO9 7440-66-6 II4

SPECIFIC METHOD

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*** *** SAMPLE DATA *** *****

SAMPLE-ID W25294 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 1447 CONTRACTOR JRB WELL ID 032A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3133

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 COMPOUND FLUCRIDE NITRATE

00 34020 ANALYSIS LAB ERCO QUAN SIZE 0.0 ML CAS PC CONCENTPATION REFORTED CONC COMME 0- 0-0 II5 910.000 US/L 0- 0-0 I16 1900.000 UG/L

COMMENT

**** *** SAMPLE DATA *** ****

SAMPLE-ID W20015 MEDIUM H20 SOURCE STORM SAMPLE DATE 08/10/80 START TIME 0720 CONTRACTOR GEOME WELL ID 000 DEPTH 10.00 FEET GRAD SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD RAD SPECIFIC METHOD GAMMA ANALYSIS LAB EMSV QUAN SIZE 0.3 ML CAS EC CONCENTRATION REPORTED CONC COMME COMPOUND CAS FC CONCENTRATION REPORTED CONC COMMENT PADIATION BELOW DETECTION LIMIT

> **** *** SAMPLE DATA *** ***

SAMPLE-ID W20016 MEDIUM H20 SOURCE STORM SAMPLE DATE 08/10/80 START TIME 0720 CONTRACTOR GEOME WELL ID 000 DEPTH 10.00 FEET GRAB SAMPLE WATER TEMP 0

	PECIFIC METHOD G	GAMMA	ANALYSIS LAB	EMSV QUAN SIZE	0.3 ML
RADIATION BELOK	CAS I DETECTION LIMIT		CONCENTRATION	REPORTED CONC	COMMENT

RAW DATA LISTING THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82

***** *** SITE DATA *** ****

SAMPLING AREA 04 STATION 508

COORDS 401840 E 1124260 N

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*** *** SAMPLE DATA *** *****

SAMPLE-ID W25327 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/03/80 START TIME 1644 CONTRACTOR JRB WELL ID 090A DEPTH 22.50 FEET COMPOSITE SAMPLE WATER TEMP 0 3151.

*** ANALYSIS RESULTS ***

METHOD COMPOUND ANTIMONY BARIUM CADMIUM CHROMIUM NICKEL THALLIUM	AASFW	SPECIFIC METHOD 20410. CAS PC 7440-36-0 IO1 7440-39-3 IO3 7440-43-9 IO5 7440-47-3 IO6 7440-27-0 IO9 7440-28-0 I13	420.000 UG/L 6.000 UG/L 35.000 UG/L 86.000 UG/L	0 ML COMMENT
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***** *** SAMPLE DATA *** ****

SAMPLE-ID W25328 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/03/80 START TIME 1645 CONTRACTOR JRB 090A DEPTH 22.50 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD	ANION	SPECIFIC	METHCO	34020	ANALYSIS LAB	PJBL	GUAN SIZE	100 0 10	
CCMPOUND FLUCRIDE			CA 0-	S FC 0-0 I15	CONCENTRATION		REPORTED CONC	100.0 HL Comme Vol=100	

***** *** SAMPLE DATA *** *****

SAMPLE-ID W25330 MEDIUM H20 SCURCE GRH20 SAMPLE DATE 10/03/80 START TIME 1642 CONTRACTOR JRB WELL ID 090A DEPTH 22.50 FEET COMPOSITE SAMPLE WATER TEMP 0 3151

*** ANALYSIS RESULTS ***

	SPECIFIC METHOD	ANALYSIS LAB	GSNO QUAN SIZE	999.9 MI
PHENOL	CAS	FC CONCENTRATION		999.9 ML COmment
2,4-DICHLOROPHENOL DIETHYLFHTHALATE	103-95-2 120-83-2	INAUL	, , , , , , , , , , , , , , , , , , , ,	CONTENT
DICHTERTRALATE	84-66-2	B28 TRACE		

***** *** SAMPLE DATA *** ****

SAMPLE-ID W25331 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/03/80 START TIME 1647 CONTRACTOR JRB COMPOSITE SAMPLE WATER TEMP 0

3151

*** ANALYSIS RESULTS ***

METHOD	603W	SPECIFIC METHOD		ANALYSIS LAB	CCI 4	6	_	
CCMFCUND		CAS	PC	CONCENTRATION		REPORTED CONC		ML
ALPHA-EHC BETA-EHC		319-84-6 319-85-7		4.01C U	IG/L			CMMENT

508

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***** *** SAMPLE DATA *** ******

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SAMPLE-ID W25334 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/03/80 START TIME 1640 CONTRACTOR JRB WELL ID 090A DEPTH 22.50 FEET COMPOSITE SAMPLE WATER TEMP n

*** ANALYSIS RESULTS ***

METHOD 624W COMFOUND BENZENE	SPECIFIC METHOD CAS PC 71-43-2 V22		GSNO QUAN SIZE REFORTED CONC	5.0 ML COMMENT
P-XYLENS TETRACHLOROSTHENE ETHYL BENZENE	106-42-3 V32 127-18-4 V33 100-41-4 V39	TRACE		•

***** *** SAMPLE DATA *** ****

SAMPLE-ID W20032 MEDIUM H20 SOURCE STORM SAMPLE DATE 08/10/80 START TIME 0730 CONTRACTOR GEOME WATER TEMP 0 WELL ID 000 DEPTH 10.00 FEET GRAB SAMPLE

*** ANALYSIS RESULTS ***

METHOD RAD	SPECIFIC METHOD GAMMA	ANALYSIS LAB	EMSV GUAN SIZE	0.3 HL
COMPOUND	CAS PC	CONCENTRATION	REPORTED CONC	COMMENT
RADIATION	BELOW DETECTION LIMIT			

***** *** SAMPLE DATA *** ****

SAMPLE-ID W20033 MEDIUM H20 SOURCE STORM SAMPLE DATE 08/10/80 START TIME 0730 CONTRACTOR GEOME DEPTH 10.CO FEET GRAB SAMPLE WATER TEMP 0 WELL ID 000

*** ANALYSIS RESULTS ***

METHOD RAD	SPECIFIC METHOD GAMMA	ANALYSIS LAB	—	0.3 ML
COMPOUND	CAS PC	CONCENTRATICN	REPORTED CONC	COMMENT
RADIATION	BELOW DETECTION LIMIT			

****************** *** SAMPLE DATA *** ******

SAMPLE-ID W20034 MEDIUM H20 SOURCE STORM SAMPLE DATE 08/10/80 START TIME 0740 CONTRACTOR GEOME WELL ID 000 DEPTH 10.00 FEET GRAB SAMPLE WATER TEMP 0

METHOD RAD	SPECIFIC METHOD GAMMA	ANALYSIS LAB		0.3 ML
COMPOUND	CAS PC	CONCENTRATION	REPORTED CONC	COMMENT
RADIATION	BELOW DETECTION LIMIT			

* * R A W __ D A T A L I S T I N G * * THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82

SAMPLING AREA 08 STATION 020

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COORDS 402837 E 1120865 N

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SAMPLE-ID W25678 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 1730 CONTRACTOR JRB WELL ID 103A DEPTH 10.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6122

*** ANALYSIS RESULTS ***

 METHOD
 625CH
 SPECIFIC METHOD
 ANALYSIS LAB
 CMTL
 QUAN SIZE
 930.0
 ML

 COMFOUND
 CAS
 PC
 CONCENTRATION
 REFORTED
 CONC
 COMMENT

 ACIDS
 BELOW DETECTION
 LIMIT
 BASE/NEUTRALS
 BELOW DETECTION
 LIMIT

SAMPLE-ID W25679 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 1730 CONTRACTOR JRB WELL ID 103A DEPTH 10.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6122

*** ANALYSIS RESULTS ***

METHOD 608W	SFECIFIC METHOD		ANALYSIS LAB	CMTL QUAN SIZE	830.0 ML
COMPOUND	. CAS	PC	CONCENTRATION	REFORTED CONC	COMMENT
PESTICIDES	BELOW DETECTION LINIT				

**** SAMPLE DATA ***

SAMPLE-ID W25680 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 1730 CONTRACTOR JRB Well ID 103A DEPTH 10.00 FEET COMPOSITE SAMPLE WATER TEMP 0

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*** ANALYSIS RESULTS ***

METHOD	ICPW	SPECIFIC	METHOD		ANALYSIS LAB ERCO QUAN SIZE 0.0 ML
CONFOUND			CAS	PC	CONCENTRATION REPORTED CONC COMMENT
BARIUM		•	7440-39-3	I03	45.000 UG/L
CADHIUM			7440-43-9	105	44.000 UG/L
CHROMIUM	÷		7440-47-3	105	23.000 UG/L
COFFER			7440-50-8	107	16.000 UG/L
LEAD			7439-92-1	I08	91.000 UG/L
NICKEL			7440- 2-0	I09	30.000 UG/L
ZINC			7440-66-6	114	44.000 UG/L

SAMPLE-ID W25681 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 1730 CONTRACTOR JRB WELL ID 103A DEPTH 10.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6122

*** ANALYSIS RESULTS ***

METHOD	ANION	SPECIFIC METHOD 340	20	ANALYSIS LAB ER	CO QUAN SIZE	0.0 HL
COMFOUND		CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE		0- 0-0	I15	1400.000 UG/L		•
NITRATE		0- 0-0	I1 6	2215.000 UG/L		

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* * R A W D A T A L I S T I N G * * THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 .08 020

SAMPLE-ID W25682 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 1730 CONTRACTOR JRB WELL ID 103B DEPTH 9.40 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 5.0 ML Compound CAS PC concentration reforted conc comment Volatiles below detection limit

SAMPLE-ID W25683 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/15/80 START TIME 1730 CONTRACTOR JPB WELL ID 1038 DEPTH 9.40 FEET COMFOSITE SAMPLE WATER TEMP 0

6222 *** ANALYSIS RESULTS ***

METHOD625CWSPECIFIC METHODANALYSIS LABCMTLQUANSIZE999.0MLCOMPOUNDCASPCCONCENTRATIONREFORTED CONCCONMENTDI-N-CCTYLFHTHALATE117-84-0B4116.000UG/LACIDSBELOW DETECTIONLIMIT

SAMPLE-ID W25584 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/15/80 START TIME 1730 CONTRACTOR JRB WELL ID 103B DEPTH 9.40 FEET COMPOSITE SAMPLE WATER TEMP 0

6222 *** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB CMTL GUAN SIZE 930.0 ML COMPOUND CAS PC CONCENTRATION REPORTED CONC COMMENT PESTICIDES BELOW DETECTION LIMIT

SAMPLE-ID W25685 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 1730 CONTRACTOR JRB WELL ID 1038 DEPTH 9.40 FEET COMFOSITE SAMPLE WATER TEMP 0

6222

*** ANALYSIS RESULTS ***

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039

***** *** SAMPLE DATA *** *******

SAMPLE-ID HOUSUS MEDIUM HOD SOURCE GRHOD SAMPLE DATE 09/18/80 START TIME 1130 CONTRACTOR JRB 0 WELL ID 0293 DEPTH 36.50 FEET CONFOSITE SAMPLE WATER TEMP

9211

*** ANALYSIS RESULTS ***

METHOD 625CW	SPECIFIC METHOD	ANALYSIS LAB PJE	BL - GUAN SIZE	999.9 ML	
CONFOUND	CAS PC	CONCENTRATION	REPORTED CONC	COMMENT	
2-CHLCPOPHENOL	95-57-8 AC	1 42.000 UG/L		SEE J41-0516	
3-CHLCROFHENOL	103-43-0 AC	2 33.000 UG/L			
FHENOL	103-95-2 AC	5 33.000 UG/L	· ·	SEE J41-0516	
2,4-DIMETHYLFHENOL	105-67-9 AC	5 53.000 UG/L			
2,4-DICHLOROPHENOL	120-83-2 AC	7 30.000 UG/L		SEE J41-0516	••
1,4-DICHLOROBENZENE	105-46-7 EC	2 TRACE			
1,3-DICHLORCBENZENE	541-73-1 BC	3 15.000 UG/L			
1,C-DICHLOROBENZENE	95-50-1 EC	4 15.000 UG/L			
NAFHTHALENE	. 91-20-3 EI	4 TRACE			
BIS(2-CHLCROETHOXY)METH	ANE 111-91-1 B:	5 14.000 UG/L			
ACENAFHTHENE	. 83-32-9 B3	0 22.000 UG/L			
N-NITPOSCDIPHENYLAMINE	86-30-6 83	9 14.000 UG/L			
ANTHRACENE	120-12-7 B3	3 9.000 UG/L			

**************** *** SAMPLE DATA *** *******

SAMPLE-ID W20509 MEDIUM H20 SCURCE.GRH20.# SAMPLE DATE 09/18/80 START TIME 1130 CONTRACTOR JRB DEPTH 36.50 FEET CONFOSITE SAMPLE WATER TEMP 0 WELL ID 0293

3211

*** ANALYSIS RESULTS ***

METHOD 608W	SPECIFIC METHOD		ANALYSIS LAB	PJSL QUAN SI	ZE 999.9 ML
CONFOUND	CAS	PC	CONCENTRATION	REPORTED CON	COMMENT
PESTICIDES	BELOW DETECTION LIMIT				

1.12.1

مسامعه ال

**** *** SAMPLE DATA *** *****

SAMPLE-ID H01235 MEDIUM H20 . SOURCE GRH20, SAMPLE DATE 09/24/80 START TIME 1630 CONTRACTOR JRB DEPTH 22.00 FEET COMPOSITE SAMPLE WATER TEMP 0 WELL ID 029A 3111

· . · *** ANALYSIS RESULTS ***

CD ANALYSIS LAB ACEE QUAN SIZE CAS PC CONCENTRATION REPORTED CONC METHOD 624W SPECIFIC METHOD 5.0 ML COMMENT COMPOUND CHLOROFORM 67-66-3 V11 2.000 UG/L ERCHODICHLOROMETHANE 75-27-4 V17 TRACE

**** *** SAMPLE DATA *** ************************

SAMPLE-ID W21236 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/24/80 START TIME 1630 CONTRACTOR JRB DEPTH 22.00 FEET COMPOSITE SAMPLE WATER TEMP 0 WELL ID 029A

3111

*** ANALYSIS RESULTS ***

METHOD 625CW	SFECIFIC METHCD		ANALYSIS LAB	ACEE	QUAN SIZE	999.9 ML
COMFCUND	CAS	PC	CONCENTRATION	RE	PORTED CONC	COMMENT
ACIDS	BELOW DETECTION LIMIT					,
BASE/NEUTRALS	BELCH DETECTION LIMIT					

1.2.4% 203

1.15

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**** *** SAMPLE DATA *** *****************

SAMPLE-ID W21285 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/29/80 START TIME 1220 CONTRACTOR JRB DEPTH 36.50 FEET COMPOSITE SAMPLE WATER TEMP 0 5211

*** ANALYSIS RESULTS ***

METHOD ICPW COMPOUND BARIUM CADMIUM ZINC	SPECIFIC METHOD CAS PC 7440-39-3 103 7440-43-9 105 7440-66-6 114	5.000 UG/L	0.0 ML Comment

. 8

*** SAMPLE DATA *** ***

SAMPLE-ID W21303 HEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/24/80 START TIME 1630 CONTRACTOR JRB HELL ID 029A DEPTH 22.00 FEET COMPOSITE SAMPLE WATER TEMP 0 3111

*** ANALYSIS RESULTS ***

METHOD ICFW COMPOUND BARIUM CHRONIUM COFFER LEAD NICKEL ZINC

SPECIFIC METHOD ANALYSIS LAB ERCO OUAN SIZE CAS PC CONCENTRATION REPORTED CONC 7440-39-3 IO3 42.000 UG/L 7440-47-3 105 87.000 UG/L 34 40.000 U3/L 190 60.000 UG/L 2/2 130.000 UG/L 2/2 65.000 US/L 198 7440-50-8 107 7439-92-1 IOS 7440- 2-0 109 7440-66-6 114 65.000 US/L 224

0.0 HL COMMENT

****** *** SAMPLE DATA *** ****

SAMPLE-ID W21304 * MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/24/80 START TIME 1630 CONTRACTOR JRB " WELL ID 029A DEPTH 22.00 FEET COMFOSITE SAMPLE WATER TEMP 0

3111

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB ERCO - QUAN SIZE COMPOUND 0:0 ML CAS PC CONCENTRATION REPORTED CONC FLUCRIDE COMMENT 0- 0-0 II5 1500.000 UG/L NITRATE 0- 0-0 I16 2600.000 UG/L

**** *** SAMPLE DATA *** ****

SAMPLE-ID W21364 'MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/01/80 START TIME 1540 CONTRACTOR JRB DEPTH 22.00 FEET COMPOSITE SAMPLE WATER TEMP 0 WELL ID 029A

3111

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN CCMFOUND CAS PC CONCENTRATION REPORTED C ALFHA-EHC 319-84-6 PO1 TRACE BETA-BHC 319-85-7 PO2 TRACE GAMMA-EHC 58-39-9 PO3 TRACE HEPTACHLOR 76-44-8 PO5 TRACE		
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RAW DATA LISTING THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 02 040

***** *** SITE DATA *** *****

SAMPLING AREA 02 STATION 040

COORDS 401594 E 1123205 N

*** SAMPLE DATA *** *****

فحراجه SAMPLE-ID H21333 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/01/80 START TIME 1145 CONTRACTOR JRB WELL ID 030A DEPTH 25.00 FEET CONFOSITE SAMPLE WATER TEMP 0

3112

*** ANALYSIS RESULTS ***

METHOD CCHFCUND ALFHA-BHC BETA-BHC GAMMA-BHC DELTA-BHC DIELCRIN	608W	SPECIFIC F	CAS 319-84-6 319-85-7 53-89-9 319-85-8 60-57-1	P01 P02 P03 P04 P13	TRACE 2.000 UC TRACE	GUAN REFORTED	SIZE	ONMENT	
CDT			50-29-3		TRACE		. •		

**** *** SAMPLE DATA *** *****

SAMPLE-ID W25083 MEDIUM H20 SCURCE GRH20 SAMPLE DATE 10/02/80 START TIME 1140 CONTRACTOR JRB WELL ID 030A DEPTH 19.00 FEET COMFOSITE SAMPLE WATER TEMP 0

3112

*** ANALYSIS RESULTS ***

ANALYSIS LAB ACEE QUAN SIZE 5.0 ML METHOD 624W SPECIFIC METHOD CAS PC CONCENTRATION REFORTED CONC COMMENT CONFOUND 1,1,1-TRICHLORGETHANE TRACE 71-55-6 V14

> ***** *** SAMPLE DATA *** *****

SAMPLE-ID W25084 MEDIUM H20 "SOURCE GRH20 SAMPLE DATE 10/01/80 START TIME 1142 CONTRACTOR JRB WELL ID 030A DEPTH 19.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3112

*** ANALYSIS RESULTS ***

ANALYSIS LAB ACEE GUAN SIZE 999.9 ML SFECIFIC METHCD METHOD 625CW CAS PC CONCENTRATION REPORTED CONC COMMENT COMPOUND BELCH DETECTION LIMIT BELCH DETECTION LIMIT ACIDS · BASE/NEUTRALS

**** *** SAMPLE DATA *** *****

1 mar /

SAMPLE-ID H25085 MEDIUM H20 SCURCE GRH20 SAMPLE DATE 10/01/80 START TIME 1144 CONTRACTOR JRB 0 WELL ID 030A DEPTH 19.00 FEET COMPOSITE SAMPLE WATER TEMP

3112

METHOD COMPOUND	ANION	SPECIFIC METHOD 34020 CAS PC	ANALYSIS LAB PJBL QUAN CONCENTRATION REFORTED C	DHC COMMENT
FLUORIDE NITRATE		0- 0-0 II 0- 0-0 II		SAMPLE VOL.100ML SAMPLE VOL.10ML

* * R A W D A T A L I S T I N G * * THIS REPORT IS BASED ON VALICATED DATA ENTEPED INTO THE SYSTEM THROUGH 02/17/82

**** *** SAMPLE DATA *** *****

SAMPLE-ID W25086 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/01/80 START TIME 1143 CONTRACTOR JRB WHELL ID 030A DEPTH 19.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3112

*** ANALYSIS RESULTS ***

METHOD	AASFW	SPECIFIC N	METHOD 20410	ANALYSIS LAB PJBL GUAN STZE	
COMPOUND ANTIMONY ARSENIC EAQUUM CADMIUM CHPCMIUM CHPCMIUM COFFER LEAD NICKEL SELENIUM THALLIUM ZINC			CAS FC 7440-36-0 IC 7440-38-2 IC 7440-39-3 IC 7440-43-9 IC 7440-43-9 IC 7440-50-8 IC 7439-92-1 IC 7439-92-1 IC 7440-20 IC 7722-49-2 I1 7440-23-0 I1 7440-66-6 I1	CONCENTRATION REPORTED CONC 1 190.000 UG/L 2 2.000 UG/L /2 3 43.000 UG/L /2 5 2.000 UG/L /2 6 23.000 UG/L 78 7 10.000 UG/L 82 8 48.000 UG/L 32.9 9 64.000 UG/L /2.4 1 10.000 UG/L /2.4 3 52.000 UG/L /2.4	200.0 ML Comment
-					•

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 02

***** *** SITE DATA *** ****

SAMPLING AREA 02 STATION 044

COCRDS 401648 E 1122585 N

044

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*** SAMPLE DATA *** ****

SAMPLE-ID W21372 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/01/80 START TIME 1027 CONTRACTOR JRB WELL ID 035A DEPTH 22.00 FEET GRAB SAMPLE WATER TEMP a

3113

*** ANALYSIS RESULTS ***

METHOD	608W	SPECIFIC METHOD		ANALYSIS LAB	ACEE	QUAN SIZE	999.9 ML	
COmpound		CAS	PC	CONCENTRATION	R	EPCRTED CONC	CONTENT	
ALFHA-BHC		- 319-84-6	P01	TRACE			Gennerti	•
BETA-EHC		319-85-7	P02	TRACE				
HEPTACHLOR		76-44-8	P05	TRACE		· · · ·		
ALFHA-BHC BETA-EHC		319-84-6 319-85-7	P01 P02	TRACE	R	EPORTED CONC	COMIENT	

*** SAMPLE DATA *** ****

SAMPLE-ID H21373 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/01/80 START TIME 1022 CONTRACTOR JRB WELL ID 035A DEPTH 22.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3113

*** ANALYSIS RESULTS ***

METHOD 625CW	SPECIFIC METHOD CAS	PC	ANALYSIS LAB	ACEE QUAN SIZE	999.9 ML COMMENT
ACIDS BASE/NEUTRALS	BELOW DETECTION LIMIT BELOW DETECTION LIMIT			,	

****** *** SAMPLE DATA ***

SAMPLE-ID W21374 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/01/80 START TIME 1020 CONTRACTOR JRB WELL ID 035A DEPTH 22.00 FEET CCMPOSITE SAMPLE WATER TEMP 0

3113

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML COMPOUND CAS PC CONCENTRATION REPORTED CONC COMMENT BELOW DETECTION LIMIT VOLATILES

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***** *** SAMPLE DATA *** ****

SAMPLE-ID W21375 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/01/80 START TIME 1025 CONTRACTOR JRB WELL ID 035A DEPTH 22.00 FEET COMPOSITE SAMPLE WATER TEMP O.

3113

METHOD	ANION	SPECIFIC I	METHOD 34	020	ANALYSIS LAB	PJBL GUAN	SIZE	0.0 ML
COMPOUND			CAS	PC	CONCENTRATION	REPORTED	CONC	CONSENT
FLUORIDE			0-0-	0 115	810.0C0 UG	5/L (SAMPLE VOL.100ML
NITRATE			0- 0-	0 I16	200.000 UG	5/L		SAMPLE VOL.10ML

* * R A W D A T A L I S T I N G * * THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82

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044

SAMPLE-ID W21376 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/01/60 START TIME 1024 CONTRACTOR JRB WELL ID 035A DEPTH 22.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3113

METHOD	AASFW	SPECIFIC	METHOD 20410	ANALYSIS LAB PJBL - QUAN SIZE	200.0 ML
COMPOUND			C4S PC	CONCENTRATION REPORTED CONC	COMMENT
ANTIMONY			7440-36-0 IO1	280.000 UG/L 0</td <td></td>	
ARSENIC			7440-39-2 102	5.000 UG/L //	
BARIUM			7440-39-3 103		
CACHIUM			7440-43-9 105		
CHROMIUM		• •	7440-47-3 106		•
CCPPER		· · ·	7440-50-8 107		
LEAD			7439-92-1 ICS		
NICKEL			7440- 2-0 IO9		· ·
SILVER			7440-22-4 I12	—	
THALLIUM			7440-28-0 I13		· ·
ZINC			7440-66-6'I14		

3 515

COORDS 401390 E 1122128 N

* * R A W D A T A L I S T I N G * * THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 03

SAMPLING AREA 03 STATION 515

*** SAMPLE DATA ***

SAMPLE-ID W052S0 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 1520 CONTRACTOR JRB WELL ID 035A DEPTH 20.00 FEET COMFOSITE SAMPLE WATER TEMP 0

5122

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML COMPOUND CAS PC CONCENTRATION REPORTED CONC COMMENT VOLATILES BELOW DETECTION LIMIT

SAMPLE-ID W25281 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 1527 CONTRACTOR JRB Well ID 035A DEPTH 20.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5122

5122

*** ANALYSIS RESULTS ***

HETHOD	608W	SPECIFIC METHOD		ANALYSIS LAB	ACEE QUAN SIZE	999.9 ML
C01120UND		CAS	PC	CONCENTRATION	REPORTED CCNC	COMMENT
ALFHA-EHC		319-24-6	P01	TRACE		
GATMA-EHC		58-89-9	F03	TRACE		
HEPTACHLOR		76-44-8	PC5	TRACE		
DDE		72-55-9	P10	TRACE		

SAMPLE-ID W25282 MEDIUM H20 SQURCE GRH20 SAMPLE DATE 10/02/80 START TIME 1522 CONTRACTOR JRB WELL ID 035A DEPTH 20.00 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD 625CH SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML COMPOUND CAS PC CONCENTRATION REPORTED CONC COMMENT PHENANTHRENS 85- 1-8 B32 TRACE ACIDS BELOW DETECTION LIMIT

SAMPLE-ID W25283 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 1528 CONTRACTOR JRB WELL ID 035A DEPTH 20.00 FEET COMPOSITE SAMPLE WATER TEMP 0

METHOD	ANION	SPECIFIC	METHOD	3402		ANALYSIS LAB			I SIZE	0.0 ML COMMENT
COMPOUND			CA	-		CONCENTRATION		REPORTED	LUNC	CONTRACTOR
FLUCRIDE			-	0-0 0-0		1100.000 2200.000				
NITRATE			0-	0-0	110	2200.000	00/2	•	;	

* * R A W D A T A L I S T I N G * * THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82

03

515

***** *** SAMPLE DATA *** ******

SAMPLE-ID W25264 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 1525 CONTRACTOR JRB WELL ID 036A DEPTH 20.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5122

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*** ANALYSIS RESULTS ***

	METHOD CCMFOUND	ICPW	SPECIFIC			ANALYSIS LAB	ERCO	GUAN SIZE	0.0 ML
	BARIUM		•	CAS	PC	CONCENTRATICN		REPORTED CONC	
	CADMIUM		. ·	7440-39-3				CONC	COMMENT
	CHEOMIUM			7440-43-9		8.0C0 L			
	COPFER		•	7440-47-3	I06	22.000 L			
	LEAD			7440-50-8		23.000 L			
	NICKEL			7439-92-1			JGZL		
	ZINC		· ·	7440- 2-0		+0.000 U	JS/L		
	62116		•	7440-66-6	I 14	75.000 U	JG/L		
••	· •							•	

RAW DATA LISTING THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82

06

***** *** SITE DATA *** *****

SAMPLING AREA 06 STATION 011

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COORDS 402739 E 1122217 N

940.0 MI

COMMENT

011

*** *** SAMPLE DATA ***

SAMPLE-ID W21579 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/09/80 START TIME 1020 CONTRACTOR JRB WELL ID 066A DEPTH 15.00 FEET COMFOSITE SAMPLE WATER TEMP 0 6111

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB CMTL GUAN SIZE 5.0 ML COMPOUND CAS FC CONCENTRATION REPORTED CONC VOLATILES COMMENT BELOW DETECTION LIMIT

**** *** SAMPLE DATA *** ***

SAMPLE-ID W21530 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/09/80 START TIME 1028 CONTRACTOR JRB WELL ID 066A DEPTH 15.00 FEET COMPOSITE SAMPLE WATER TEMP ٥

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 160.0 ML CONFOUND CAS PC CONCENTRATION REPORTED CONC DI-N-OCTYLPHTHALATE COMMENT 117-64-0 B41 48.000 UG/L ACIDS BELOW DETECTION LIMIT

**** *** SAMELE DATA *** ****

SAMPLE-ID W21581 MEDIUM HCO SCURCE GRH20 SAMPLE DATE 10/09/80 START TIME 1028 CONTRACTOR JRB DEPTH 15.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6111

6111

*** ANALYSIS RESULTS ***

CAS PC CONCENTRATION

ANALYSIS LAB CMTL GUAN SIZE

REFORTED CONC

SPECIFIC METHOD

BELCH DETECTION LIMIT

METHOD 6C8W COMPOUND FESTICIDES

> ***** *** SAMPLE DATA *** ******

SAMPLE-ID W21582 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/09/80 START TIME 1027 CONTRACTOR JRB WELL ID 066A DEFTH 15.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6111

LEAD

ZINC

*** ANALYSIS RESULTS ***

SPECIFIC METHOD 20410 HETHOD AASFW ANALYSIS LAB PJBL QUAN SIZE 200.0 ML CCMPOUND CAS FC CONCENTRATION ARSENIC REPORTED CONC COMMENT 7440-38-2 IO2 19.000 UG/L BARIUN 7440-39-3 103 150.000 UG/L CADMIUM 7440-43-9 105 2.000 UG/L CHEOMIUM 7440-47-3 IC5 180.000 UG/L COPPER 7440-50-8 IO7 95.000 UG/L 7439-92-1 109 290.000 UG/L NICKEL 7440- 2-0 109 190.000 UG/L 7440-66-6 I14 260.000 UG/L 1.

* * R A W D A T A L I S T I N G * * THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 06 011

SAMPLE-ID W21583 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/09/80 START TIME 1028 CONTRACTOR JRB HELL ID 066A DEPTH 15.00 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD	ANION	SPECIFIC	METHOD	340	20	ANALYSIS LAE	BLA E	L GUAN	SIZE	0.0	ML
CCMPOUND			CA	S	PC	CONCENTRATION		REFORTED	CONC	co	MMENT
FLUORIDE			0-	0-0	115	1300.000	UG/L			VOL	200
NITRATE			0-	0-0	I16	200.000	UG/L			VOL	25

SAMPLE-ID W21584 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/09/80 START TIME 1035 CONTRACTOR JRB WELL ID 0668 DEPTH 13.50 FEET COMPOSITE SAMPLE WATER TEMP 0

6211

6111

*** ANALYSIS RESULTS ***

 METHOD
 624W
 SPECIFIC METHOD
 ANALYSIS LAB
 CMTL
 QUAN SIZE
 5.0
 ML

 COMFCUND
 CAS
 PC
 CONCENTRATION
 REPORTED CONC
 CONMENT

 VOLATILES
 BELOW DETECTION LIMIT
 COMPANY
 COMPANY
 COMPANY

SAMPLE-ID W21585 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/09/80 START TIME 1038 CONTRACTOR JRB WELL ID 066B DEPTH 13.50 FEET CONFOSITE SAMPLE WATER TEMP 0

6211

*** ANALYSIS RESULTS ***

 METHOD
 625CH
 SPECIFIC METHOD
 ANALYSIS LAB
 CMTL
 QUAN SIZE
 940.0
 ML

 COMPOUND
 CAS
 PC
 CONCENTRATION
 REPORTED CONC
 CCMMENT

 ACIDS
 BELCW DETECTION LIMIT

 BASE/NEUTRALS
 BELOW DETECTION LIMIT

SAMPLE-ID W21586 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/09/80 START TIME 1045 CONTRACTOR JRB HELL ID 0668 DEPTH 13.50 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

 METHOD
 608W
 SFECIFIC METHOD
 ANALYSIS LAB
 CML
 QUAN SIZE
 999.9
 ML

 CC::FOUND
 CAS
 PC
 CONCENTRATION
 REPORTED
 CONC
 COMMENT

 PESTICIDES
 BELOW DETECTION
 LIMIT
 COMMENT
 COMMENT

SAMFLE-IDWEDIUM H2DSOURCE GRH2DSAMPLEDATE 10/09/80START TIME 1039CONTRACTORJRBWELL ID0665DEPTH13.50FEETCCMFOSITE SAMPLEWATER TEMP0

6211

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6211

*** ANALYSIS RESULTS ***

METHCD AASFWSPECIFIC METHOD 20410ANALYSIS LAB PJBLGUAN SIZE200.0MLCONFCUNDCASPCCONCENTRATIONREFORTED CONCCOMMENTANTIMONY7440-36-0I0160.000UG/L

6211

* * R A W D A T A LISTING * *

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LEAD NICKEL SILVER ZINC	7440-50-8 I 7439-92-1 I 7440- 2-0 I 7440-22-4 I 7440-66-6 I	CCS CC9 [12	12.000 U3/L 60.000 U3/L 37.000 U3/L 8.000 U3/L 41.000 UG/L				
COMPOUND BARIUM CHROMIUM COPPER	7440-39-3 1 7440-47-3 1	E03 E06	CONCENTRATION 44.000 UG/L 16.000 UG/L	REFORTED	CONC	COMM	ENT

*** SAMPLE DATA ***

SAMPLE-ID W21588 MEDIUM H20 SCURCE GRH20 SAMPLE DATE 10/09/80 START TIME 1041 CONTRACTOR JRB WELL ID 0668 DEPTH 13.50 FEET COMFOSITE SAMPLE WATER TEMP 0

5211

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*** ANALYSIS RESULTS ***

METHOD	ANION	SPECIFIC METHO	0 34020	ANALYSIS LAB	PJBL GUAN SIZE	0.0 ML
COMPOUND FLUCRIDE			CAS FC	CONCENTRATION	REPORTED CONC	CONCENT
NITRATE			0- 0-0 I15	1200.000 00		VOL.200
			0- 0-0 I16	100.000 00	G/L	VOL 25

SAMPLE-ID \$40754 MEDIUM SOIL SOURCE HOME SAMPLE DATE 10/03/80 START TIME 0830 CONTRACTOR GEOME WELL ID 000 DEPTH 6.00 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

 METHOD
 RAD
 SPECIFIC
 METHOD
 GANMA
 ANALYSIS
 LAB
 EMSV
 GUAN
 SIZE
 334.0
 GPAM

 COMPOUND
 CAS
 FC
 CONCENTRATION
 REPORTED
 CONC
 COMMENT

 K-STABLE
 FOTASSIUM
 0-00
 R01
 0.011
 GM/GM

 RADIUM-226
 0-00
 R04
 0.553
 FC/GM

SAMPLE-ID S40755 MEDIUM SOIL SOURCE HOME SAMPLE DATE 10/03/80 START TIME 0830 CONTRACTOR GEOME WELL ID 000 DEPTH 6.00 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

 METHOD
 RAD
 SPECIFIC
 METHOD
 GAMMA
 ANALYSIS
 LAB
 EMSV
 QUAN
 SIZE
 325.0
 GRAM

 COMFOUND
 CAS
 FC
 CONCENTRATION
 REFORTED
 CONC
 COMMENT

 K-STABLE
 FOTASSIUM
 0-0-0
 FO1
 0.010
 GM/GM

 RADIUM-226
 0-0-0
 R04
 0.412
 FC/GM

SAMPLE-ID S45073 MEDIUM SOIL SOURCE HOME SAMPLE DATE 10/03/80 START TIME 0330 CONTRACTOR GEOME HELL ID 000 DEPTH 6.00 FEET GRAB SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD 624FS	SPECIFIC METHOD		ANALYSIS LAB	CMTL	QUAN SIZE	10.0 GRAM
COMPOUND VOLATILES	CAS BELOW DETECTION LIMIT	PC	CONCENTRATION		PORTED CCHC	CCIMENT

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***** *** SITE DATA *** ***

SAMPLING AREA 07 STATION 020

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CCORDS 402935 E 1122487 N

07

020

*** *** SAMPLE DATA *** ***

SAMPLE-ID W21354 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/03/80 START TIME 1426 CONTRACTOR JRB WELL ID 020A DEPTH 21.50 FEET CCMPOSITE SAMPLE WATER TEMP ۵ 4134

*** ANALYSIS RESULTS ***

METHCO 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML COMPOUND PC CONCENTRATION CAS REPORTED CONC COMMENT VOLATILES BELOW DETECTION LIMIT

***** *** SAMPLE DATA ***

SAMPLE-ID W21358 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/03/80 START TIME 1428 CONTRACTOR JRB WELL ID 020A DEPTH 21.50 FEET COMPOSITE SAMPLE WATER TEMP ۵

4134

4134

*** ANALYSIS RESULTS ***

METHOD	AASFW	SPECIFIC METHOD	20410	ANALYSIS LA	8 2.3	L GUAN SIZE	200.0 ML
COHEridian		C	AS PC	CONCENTRATICH		REPORTED CONC	COMMENT
ANTIMONY		7440	-36-0 IO1				CONTERN
ARSENIC		7440	-38-2 IC2			· · · · ·	
2491U:1		7440	-39-3 IO3				
CADMIUM		7440	-43-9 105				
CHRCMIUM		7440	-47-3 IC5	74.000			
COFFER		7440	-50-8 I07	32.000			
LEAD		7439	-92-1 ICS			÷	
NICKEL		7440	- 2-0 109	150.000			
SELENIUM		7782	-49-2 III	6.000			
THALLIUM		7440	-28-0 I13	32.000	_		
ZINC		7440	-66-6 I14	100.000			
		•	*****	***			•

*** SAMPLE DATA *** ******

SAMPLE-ID H21359 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/03/80 START TIME 1430 CONTRACTOR JRB WELL ID 020A DEPTH 21.50 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD CCMPCUND FLUORIDE NITRATE	ANION	CAS 0-	34020 FC 0-0 I15 0-0 I16	100.000	REPORT	RUAN SIZE TED CCHC	0.0 ML Comment Sample Vol.100MI	L
		0- (0-0 110	200.000 U	G/L		SAMPLE VOL.10ML	

RAW DATA LISTING THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 07 020

**** *** SAMPLE DATA *** ****

SAMPLE-ID W21360 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/03/80 START TIME 1433 CONTRACTOR JRB WELL ID 020A DEPTH 21.50 FEET COMPOSITE SAMPLE WATER TEMP 0 4134

*** ANALYSIS RESULTS ***

METHOD 608W CCMPOUND ALPHA-SHC BETA-EHC GAMMA-BHC HEPTACHLOR ALCRIN

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SPECIFIC METHOD		ANALYSIS LAB	ACEE. QUAN SIZE	999.9 ML
CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
319-84-6	F01	TRACE		
319-85-7	F02	TRACE		
58-69-9	P03	TRACE		
76-44-8	P05	TRACE		
309- 0-2	PC6	TRACE		
•				

*** SAMPLE DATA *** ****

SAMPLE-ID W21361 MEDIUM H20 SCURCE GRH20 SAMPLE DATE 10/03/80 START TIME 1428 CONTRACTOR JRB WELL ID 020A DEPTH 21.50 FEET COMPOSITE SAMPLE WATER TEMP 0 4/34 *** ANALYSIS RESULTS ***

METHOD	625CH	SPECIFIC M	ETHOD		ANALYSIS LAB	ACE	E QUAN SI	ZE S	999.9 ML
COMFOUND			CAS	PC	CONCENTRATION		REFORTED CON	С	COMILENT
ACEN4FHTYLENE			208-96-8	819	TRACE				
FLUCRENE		•	86-73-7	623	TRACE				
PHENANTHRENE			85- 1-8	832	2.000	UG/L			
ACIDS		BELCH DETECTI	ON LIMIT						

858

* * R A W D A T A L I S T I N G * * THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 03 516

SAMPLING AREA 03 STATION 516

COORDS 401652 E 1121825 N

SAMPLE-ID W20873 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 1400 CONTRACTOR JRB HELL ID 037B DEPTH 24.20 FEET COMFOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD	ANION	SPECIFIC	METHOD	34020	ANALYSIS LAB	ERCO	QUAN SIZE	0.0 ML
COMPOUND			CAS	PC	CONCENTRATICN	R	EPORTED CONC	COMMENT
FLUORICE			0-0	0-0 I15	820.000 L	JG/L		
NITRATE			0-0	0-0 I16	670.000 L	JG/L		

SAMPLE-ID W20877 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 1356 CONTRACTOR JRB WELL ID 0378 DEPTH 24.20 FEET COMPOSITE SAMPLE WATER TEMP 0

5211

*** ANALYSIS RESULTS ***

METHOD 624WSPECIFIC METHODANALYSIS LAB ACEEQUAN SIZE5.0 MLCOMPOUNDCASPCCONCENTRATIONREPORTED CONCCOMMENTCHLOROFORM67-66-3 V117.000 UG/L

SAMPLE-ID W20704 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 1400 CONTRACTOR JRB WELL ID 0378 DEPTH 24.20 FEET COMPOSITE SAMPLE WATER TEMP 0

5211

5211

*** ANALYSIS RESULTS ***

METHOD 608W SFECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 1.0 ML COMFOUND CAS PC CONCENTRATION REPORTED CONC COMMENT GAMMA-EHC 58-89-9 P03 TRACE

•

SAMPLE-ID W00905 MEDIUM H2D SOURCE GRH2D SAMPLE DATE 09/22/80 START TIME 1400 CONTRACTOR JRB Well ID 0378 DEPTH 24.20 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD 625CH SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 1.0 ML COMPOUND CAS PC CONCENTRATION REPORTED CONC CONMENT FHENOL 108-95-2 A05 14.000 UG/L BASE/NEUTRALS BELOH DETECTION LIMIT

147 A

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RAW DATA LISTING THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 03 516

*** SAMPLE DATA *** ***

SAMPLE-ID W20906 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 1420 CONTRACTOR JRB WELL ID 037A DEPTH 24.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5111

*** ANALYSIS RESULTS ***

METHOD COMPOUND BETA-EHC GAMMA-BHC ALDRIN	608H	SPECIFIC METHOD CAS 319-85-7 58-89-9 700-0-0	P02	TRACE	ACEE QUAN SIZE REPORTED CONC	999.9 ML COMMENT
		309- 0-2	F06	TRACE	•	

**** *** SAMPLE DATA *** ******

SAMPLE-ID W20907 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 1414 CONTRACTOR JRB WELL ID 037A DEPTH 24.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5111

5111

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD IOD ANALYSIS LAB ACEE QUAN SIZE 1.0 ML CAS PC CONCENTRATION REPORTED CONC COMME 08-95-2 A05 4.000 UG/L COMPOUND COMMENT PHENOL 108-95-2 A05 BASE/NEUTRALS BELOW DETECTION LIMIT

**** *** SAMPLE DATA *** ****

SAMPLE-ID W20971 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 1416 CONTRACTOR JRB WELL ID 037A DEPTH 24.00 FEET COMPOSITE SAMPLE WATER TEMP n

*** ANALYSIS RESULTS ***

METHOD	ANICH	SPECIFIC METHOD 3402	0	ANALYSIS LAB	ERCO	QUAN SIZE	0.0	MI
COMPOUND		CAS	FC	CONCENTRATION		REPORTED CONC		CMMENT
FLUORIDE		0- 0-0	I15	760.000 UC				O ICITI
NITRATE		0- 0-0	I16	270.000 U	G/L			

*** SAMPLE DATA *** ***

SAMPLE-ID W21230 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/26/80 START TIME 0900 CONTRACTOR JRB WELL ID 037A DEPTH 24.00 FEET CCMPOSITE SAMPLE WATER TEMP 0

5111

*** ANALYSIS RESULTS ***

METHOD 624W COMFCUND VOLATILES	SFECIFIC METHOD CAS BELOW DETECTION LIMIT	PC	ANALYSIS LAB CONCENTRATION		QUAN SIZE	5.0 ML COMMENT
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RAW DATA LISTING THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/S2

03 516

*** *** SAMPLE DATA *** ****

SAMPLE-ID W21340 MEDIUM H20 SCURCE GRH20 SAMPLE DATE 09/27/80 START TIME 1050 CONTRACTOR JRB HELL ID 037A DEPTH 24.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5111

2

*** ANALYSIS RESULTS ***

METHOD	ICPH	SPECIFIC METHOD		ANALYSIS LAB E	RCO QUAN	SIZE 0	.0 ML
CCMPOUND		CAS	PC	CONCENTRATICH	REPORTED	CONC	COMMENT
BARIUN		7440-39-3	5 IO3	3.000 UG/	'L		
ZINC		7440-66-6	114	7.000 UG/	1 207		

**** *** SAMPLE DATA *** ******

SAMPLE-ID W21346 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/27/80 START TIME 1055 CONTRACTOR JRB WELL ID 037B DEPTH 24.20 FEET COMPOSITE SAMPLE WATER TEMP ۵ 5211

*** ANALYSIS RESULTS ***

METHOD	ICPW	SPECIFIC	метноо		ANALYSIS LAB	RCO QUAN SIZE	0.0 ML
COMPOUND			CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM		•	7440-39-3	I03	14.000 UG/	/L	
COPFER			7440-50-8	I07	9.000 UG/	1 52	
ZINC			7440-66-6	114			

RAW DATA LISTING THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 03 525

> ***** *** SITE DATA *** *****

SAMPLING AREA 03 STATION 525

COORDS 401669 E 1121261 N

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*** *** SAMPLE DATA *** ***

SAMPLE-ID W20868 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/60 START TIME 1200 CONTRACTOR JRB WELL ID 050B DEPTH 38.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5213

*** ANALYSIS RESULTS ***

METHCO 625CW SPECIFIC METHOD OD ANALYSIS LAB ACEE QUAN SIZE 1.0 ML CAS PC CONCENTRATION REPORTED CONC COMMENT COMPOUND PHENOL 105-95-2 A05 9.000 UG/L PHENANTHRENE 85- 1-8 B32 TRACE

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*** *** SAMPLE DATA *** ****

SAMPLE-ID W20870 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 1200 CONTRACTOR JRB WELL ID 0508 DEPTH 38.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5213

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB ERCO QUAN SIZE 0.0 ML CAS PC CONCENTRATION REPORTED CONC COMPOUND COMMENT FLUCRIDE 0- 0-0 I15 1370.000 UG/L NITRATE 0- 0-0 I16 220.000 UG/L

> **** *** SAMPLE DATA *** ****

SAMPLE-ID W20371 MEDIUM H20 SCURCE GRH20 SAMPLE DATE 09/22/80 START TIME 1230 CONTRACTOR JRB HELL ID 050A DEPTH 28.00 FEET COMPOSITE SAMPLE WATER TEMP 0 511-

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB ERCO QUAN SIZE 0.0 ML CAS FC CONCENTRATION REFORTED CONC 0-0-0 II5 3100.000 UG/L COMPOUND . COMMENT FLUCRICE NITRATE 0- 0-0 I16 970.000 UG/L .

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** *** SAMPLE DATA *** ****

SAMPLE-ID W20372 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 1230 CONTRACTOR JRB WELL ID 050A DEPTH 28.00 FEET COMPOSITE SAMPLE WATER TEMP 0 5113

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML COMPOUND CAS PC CONCENTRATION REFORTED CONC 103-95-2 A05 12.000 UG/L COMMENT PHENOL BASE/NEUTRALS BELOW DETECTION LIMIT

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 03 525

> **** *** SAMPLE DATA *** ******

SAMPLE-ID W20921 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 1200 CONTRACTOR JRB WELL ID 050B DEPTH 38.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5213

*** ANALYSIS RESULTS ***

COMPOUND

METHOD 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML CAS PC CONCENTRATION REPORTED CONC COMMENT VOLATILES BELOW DETECTION LIMIT

> ****************** *** SAMPLE DATA *** *****

SAMPLE-ID W20922 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 1230 CONTRACTOR JRB DEPTH 28.00 FEET COMFOSITE SAMPLE WATER TEMP 0 WELL ID 050A

5113

*** ANALYSIS RESULTS ***

THOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML CAS PC CONCENTRATION REPORTED CONC CONMENT 107-6-2 V12 17.000 UG/L METHOD 624W SPECIFIC METHOD COMPOUND 1,2-DICHLCROETHANE

> . . *** SAMPLE DATA *** ****

SAMPLE-ID H21337 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/27/80 START TIME 1105 CONTRACTOR JRB WELL ID 050A DEPTH 28.00 FEET COMPOSITE SAMPLE WATER TEMP 0

0.0 HL COMMENT BARIUM CADHIUM CHRCHIÚM COPPER LEAD NICKEL ZINC

*** *** SAMPLE DATA *** *****

SAMPLE-ID W21339 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/27/80 START TIME 1110 CONTRACTOR JRB WELL ID 0503 DEPTH 38.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5213

*** ANALYSIS RESULTS ***

ANALYSIS LAB ERCO QUAN SIZE 0.0 ML METHOD ICFW SPECIFIC METHOD
 CAS
 PC
 CONCENTRATION
 REPORTED
 CONC

 7440-39-3
 103
 5.000
 UG/L
 7440-66-6
 114
 45.000
 UG/L
 77/
 COMMENT CCMFOUND BARIUM ZINC

RAW DATA LISTING THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82

***** ***** *** SAMPLE DATA ***

SAMPLE-ID W21366 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/01/80 START TIME 0930 CONTRACTOR JRB WELL ID 050A DEPTH 28.00 FEET CCMPOSITE SAMPLE WATER TEMP 0 5113

*** ANALYSIS RESULTS ***

SPECIFIC METHOD

METHOD 608W CCMPOUND. PESTICIDES

SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML CAS PC CONCENTRATION REPORTED CONC COMMENT BELOW DETECTION LIMIT

03 525

RAW DATA LISTING THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 08 011

**** *** SITE DATA *** ****

SAMPLING AREA 08 STATICN 011

CCORDS 402726 E 1121650 N

0.0 ML

COMMENT

*** SAMPLE DATA ***

SAMPLE-ID W21619 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/09/80 START TIME 1115 CONTRACTOR JRB DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0 6112

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB CHTL GUAN SIZE CAS PC CONCENTRATION REFORTED CONC 5.0 ML COMMENT VOLATILES BELOW DETECTION LIMIT

> * 按照准计算机算法 *** SAMPLE DATA ***

SAMPLE-ID W21620 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/09/80 START TIME 1125 CONTRACTOR JRB WELL ID 068A DEPTH 14.00 FEET COMFOSITE SAMPLE WATER TEMP ۵.

6112

*** ANALYSIS RESULTS ***

COMPOUND ACIDS BASE/NEUTRALS

6112

611

METHOD 625CW SPECIFIC METHOD CAS PC CONCENTRATION BELOW DETECTION LIMIT BELOW DETECTION LIMIT

> **** *** SAMPLE DATA *** *****

ANALYSIS LAB CMTL QUAN SIZE

REPORTED CONC.

SAMPLE-ID W21621 MEDIUM H20 SCURCE GRH20 SAMPLE DATE 10/09/80 START TIME 1119 CONTRACTOR JPB WELL ID 068A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB CHTL GUAN SIZE 930.0 ML COMPOUND CAS PC CONCENTRATION REPORTED CONC COMMENT PESTICIDES BELOW DETECTION LIMIT

> ***** *** SAMPLE DATA *** ***

SAMPLE-ID W21622 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/09/80 START TIME 1119 CONTRACTOR JRB DEPTH 14.00 FEET COMFOSITE SAMPLE WATER TEMP ۵

*** ANALYSIS RESULTS ***

HETHOD COMPOUND EARIUM CADMIUM CHRENIUM COPPER LEAD NICKEL ZINC	AASFW	SPECIFIC	METHOD 2041 CAS 7440-39-3 7440-43-9 7440-47-3 7440-50-1 7440-2-0 7440-66-6	PC 103 105 106 107 103 109	CONCENTRATICN REPORTED CONC 65.000 UG/L 6.000 UG/L 14.000 UG/L 14.000 UG/L 85.000 UG/L 33.000 UG/L	200.0 ML Comment
				* * *	100.000 06/1	•

TABLE 3

Table and Map of Positive Analytical Results Before and After the Drainage System Installation

EXPLANATION FOR THE THREE CHARTS

- 1. The charts are a comparison of the United States Environmental Protection Agency (USEPA) results taken two to four years ago and recent New York State Department of Environmental Conservation (NYSDEC) results.
- 2. The only wells listed are ones outside the fence where there are old USEPA results and recent NYSDEC results.
- 3. The only compounds listed are ones that showed up positive either in previous or current testing.
- 4. The numbers on top represent recent NYSDEC results and the numbers on the bottom are the old USEPA results.

5. All units of concentration are ug/l.

											Well	I.O.	Number		•						,					
	3222	3122	3123	3133	5114	5214	5112	5212	3151	6113	6141	6241	3111	3112	3113	6112	5111	5211	5113	5213	6122	6222	6111	6211	4134	5122
A-BHC	<10 0.05	<10 trace	<10 trace	<10 trace					<10 0.012			1.		trace	trace	0.69 < DL]]					0.56 < DL	3.9 < DL		trace	<.005 trace
Lindane	<10 0.012		<10 trace	<10 trace		<10 trace			10					trace		2.0 < DL	trace	<.00				0.36 < NL	< 0L		0.49 trace	0.56 trace
B-BHC		- 10	<10	<10 trace					<10 0.010		ļ		<.005 trace		trace	< DL						2.1 < DL			11 trace	
Heptachlor	<10	<10 trace	<10 trace	<10 trace	13 < DL 11							<u> </u>		< 000		0.58 < DL					<u> </u>		17 < NL		32 trace	<.005 trace
D-BHC	.018		<10	<10	49			<u> </u>			_	<u> </u>		<.005 2		21	< 00 ⁴					2.8 < DL				
Aldrin				trace			·				-		1.1			2.1 < DL	<.005 trace		<u> </u>			ļ			0.89 trace	
Hept. Epox.					< DL 14			<u> </u>	<u> </u>		<u> </u>	ļ	< DL	<.005					 			<u> </u>				
Dieldrin	-	<10			< DL				 					trace					 		 					<.005
pp DNF		trace			13						-															trace
Endosulfan				<10	< DL			<u> </u>				<u> </u>		<.01												
DDT DND	+	<10 trace		trace										trace												

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Love Canal Groundwater Monitoring Program

(1) All concentrations in ug/l (ppb.)

(2) <10 - DEC results 0.05 - USEPA results

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(3) Trace means present in low levels, but not quantified

(4) <DL means below the detection limit of that compound

																					;						
~	3222	22	23	3133	14.	14	12	12	3151	13	6141	41	11	3112	13	6112	11	5211	5113	5213	6122	6222	6111	6211	4134	5122	
Compound	32	31	31	31	51	521	511	521	31	611	61	624	311	31	311	61	511	52	51	52	61	62	61	62	41	51	
	-1		I	r	r	<u></u>	<u> </u>	·	1	1	1	·	t	r	ব	t	·	 		· · · · ·	·	1	 		— —		Ŧ
Ag										{	1				6	ĺ			1			1		<3 8			
_		20											1.5	1.7	1.4	1		2.6			<u> </u>	<u> </u>	2.2	l		 -	t
Be		0.8	<u> </u>			L					l		< DL		< DL			< DL					< 0L	}		1	1
Cd		<20 16			<20 5		<20 -6		<20 6	<40	10	11		<10 2	11	<10			<10		<10	<10	< DL		<10	21	t
<u></u>	<u> </u>	100	<100	<100	100	<100	100			<100		5.3	84	78	<u>8</u> 52	6 28	6.4	- 22	13 21	0 F	44		2		?	8	Ļ
Cr		47	17	24	9	21	9		36	18	< DL	< DL	87	28	30	14	< DL	22 < DL	26	9.5 < DL	14 23	6.9 < DL	236 180	< 4	21 74	5.4 22	1
	<50	<50	<50	<50	<50	<50	<50		<u> </u>	<50	23		190	82	85	58	26	52	45	32	< 2	21	304	16	< 2	- 27. - 25	ł
Cu	7	68	34	27	6	59	8			12	< DL	(40	10	12	14	< DL	9	15	< DL	16	7	95	12	32	23	1
		<50	50	<50]	[<50		<50	110	29		198	124	126	58	35	162	68	20	23	· · ·	304	<15	49	35	ł
Ni		110	52	39			25		86	74	< DL		130	64	160	33	< DL	< DL	36	< DL	30		190	37	150	46	Í
1. A		<100	<100	<100	<100	•	ľ			<100	302	184	212	329	260	172	107	472	198	568	206	78	696	91	142	82	t
Ph		350	150	220	27		100	1.20	0.000	71	61	< DL	80	48	_24	85	< DL	< DL	53	< DL	91	< DL	290	60	120	110	1
Zn	90 75	730 580	140 240	180	260	90	180	130	2500		135	• 79 • •	224	279	310	-120	209	495	178	171	109	56	348	80	172	33	Í
<u>211</u>	15	300	240	200	52	40	24	<dl< td=""><td><dl< td=""><td>100</td><td>48</td><td>18</td><td>66</td><td>84 12</td><td>220</td><td>160</td><td>_/</td><td>27</td><td>70</td><td>45</td><td>.44</td><td>37</td><td>260</td><td>41</td><td>100</td><td>75</td><td>ł</td></dl<></td></dl<>	<dl< td=""><td>100</td><td>48</td><td>18</td><td>66</td><td>84 12</td><td>220</td><td>160</td><td>_/</td><td>27</td><td>70</td><td>45</td><td>.44</td><td>37</td><td>260</td><td>41</td><td>100</td><td>75</td><td>ł</td></dl<>	100	48	18	66	84 12	220	160	_/	27	70	45	.44	37	260	41	100	75	ł
As						1				1			< DL		11	l		21 < DL					56 19		<10 3		l
<u> </u>	10.2			ł						<1.2				┟╌┶╴	.21	<u> </u>		<u> </u>				<u> </u>	0.21				Ł
Hg	trace					1	(!			0.2	1				< DL								< DL				1
							5				1			<10	1										<10		t
Se							4							10											6		1 -
-									<1000					<10	<10									<10	<10		ſ
<u>Sb</u>			L		ļ		L		240					190	280									60	210		L
тı [.]									<100		1			<10	<10						ł]			<10		1
<u></u>									62					_ 52	76							1.			32		1

Love Canal Groundwater Monitoring Program Well I.D. Number

(1) All concentrations in ug/l (ppb.)

(2) 14 - DEC results <10 - USEPA results

(3) Trace means present in low levels, but not quanitfied

(4) <DL means below the detection limit of that compound

											Well	I.D. N	lumber							,						
	3222	3122	3123	3133	5114	5214	5112	5212	3151	6113	6141	6241	3111	3112	3113	6112	5111	5211	5113	5213	6122	6222	6111	6211	4134	5122
Benzene				< 1 8					< 1 trace																	
1,1,2,2-tetra- chloroethane												•										·				
Toluene				< 1 37						·																
Dibromo-chloro- methane						< 1 trace																				
()-Xylene	•			< 1 18									<u> </u>										, i			
M-Xylene				< 1 18																					•	•
Ethyl Benzene				< 1 7				£	<1 trace																	
Diethyl-phthalate									<10 trace									. 								
P-Xylene									<1 trace																	
Tetrachloroethane									<1 trace																	
Methylene-chloride																·		42 < DL								
Fluoroanthene									23 <dl< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></dl<>																	
Pyriene									31 <dl< td=""><td></td><td></td><td></td><td> </td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td> <u>.</u></td><td></td><td></td><td></td><td></td></dl<>													<u>.</u>				
Endosul fan Sul fate									15 ⊲∩L																	

Love Canal Groundwater Monitoring Program

(1) All concentrations in ugl/l (ppb.)

(2) <1 - DEC results 8 - USEPA results

(3) Trace means present in low levels, but not quantified

(4) <DL means below the detection limit of that compound

ATTACHMENT A INTERIM GROUNDWATER MONITORING PROGRAM LOVE CANAL SITE

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INTERIM GROUNDWATER MONITORING PROGRAM LOVE CANAL SITE NIAGARA FALLS, NEW YORK

The following maps show the concentrations of the major pollutants that have shown up in the wells inside the fence at Love Canal. Other pollutants have shown up but not in high enough concentrations or frequently enough to be a reliable indicator of Love Canal contamination. The results reflect data collected from June 17, 1981 through March 25, 1983. The individual compounds have been put on two maps each. One showing only overburden wells and the other showing only bedrock wells. The compounds included are:

Methylene Chloride Bis (2-Et-Hexyl) phthlate Chloroform Trichloroethylene 1,2-Dichlorobenzene (0) 1,4-Dichlorobenzene (P) Toluene Chlorobenzene 1,2,4-Trichlorobenzene 2,4-Dichlorophenol Tetrachloroethylene Benzene 1,1,2,2-Tetrachloroethane

All but one of these compounds falls into two classes (volatiles and base neutrals). The remaining compound (2,4-Dichlorophenol) shows up in only one well (5101). The sandy loam and the desiccated silty clay layers of soil shows the largest amount of contamination. Wells located at this depth would probably show the first signs of a spread in the contamination. Well numbers 1160 (A and C), 1161C, 1163 (A and C), 4103 and 5101 have shown the largest concentration of contaminants. They would supply the most information for long term temperal trend analyses.

The bedrock wels have shown up clean except 4204, 4207, 5201, and 6207. Of these four, only 5201 has shown more than one different kind of contaminant. Well number 5201 is close to six of the seven most contaminated wells and near the leachate drainage system. This would probably be the best bedrock well to monitor to check on the downward migration of contaminants.

A monitoring program to meet the needs of early detection of a spread of contaminants along with long term analyses should consist of testing for volatiles and base/neutrals on the following schedule:

1st and 3rd Quarter

1160 (A and C), 1161C 4103, 4 bedrock wells (other than 5201) and 16 random overburden wells

2nd and 4th Quarter

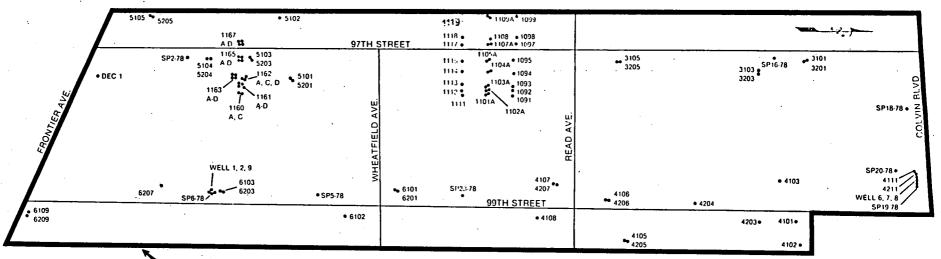
1163 (A and C), 5101 5201, 3 bedrock wells other than 5201) and 17 random overburden wells This schedule will result in water quality samples being taken at all the wells on-site (within the perimeter fence), during an 18 month period.

Twenty-four (24) off-site wells were sampled July 11 and 12, 1984. There are 16 wells, other than these 24, with risers that will also be sampled. When the results come back, any wells showing contamination will be resampled along with nearby wells. This will verify the results and check for the further spread of contamination.

Groundwater elevations of all the on-site wells and the 40 off-site wells (with risers) will be taken monthly.

FIGURE B.1

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LOVE CANAL GROUNDWATER MONITORING PROGRAM

PERIMETER FENCE

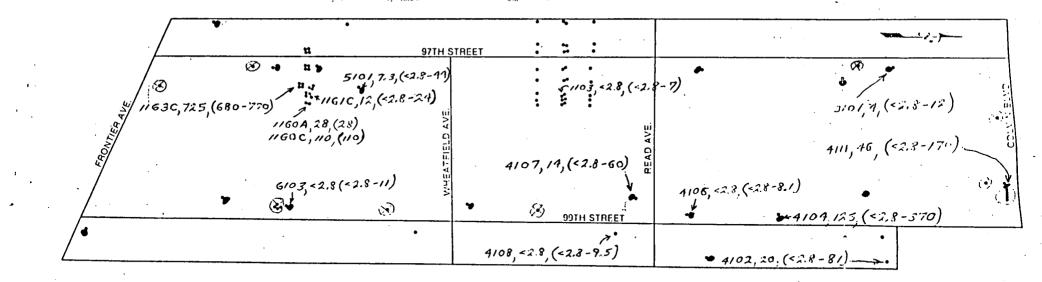
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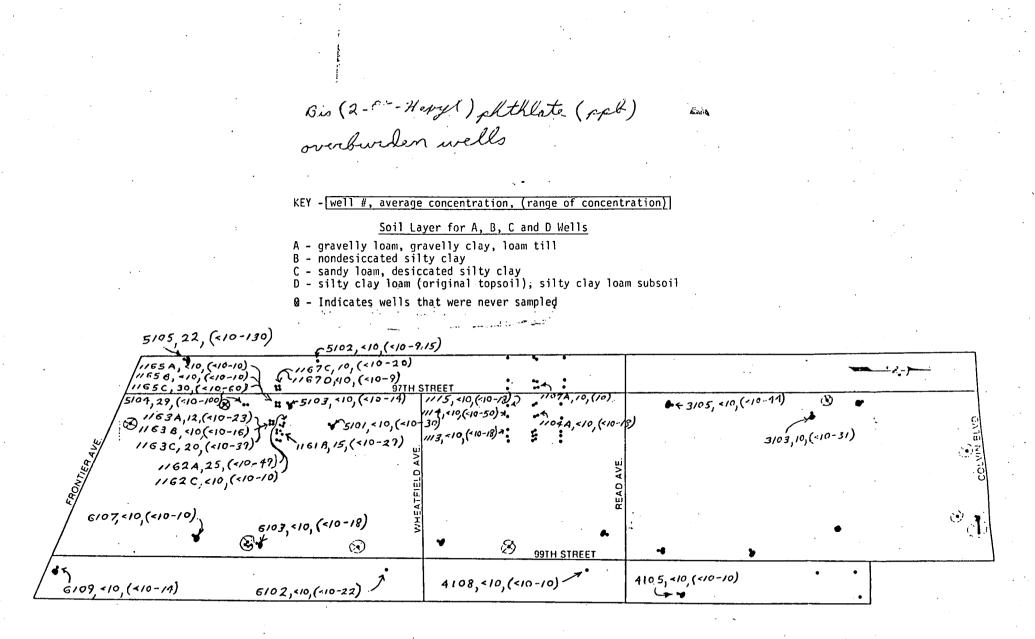
Methy " & Chloride (ppb) Overlanden Wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

- A gravelly loam, gravelly clay, loam till
- B nondesiccated silty clay
- C .sandy loam, desiccated silty clay
- D silty clay loam (original topsoil), silty clay loam subsoil





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aler m (pcb) overburden wells

KEY - [well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

- A gravelly loam, gravelly clay, loam till
- B nondesiccated silty clay

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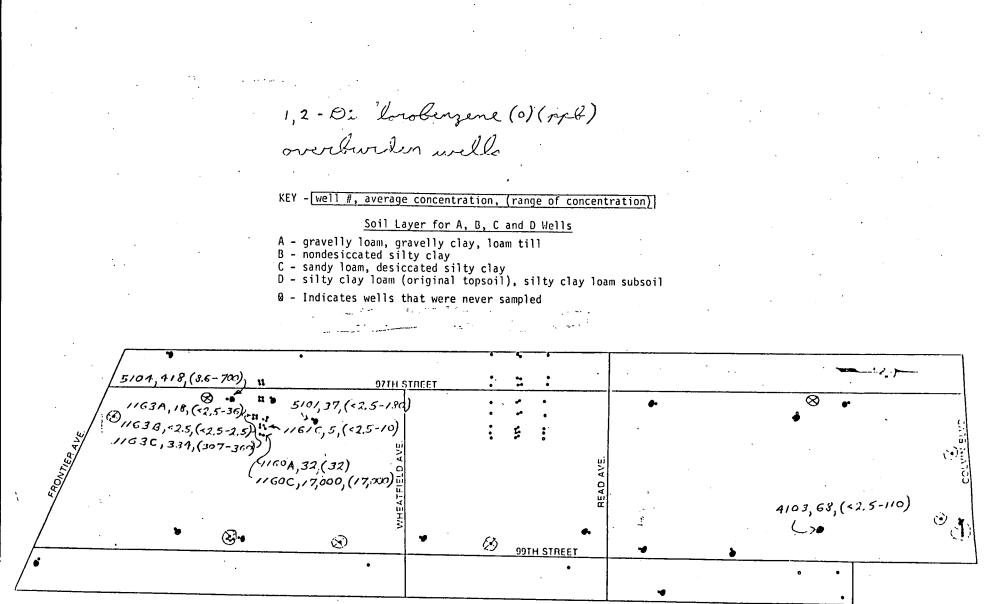
- C sandy loam, desiccated silty clay D silty clay loam (original topsoil), silty clay loam subsoil

state en

5104,20, (1.5-48) n ,116C, <1.6, (+1.6-1.6) . 🛛 🎍 @ 1163C, «1.6 («1.6.1.6) + u. += 5101, 121, (<1.6-200) (),161A,1,6,(1,6) -1161B,~1,6,(4,6-1,6) -1161C,42,(20-C3) 1160A, 1.6, (1.6)~ 11600, 210, (210) \mathfrak{O} 4106,2, (<1,6-8.1) •چ \bigotimes 4 \bigotimes ≥ 4101, 11, (<1.6 - 3.1) (_y• 99TH STREET ~ 6102, <1.6, (<1.6-9)

Trichla withylane (rest) KEY - [well #, average concentration, (range of concentration)] Soil Layer for A, B, C and D Wells A - gravelly loam, gravelly clay, loam till B - nondesiccated silty clay C - sandy loam, desiccated silty clay D - silty clay loam (original topsoil), silty clay loam subsoil Q - Indicates wells that were never sampled میں بینے انسان میں انسان میں انسان میں میں انسان میں انسان میں انسان میں انسان میں انسان میں انسان میں انسان م میں انسان میں انسان میں انسان میں انسان میں انسان میں انسان میں انسان میں انسان میں انسان میں انسان میں انسان می 5104, 44, (18-79) 97TH STREET 1162A, 5, (<5-10) 11 b 5101, 1630, (560-2500) → ¤. <5,(<5-6,1) (161B

163A,22 (5-43) Ø \mathcal{S} @11638, = 5, (*5-7.9) 1163C,2000, (1700-2303) 1: 4-1161A, 6, (6) 11630,18 (18) 444,(37-850) 1160A, 17.(17 1600, 1,800,(1,800) 4103, < 5, (- 5 - 10) ن ک (1)٠ چ \odot 63 99TH STREET -



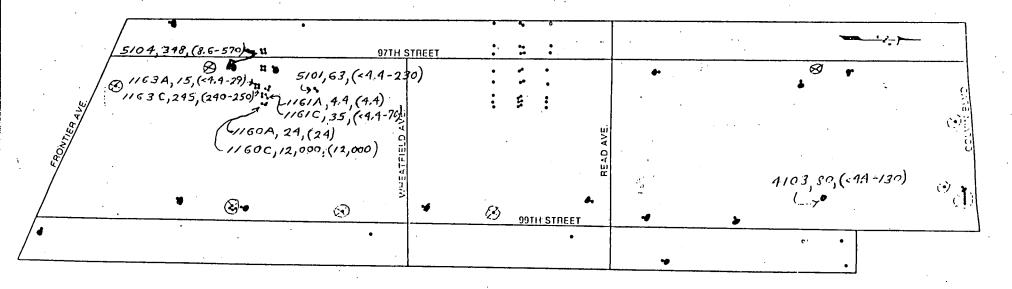
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1,4-Dicalorobenzene (r) (ppt) worburden welle

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

- A gravelly loam, gravelly clay, loam till
- B nondesiccated silty clay
- C sandy loam, desiccated silty clay D silty clay loam (original topsoil), silty clay loam subsoil
- @ Indicates wells that were never sampled



Tolue (ppt) overburgen wells

KEY - [well #, average concentration, (range of concentration)]

Soil Layer for A, B, C and D Wells

- A gravelly loam, gravelly clay, loam till
- B nondesiccated silty clay
- C sandy loam, desiccated silty clay
- D silty clay loam (original topsoil), silty clay loam subsoil
- 0 Indicates wells that were never sampled

5104,6551, (5-10,000) 11 97TH STREET n <u>5103</u>, <5, (5, -10) 5101, 17302, (-5-10,000) () 1163A, 115, (~5-230) 3 ... HIGIA, 46, (16) 37,000, (-5-120) 11618,60, (-5-120) 1163C SIIGIC, 11,900, (7,900 - 18,000) 160A,270,(270) 11600,60,000,(60,000) (73-170) 4103,111 8. \bigotimes Ø 99TH STREET

Chlorobengene (ppt) overburden wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

- A gravelly loam, gravelly clay, loam till
- B nondesiccated silty clay
- C sandy loam, desiccated silty clay D silty clay loam (original topsoil), silty clay loam subsoil
- Indicates wells that were never sampled 0

5101, 1783, (5-5,300) n 97TH STREET 11620, -5, (-5-6) 11. 5 ଷ -5101,1782, (890-3,00) 11631,40(30-50)-@11638, 5, (~5-6) 614,9.7 (9.7) 11630,1350,(1000-1,70) 12, (<5-24) (\cdot) 580, (58 1) 160C, 14,000, (14,000) 4103,14, (-5-22) ेत्। 4104, <5, (~5-10) (E)• \otimes . 4 $\langle \mathfrak{I} \rangle$ \rightarrow 99TH STREET 4102, +5, (+5-10) ->

1,2,4-Inchlorobengene (ppb) overburden wells KEY - [well #, average concentration, (range of concentration) Soil Layer for A, B, C and D Wells A - gravelly loam, gravelly clay, loam till B - nondesiccated silty clay C - sandy loam, desiccated silty clay D - silty clay loam (original topsoil), silty clay loam subsoil Q - Indicates wells that were never sampled 2.5 5104,515 (8.6-940) 111658.5(-1.9-10) DTH STREET ß 1163A, 230, (180-280) (+11. (GS4, (<1.9-2 400) 1161A.32 (3.2) C, 578 (345-810) 11610,460 (170-730) -1160K, 32, (32) 1160C, 79,000, (79,000) NHEATFIE 4103,254 (<17-600)

B

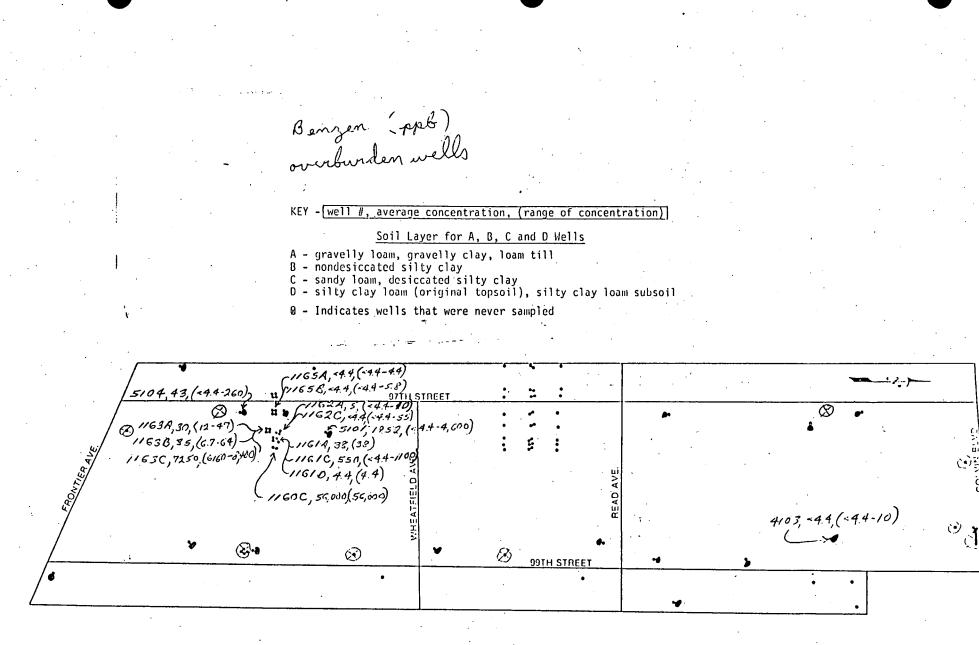
99TH STREET

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2,4 - D. Aloriophenol (ppb) overburden wello KEY - [well #, average concentration. (range of concentration)] Soil Layer for A, B, C and D Wells A - gravelly loam, gravelly clay, loam till B - nondesiccated silty clay C - sandy loam, desiccated silty clay D - silty clay loam (original topsoil), silty clay loam subsoil 0 - Indicates wells that were never sampled 5104, <2.7. (<2.7.10) 97TH STREET ଚ 1 5101. 3.500 (-2.7-11,000) R G) 1163A, 12, (10-13) . . . 11638, <2.7, (<2.7-2.7) 11630, 5, (+2.7-10) 11610, <2.7 (<2.7.2.7) (°) 1604, 2.7. (2.7) \odot 8. \otimes $\langle \mathcal{O} \rangle$ 99TH STREET . ¥

letrachloroethylene (ppb) overburden wells KEY - [well #, average concentration, (range of concentration) Soil Layer for A, B, C and D Wells A - gravelly loam, gravelly clay, loam till B - nondesiccated silty clay C - sandy loam, desiccated silty clay D - silty clay loam (original topsoil), silty clay loam subsoil Q - Indicates wells that were never sampled 5104 442 (5-1100) 97TH STREET 5101,207, (+4.1-830) 63 11 10 (3)1163A,7,(+4.1-13) ふまい 1.6 11638, 41/ 41-7.3) -11GIA, 4.1, (4.1) 1163C, 1950 (=41-3,900)) 1 (-11610, +41 (+1-41) (1161C, 1495 (STO-2+0) 1163 D. 4.1 (4.1) (1160A, 4.1, (4.1) 1160C, 250, (250) 4105,50, (37-64) 3 2 3. \odot $\langle \mathfrak{G} \rangle$ 99TH STREET . -



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1,1,2,2 - itrackloroethylene (ppb) overburden wells

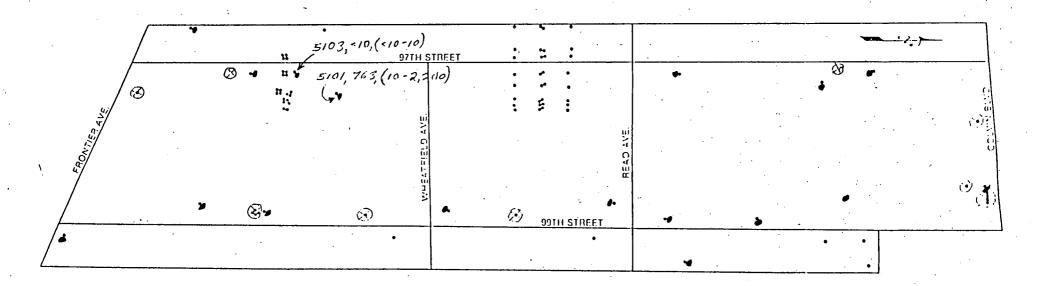
KEY - [well #, average concentration, (range of concentration)]

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till

B - nondesiccated silty clay

- C sandy loam, desiccated silty clay D silty clay loam (original topsoil), silty clay loam subsoil
- Q Indicates wells that were never sampled

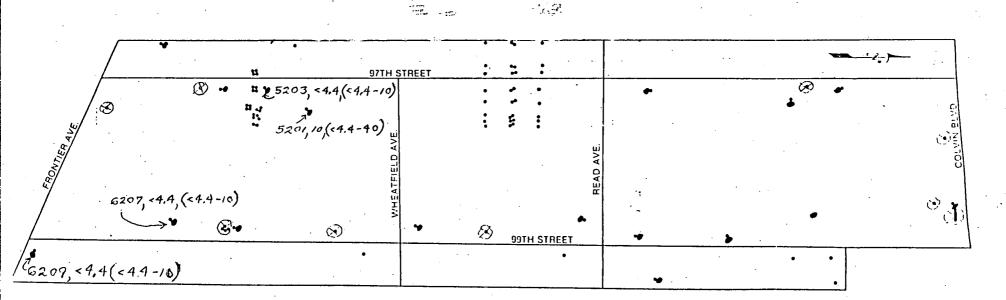


~ mjene (ppb) Bedrock wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

- A gravelly loam, gravelly clay, loam till
- B nondesiccated silty clay
- C sandy loam, desiccated silty clay D silty clay loam (original topsoil), silty clay loam subsoil



Methytene Chloride (ppt) Bedrock wells KEY - [well #, average concentration, (range of concentration) Soil Layer for A, B, C and D Wells A - gravelly loam, gravelly clay, loam till B - nondesiccated silty clay
 C - sandy loam, desiccated silty clay
 D - silty clay loam (original topsoil), silty clay loam subsoil Q - Indicates wells that were never sampled 5203, <2.8, (2.8-5) 97TH STREET 5201, 2.8, (-2.8-11 R цý 3207, 4.3, (~2.8-13) и., Ц Ò 4206, <2.8, (-2.8-13) 6207,85,(~2.8-221) 4207,99,(-28-410) ٢ •(کی) $\langle \mathbf{Q} \rangle$ $\langle \mathfrak{H} \rangle$ 90TH STREET 4204,654, (-28-2,600) 6201, 3, (~2.8-12)

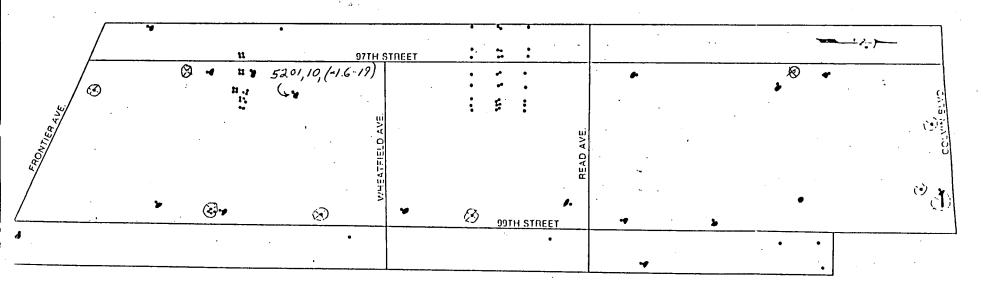
Bis (2-E. Hep-gl) phthlate (ppb) Bedrock wells KEY - [well #, average concentration, (range of concentration)] Soil Layer for A, B, C and D Wells A - gravelly loam, gravelly clay, loam till B - nondesiccated silty clay C - sandy loam, desiccated silty clay D - silty clay loam (original topsoil), silty clay loam subsoil Q - Indicates wells that were never sampled 5203 -10 (<10-10) 5204 -10 (-10-11 97TH STREET 11 1 5201, 38 (-10-170) 11 .y 15 6207, < 10, (*10-25) 4207, <10, (+10-18) 4:206, <10, (<10-45) \mathfrak{O} 4204, «10, (*10-10) (E)- \odot \oslash 99TH STREET 85 6209, < 10, (<10.10) 4205, «10, («10-10) 6201, -10, (-10-10)

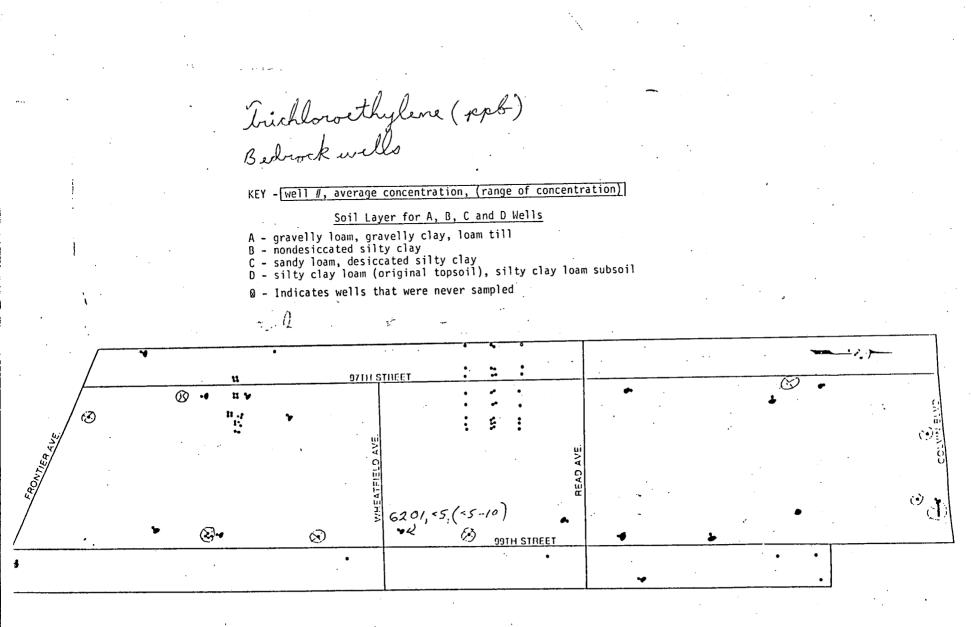
Chlorop.rm (ppb) Bedrock wells

KEY - [well #, average concentration, (range of concentration)]

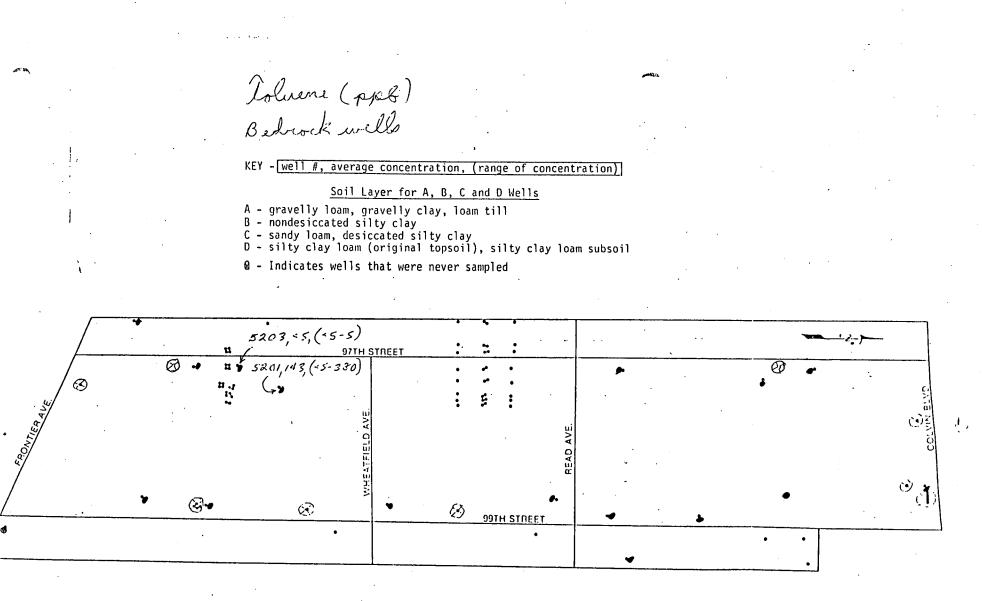
Soil Layer for A, B, C and D Wells

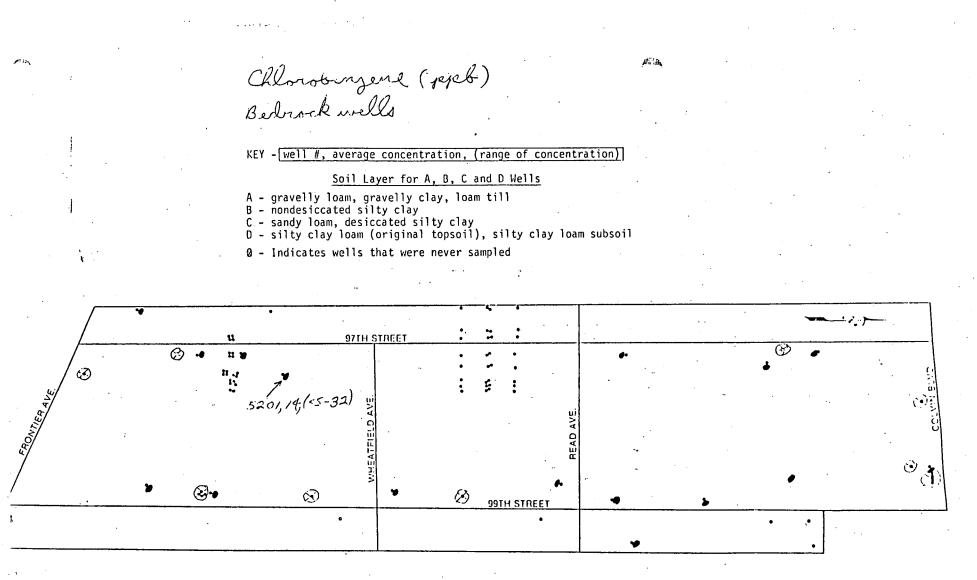
- A gravelly loam, gravelly clay, loam till
- B nondesiccated silty clay
- C sandy loam, desiccated silty clay D silty clay loam (original topsoil), silty clay loam subsoil
- Q Indicates wells that were never sampled

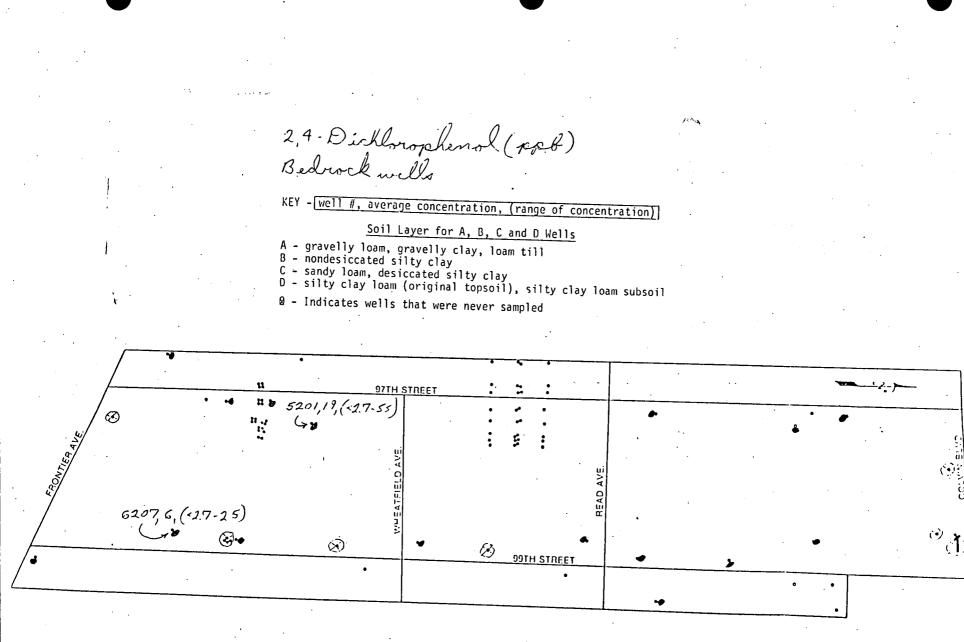




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Tetrachloroethylene (ppb) Bedrock Wells

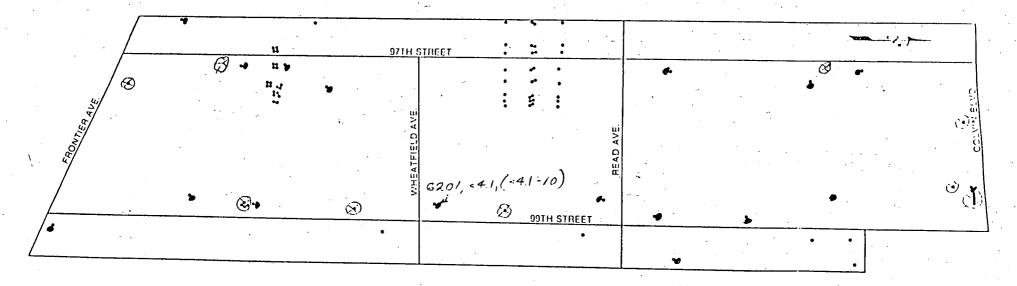
KEY - [well #, average concentration, (range of concentration)]

1.0%

Soil Layer for A, B, C and D Wells

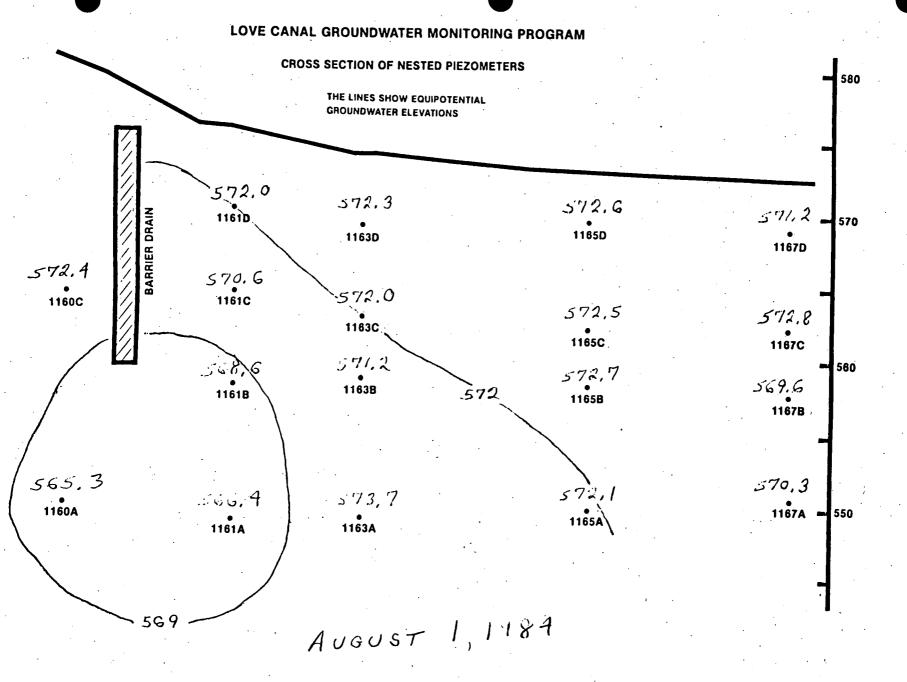
- A gravelly loam, gravelly clay, loam till B nondesiccated silty clay

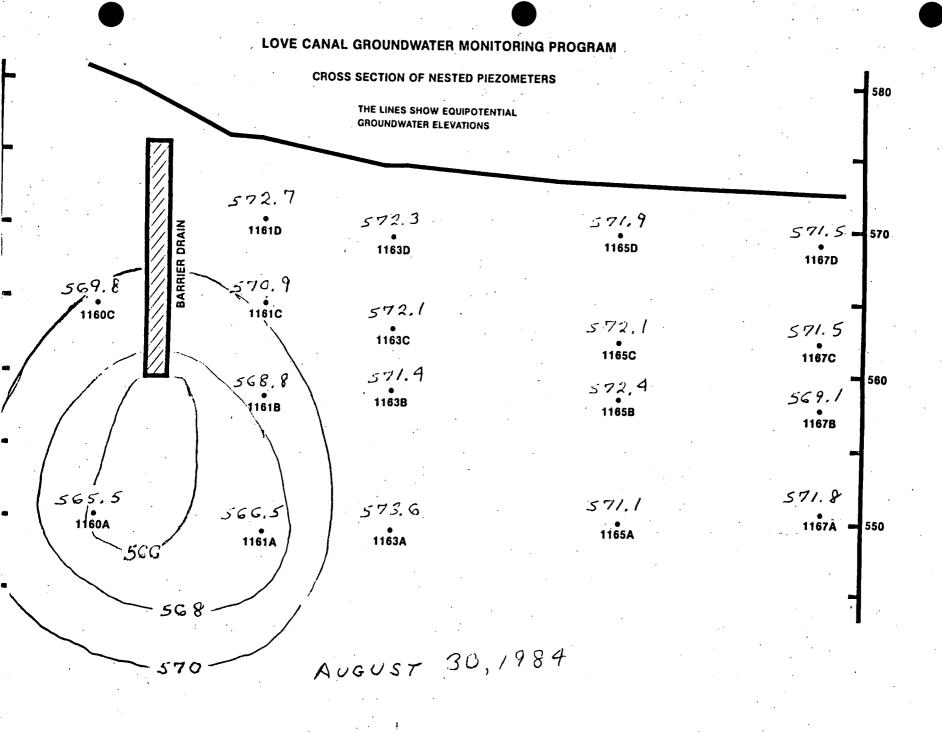
- C sandy loam, desiccated silty clay D silty clay loam (original topsoil), silty clay loam subsoil
- Q Indicates wells that were never sampled

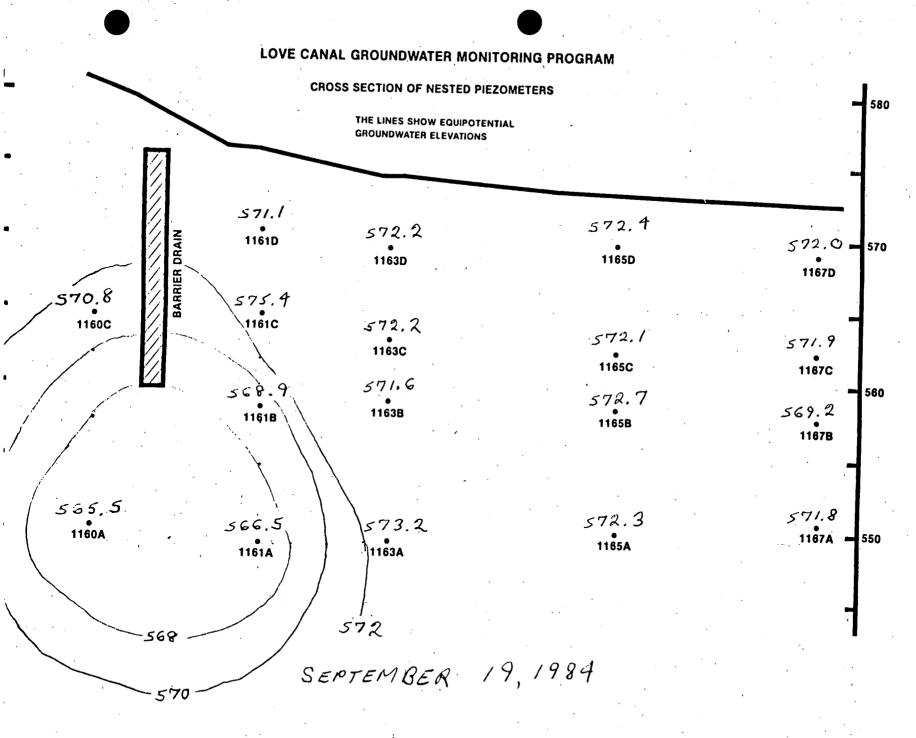


ATTACHMENT B

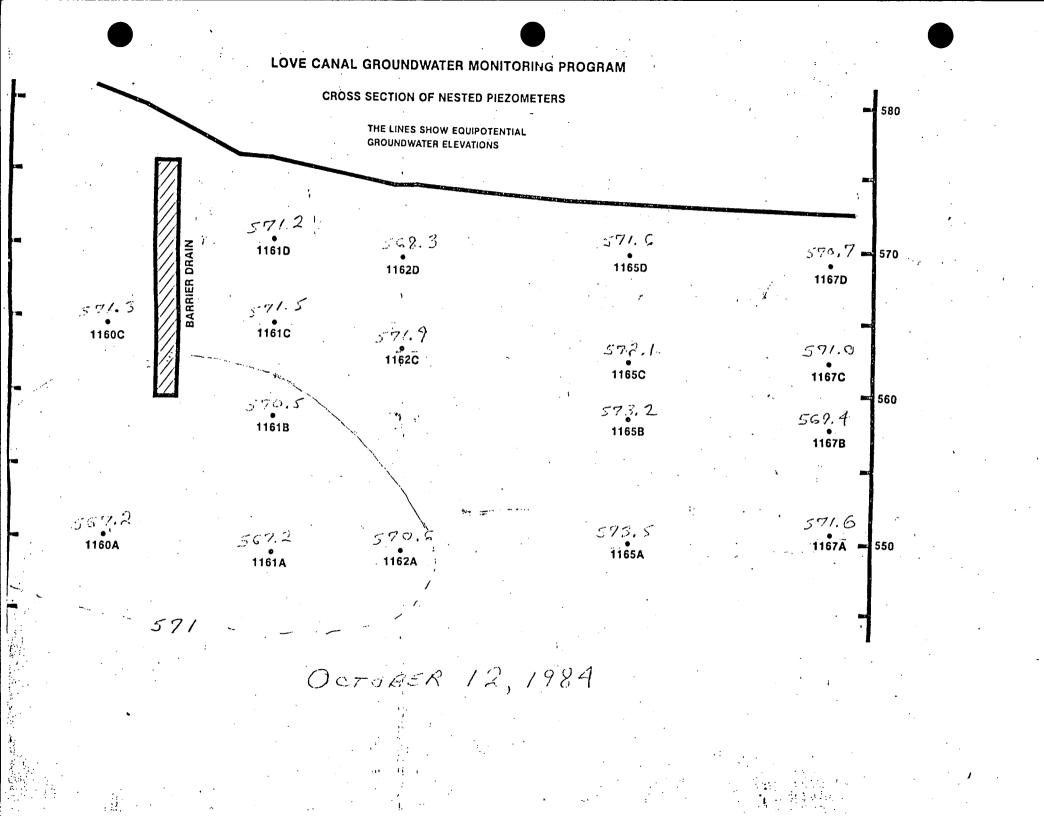
CROSS-SECTIONAL ELEVATION PLOTS NESTED PIEZOMETERS



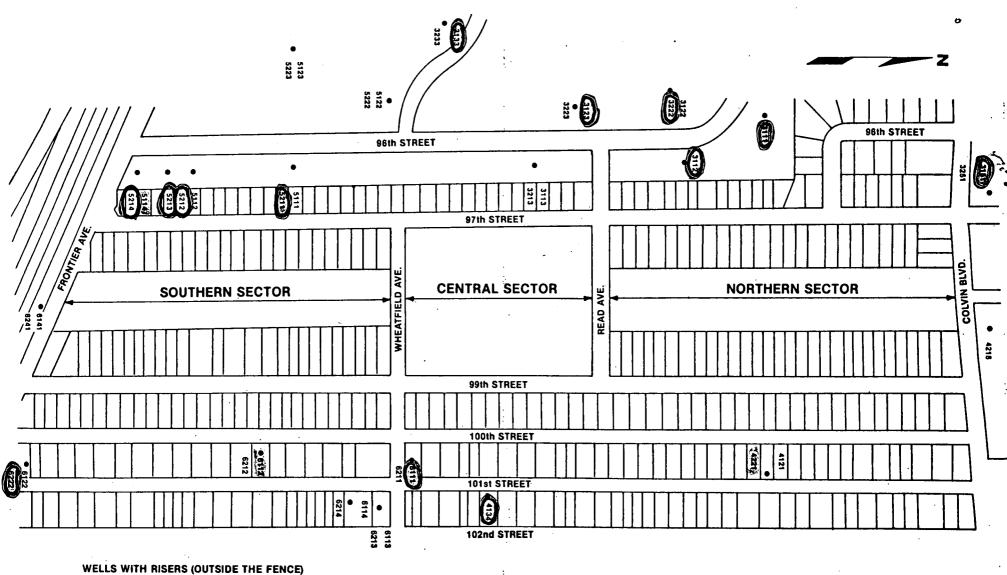




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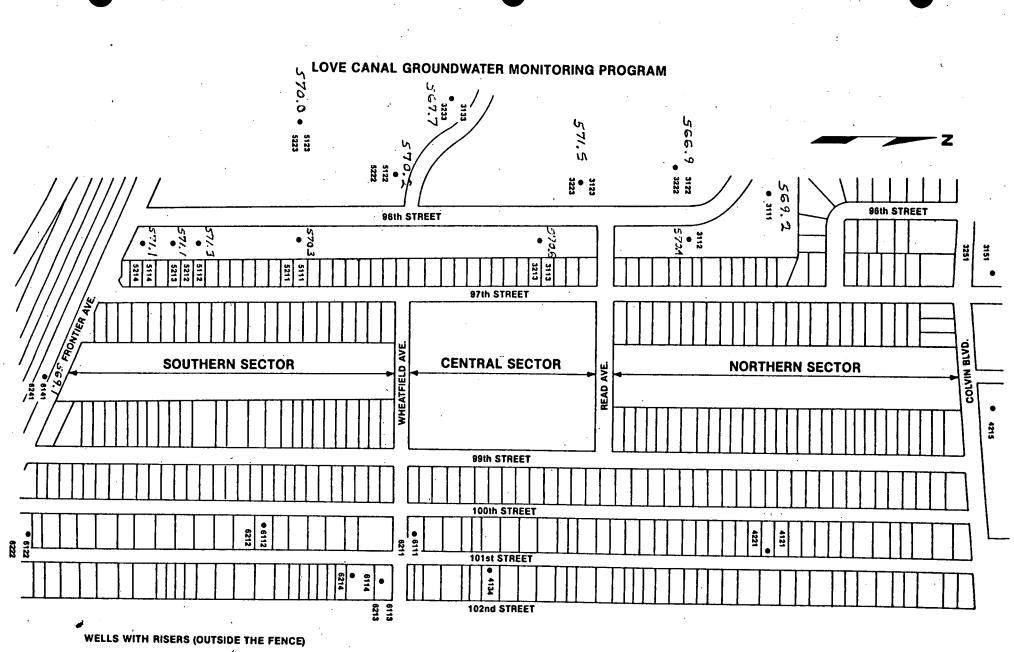






WELLS OUTSIDE THE FENCE SAMPLED

Red circles show positive results for the United States Environmental Protection Agency sampling Blue indicates positive results for the New York State Department of Environmental Conservation sampling



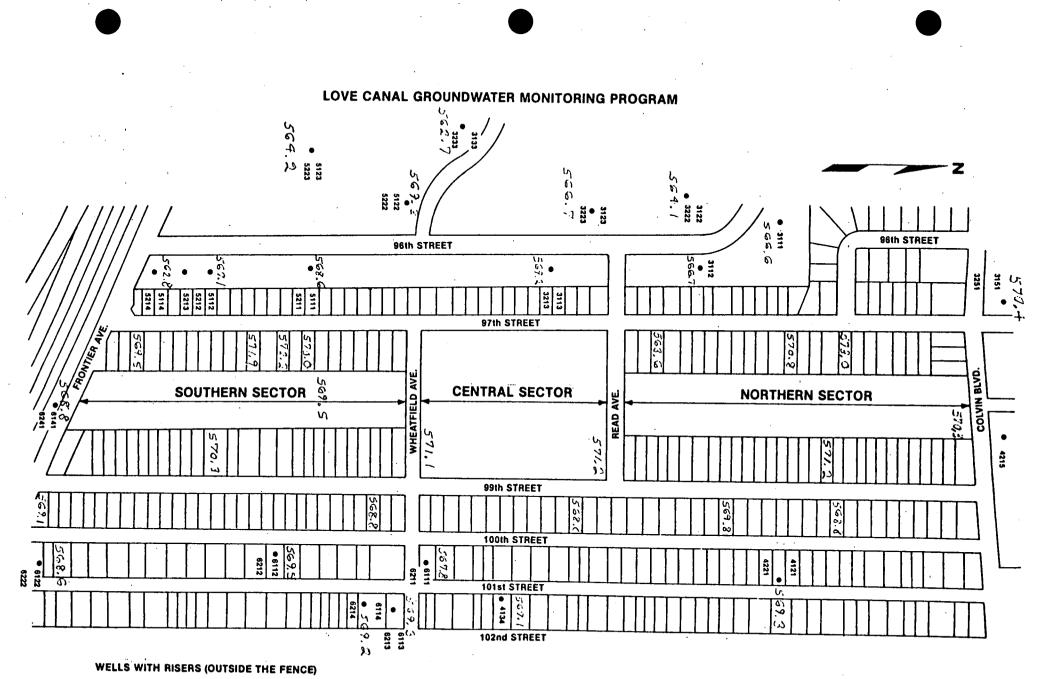
OVERBURDEN AQUIFER JUNE 13, 1984

LOVE CANAL GROUNDWATER MONITORING PROGRAM U 66 3133 3233 5123 5223 S S 5122 5222 568. 96th STREET 96th STREET 570 0 1 1 1 1 1 1 569. 569 3151 FRONTIER AVE 97th STREET S.Y. 72.6 COLVIN BLVD SOUTHERN SECTOR AVE CENTRAL SECTOR NORTHERN SECTOR // 6141 6241 READ AVE. 570. 9.14.5 570. 52 4213 à 99th STREET 569. 100th STREET 567, 6 • 8112 6212 568.0 • 61 1221 6122 6222 101st STREET 569.0 • 4134 **102nd STREET** 6113 6213

WELLS WITH RISERS (OUTSIDE THE FENCE) OVERBURDEN AQUIFER AUGUST 1, 1984

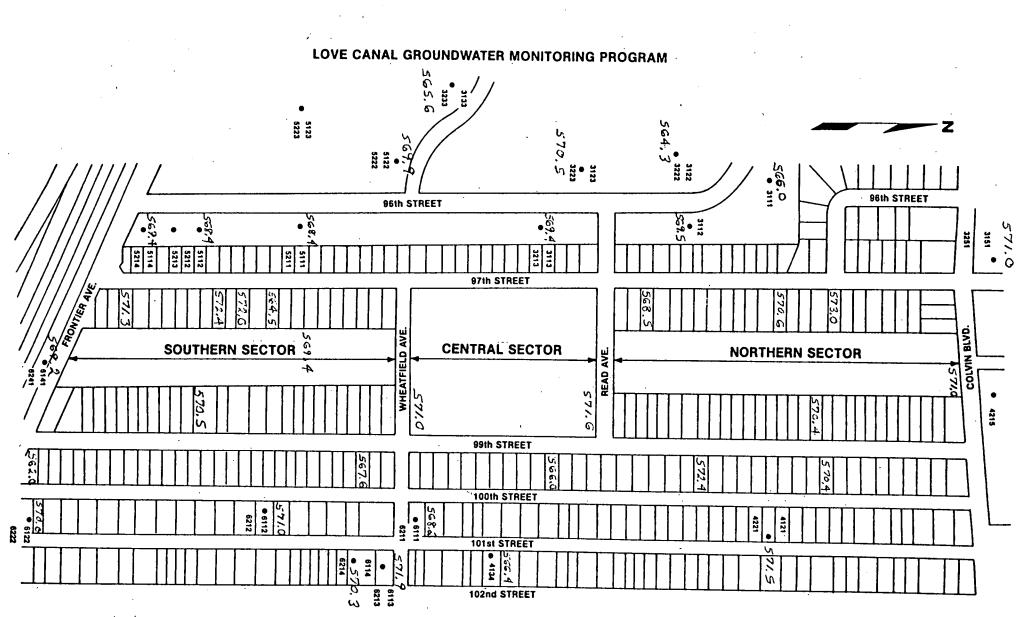
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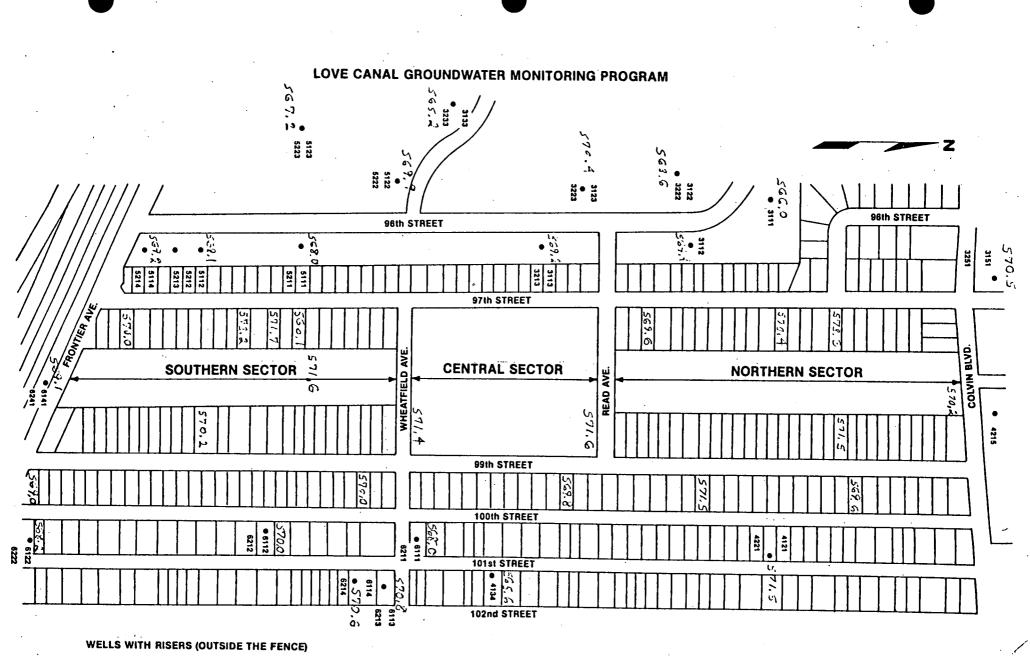
OVERBURDEN AQUIFER

AUGUST 30,1984

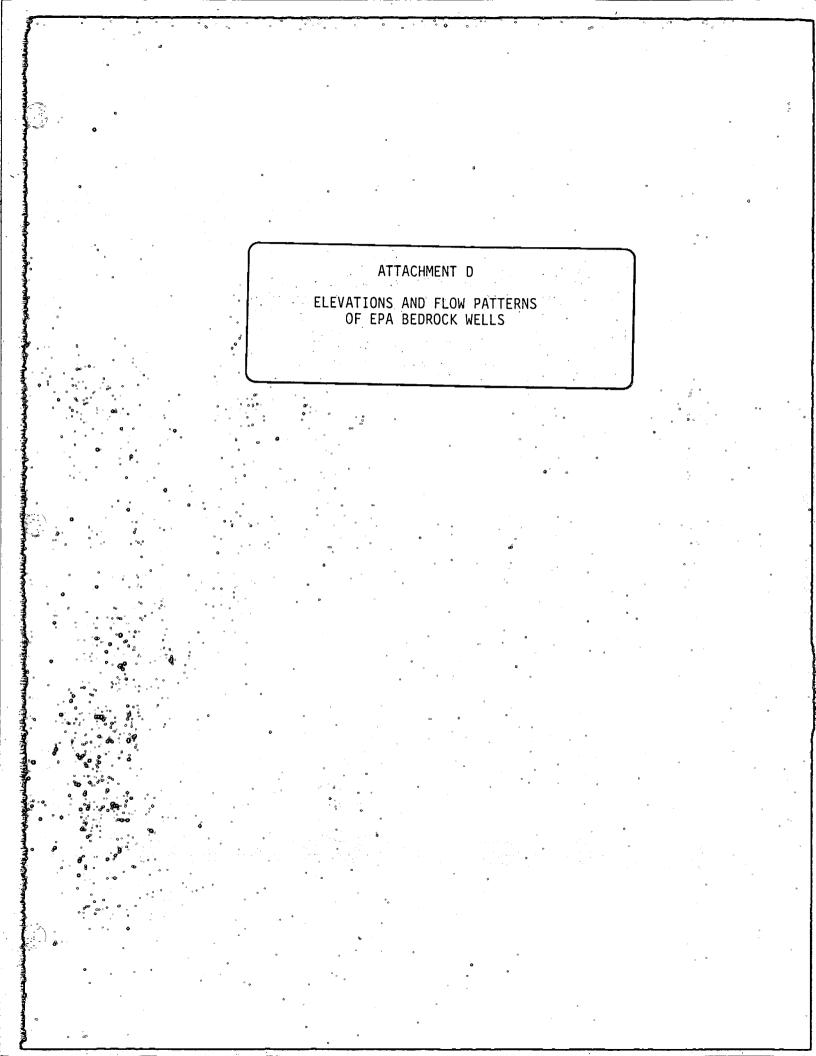


WELLS WITH RISERS (OUTSIDE THE FENCE)

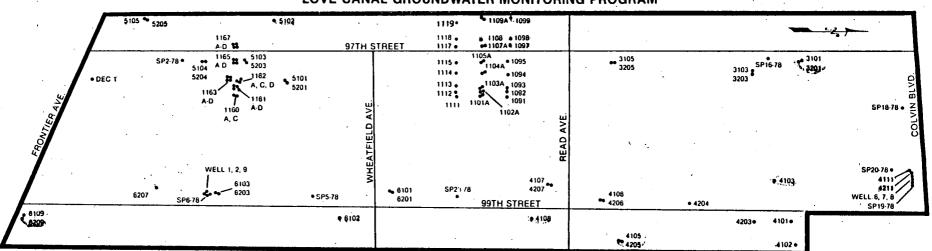
OVERBURDEN AQUIFER SEPTEMBER 19, 1984



OVERBURGEN AQUIFER OCTOBER 12, 1984

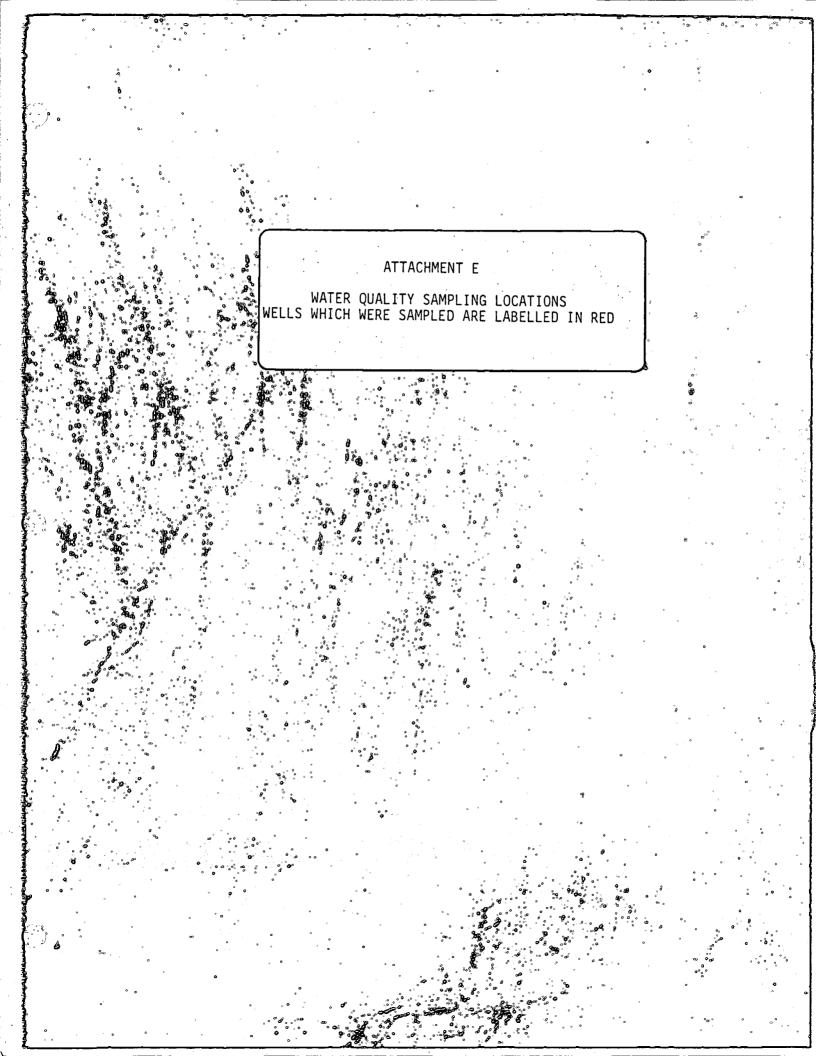




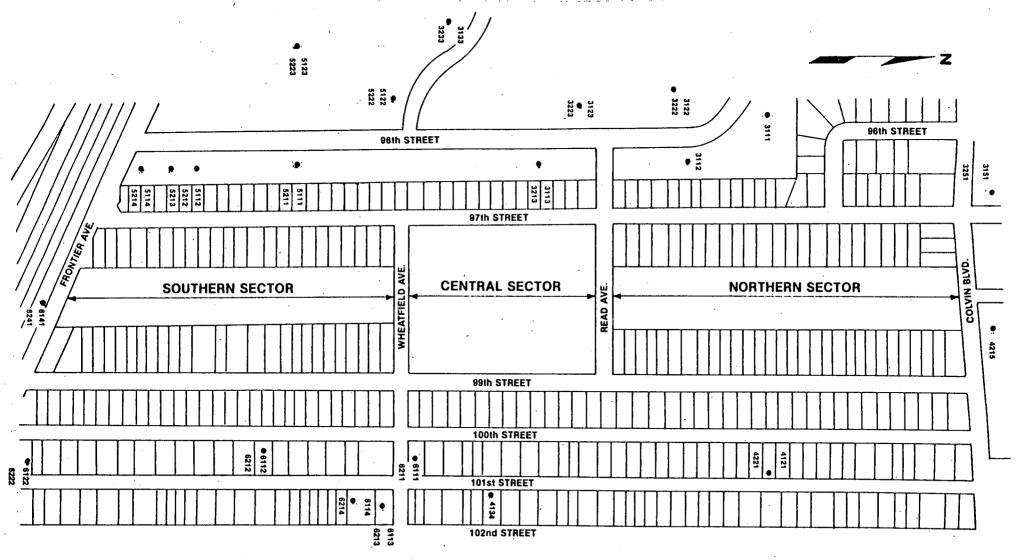


LOVE CANAL GROUNDWATER MONITORING PROGRAM

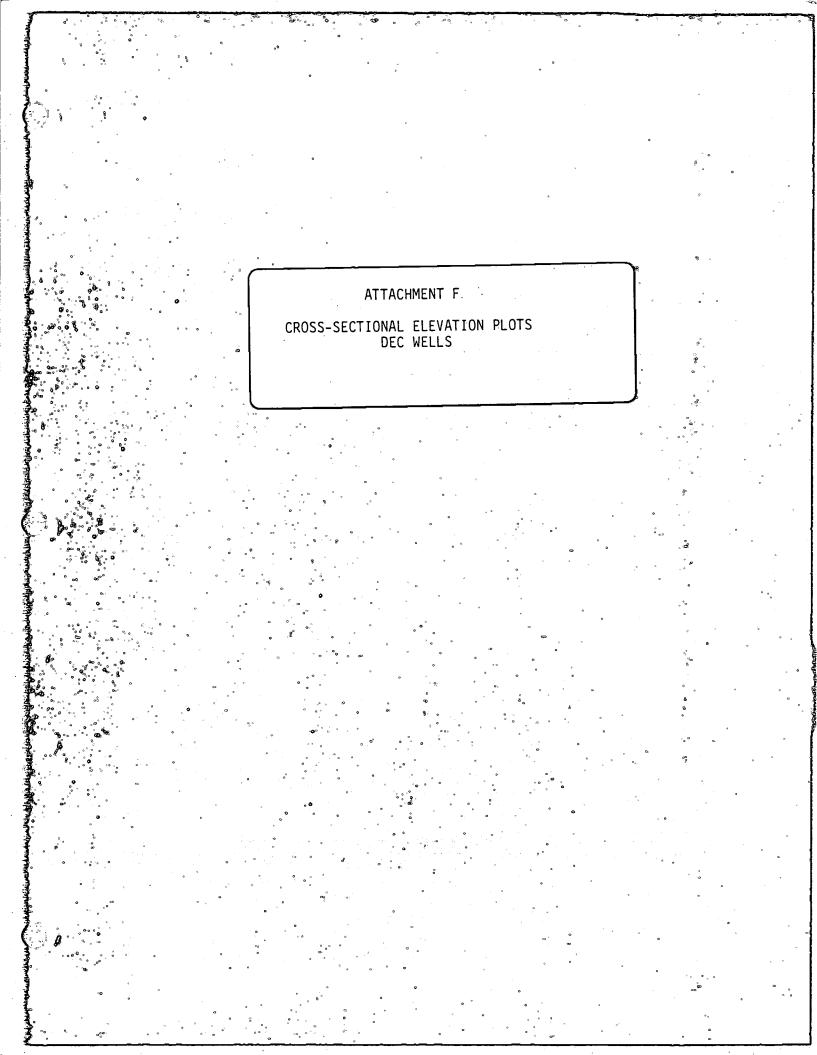
PERIMETER FENCE

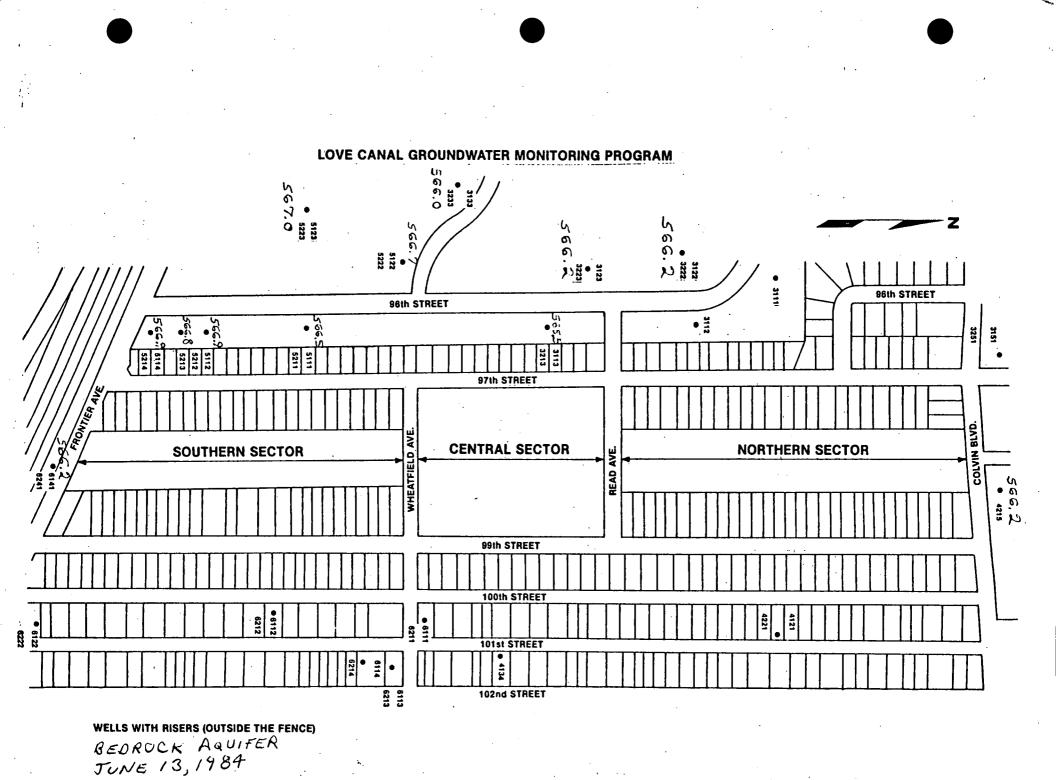


LOVE CANAL GROUNDWATER MONITORING PROGRAM

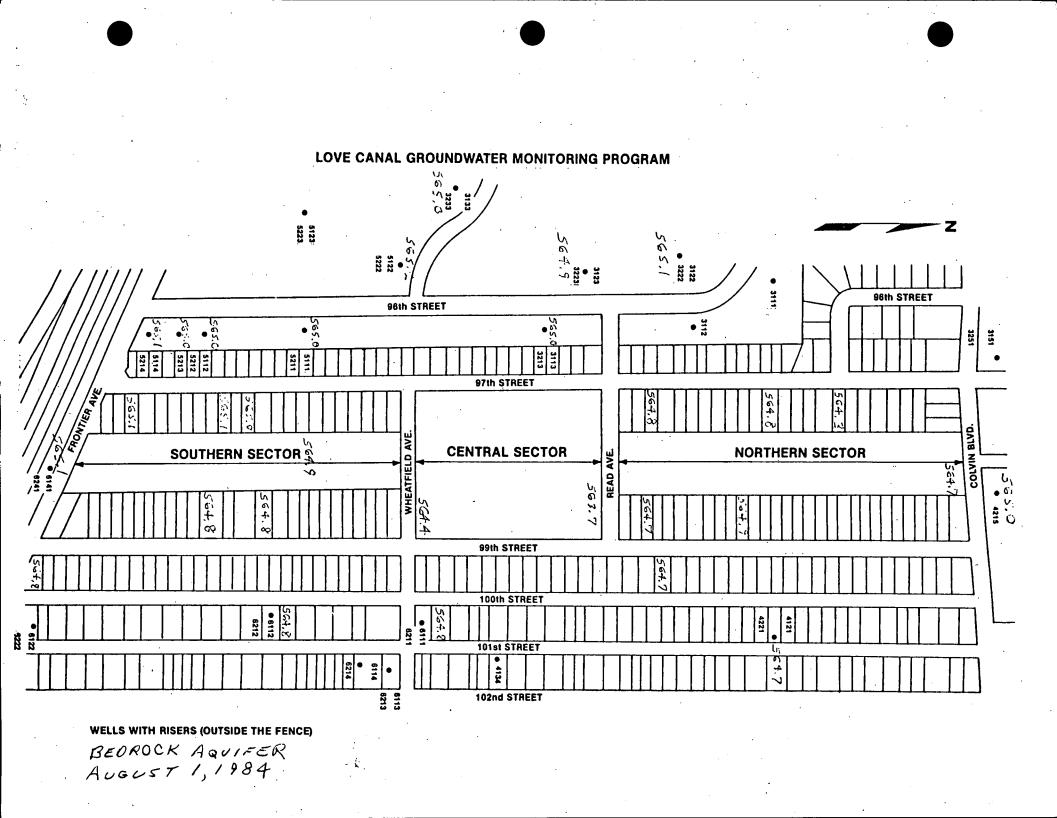


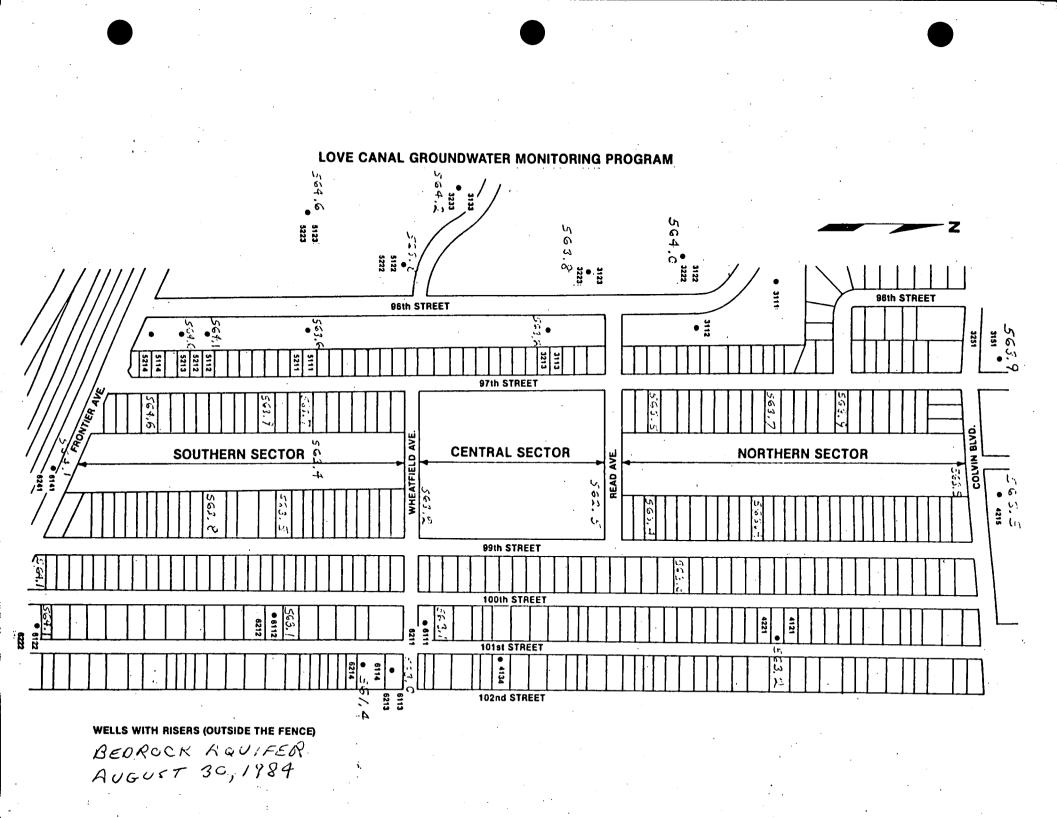
WELLS WITH RISERS (OUTSIDE THE FENCE)

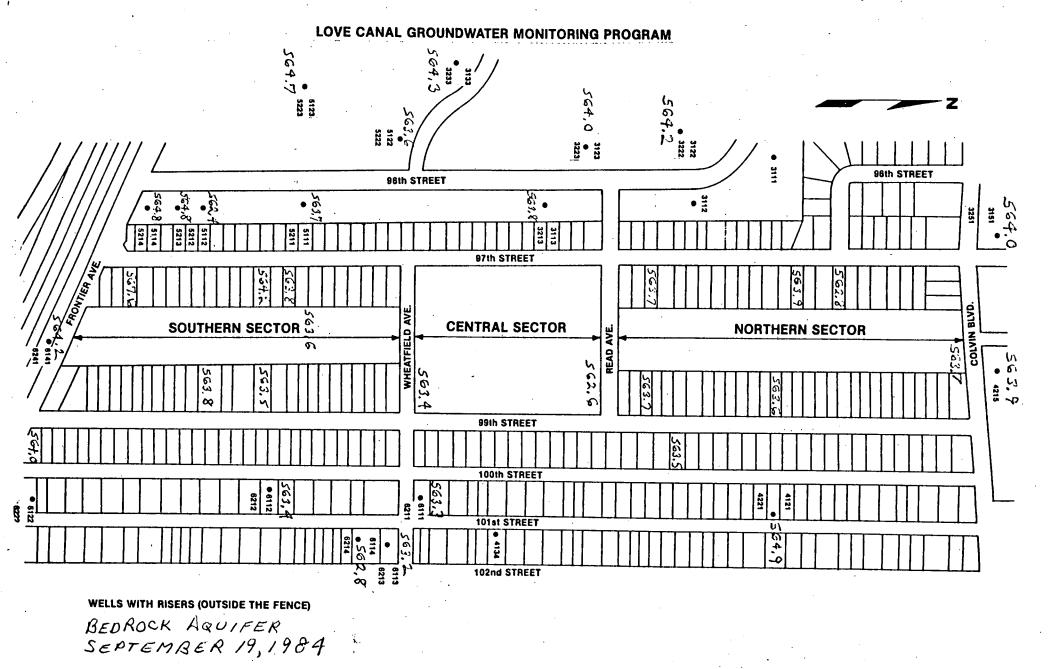


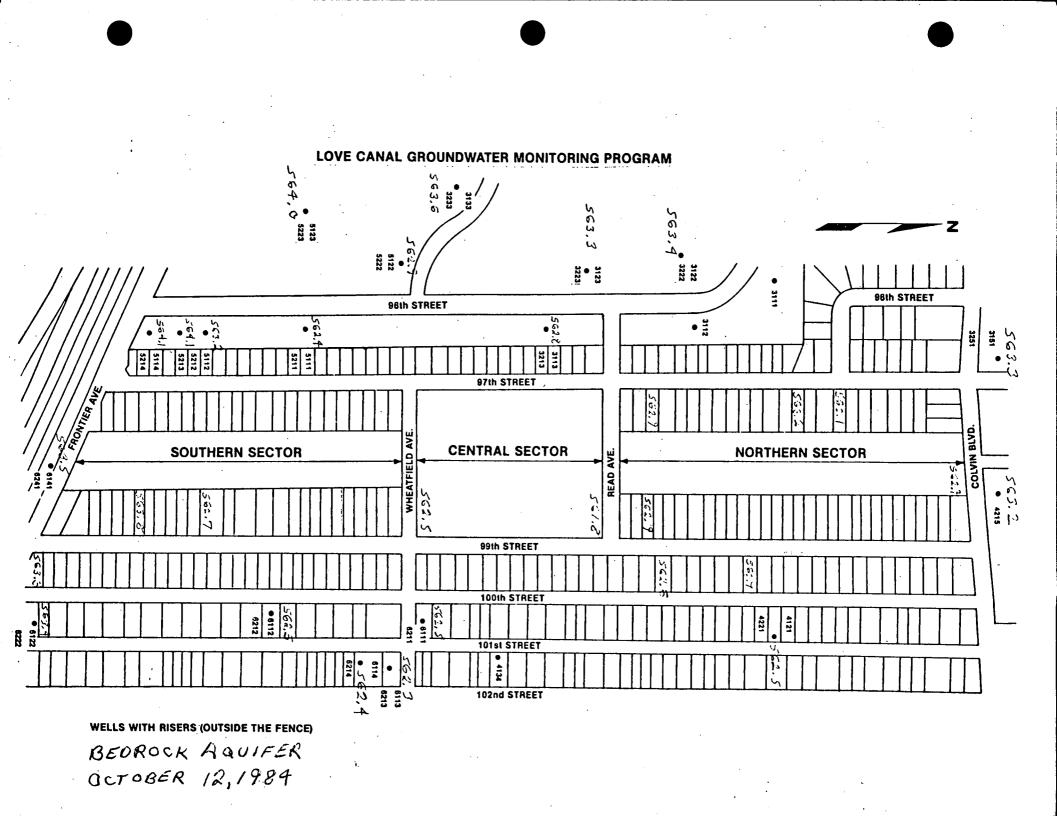


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EXPLANATION FOR

CROSSECTIONAL WATER ELEVATION PLOTS

IN DEC WELLS

- 1(a) <u>Row #10</u> corresponds to wells labeled 1101 through 1109 in Figure 1
- (b) <u>Row #9</u> corresponds to wells labeled 1091 through 1099 in Figure 1
- (c) <u>Row #11</u> corresponds to wells labeled 1111 through 1119 in Figure 1
- (d) On the cross-sectional plots, Well Nos. 1091 or 1101 or 1111 is on the right of the plots, and 1099 or 1109 or 1119 is on the left side of the plot.

