

Department of Environmental Conservation

Division of Environmental Remediation

G.E. WEST LOT
UTICA (C), ONEIDA COUNTY, NEW YORK
SITE NO. 6-33-036
March 1998

RECORD OF DECISION

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* JOHN P. CAHILL, *Commissioner*

DECLARATION STATEMENT RECORD OF DECISION

GE WEST LOT SITE City of Utica, Oneida County, New York Site No. 6-33-036

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for the GE West Lot Site which was chosen in accordance with the New York State Environmental Conservation Law (ECL). The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40 CFR 300).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the GE West Lot Site, and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A bibliography of the documents included as a part of the Administrative Record is included in Appendix C of the ROD.

Assessment of the Site

Actual or threatened release of volatile organic compounds (VOCs) and polychlorinated biphenyls (PCBs) from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential threat to public health and the environment.

Description of Selected Remedy

Based upon the results of the Remedial Investigation/Feasibility Study (RI/FS) Reports for the GE West Lot Site and the criteria identified for evaluation of alternatives, the NYSDEC has selected the removal and disposal of contaminated soil from the burnpit area and disposal of soil from an on-site treatment cell. Contaminated groundwater will also be collected for treatment. The components of the remedy are as follows:

- Removal of PCB and VOC contaminated soils and waste, which exceed the Department's cleanup goals (TAGM 4046), from the IRM treatment cell and in the vicinity of the former burn pit. Based upon the Feasibility Study, 2,200 and 870 cubic yards of soils will be removed from the treatment cell and burn pit area, respectively. The soils will be stock piled and characterized for off-site disposal at either a permitted solid waste or hazardous waste landfill. The excavated area will be backfilled and revegetated, once confirmatory soil samples verify that cleanup goals were achieved.
- Overburden pumping wells will be installed to capture the high concentrations of VOCs in the overburden groundwater downgradient of the burn pit (Alternative # 3). At least one additional pumping well located along the axis of the plume may be needed to maximize practical containment of the plume. The number, location and spacing of wells will be determined during the remedial design. The design goals will be to restore contaminated groundwater to groundwater

quality standards within the shortest time technically feasible and to protect down gradient receptors.

- The groundwater collection and treatment system will treat contaminated water in order to discharge to adjacent surface water or to discharge to an on site infiltration system.
- As part of the monitoring program, it will be necessary to evaluate the effectiveness of the groundwater remediation system over time. Additional groundwater clean up remedies or controls may need to be evaluated based on the effectiveness of the groundwater pumping system.
- Additional monitoring wells will be installed to track and monitor the bedrock aquifer and to determine if future remedial activities are warranted to address deep or down gradient impacts. Monitoring will also be required to insure that downgradient surface water is protected.
- Monitoring and maintenance will be required for the groundwater collection and treatment system to insure proper operations, regulatory compliance and protection of human health and the environment.
- The remedial design program will verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Any uncertainties pertaining to the remedy identified during the RI/FS will be resolved.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

Date

5/30/98



Michael J. O'Toole, Jr., Director
Division of Environmental Remediation

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SECTION 1: SITE LOCATION AND DESCRIPTION

The General Electric facility is a 55 acre property located on French Road in Utica, Oneida County, New York. In the early 1950's GE constructed a 500,000 square-foot manufacturing facility in order to manufacture, assemble and test electrical components for the defense and aerospace industry. In 1993, Martin Marietta Corporation acquired the French Road facility when it acquired GE's aerospace business. In January 1996, Martin Marietta merged into its parent corporation, LMC, and ceased to exist. LMC continued to operate the facility. LMC transferred ownership of the French Road facility to a private developer in March 1996, but continued operations there pursuant to a lease until September 1996. From that time until approximately August 1997, the facility was unoccupied. Ownership of the facility was transferred in March 1997 to the Oneida County Industrial Development Agency (OCIDA). In September 1997, OCIDA transferred ownership of the eastern portion of the property to a private developer for construction of a retail store. The remainder of the property, including the former GE building, was leased by OCIDA to a local corporation.

The West Lot Site, located to the west of the main plant, is approximately 2 acres in size. The site is bounded by an abandoned railroad bed, the New York State Department of Transportation Maintenance Facility and the New Hartford Village Dump(a class 3 site) to the west, the plant parking lot and Chenango Road to the south, the GE Facility to the east, and open fields to the north.

The immediate vicinity is comprised of open fields, partially wooded areas, and an old railroad bed. The area of concern is triangular in shape and slopes gently to the west-southwest. The surrounding area is a mix of commercial and industrial facilities intermixed with residential homes. All of the surrounding area is serviced by both public water and sewer. The area is heavily serviced by both road and railways.

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

The disposal site is located to the west of the main manufacturing facility. The site was never used as part of the manufacturing area and was located at the edge of the employee parking lot.

Based on discussions with facility employees, the site was used by the facility's fire brigade for firefighting training exercises through the early 1970's. Waste materials, consisting primarily of wooden pallets and construction debris, were reportedly brought to the site and ignited in the burn pit. The burn pit was identified as an area approximately 20 feet in diameter located to the northwest of the parking lot.

During interviews with four former GE employees it was determined that solvents and magnesium were burned at the site. One of the former GE employees indicated that waste oils were also utilized during the 1950's and 1960's.

2.2: Remedial History

In 1990, GE initiated an investigation at the site which evaluated potential impacts to site soil and groundwater. Due to the presence of VOCs and contravention of New York State Standards, Criteria and/or Guidance(SCGs), the site was listed as a Class 2 site in the NYS Inactive Hazardous Waste Disposal Site Registry.

In 1993, Martin Marietta and NYSDEC entered in an order on consent to perform a Remedial Investigation/Feasibility Study. Also in 1993, Martin Marietta developed, and initiated, an Interim Remedial Measure (IRM) that included the excavation of soils containing VOCs from within the burn pit area,

followed by ex-situ treatment using a soil vapor extraction system within a lined cell. Other site investigations include:

1. **Soil Gas Investigation** performed by Dunn Geoscience in April 1990;
2. **Site Assessment** performed by O'Brien & Gere Engineers Inc. in May 1991;
3. **Focused Remedial Investigation** performed by O'Brien and Gere Engineers, Inc. in July 1992;
4. **Hydrogeologic Investigation** performed by ERM-Northeast in October 1992;
5. **Additional Investigation** performed by O'Brien and Gere Engineers Inc. in April 1993.

SECTION 3: CURRENT STATUS

In response to a determination that the presence of hazardous waste at the site presents a significant threat to human health and the environment, Lockheed Martin Corporation completed a Remedial Investigation/Feasibility Study (RI/FS).

3.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site.

The RI activities have included the following :

- ▶ A review of all existing information.
- ▶ Advancement of soil borings within and around the waste disposal pit to determine the vertical and horizontal extent of contamination.
- A soil gas investigation to determine the areas affected by volatile organic compounds.
- ▶ Groundwater modeling was conducted to estimate the lateral extent of groundwater contamination.
- ▶ Installation of soil borings and monitoring wells for analysis of soils and groundwater as well as physical properties of soil and hydrogeologic conditions.
- Hydraulic conductivity testing to identify the permeabilities of the overburden and bedrock materials.

The analytical data obtained during the RI were compared to applicable SCGs. Groundwater, drinking water, and surface water SCGs identified for the GE West Lot site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of NYS Sanitary Code. Soil SCGs are based on NYSDEC's Technical and Administrative Guidance Memorandum (TAGM) 4046 soil cleanup objectives for the protection of groundwater.

3.1.1 Hydrogeologic Features

The geology at the G.E. West Lot Site consists predominantly of four main overburden units. An approximate 10 foot thick layer of fill consisting of loose, brown, fine sand with trace gravel was encountered in the former burn pit area that was excavated and backfilled during the IRM activities. The thickest layer of fill was encountered at boring B-2, which was located near the center of the former burn pit. Beneath the fill layer, a layer of light brown to brown silt and silty sand was encountered which is defined as the glacio-lacustrine unit and ranged in depth between 0 to 6 feet. The glacial-kame unit, which is comprised of approximately 25-36 feet of stratified deposits consisting of brown to gray-brown sands and

occasional gravelly or silty lenses, is found beneath the glacial-lacustrine unit. The final layer found above bedrock is the glacial till unit. This approximate 10 to 12 foot unit consists of relatively dense, gray-brown, sandy silt with minor components of gray shaley gravel. Bedrock is encountered at approximately 43-47 feet below grade. The bedrock is a weathered grey shale and is described as an Ordovician Utica Formation. The majority of groundwater flow is limited to the glacial-kame deposit. The hydraulic gradient at the site is approximately 0.003 feet per foot toward the south-southwest. Based upon results of slug tests and specific capacity tests, the hydraulic conductivity of the glacial-kame deposit has been estimated to be approximately 2×10^{-2} to 3×10^{-2} centimeters per second (cm/sec). The groundwater flow velocity within the overburden is estimated at 0.5 to 1.5 feet per day.

3.1.2 Surface Water

The nearest surface water to the site is the Sauquoit Creek, which is approximately 1/4 mile west of the site. Sampling done during previous investigations performed at the New Hartford Village Dump Site No. 633026 (located west of the site) has identified trace levels of VOCs and elevated levels of metals. However, these compounds are believed to be associated with disposal practices at the New Hartford Village Dump.

3.1.3 Contaminants

The following is a description of impacts from the disposal of hazardous waste at the GE West Lot Site. Based upon the results of the remedial investigation in comparison to SCGs and potential public health and environmental exposure rates, certain areas and media of the site require remediation.

3.1.3 (a) Soils

In early 1990, Dunn Geoscience performed a soil gas survey which identified that the former burn pit area contained VOCs within the vadose zone at levels up to 250 parts per million. In March 1990 O'Brien and Gere Engineers, installed one boring within the burn pit. The results of this sample confirmed the presence of VOCs in the soil. Subsequently 9 additional borings were installed to further delineate the area.

The VOCs detected in soil at or near the burn pit include: 1,2-Dichloroethene (0.14 ppm to 140 ppm), tetrachloroethane (49 ppm), trichloroethene (0.21 ppm to 900 ppm), ethylbenzene (0.31 ppm to 77 ppm), toluene (0.24 ppm to 940 ppm) and xylene (1.1 ppm to 370 ppm).

In 1993 and 1994 approximately 2200 cubic yards of VOC contaminated soils were removed for treatment as part of an IRM.

In 1996, additional soil sampling was conducted in the vicinity of the burn pit to delineate residual levels and quantities of PCB and VOC contaminated soils which remained above soil cleanup objectives. Approximately 870 cubic yards of contaminated soils were found to remain in the burnpit area which exceed soil cleanup objectives for Tetrachloroethene (non detect - 16 ppm), Ethylbenzene (non detect - 150 ppm) and Xylene (non detect - 710 ppm). PCBs were found in the range of non detect to 9.1 ppm. Semi-volatile organic compounds, pesticides and metals have not been identified as being significant within the soil medium.

3.1.3 (b) Sediments

The nearest surface body of water (Sauquoit Creek) is approximately 1/4 mile away from the site. No surface water nor sediments exist on, or directly adjacent to, the site, therefore, no sediment samples were taken.

3.1.3 (c) Groundwater

Generally, groundwater found at the site is contaminated with chlorinated and non-chlorinated volatile organic compounds. Levels of total VOCs, found on-site, range from 66,000 ppb at the former burnpit to 1,000 ppb at the property boundary. Levels of VOCs found off-site range from 1,000 ppb at the property line to 11 ppb, 250 feet downgradient, on the NYSDOT facility. 1,2 Dichloroethene is the most prevalent VOC found at and off the site.

Twenty-eight groundwater samples were collected between March 1990 and April 1991. Additional monitoring wells, hydropunch®(s) and piezometers were installed during 1996 and 1997 to further evaluate groundwater quality and flow at the site. The following VOCs have been identified in the groundwater above 6 NYCRR Part 703 groundwater quality standards: vinyl chloride (1 ppb to 3,400 ppb), 1,1-Dichloroethane (5 ppb to 7 ppb), 1,2-Dichloroethene (DCE)(total)(7 ppb to 86,000 ppb), 1,1,1-Trichloroethane(TCE) (3 ppb to 42 ppb), Tetrachloroethene(2 ppb to 5 ppb), toluene(4 ppb to 21,000 ppb), benzene (13 ppb to 14 ppb), ethylbenzene, and xylene (total)(8 ppb to 6,600 ppb). Also Bis(2-ethylhexyle phthalate, Di-n-butyl phthalate, Dichlorobenzene, Diethyl phthalate, 2-Methyl naphthalene, Napthalene and PCBs (Aroclor 1254) were found at low levels above standards. Contaminated groundwater is flowing in a south, southwest direction and appears to be confined largely to the upper glacial lacustrine unit. Levels of VOCs located off-site are in the range of non-detect to 1,000 ppb.

Six deep overburden soil borings were installed at the site. Groundwater samples were collected from three of the six deep locations. Groundwater northeast of the burn pit (Deep-1) did not show any detectable levels of VOCs. Monitoring well, Deep-4, which was located within the former burn pit showed 1,2-DCE (total) concentration of 5.5 (ppb), trichloroethene (TCE) concentration of 33 (ppb), and toluene concentration of 130 (ppb). Deep monitoring well, Deep-5 showed 1,2-DCE(total) concentrations of 10 (ppb).

3.1.3 (d) Air

Soil sampling and screening for the primary organic compounds of concern have not indicated the presence of the target compounds at measurable levels near the surface of the former burn pit and, therefore, airborne contamination is not likely.

3.2 Interim Remedial Measures:

Interim Remedial Measures (IRMs) were conducted based upon the initial site investigation performed in 1990. An IRM is implemented when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS.

An IRM was conducted at the site in late 1993 through 1994. The IRM consisted of the excavation of approximately 2,200 cubic yards of soil from the former burn pit located at the West Lot site. The excavated soils were placed in an aboveground engineered treatment cell for remediation of VOCs using soil vapor extraction (SVE). Treatment of these soils concluded in 1996. The soils currently are staged within the cell, awaiting disposal. These soils are still contaminated with PCBs at levels up to 200 ppna.

3.3 Summary of Human Exposure Pathway

This section describes the types of human exposure that may present added health risks to persons at, or around, the site. A more detailed discussion can be found in the Remedial Investigation.

An exposure pathway is how an individual may come into contact with a contaminant. The five elements of an exposure pathways are: 1) source of contamination; 2) environmental media and transport mechanisms;

3) point of exposure; 4) route of exposure; and 5) receptor population. All of these elements must be present to form a completed pathway.

Based upon this criteria and data present in the RI there are currently no completed pathways at this site. However, possible future pathways include:

- ▶ Use of on-site groundwater for drinking water.
- ▶ Inhalation of dust from excavation of soil at the burn pit.
- ▶ Skin contact with contaminated soil during excavation of the burn pit.
- ▶ Contact with contaminated groundwater in basement sumps or exposure to contaminated groundwater seeping into below ground structures during high groundwater conditions.
- ▶ Accumulation of vapors containing VOCs in buildings built over or near the contaminated groundwater plume.

The site is not within a secure or active facility and control over current and future use is not restricted at this time. The site is not fenced and trespassers may come in contact with contaminated soils which remain in the vicinity of the burn pit.

There are no known private water supply wells within the vicinity of the site. Exposure to contaminated groundwater at the downgradient New York State Department of Transportation building is minimal due to the presence of soil, asphalt and concrete caps. However, intrusive work may result in exposure to contaminated groundwater and organic vapors. Accumulation of vapors in and around building foundations may also be a potential given the high levels of VOCs migrating on to the NYSDOT facility.

3.4 Summary of Environmental Exposure Pathways:

Exposure pathways for environmental receptors are possible through contact with, and ingestion of, contaminated soils and groundwater. The most significant contaminants of concern are VOCs and PCBs. There is not a significant aquatic or wildlife population which could come into contact with the impacted materials. Site related contaminants have impacted the overburden aquifer downgradient of the burn pit. Left un-remediated, the contaminated groundwater which originates from the GE West Lot site could eventually reach the Sauquoit Creek.

SECTION 4: ENFORCEMENT STATUS

The NYSDEC and Martin Marietta Corporation entered into a Consent Order (#A6-0311-93-11) on December 15, 1993. The Order obligated the responsible party to implement a Remedial Investigation/Feasibility Study and Interim Remedial Measure Program. Upon issuance of the Record of Decision the NYSDEC will negotiate an additional Order on Consent to implement the selected remedy.

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. The overall remedial goal is to restore the site to pre-disposal conditions, to the extent feasible and authorized by law.

At a minimum, the remedy selected should eliminate or mitigate all significant threats to public health and to the environment presented by the hazardous wastes disposed of at the site through the proper application of scientific and engineering principles.

The goals selected for this site are:

- Reduce, control, or eliminate, to the extent practicable, the contamination present within the soils on site and prevent further migration of contaminant to groundwater.
- Eliminate the threat to surface waters by eliminating or mitigating any future contaminated groundwater discharging to downgradient streams.
- Eliminate the potential for direct human or animal contact with the contaminated soils on site.
- Prevent, to the extent possible, migration of contaminants in the burn pit to groundwater.
- Mitigate off-site impacts and restore all groundwater quality to meet SCGs in a timely manner.

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

Potential remedial alternatives for the GE West Lot site were identified, screened and evaluated in a two phase Feasibility Study. This evaluation was initially presented in the report entitled Feasibility Study Report, dated July 14, 1997 and prepared by SECOR International, Inc.. As a supplement to the FS, Blasland, Bouck & Lee submitted a report entitled Feasibility Study Report Supplement, dated January 1998. Alternative #6 was provided in this report and is presented in the following section.

A summary of the detailed analysis follows.

6.1: Description of Alternatives

The description below addresses the alternatives which have been identified to remediate the contamination associated with the GE West Lot site. The potential remedies are intended to address the contaminated soils and groundwater found at the site.

Alternative 1- Limited Action

The limited action alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. This alternative would include a combination of site controls to prevent human and biota exposure to the compounds of concern at the site, and a groundwater monitoring program.

A security fence would be erected to enclose the impacted area and signs would be placed to describe the area and to deter trespassing.

Additional monitoring wells, bedrock and overburden, would be installed in order to evaluate contaminated groundwater migration and downgradient receptors.

Routine monitoring would be performed to ensure that security was maintained and to define groundwater migration.

This alternative would not meet the threshold criteria for protection of human health and the environment and therefore is not acceptable.

Present Worth:	\$ 181,541
Capital Costs:	\$ 0
Annual O&M:	\$ 15,000

Alternatives 2 through 6

The following list of five alternatives addresses the contaminated groundwater portion of the site. A component of each of the alternatives is the removal VOC and PCB contaminated soils located in the treatment cell and surrounding the burn pit area. There are approximately 2,200 cubic yards of soil in the treatment cell and approximately 870 cubic yards of soil remaining in the vicinity of the burn pit which exceed TAGM 4046 soil clean up goals. All soils exceeding clean up goals are proposed to be excavated, treated (if necessary) and taken off site for disposal. All soils are proposed to be transported to a permitted hazardous waste landfill or permitted solid waste landfill. Verification sampling would be conducted to ensure cleanup goals are achieved. Once the soils are removed, the treatment cell would be dismantled and the treatment cell and the burnpit area would be backfilled, graded and a vegetative cover established.

Alternative 2 - Collection/Treatment and Discharge to POTW

This alternative combines groundwater extraction, on-site physical treatment, and discharge to the publicly owned treatment works (POTW). Monitoring of groundwater downgradient of the site, as described under the limited action alternative, would also be included.

This alternative would include the installation of a series of recovery wells installed along the southern side of the former burn pit in order to capture contaminated overburden groundwater. Approximately 4 wells would be installed 75 feet on center from approximately the old railroad bed extending east to the edge of the West Lot parking lot. Each well would be installed to a depth of the glacial till layer or about 35 feet deep. Collected waters would be treated on-site utilizing a low profile air stripping system and polished by carbon in order to meet pretreatment standards as designated by the Oneida County POTW.

Present Worth:	\$ 1,355,754
Capital Costs for Groundwater System:	\$ 200,000
Capital Costs for Soil Removal:	\$ 710,200
Annual O&M Costs for the first 10 years:	\$ 60,000
Annual O&M Costs for 5 years of post remediation monitoring:	\$ 15,000

Alternative 3 - Collection/Treatment and On-Site Discharge

Alternative #3 combines groundwater extraction, on-site treatment and on site discharge via subsurface injection wells or an infiltration gallery. The Description of Alternative #3 is the same as Alternative #2 except that the collected water would be discharged on site rather than to the POTW. A higher level of treatment may be required if waters would be injected outside the area of capture. The time to run this system is slightly less than Alternative #2, due to the injection of clean groundwater back into the groundwater

system, which would slightly enhance biological conditions and provide flushing of contamination toward recovery points..

Present Worth:	\$ 1,296,115
Capital Costs for Groundwater System:	\$ 220,000
Capital Costs for Soil Removal:	\$ 710,200
Annual O&M Costs for the first 8 years:	\$ 60,000
Annual O&M Costs for 5 years of post remediation monitoring:	\$ 15,000

Alternative 4 - In Situ Treatment using Air Sparging

Alternative #4 is based on the physical removal of dissolved VOCs via mass transfer in situ. A series of small diameter wells would be constructed to inject air into the contaminated overburden aquifer. VOCs would be transferred from the dissolved phase in the groundwater to the gaseous phase in the vadose zone. Gas would dissipate at the surface of the ground. It is anticipated that 12 air sparging wells spaced 50 feet on center would influence the zone of highest dissolved VOCs. Monitoring of groundwater downgradient of the site as described under the limited action alternative would also be included.

Present Worth:	\$ 1,015,579
Capital Costs for Groundwater System:	\$ 150,000
Capital Costs for Soil Removal:	\$ 710,200
Annual O&M Costs for the first 5 years:	\$ 30,000
Annual O&M Costs for 5 years of post remediation monitoring:	\$ 15,000

Alternative 5 - In Situ Treatment Using Chemical Oxidation

Alternative #5 consists of injecting oxidant, (usually hydrogen peroxide) into the aquifer to chemically oxidize VOCs in the groundwater. The pre-diluted technical grade hydrogen peroxide would be stored on site in a storage tank. The hydrogen peroxide would be piped to existing monitoring wells where it would be injected. It is estimated that a period of two years would be required for injections in order to dissipate the area effected by the highest levels of VOCs.

Present Worth:	\$ 888,000
Capital Costs for Groundwater System:	\$ 110,000
Capital Costs for Soil Removal:	\$ 710,200
Annual O&M Costs for the first 2 years:	\$ 20,000
Annual O&M Costs for 3 years of post remediation monitoring:	\$ 15,000

Alternative #6 - Supplemental Groundwater Alternative

This alternative includes the installation of a groundwater recovery system to capture and remove VOC impacted groundwater found on and off site. The proposed collection system calls for the installation of one well to be placed on site. The groundwater recovery system would transmit contaminated groundwater to a treatment system for either full treatment to meet discharge limits or to meet pretreatment standards as set by the Publicly Owned Treatment Works (POTW).

Contaminated groundwater found off-site would be allowed to naturally attenuate.

Downgradient groundwater would be monitored to ensure that contamination was not increasing or migrating toward downgradient receptors.

As part of this alternative, during the pump and treat operations, alternative treatment technologies may be evaluated to replace the pump and treat system. Potential technologies include enhanced bioremediation, reaction wall/gate, phyto-remediation, etc.

Present Worth:	\$ 1,148,105
Capital Costs for Groundwater System:	\$ 191,500
Capital Costs for Soil Removal:	\$ 710,200
Annual O&M Costs for the first 4 years:	\$ 59,800
Annual O&M Costs for years 5 through 30:	\$ 15,000

6.2 Evaluation of Remedial Alternatives

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6NYCRR Part 375). For each of the criteria, a brief description is provided, followed by an evaluation of the alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is contained in the Feasibility Study. The first two evaluation criteria are termed threshold criteria and must be satisfied in order for an alternative to be considered for selection. The last five evaluations are termed "primary balancing criteria" and are used to compare the positive and negative aspects of each alternative.

1. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance (Appendix A, Table 1).

Alternative #1 would not meet SCGs for groundwater in a timely manner. Under this alternative no removal or treatment of contaminated groundwater would occur, and therefore, contaminants would continue to migrate from the site.

All remaining alternatives may eventually meet SCGs for groundwater, assuming that the remedies would be effective in removing contamination.

All alternatives except for #1 would meet SCGs for contaminated soils, based upon the excavation of all waste and soils above soil cleanup goals. Soils would be disposed of in either a secure solid waste or hazardous waste landfill.

2. Protection of Human Health and the Environment. This criterion is an overall evaluation of the health and environmental impacts to assess whether each alternative is protective.

Alternative #1 would not be considered to be protective of human health and the environment since site related contaminants above clean-up goals would remain in place and continue to migrate off-site and onto adjacent property which is present in active use.

Alternatives #2, #3, #4, #5, and #6 would be considered to be protective, assuming that each alternative is effective in minimizing exposure to contaminants.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

Alternative #1 would not cause any short term impacts due to the lack of disturbance of the site.

The remaining alternatives could create potential short term impacts from the installation and construction of groundwater collection and treatment systems due to worker and public exposure to soils, dust and noise. However, these impacts would be mitigated by implementing readily available safety procedures, including air monitoring, the wearing of protective equipment, and decontamination of equipment prior to leaving the site, and engineering controls including covering excavated soils and installing sediment migration barriers to keep contaminants from migrating beyond the work site boundaries.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the controls intended to limit the risk, and 3) the reliability of these controls.

Alternative #1 would not provide long-term effectiveness or permanence due to the continued migration of contaminated groundwater.

Alternatives #4 and #5 would have a greater degree of long-term effectiveness or permanence in comparison compared to Alternatives #2, #3, and #6 because Alternatives #4 and #5 include on-site insitu treatment versus containment. However, some additional environmental controls would be required for Alternatives #4 and #5 in order to prevent the further spread of contaminated groundwater off site during the in-situ treatment period.

There remains uncertainties regarding the effectiveness of all groundwater cleanup remedies proposed in the engineering reports. Additional field testing would be needed to verify the engineer's assumption on the effectiveness of each alternative.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Alternative #1 would provide no reduction in toxicity, mobility or volume as it pertains to the contaminated soils. The remaining alternatives all include the removal of contaminated wastes and soils from the site, therefore, they are all considered to provide the same degree of reduction.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction and the ability to

monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc..

Alternatives involving soil and waste removal would be considered implementable. Standard excavation techniques would be implemented and no special equipment or tools are required.

Alternative # 1 considered to be the most implementable due to the limited construction required.

Alternatives # 2, #3, and #6 have the highest degree of implementability, since the equipment and contractors are readily available, the technology is reliable and the no delays are anticipated technically or administratively.

Alternatives # 4 and # 5 are considered to be less implementable due to the uncertainties in meeting specified process efficiencies and performance goals and the availability of equipment and experienced contractors. In addition, further controls may be required to prevent further off site migration during the in situ treatment period.

The PRAP called for discharge of collected groundwater to the POTW for further treatment. Because the Oneida County POTW does not have the capacity to accommodate the collected groundwater, all water will be treated on site to meet discharge standards and then discharged to Nail Creek or to an on-site infiltration gallery.

This is considered to be an implementability issue. The ability of the Lockheed Martin to obtain permission to discharge to the Oneida County POTW is not available and therefore alternative # 2 is considered to be less implementable than Alternative # 3. This does not change the overall intent of the Department's selected remedy. However on-site treatment and discharge will be the option which is available and subsequently implimentable.

7. Cost. Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision. The costs for each alternative are presented in Table 3.

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan are evaluated. A "Responsiveness Summary" included in Appendix C presents the public comments received and the Department's responses to the concerns. In general the public comments received were supportive of the selected remedy. Comments received from the Oneida County Sewer District did require the proposal to be modified. The PRAP called for discharge of collected groundwater to the POTW for further treatment. Because the Oneida County POTW does not have the capacity to accommodate the collected groundwater, all water will be treated on site to meet discharge standards and then discharged to Nail Creek or to an on-site infiltration gallery. This does not change the overall intent of the Department's selected remedy. Alternative # 2 and Alternative # 3 are essentially the same, except # 2 requires off site disposal and # 3 requires on-site treatment of contaminated groundwater. Lockheed Martin submitted a substantial quantity of comments, however they concluded that the Department's approach, pertaining to the development of a system during the preliminary design phase, was acceptable. Other comments were responded to, incorporated or were editorial in nature.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 6, the NYSDEC is selecting Alternative #3 as the remedy for this site. Alternative # 3 has been modified, not to include the exact number, size and location of pumping wells. The exact size of the system will be determined during a preliminary design program. This will reflect more accurately current field conditions and physical constraints.

The elements of the selected remedy are as follows:

- Removal of PCB and VOC contaminated soils and waste, which exceed the Department's cleanup goals (TAGM 4046), from the IRM treatment cell and in the vicinity of the former burn pit. Based upon the Feasibility Study, approximately 2,200 and 870 cubic yards of soils will be removed from the treatment cell and burn pit area, respectively. The soils will be stock piled and characterized for off-site disposal at either a permitted solid waste or hazardous waste landfill. The excavated area will be backfilled and revegetated, once confirmatory soil samples verify that cleanup goals were achieved.
- Overburden pumping wells will be installed to capture the high concentrations of VOCs in the overburden groundwater downgradient of the burn pit (Alternative #3). At least one additional pumping well located along the axis of the plume may be needed to maximize practical containment of the plume. The number, location and spacing of wells will be determined during the remedial design. The design goals will be to restore contaminated groundwater to groundwater quality standards within the shortest time technically feasible and to protect down gradient receptors.
- The groundwater collection and treatment system will treat contaminated water in order to meet discharge standards to adjacent surface water or to discharge to an on site infiltration system.
- As part of the monitoring program, it will be necessary to evaluate the effectiveness of the groundwater remediation system over time. Additional groundwater clean up remedies or controls may need to be evaluated based on the effectiveness of the groundwater pumping system.
- Additional monitoring wells will be installed to track and monitor the bedrock aquifer and to determine if future remedial activities are warranted to address deep or down gradient impacts. Monitoring will also be required to ensure that downgradient surface water is protected.
- Monitoring and maintenance will be required for the groundwater collection and treatment system to ensure proper operations, regulatory compliance and protection of human health and the environment.
- A remedial design program to verify the components of the conceptual design and to provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Any uncertainties identified during the RI/FS will be resolved.

The estimated present worth cost to implement the proposed remedy is \$1,296,115. The cost to construct the remedy is estimated to be \$910,200 and the estimated annual operation and maintenance cost is estimated to be \$60,000 for the first 8 years and \$15,000 for year 9 through 13. Additional costs may be encountered based on the preliminary design work which will verify the consultants assumption concerning number, location and spacing of extraction wells. Time and cost estimates are based on current understanding of site conditions, conceptual models and best estimates. Field condition encountered during construction, preliminary design analysis and future conditions may result in deviations from projected estimates.

The following is the basis for the Department's section:

- ▶ Compared to the remaining alternatives, the Department's proposal would obtain remedial goals during the shortest time, while utilizing proven and cost effective technologies. Compared to the other alternatives, the Department's proposal, which includes additional downgradient extraction wells, would provide the highest level of protection, both short term and long term, for human health and the environment.
- ▶ The excavation of all soils and waste containing VOCs and PCBs above NYSDEC soil clean up goals would permanently remove contaminated media from the environment and reduce loading of VOCs and PCBs to the groundwater.
- ▶ Off-site disposal of these wastes and soils at a secure solid waste or hazardous waste landfill would properly contain these materials in an approved long-term secure facility.
- ▶ The removal of soils and waste would meet SCGs and Remedial Action Objectives, permanently reduce the toxicity, mobility or volume of the waste, and would be protective of human health and the environment.
- ▶ The installation of pumping wells would remove and control contaminants in groundwater presently presenting a significant threat to public health and the environment.
- ▶ The installation of pumping wells would prevent contaminated overburden groundwater from migrating into the bedrock aquifer.
- ▶ The installation of downgradient deep and shallow monitoring wells would detect if contamination is spreading in the overburden or bedrock aquifer. Additional remedial actions may be required if needed to protect human health and the environment.
- ▶ The development of an Operation, Monitoring and Maintenance Program (OMMP) would ensure that the selected remedy is functioning as required by the Record of Decision.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the GE West Lot Site remediation process, a number of Citizen Participation (CP) activities were undertaken in an effort to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- ▶ A repository for documents pertaining to the site was established.
- ▶ A site mailing list was established which included nearby property owners, local political officials, local media, and other interest parties.
- ▶ A public meeting was held to discuss the characteristics of the site and the proposed remedy, and to answer any questions raised.
- ▶ A "Responsiveness Summary" was prepared and made available to the public to address the comments received during the public comment period for the PRAP.

APPENDIX A

Appendix A - Table 1
New York State Standards, Criteria and Guidance Applications

U.S. Environmental Protection Agency (EPA)

- Toxic Substance Control Act (TSCA)
- USEPA Health Based Soil Criteria for Systemic Toxicant and Carcinogens

New York State Department of Environmental Conservation (NYSDEC)

NYSDEC - Division of Environmental Remediation

- 6NYCRR Part 375-Inactive Hazardous Waste Disposal Site Remedial Program

Hazardous Waste Technical and Administrative Guidance Memoranda (TAGMs)

- TAGM 4030 - Selection of Remedial Actions at Inactive Hazardous Waste Sites
- TAGM 4046 - Determination of Soil Cleanup Objectives and Cleanup Levels
- TAGM 4031 - Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites

NYSDEC - Division of Hazardous Substance Regulations

- 6NYCRR Part 370 - Hazardous Waste Management System - General
- 6NYCRR Part 371 - Identification and Listing of Hazardous Wastes
- 6NYCRR Part 372 - Hazardous Waste Manifest System and Related Standards for Generators, Transporter, and Facilities
- 6NYCRR Part 376 - Land Disposal Restrictions

NYSDEC - Division of Solid Waste

- 6NYCRR Part 360 - Solid Waste Management Facilities
- 6NYCRR Part 364 - Waste Transporters Permits

NYSDEC - Division of Water

- 6NYCRR Part 700-705 - Water Quality Regulations for Surface Water and Groundwater
- 6NYCRR Part 750-757 - Implementation of NYPDES in New York State
- Technical and Operation Guidelines (TOGS) 1.1.1-Ambient Water Quality Standards and Guidance Values

NYSDEC - Division of Fish and Wildlife

- Technical Guidance for Screening Contaminated Sediments (Nov 1993)

Occupational Safety and Health Administration

- 29 CFR 1900-1999

Appendix A - Table 2
Representative Contamination Summary

Media	Class	Contaminant of Concern	Concentration Range	Frequency of Exceedances	SCG *
Groundwater Shallow	Volatile Organic Compounds	Tetrachloroethylene	Non Detect - 100 ppb	5 out of 26	5 ppb
		Trichloroethene	Non Detect - 14,000 ppb	8 out of 26	5 ppb
		1,1,1-Trichloroethane	Non Detect - 830 ppb	5 out of 26	5 ppb
		1,2-Dichloroethene	Non Detect - 420,000	13 out of 26	5 ppb
		Vinyl Chloride	Non-Detect - 3,500 ppb	9 out of 26	5 ppb
		Toluene	Non Detect - 6,100 ppb	5 out of 26	5 ppb
		Ethylbenzene	Non Detect - 340 ppb	7 out of 26	5 ppb
		Xylene	Non Detect - 1,400 ppb	7 out of 26	5 ppb
		Benzene	Non Detect - 14 ppb	1 out of 26	0.7 ppb
		PCBs	Total PCBs	Non Detect - 0.7 ppb	1 out of 26
Groundwater Deep	Volatile Organic Compounds	1,2-Dichloroethene	Non Detect - 10 ppb	2 out of 3	5 ppb
		Trichloroethene	Non Detect - 33 ppb	1 out of 3	5 ppb
		Toluene	Non Detect - 130 ppb	1 out of 3	5 ppb
Soils	Polychlorinated Biphenyls	PCB	Non Detect - 340,000 ppb	1 out of 20	10,000 ppb
	Volatile Organic Compounds	Tetrachloroethylene	Non Detect 16,000 ppb	1 out of 20	1,400 ppb
		Ethylbenzene	Non Detect - 150,000 ppb	1 out of 20	5,500 ppb
		Xylene	Non Detect - 710,000	1 out of 20	1,200 ppb

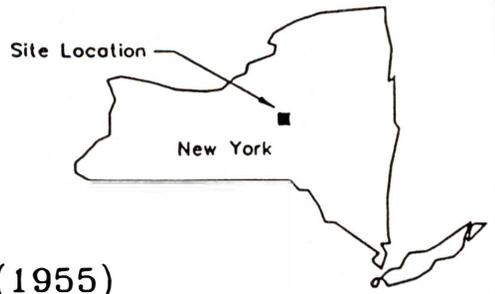
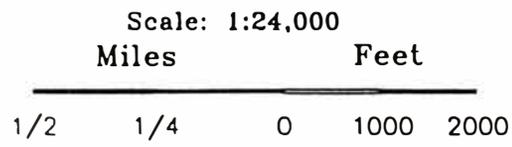
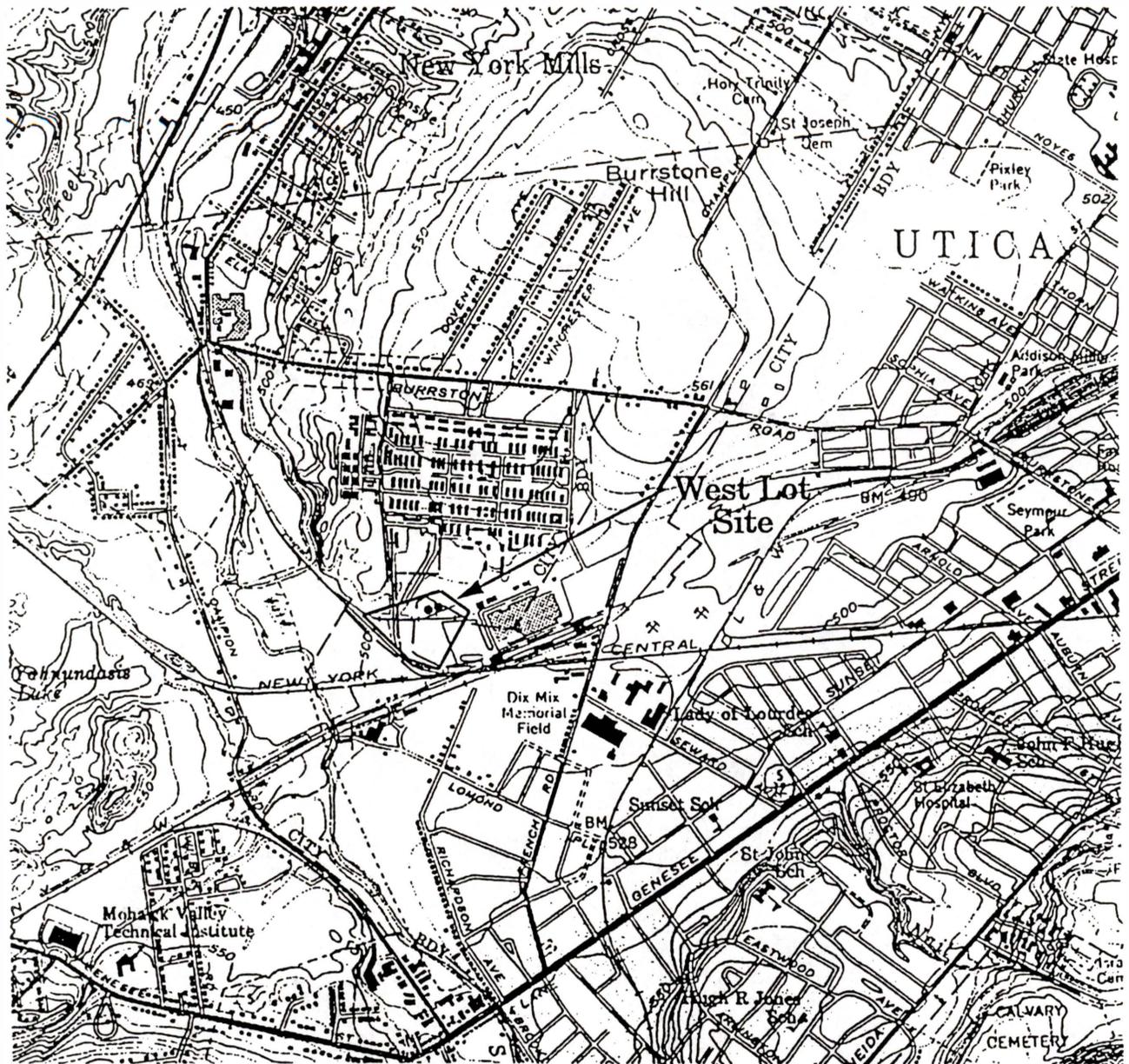
* SCG's for groundwater is standard 6 NYCRR Part 703
SCG's for soil is objectives in NYSDEC TAGM 4046

Appendix A - Table 3
G. E. West Lot Site
Remedial Alternatives Costs

Remedial Alternative	Capital Costs	Annual O&M	Total Present Worth
Alternative # 1 Limited Action	\$ 0.00	\$ 15,000 - 0 to 30 years	\$ 181,541
Alternative # 2 Collect Treat/Discharge to POTW	\$ 200,000 - Groundwater \$ 710,200 - Soil	\$ 60,000 - 0 to 10 years \$ 15,000 - 11 to 15 years	\$ 1,355,754
Alternative # 3 Collect Treat/Discharge on Site	\$ 220,000 - Groundwater \$ 710,200 - Soil	\$ 60,000 - 0 to 8 years \$ 15,000 - 9 to 13 years	\$ 1,296,115
Alternative # 4 In-Situ Treatment - Air Sparging	\$ 150,000 - Groundwater \$ 710,200 - Soil	\$ 60,000 - 0 to 5 years \$ 15,000 - 6 to 10 years	\$ 1,015,579
Alternative # 5 In-Situ Treatment - Chemical Oxidation	\$ 110,000 - Groundwater \$ 710,200 - Soil	\$ 60,000 - 0 to 2 years \$ 15,000 - 3 to 6 years	\$ 888,000
Alternative # 6 Supplemental Groundwater Alternative	\$ 191,500 - Groundwater \$ 710,200 - Soil	\$ 59,800 - 0 to 4 years \$ 15,000 - 5 to 10 years	\$ 1,148,105

Notes: Present Worth Value is based upon a 7 % Present Worth Factor using continuous compounding.
Source removal of soils within the burn pit vicinity is part of every alternative, except the limited action alternative.

APPENDIX B



Source:
 United States Geological Survey
 7.5-Minute Series (Topographic)
 Quadrangle Map

Utica - West, NY (1955)

<p>SECOR International, Inc.</p>	<p>Figure 1 - Site Location Map West Lot Project Area</p>	<p>Former Lockheed Martin Corp. Facility 525 French Road Utica, Onondaga County, New York, 13502</p> <p>LOCATION:</p>	
<p>4914 West Genesee Street Camillus, New York 13031 (315) 484-7874</p>	<p>Burbank Program Office 2550 N. Hollywood Way CLIENT: Burbank, CA 91505</p>	<p>4G002-001-01 PROJECT NO.:</p>	<p>LMC-UTLOC.jpg 16 May 1997 ASKCH FILE: DATE:</p>

SECOR
 4914 WEST GENESSEE ST.
 CAMILLUS, NEW YORK 13031
 (315) 484-7874
 (315) 484-0298 Fax

**WEST LOT PROJECT AREA
 SITE PLAN**

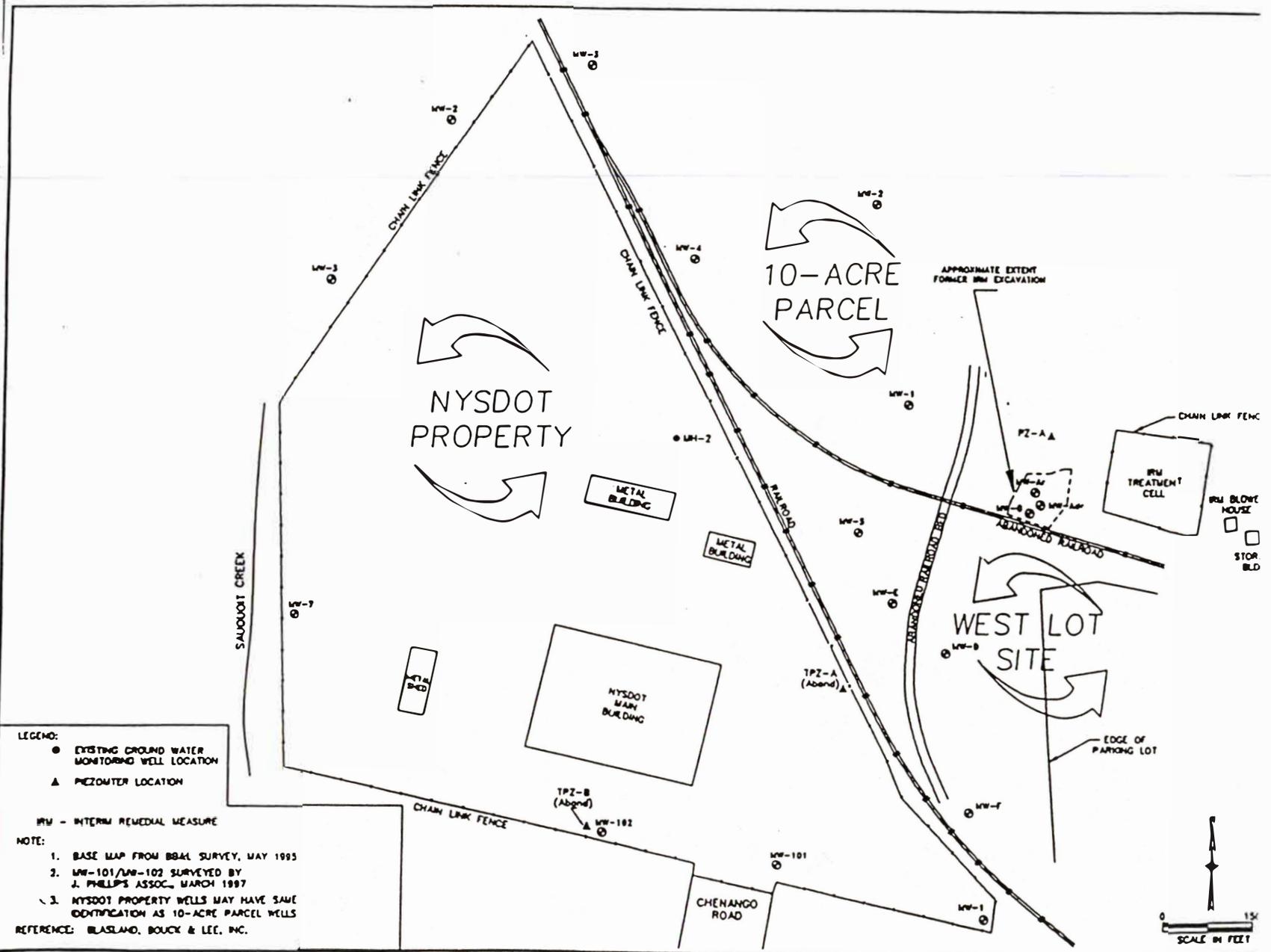
FIGURE 2

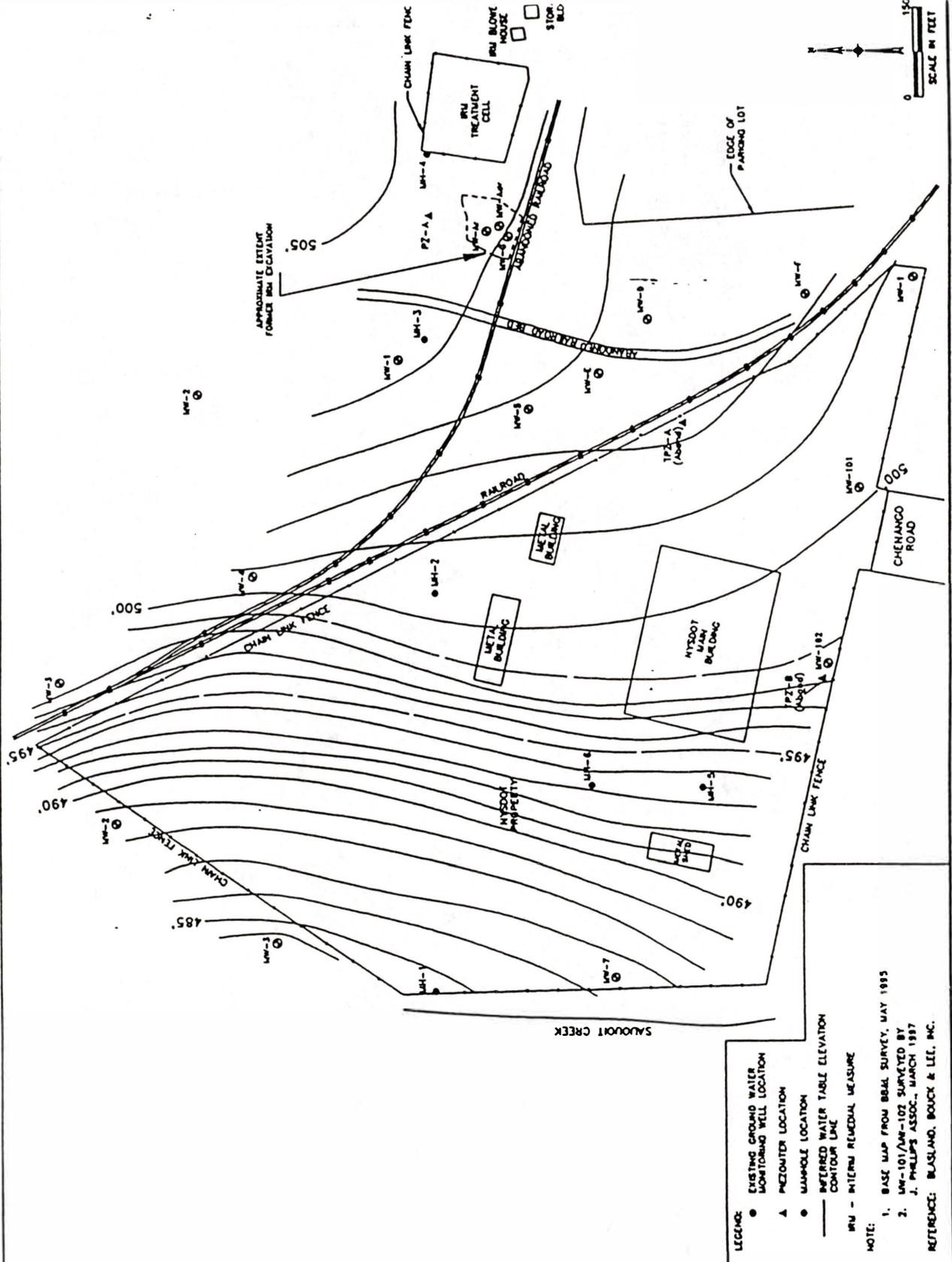
LOCKHEED MARTIN CORPORATION
 BURBANK PROGRAM OFFICE
 "WEST LOT PROJECT AREA"
 UTICA, ONEIDA COUNTY, NEW YORK

PREPARED BY: CAGG-PJ

FILE NAME: LOCKHEED

DATE: 4/23/97





SECOR

4914 WEST GENESEE ST.
 CAMILLUS, NEW YORK 13031
 (315) 484-7874
 (315) 484-0298 Fax

INFERRED WATER TABLE GRADIENT MAP 04 MARCH 1997

FIGURE 3

LOCKHEED MARTIN CORPORATION
 BURBANK PROGRAM OFFICE
 "WEST LOT PROJECT AREA"
 UTICA, ONEIDA COUNTY, NEW YORK

PREPARED BY: CADO-PJ

FILE NAME: LOCKHEED

DATE: 4/23/97

SECOR
 4914 WEST GENESSEE STREET
 CANTILLUS, NEW YORK 13031
 (315) 484-7874
 (315) 484-0288 FAX

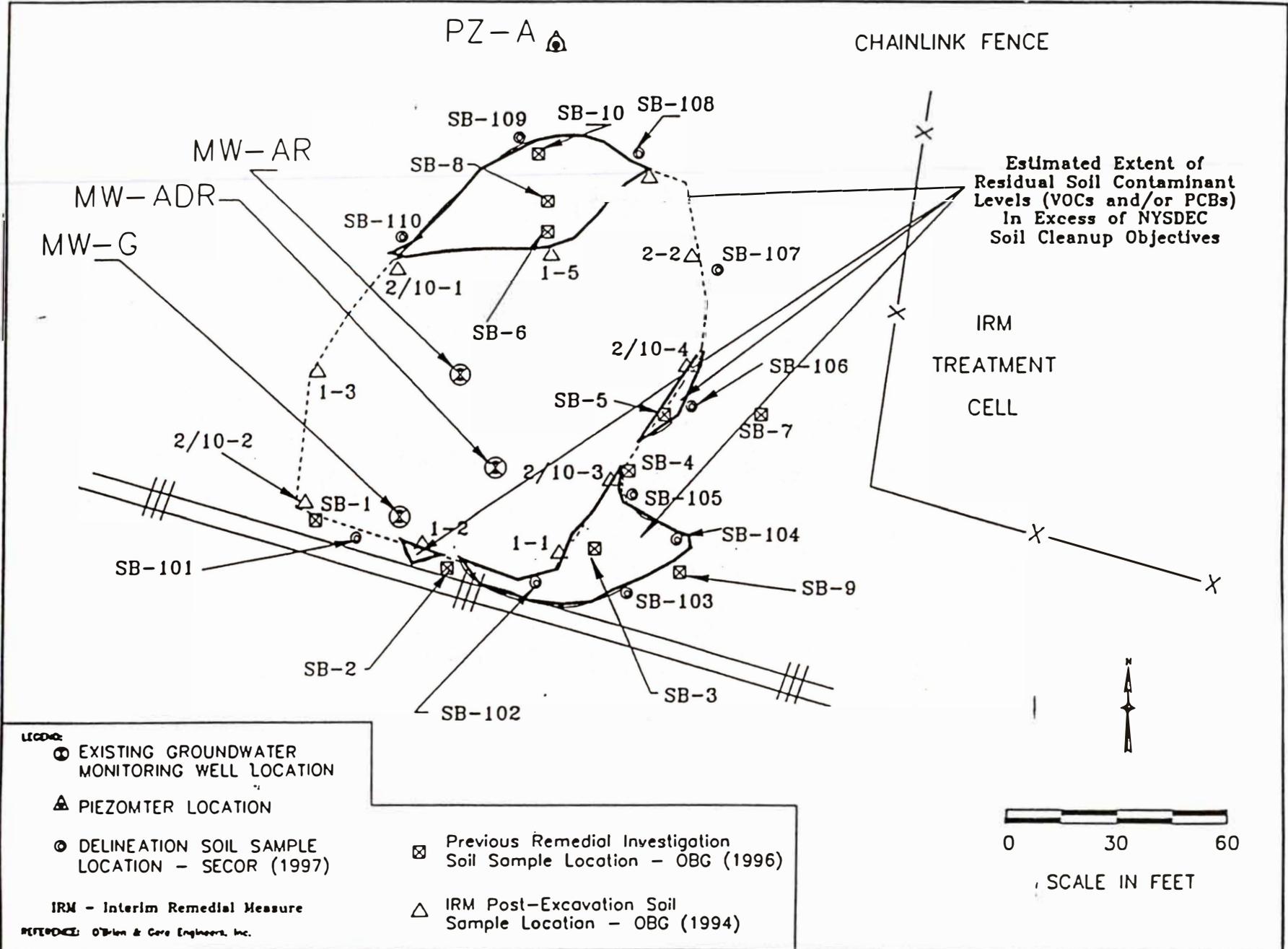
FORMER "BURN PIT" AREA
 Delineation Soil Sample Locations

CLIENT: LOCKED MARTIN CORP.
 BUREAU PROGRAM OFFICE
 2550 N. HOLLYWOOD WAY
 BUREAU, CA 91505

LOCATION: FRENCH ROAD FACILITY
 515 FRENCH ROAD
 UTICA, ONEIDA COUNTY, NY 13502

REVISED BY: JPS (5/97)
 ASPECT: DELINEATION
 DATE: 4/23/97

FIGURE 4



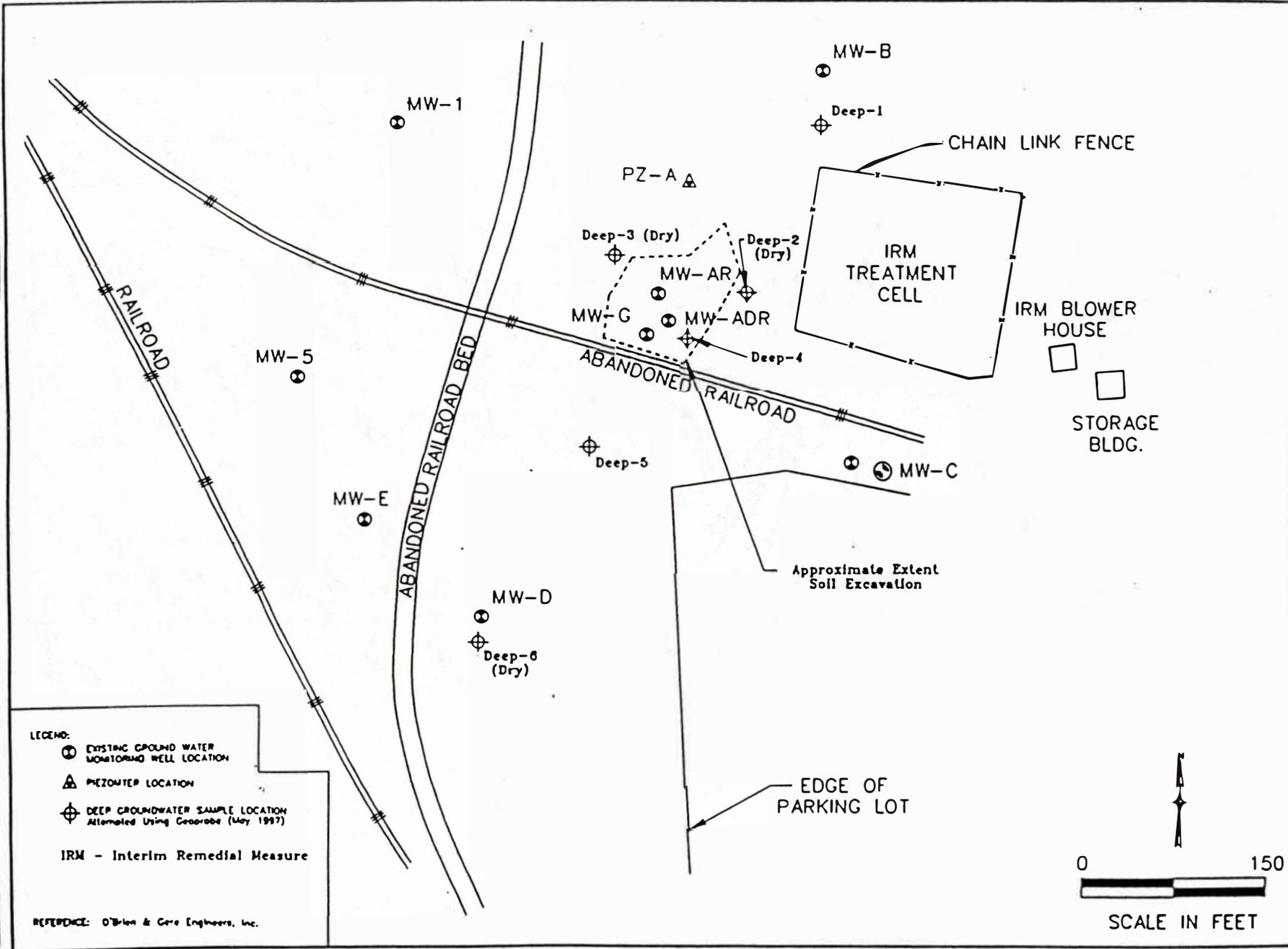
SECOR
 4914 WEST GENESEE STREET
 CAMILLUS, NEW YORK 13051
 (315) 484-7874
 (315) 484-0298 Fax

WEST LOT PROJECT AREA
 Till Layer Groundwater Sample Locations

CLIENT: LOGGED MARTIN CORP.
 BUREAU PROGRAM GROUP
 2550 N. HOLLYWOOD WAY
 BURBANK, CA 91505

LOCATION: FREDON ROAD FACILITY
 525 FREDON ROAD
 UTICA, ONEIDA COUNTY, NY 13502

REVISED BY: P/S (5/97) **DATE:** 4/23/97



SECOR
 4914 WEST GENESEE ST.
 CAMILLUS, NEW YORK 13031
 (315) 484-7674
 (315) 484-0298 Fax

INFERRED WATER TABLE GRADIENT MAP
 22 MAY 1997

CLIENT:
 LOCKPORT WATER CORPORATION
 WASTEWATER PROGRAM OFFICE
 2339 N. HOLLAND ROAD
 BIRMINGHAM, CT. 07825

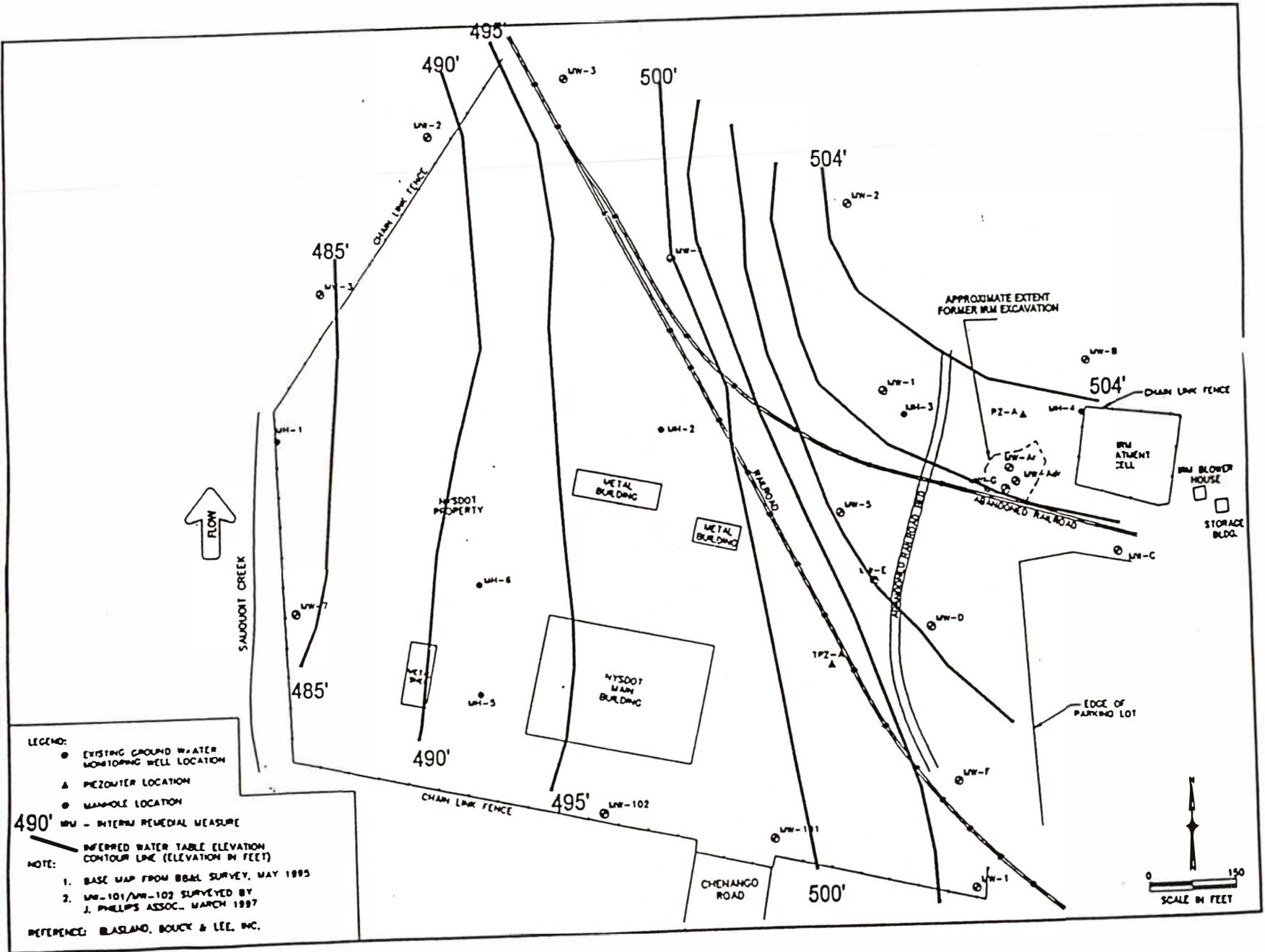
LOCATION:
 FRENCH ROAD FACILITY
 515 FRENCH ROAD
 UNION, ONEIDA COUNTY, NY 13992

PREPARED BY: CA00-PJ FILE NAME: LOCKPORT DATE: 4/23/97

SECOR

INFERRED WATER TABLE GRADIENT MAP

FIGURE 6



SECOR
 4914 WEST GENESSEE STREET
 CAMILLUS, NEW YORK 13031
 (315) 484-7874
 (315) 484-0298 Fax

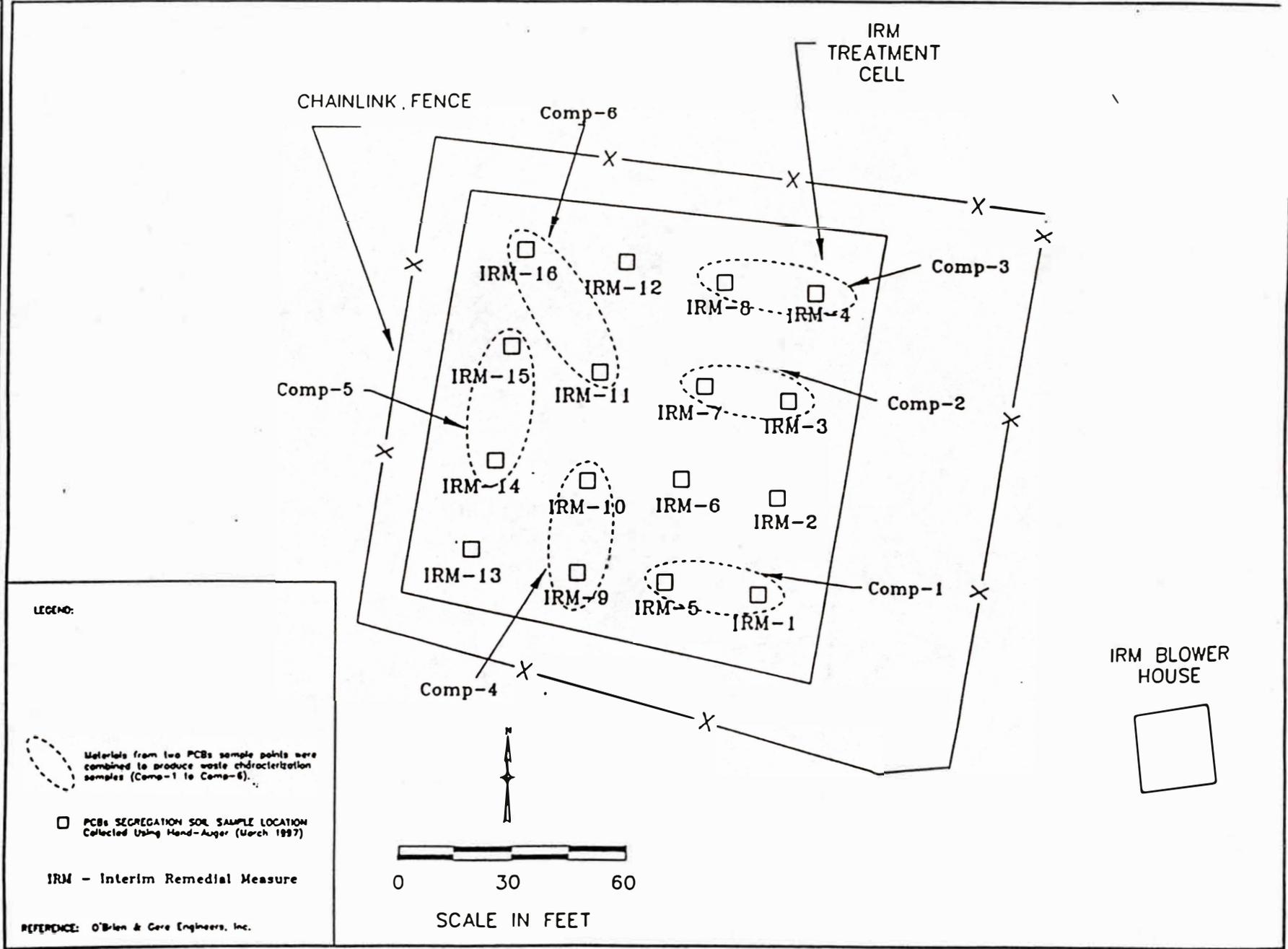
WEST LOT PROJECT AREA
 Segregation/Waste Characterization
 IRM Cell Soil Sample Locations

CLIENT: LOGGED MARTIN CORP.
 BUREAU PROGRAM OFFICE
 2550 N. HOLLYWOOD WAY
 BURBANK, CA 91505

LOCATION: FRENCH ROAD FACILITY
 575 FRENCH ROAD
 UTICA, ONEIDA COUNTY, NY 13502

PREPARED BY: JPS (3/97) ASKETCH: POSTGRO, SMD DATE: 4/23/97

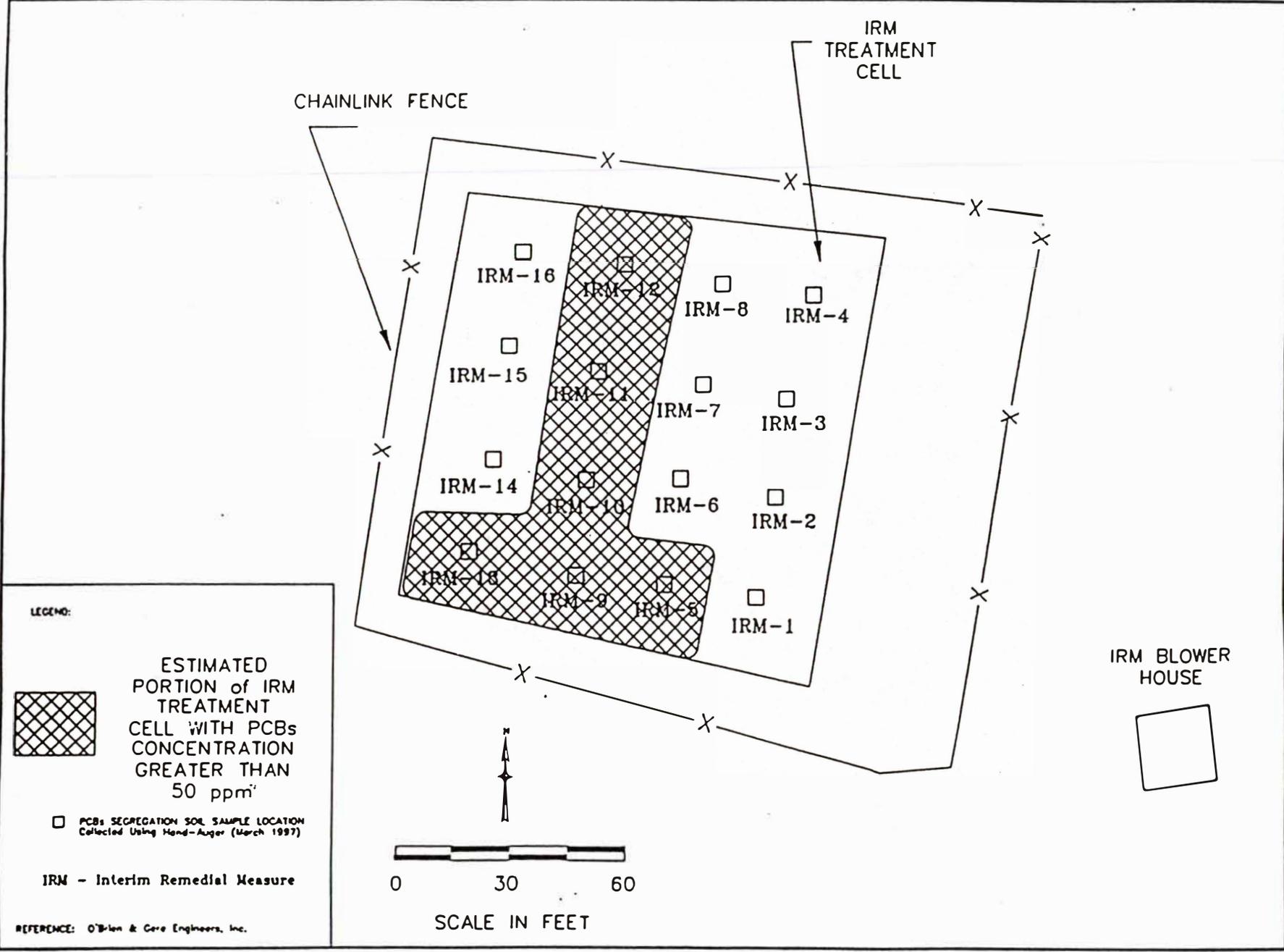
FIGURE 7



SECOR
 4914 WEST GENESEE STREET
 CAHILLUS, NEW YORK 13031
 (315) 484-7874
 (315) 484-0298 fax

WEST LOT PROJECT AREA
 Estimated Portion of IRM Cell Requiring
 Disposal as "Hazardous Waste"
 CLIENT: LOGGERS MARTIN CORP.
 BARBARA PROCTOR OFFICE
 2350 N. HOLLWOOD WAY
 BURBANK, CA 91505
 PREPARED BY: JPS (5/97) ASPECT: PAPER/SKD DATE: 4/23/97

FIGURE 8



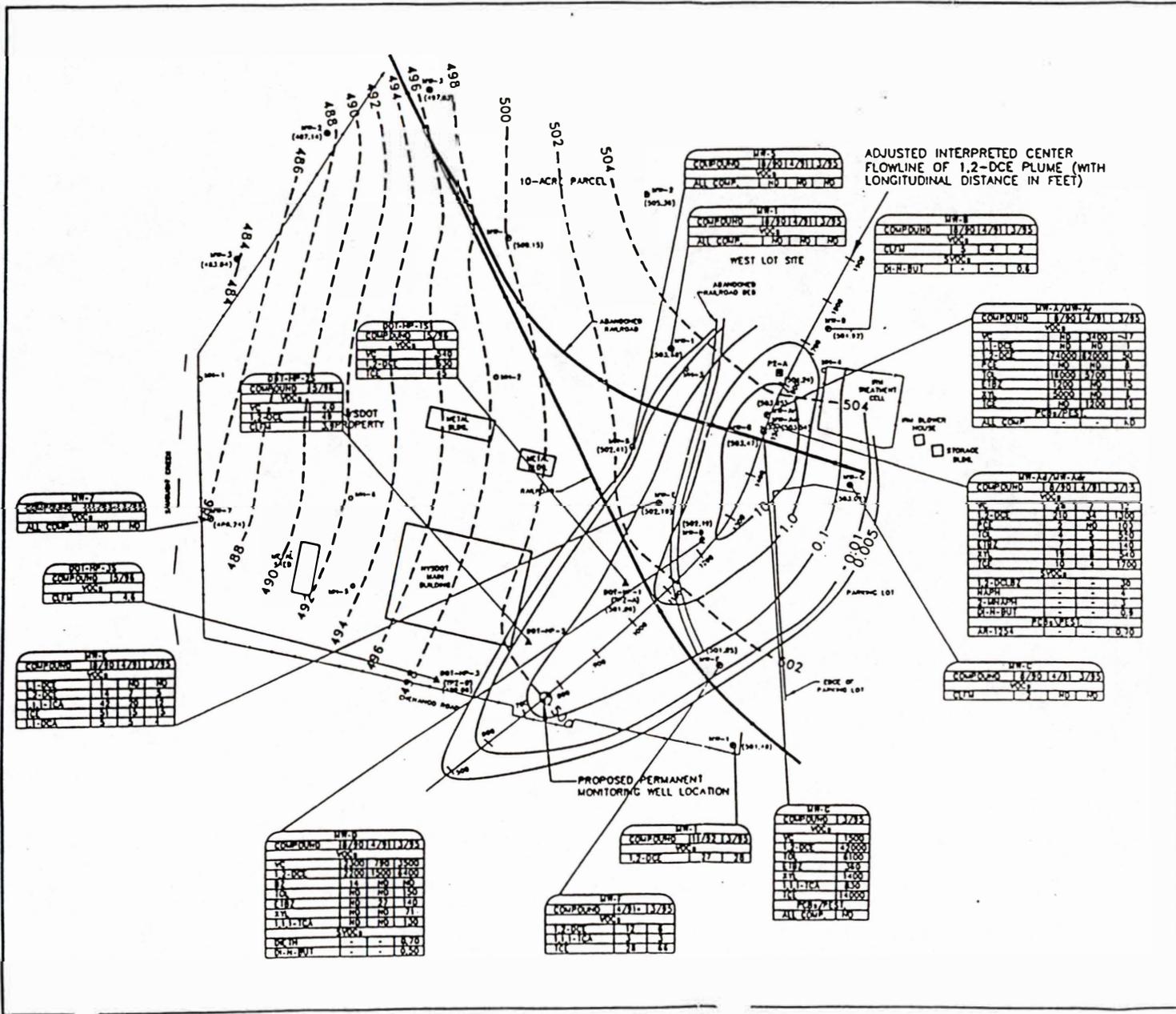


FIGURE 7



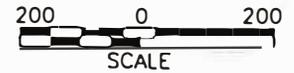
LEGEND

- MW-1 MANHOLE LOCATION
- MW-7 EXISTING GROUND-WATER MONITORING WELL
- ⊠ PI-A PIEZOMETER
- ▲ BOT-1-3 HYDROPUNCH LOCATION
- 0.01 ——— SIMULATED 1,2-DCE PLUME CONTOUR (mg/L)
- (500.15) ——— GROUND-WATER ELEVATION (FEET)(MAY 22, 1998)
- 502 - - - - GROUND-WATER ELEVATION CONTOUR LINE (FEET)

- NOTES:**
1. FIGURE BASED ON MAP DEVELOPED BY RUSLAND, BOUCE & LEE, INC. (DWC FILE - 3803406)
 - - - 4/81 AND 11/83 GROUND WATER SAMPLING RESULTS AT HYSOCT PROPERTY BASED ON SAMPLES OBTAINED BY HYSOCT.
 - ND - NOT DETECTED

**LOCKHEED MARTIN CORP.
WEST LOT SITE-UTICA, N.Y.
REMEDIAL INVESTIGATION
REPORT ADDENDUM**

**ADJUSTED SOLUTE-TRANSPORT
MODEL PLUME AND PROPOSED
MONITORING WELL LOCATION**



SCALE

FILE NO. 5526.050-06F



MW-8		COMPOUND		11/29/13/21/13/23/5	
VE	VE	VE	VE	VE	VE
1,2-DCE	ND	ND	ND	ND	ND
1,1-DCE	7.0000	13.0000	ND	ND	ND
PERC	ND	ND	ND	ND	ND
THA	11.0000	13.0000	ND	ND	ND
THM	11.0000	ND	ND	ND	ND
THM	ND	ND	ND	ND	ND
ALL COMP.	ND	ND	ND	ND	ND

MW-12/13/14		COMPOUND		11/29/13/21/13/23/5	
VE	VE	VE	VE	VE	VE
1,2-DCE	ND	ND	ND	ND	ND
1,1-DCE	ND	ND	ND	ND	ND
PERC	ND	ND	ND	ND	ND
THA	ND	ND	ND	ND	ND
THM	ND	ND	ND	ND	ND
THM	ND	ND	ND	ND	ND
ALL COMP.	ND	ND	ND	ND	ND

MW-15		COMPOUND		11/29/13/21/13/23/5	
VE	VE	VE	VE	VE	VE
1,2-DCE	ND	ND	ND	ND	ND
1,1-DCE	ND	ND	ND	ND	ND
PERC	ND	ND	ND	ND	ND
THA	ND	ND	ND	ND	ND
THM	ND	ND	ND	ND	ND
THM	ND	ND	ND	ND	ND
ALL COMP.	ND	ND	ND	ND	ND

MW-9		COMPOUND		11/29/13/21/13/23/5	
VE	VE	VE	VE	VE	VE
1,2-DCE	ND	ND	ND	ND	ND
1,1-DCE	ND	ND	ND	ND	ND
PERC	ND	ND	ND	ND	ND
THA	ND	ND	ND	ND	ND
THM	ND	ND	ND	ND	ND
THM	ND	ND	ND	ND	ND
ALL COMP.	ND	ND	ND	ND	ND

MW-1		COMPOUND		11/29/13/21/13/23/5	
VE	VE	VE	VE	VE	VE
1,2-DCE	ND	ND	ND	ND	ND
1,1-DCE	ND	ND	ND	ND	ND
PERC	ND	ND	ND	ND	ND
THA	ND	ND	ND	ND	ND
THM	ND	ND	ND	ND	ND
THM	ND	ND	ND	ND	ND
ALL COMP.	ND	ND	ND	ND	ND

MW-7		COMPOUND		11/29/13/21/13/23/5	
VE	VE	VE	VE	VE	VE
1,2-DCE	ND	ND	ND	ND	ND
1,1-DCE	ND	ND	ND	ND	ND
PERC	ND	ND	ND	ND	ND
THA	ND	ND	ND	ND	ND
THM	ND	ND	ND	ND	ND
THM	ND	ND	ND	ND	ND
ALL COMP.	ND	ND	ND	ND	ND

MW-10		COMPOUND		11/29/13/21/13/23/5	
VE	VE	VE	VE	VE	VE
1,2-DCE	ND	ND	ND	ND	ND
1,1-DCE	ND	ND	ND	ND	ND
PERC	ND	ND	ND	ND	ND
THA	ND	ND	ND	ND	ND
THM	ND	ND	ND	ND	ND
THM	ND	ND	ND	ND	ND
ALL COMP.	ND	ND	ND	ND	ND

APPENDIX C

**RESPONSIVENESS SUMMARY
GE WEST LOT
SITE NO. 6-33-036**

The following comments were received during the public meeting held on March 5, 1998.

Comment #1:

- ▶ The Oneida County Sewer District will not allow discharge of contaminated or treated water to the sanitary sewers if discharge levels exceed 1-2 gallons/minute. The restriction is based on the Sewer District's ability to handle additional flow. The anticipated quantity of water to be collected from a groundwater collection system is well in excess of 10 gallons per minute.

Response #1:

- The treatment system will be constructed on site and treated water will be required to discharge to an on-site infiltration gallery or to Nail Creek which is the location that General Electric discharged their treated waste water to, under a Department SPDES permit. The selected alternative will be a modified Alternative #3. This is the same as Alternative #2, except the treated groundwater will be discharged to Nail Creek or to an on-site infiltration gallery.

Comment #2:

- ▶ How many wells will be placed on the NYS Department of Transportation Property?

Response #2:

- At this time the exact number and location of the extraction wells is not known. A preliminary design will be conducted to determine the locations and numbers based on the current definition of the plume and the radius of influence that a pumping well may exert on the surrounding area.

The following comments were provided by Lockheed Martin Corporation in a letter dated March 23, 1998.

Comment #1:

- Approval of the Remedial Investigation Report and Feasibility Study, NYSDEC has not yet issued, to LMC, written approval of the Remedial Investigation (RI) Report (Blasland, Bouck & Lee, Inc., August 1995), Addendum RI Report (O'Brien & Gere Engineers, Inc., September 1996), Feasibility Study (FS) Report (SECOR International, Inc., July 1997), nor the FS Report Supplement (Blasland, Bouck & Lee, Inc., January 1998). LMC believes the RI Report and Addendum RI Report have not yet received formal NYSDEC approval because certain additional investigative work was performed in the context of the FS.

NYSDEC has indicated that it intends to issue written approval of the FS upon issuance of the ROD. Typically, however, LMC receives approval of an FS before a PRAP is issued. LMC requests issuance at this time of NYSDEC's written approval of the RI Report, Addendum RI Report, FS Report and FS Report Supplement.

Response #1:

- ▶ The Department does not approve of the RI/FS until the public comment period is completed. During the public comment period, facts and issues may surface which would require the Department to request that the RI/FS be modified or issues addressed. The Department will provide approval of the RI and FS documents once the Record of Decision is executed.

Comment #2:

- ▶ Remedy Selection Process: LMC made every effort to communicate with NYSDEC regarding the alternatives presented in the FS Report and LMC developed a sixth alternative in the FS Report Supplement that addressed the remedy selection criteria set forth in NYSDEC's regulations at 6 NYCRR§ 375-1.10(c). LMC prepared the FS Report Supplement after consultation with NYSDEC in order to provide a remedial alternative that ensured hydraulic containment and control of the contaminant plume, but also incorporated alternative technology that would be appropriate after an initial pumping phase. In light of these efforts to address NYSDEC's concerns relating to the site's remedial program, LMC did not expect NYSDEC to select the alternative that was ranked the lowest of all the remedial alternatives during the FS screening process, and that is the most costly to implement, namely Remedial Alternative #2. Moreover, LMC never anticipated that NYSDEC would issue the PRAP without first communicating to LMC its decision regarding the selection of Alternative #2 as NYSDEC's preferred remedy. As the party responsible for implementation of the final remedy, LMC will strive to achieve open communication with NYSDEC as it enters the remedial design phase of this program. LMC believes it should be able to accomplish this goal since both parties desire to remediate the site in a manner that is protective of human health and the environment.

Response #2:

- ▶ Alternatives #2, #3 and #6 are essentially the same. Each alternative calls for groundwater extraction in order to control high levels of VOCs from migrating into the bedrock aquifer and/or off site on to lands occupied by the NYSDOT maintenance facility and private parties. The Department originally requested that the Feasibility Study, provided by SECOR International, be corrected to be factual and to consider an alternative that would actively remediate the contaminated groundwater that was identified both on and off site. Lockheed Martin's original Feasibility Study chose the limited action alternative (natural attenuation). This alternative would have required only monitoring of the contaminated groundwater plume as it spread out and migrated further off site. The Department and the NYSDOH

required Lockheed Martin to develop an active remedial program that would mitigate off site migration and provide for protection of human health and the environment. Lockheed Martin choose to remove SECOR from the project and contract with Blasland Bouck and Lee to provide a FS supplement. The supplement to the FS calls for groundwater collection and treatment, however, the Department feels that there needs to be further evaluation of the number, location and size of extraction wells during the Preliminary Design Phase. During that design phase additional borings will be advanced to define the plume and pump tests will be conducted to determine the exact amount of groundwater which can be recovered and the radius of influence that a given sized well will have. This was discussed with Mr. David Jones of Lockheed Martin and Mr. Lowell McBurney of BB&L at the public meeting. All parties agreed that this would be the logical sequence of activities.

Comment #3:

- Technical Concerns Relating to NYSDEC's Preferred Remedy. Last fall, LMC acknowledged NYSDEC's opposition to the natural attenuation remedy recommended in the FS Report. To develop a remedial alternative that would gain NYSDEC acceptance and approval, LMC prepared and submitted the FS Report Supplement, which recommended that Remedial Alternative #6 be selected as the site remedy. Conceptually, there is little difference in the groundwater control component between Remedial Alternative #6 and Remedial Alternative #2, insofar as both incorporate hydraulic containment and control through conventional groundwater pumping technology. LMC's most recent submission, the FS Report Supplement, included a detailed analysis of the groundwater hydraulics and projected capture zones, and a field-verified fate and solute-transport model. This analysis was prepared in support of Remedial Alternative #6, and identified a different conceptual pumping regimen compared to Remedial Alternative #2. LMC believes that the Remedial Alternative #6 analysis presented in the FS Report Supplement is more comprehensive and technically defensible than the Alternative #2 discussion presented in the FS Report, especially given the more recent technical information developed by LMC which undermines the technical basis associated with Remedial Alternative #2. A comparison between Remedial Alternative #2 and Remedial Alternative #6 is presented below.

**NYSDEC'S PREFERRED
REMEDIAL ALTERNATIVE #2**

Series of 4 pumping wells spaced 75 feet apart perpendicular to groundwater flow direction;

Pumping rate of 1 gallon per minute (g.p.m.) from each well;

At least one additional pumping well along the axis of the plume (Note: this was identified by NYSDEC in the PRAP, and not included as part of this alternative in the FS Report);

10 year duration;

After 10 years, asymptotic conditions expected to be reached (likely to exceed SCGS).

**LMC'S PROPOSED
REMEDIAL ALTERNATIVE #6**

Single pumping well installed along the flow centerline;

Pumping rate of 50 g.p.m.;

Capture zone width of 350 feet at pumping well location;

2 to 4 year duration;

After 2 to 4 years, employ alternative technology(ies) which rely on passive approach for long-term control.

- To summarize, LMC believes that Remedial Alternative #2 significantly under estimates the expected pumping rate that will be required to hydraulically contain and control VOC-impacted groundwater based on more recent information developed in the FS Report Supplement. In addition, the proposed locations of the four pumping wells (e.g., multiple wells perpendicular to the groundwater flow direction) represent an inefficient configuration. The outermost wells would remove groundwater with low, dilute concentrations of VOCS. In contrast, a single well installed on the axis of the plume would remove groundwater with the highest concentrations of VOCS, and provide more efficient VOC mass removal. Furthermore, multiple pumping wells aligned perpendicular to the groundwater flow direction could create stagnation zones, or hydraulic gaps, between the pumping wells resulting in a loss of hydraulic control. Although LMC believes that the conceptual-level design for Remedial Alternative #6 represents a more sound and technically stronger approach, it is premature to make any final determination relative to the configuration of the pumping system. This is embodied in LMC's summary and conclusions presented in the FS Report Supplement which acknowledges the need for refinement of key parameters as part of the remedial design effort. Furthermore, statements made by NYSDEC at the Public Meeting seemed to acknowledge the importance of the remedial design activities in

finalizing the configuration of the pumping system. Equally important to LMC relative to the technical integrity of NYSDEC's proposed remedy, is the ability to terminate the groundwater pumping system in a reasonable time frame. As indicated at the Public Meeting, NYSDEC's goals are to minimize the time period over which the groundwater pumping system must operate, restore groundwater conditions at this site to the extent practicable, and protect potential receptors against site-related impacts. However, Remedial Alternative #2 simply specifies the use of pump and treat without any provisions for system termination and/or technology-based performance criteria. Alternative #2 suggests that after a 10-year period, asymptotic conditions will exist and SCGs will not be achieved. In contrast, Remedial Alternative #6 provides for a comprehensive remedy including short-term control, long-term control and downgradient control. Aside from the technical differences between Remedial Alternative #2 and Remedial Alternative #6 indicated above, both of these alternatives address the short-term and downgradient control aspects of the site remedy. However, should the ROD be issued lacking any long-term control strategy, LMC believes that the remedy will be less than complete, and that the overall interests of all stakeholders including NYSDEC, LMC and the community, will not be fully addressed.

Response #3:

- Because of the concerns discussed above and because Alternative #6 as well as #2 and #3 are based on conceptual models provided by Lockheed Martin, the Department Record of Decision requires that preliminary design data will be gathered to enable both the Department and Lockheed Martin, the opportunity to design an effective and efficient system which will mutually satisfy both parties concerns. The most important issue is that a groundwater collection system needs to be designed to be effective and efficient, which will achieve remedial goals in a timely manner and will be acceptable to the Department, the Department of Health, the community and Lockheed Martin. The Department feels that this Record of Decision will accomplish that need and will allow for good engineering practices to be applied in order to achieve these goals.

Comment #4:

- Remedial Design. LMC believes the groundwater pump and treat system that would most effectively remediate impacted site groundwater is the system proposed by LMC in the FS Report Supplement as Remedial Alternative #6, and not NYSDEC's preferred remedy, Remedial Alternative #2. However, NYSDEC has indicated in the PRAP that "the number, location and spacing of wells would be determined during the remedial design." In light of LMC's comments set forth above relative to the technical distinctions between Remedial Alternative #2 and #6, LMC will rely on NYSDEC's language from the PRAP cited above in the design stage of the remedial program. That is, although the NYSDEC preferred remedy describes approximately 4 wells operating at 1 g.p.m. each, installed 75 feet on center from approximately the old railroad bed extending to the edge of the West Lot parking lot, LMC would expect that NYSDEC would not reject a design that included a pumping

system with a different operating regimen and physical configuration, provided LMC's design was as effective as the proposed Remedial Alternative #2.

Response #4:

- ▶ This concurs with the Department's approach and it is reflected in previous responses.

Comment #5:

- ▶ Section 1, 2nd paragraph, 1st sentence, revise as follows:..... identifies the *NYSDEC* preferred remedy..... It is important to note that this is *NYSDEC*'s preference, not *LMC*'S. *LMC*'s preferred remedy was identified as Remedial Alternative #6 in the FS Report Supplement.

Response #5:

- ▶ No response required.

Comment #6:

- Section 1, 3rd paragraph, 1st sentence, revise as follows: "...of the *NYSDEC-approved* Citizen Participation Plan (*Blasland, Bouck & Lee, May 1994*) developed..... Note, the Citizen Participation Plan also refers to approval of the RI/FS which has not occurred.

Response #6:

- ▶ This section is not included in the Record of Decision. Approval of all documents will be issued with the signing of the Record of Decision.

Comment #7:

- The *NYSDEC-approved* Citizen Participation Plan identifies the Utica Public Library as the designated document repository and not the offices identified in the PRAP. *LMC* representatives visited the *NYSDEC* office in Utica, New York (one of the repositories identified in the PRAP) on March 5, 1998 and requested the opportunity to examine the project documents. The *NYSDEC* personnel at this office were unaware of any such documents and indicated that they were not available.

Response #7:

- ▶ Documents were placed in the Utica repository at the beginning of the public comment period. The Repositories were announced in the press releases and in the PRAP. The Department was not informed of any problems with obtaining assistance at the Repository.

Comment #8:

- ▶ Section 2, 1 st paragraph: Delete the last sentence and replace with the following, which more accurately describes the current ownership status of the French Road facility: "**In 1993, Martin Marietta Corporation acquired the French Road facility when it acquired GE's**

aerospace business. In January 1996, Martin Marietta merged into its parent corporation, LMC, and ceased to exist. LMC continued to operate the facility. LMC transferred ownership of the French Road facility to a private developer in March 1996, but continued operations there pursuant to a lease until September 1996. From that time until approximately August 1997, the facility was unoccupied. Ownership of the facility was transferred in March 1997 to the Oneida County Industrial Development Agency (OCIDA). In September 1997, OCIDA transferred ownership of the eastern portion of the property to a private developer for construction of a retail store. The remainder of the property, including the former GE building, was leased by OCIDA to a local corporation."

Response #8:

- This has been incorporated into the ROD.

Comment #9:

- ▶ Section 4, 1 st paragraph, revise as follows: human health and the environment, ~~the firm of SECOR International, Inc.~~ LMC completed a Remedial Investigation/Feasibility Study (RI/FS) ~~for Lockheed Martin~~ There are several factual points to make with respect to this paragraph. First, NYSDEC states that the RI/FS has been completed; however, as stated above, LMC awaits RI/FS approval, which will formally complete this process. Secondly, although we suggest deletion of the reference to SECOR International, Inc. (SECOR), LMC provides the following clarification regarding its representation during the RI/FS. Specifically, Blasland, Bouck & Lee, Inc. (BBL) conducted the two-phased RI, which was then supplemented by additional RI-related investigations conducted by O'Brien & Gere Engineers, Inc. (OBG). The FS was prepared by SECOR and was then supplemented by BBL.

Response #9:

- ▶ The RI/FS was completed and will be approved once the ROD is signed. The reference to SECOR has been removed.

Comment #10:

- ▶ Section 4.1, 1st paragraph: LMC requests that this paragraph be deleted in its entirety and be replaced with language contained in Section 1.3 - Objectives of the Remedial Investigation contained in the RI Report (BBL, August 1995).

Response #10:

- ▶ This is standard language and no change is required.

Comment #11:

- ▶ Section 4.1, 4th bullet item: No geophysical survey was ever completed at this site. Delete

this bullet item in its entirety.

Response #11:

- This change has been incorporated.

Comment #12:

- ▶ Section 4.1, bullet items: There is no mention of the fate and solute-transport modeling which was conducted as part of the RI/FS; therefore, add a bullet item which states the following: "Fate and solute-transport modeling to estimate the lateral extent of the dissolved VOC plume."

Response #12:

- ▶ This has been incorporated.

Comment #13:

- ▶ Section 4.1, 3rd paragraph, 2nd sentence, delete: "and Part V of the NYS Sanitary Code". As part of the RI, NYSDEC accepted a comparison of analytical data to SCGs for groundwater and surface water. Drinking water was not evaluated as a potential exposure pathway in the RI, and accordingly, the drinking water SCGs and Part V of the NYS Sanitary Code were not considered as part of the RI/FS.

Response #13:

- All groundwater in the State of New York is considered to be a potential drinking water source. The Department and the Department of Health do take into consideration this potential and did consider this during the Feasibility Study.

Comment #14:

- ▶ Section 4.1.3.c, Groundwater, 3rd paragraph, revise as follows: "Six deep overburden soil borings were advanced into the till at the site. Three groundwater samples ~~monitoring wells~~ were installed obtained from the till. However, the dense till materials precluded groundwater sampling at the other three deep soil borings. Groundwater in the till northeast of the burn pit (at soil boring Deep-1) did not show contain any detectable levels of VOCs. Groundwater in the till at ~~boring monitoring well~~, Deep-4, which was located within the former burn pit showed contained 1,2-DCE (total ~~concentration of~~ at 5.5 (ppb), trichloroethene (TCE) concentration of at 33 (ppb), and toluene concentration of at 130 (ppb) Groundwater in the till at boring monitoring well Deep-5, which was installed approximately 100 feet downgradient of the burn pit, contained showed 2-DCE (total concentrations at 10 (ppb)."
It should be noted that these results are consistent with the projected VOC concentrations in the till unit, as presented in Figure 10 of the RI Report (BBL, August 1995). This is discussed further in Comment No. 2.23.

Response #14:

The ROD reflects the installation of six deep borings and the sampling of three deep wells.

Comment #15:

- ▶ Section 4.3, 3rd paragraph: LMC wishes to emphasize the statement made in this paragraph that "there are currently no completed pathways at this site". Moreover, in summarizing the human exposure pathways, it would be appropriate to state that the RI concluded that there are presently no exposure pathways associated with the chemicals identified in the groundwater and, hence, no risks associated with groundwater under current use scenarios.

Response #15:

- At this time there are no known completed pathways, however the potential for impacts to occur of the long term and the potential for pathways to be completed is a real threat. The Department consider both short term and long term impacts to human health and the environment.

Comment #16:

- ▶ Section 4.3, 5th bullet item: Section 4.1.3 (d) of the PRAP states that airborne contamination is not likely. Therefore, it is inappropriate to speculate that accumulation of vapors containing VOCs represents a possible future pathway. Delete this bullet item in its entirety.

Response #16:

- ▶ Airborne contamination in this section pertains to vapors encountered at the site which are found in the ambient air or those vapors which are encountered during excavation of soils. The accumulation of vapors pertains to the potential for VOC vapors to accumulate downgradient in basements and underground locations. The potential for these vapors to accumulate does exist and may affect persons working at the NYSDOT Maintenance Facility and persons living or working in adjacent sites.

Comment #17:

- ▶ Section 4.3, 4th paragraph, 1st sentence, revise as follows:..... and control over current and future use is not restricted ~~at this time by a deed restriction which does not allow any excavation in a 14.5 acre area surrounding the former burn pit location at the site.~~"

Response #17:

- ▶ The statement stands. The site is not restricted on current or future use by the means of a deed restriction or any other institutional controls.

Comment #18:

- ▶ Section 4.3, 5th paragraph, 4th sentence relating to accumulation of vapors containing VOCS: Same comment as Comment No 2.12 above. Delete this sentence in its entirety.

Response #18:

- See previous response.

Comment #19:

- Section 6, 5th bullet, revise as follows: "Mitigate off-site impacts and restore all groundwater quality to meet SCGs ~~in a timely manner~~ **if practicable Operation of the remedy will be terminated after reaching a point of 'diminishing returns'. or asymptotic conditions with respect to VOC mass removal versus time.** " LMC believes that achievement of SCGs may not be practicable and feel that an end point based on the likely outcome should be identified. This is consistent with statements made by NYSDEC during the Public Meeting.

Response #19:

- ▶ The ROD already reflects this with the statement that a monitoring program will be developed to insure that the system is effective over time. The ROD also states that additional groundwater remedies or controls may be evaluated based on the effectiveness of the groundwater pumping system.

Comment #20:

- Section 7. 1, 1st paragraph under heading of Alternative #1 - Limited Action, 2nd sentence: LMC does not agree that the site would remain in an "unremediated state" under this alternative, as indicated in this sentence. As presented in the FS Report, a fundamental element of this remedial alternative is ongoing intrinsic remediation. To suggest that this alternative would leave the site in an "unremediated state" is not an accurate statement. Therefore, LMC requests the following modification: "It requires continued monitoring only ~~allowing the site to remain in an unremediated state~~".

Response #20:

- ▶ The Department, the NYSDOH and the community disagree with your position. Monitoring the groundwater does not constitute remediation.

Comment #21:

- ▶ Section 7. 1, 1st paragraph under heading of Alternatives 2 through 6, 6th sentence, revise as follows: "Verification sampling (*in-place soils only, not soils in IRM cell*) would be conducted..... Since the soils in the IRM cell are contained within an engineered barrier, it is not necessary to conduct verification sampling following excavation and removal of these soils and associated materials. Further, verification sampling is not part of the USEPA-approved IRM cell decommissioning procedure.

Response #21:

- ▶ Typically, this is true, however, if the liner has failed during the treatment period, testing may be required to determine if any releases had occurred. Subsequently if there were releases and removal was required, then verification samples would need to be taken. This will remain as is.

Comment #22:

- ▶ Section 7.1, 2nd paragraph under heading of Alternative 2 - Collection/Treatment and Discharge to POTW, pursuant to Comment No. 1.04 above regarding remedial design flexibility, LMC requests that this paragraph be deleted in its entirety and replaced with the following: **"This alternative would include installation of a groundwater extraction system which will be designed and operated to provide hydraulic containment and control at the West Lot site. Collected groundwater will be treated as necessary to meet discharge standards"**.

Response #22:

- ▶ This section was taken out of the FS Report provided by Lockheed Martin and reflects one of the alternatives that was considered. No change is required and the Department will certainly consider the most effective method possible to meeting discharge standards.

Comment #23:

- ▶ Section 7.1, 3rd paragraph under heading of Alternative 6 -Supplemental Groundwater Alternative, add the following:.....migrating toward downgradient receptors, **and to confirm that natural attenuation of the severed portion of the dissolved VOC plume is occurring.**"

Response #23:

- ▶ This is not required.

Comment #24:

- ▶ Section 7.2, 2nd paragraph under heading of Compliance with New York State Standards, Criteria, and Guidance, 2nd sentence: As stated in Comment No. 2.16 above, a fundamental element of this remedial alternative is ongoing intrinsic remediation. To suggest that this alternative includes "no treatment" is not an accurate statement. Therefore, LMC requests the following modification: "...no removal or ~~treatment~~ of contaminated groundwater

Response #24:

- ▶ This is not required. The intent is still the same.

Comment #25:

- ▶ Section 8, 1 st paragraph: Although LMC did not expect NYSDEC's selection of Alternative #2 as previously indicated, LMC does acknowledge and agree with the flexibility suggested by the statement, "modified for location and number of pumping wells". The location and placement of pumping well(s) will be determined by the application of sound technical principles.

Response #25:

- ▶ No response required.

Comment #26:

- Section 8, elements of the proposed remedy, 2nd bullet, 2nd sentence: A specific reference to an additional pumping well is inconsistent with the flexibility concept which is supported by both LMC and NYSDEC. It is premature to speculate in the PRAP the number and location of pumping wells. The remedial design will evaluate and determine the need for additional wells along the axis of the plume, which may be necessary for plume containment. Delete this sentence in its entirety.

Response #26:

- ▶ The Department made this statement to indicate that additional wells may be required. The Department is in concurrence with the objectives of a remedial design program. No changes are required.

Comment #27:

- Section 8, elements of the proposed remedy, 4th bullet, 1st sentence: LMC does not agree with the need to install additional monitoring wells to monitor the bedrock aquifer. The basis of LMC's position is as follows. First, the RI provided a comprehensive delineation of the vertical and horizontal extent of VOC-impacted groundwater. This was accomplished through multiple rounds of sampling and analysis at numerous locations in combination with a field verified solute-transport model. Secondly, additional groundwater quality data was acquired during the FS, which supports the delineation of VOC-impacted groundwater presented in the RI. Specifically, three groundwater samples were collected from the till unit during installation of deep soil borings (see Comment No. 2. 1 0 above). The analytical results from these samples are consistent with the projected VOC concentrations in the till unit, as presented in Figure 10 of the RI Report (BBL, August 1995). Thirdly, the low permeability of the till encountered at three of the six deep soil borings precluded groundwater sampling indicating that the till unit has little or no water bearing capacity. These observations, in combination with the groundwater sampling results, support the interpretation that the till represents an aquitard that would limit or prevent VOC migration into the bedrock. Based on the above, LMC requests that this sentence be deleted in its entirety.

Response #27:

- Because the deep till has been impacted, the Department reserves the right to request that deep monitoring wells to be installed to provide verifications that further migration or deeper contamination has not occurred over the long term.

Comment #28:

- ▶ Section 8, elements of the proposed remedy, 4th bullet, 2nd sentence: LMC wishes to clarify the type of monitoring to be conducted to ensure that downgradient surface water is protected. Specifically, as part of the remedial action, LMC will agree to conduct periodic groundwater sampling at downgradient locations to monitor the extent of the VOC plume. LMC will not agree to conduct surface water sampling since there is no data to suggest that West Lot-related VOCs have migrated to any surface water body. Based on the above, LMC requests that this sentence be revised as follows: "**Groundwater** monitoring would ~~also~~ be **required conducted** to ensure that downgradient surface water is protected."

Response #28:

- This is the intent of this section, however, the Department will reserve the right to request this type of sampling based on the effectiveness of the remedial program and to be able to respond to unexpected environmental conditions.

Comment #29:

- ▶ Section 8, elements of the proposed remedy: With respect to the need to identify an end point, LMC requests that an additional bullet item be included as the final element of the proposed remedy as follows: "**Operation of the remedy will be terminated after reaching a point of diminishing returns", or asymptotic conditions with respect to VOC mass removal versus time.**"

Response #29:

- ▶ At this time, without knowing the specifics of the remedial design, no language of this type will be incorporated. The Department does acknowledge the effectiveness issue and the point at which a system is no longer providing a benefit, however, it is premature to limit ourselves at this time.

Comment #30:

- Section 8, basis of the Department's proposal, 1st bullet: Generally, LMC agrees with the statements made in this item with one exception. We disagree with the requirement included in the second sentence, which states..... which includes additional downgradient extraction wells..... As stated previously, LMC requests flexibility and objects to any reference to specific design or construction elements. Delete the above statement from this item.

Response #30:

- Please see previous responses.

Comment #31:

- ▶ Section 8, basis of the Department's proposal, 7th bullet: See Comment No. 2.23 above. Delete this item in its entirety.

Response #31:

- ▶ The Department reserves the right to require downgradient and deep wells to be installed as part of the operation, monitoring and maintenance program.

Comment #32:

Figure 9: LMC suggests that this figure be replaced with the plume contour map presented in the FS Report Supplement (see Figure I in Appendix A), which is based on the most recent data set. The current map shown as Figure 9 in the PRAP suggests that concentrations on the order of 100 ppb of 1,2 DCE are present at the downgradient property line of the NYSDOT property. The actual, measured concentration at this location was 11 ppb (SECOR, July 1997), which was used in the development of the plume contour map presented in the FS Report Supplement.

Response #32:

The figures will be updated.

The remainder of the comments are deemed as miscellaneous editorial comments and revisions have been made as necessary. No response is required.

- Table of Contents, Section II, revise title as follows: "Site Location and Description"
- ▶ Table of Contents, Section VI, revise title as follows: "Summary of Remedial ~~Remediation~~ Goals"
- ▶ Table of Contents, Section VII, revise title as follows: " Summary of the Evaluations of Alternatives"
- ▶ Table of Contents, Table 2, revise title as follows: "Representative Contamination Summary Contaminant"
- ▶ Table of Contents, Table 3, revise title as follows: "Remedial/Alternatives Costs"
- Table of Contents, Figure 2, revise title as follows: "~~West lot Project Area~~ Site Plan"
- ▶ Table of Contents, Figure 6, revise title as follows: Inferred ~~Groundwater~~-Table *Gradient*

Map - 5/22/97"

- ▶ Table of Contents, Figure 8, revise title as follows: "~~Disposal Cell~~ Estimated Portion of IRM Cell Requiring Disposal as "Hazardous Waste"
- ▶ Table of Contents, Figure 9, revise title as follows: "**Adjusted Solute** Transport Model Plume and Proposed Monitoring Well Locations'
- ▶ Section 3.2, 2nd paragraph, 1st sentence, revise as follows:..... entered in an Order on Consent (**Index No. A 6-0311-93-11**) to perform
- ▶ Section 4.1, General Comment: This section discusses findings which precede and extend beyond the RI; this is inconsistent with the title of Section 4. 1: Summary of the Remedial Investigation. We suggest that this title be modified as follows: '**Section 4.1: Summary of the Remedial/Investigation and Other Site-Related Studies**' The table of contents should also be revised accordingly.
- ▶ Section 4.1, 2nd paragraph, revise as follows: "The RI activities ~~have~~ included the following activities:"
- ▶ Section 4. 1, 1st bullet item, revise as follows: "A review of ~~all~~ existing information."
- ▶ Section 4.1, 2nd bullet item, revise as follows:..... around the waste disposal **pit** to ~~determine~~ *estimate* the vertical
- ▶ Section 4.1, 3rd bullet item, revise as follows: "A soil gas investigation to ~~determine~~ *estimate* the areas
- ▶ Section 4.1, 6th bullet item, revise as follows: "**In-situ** hydraulic conductivity testing (**specific capacity tests**) to *identify*, **estimate** the permeabilities of the overburden ~~and bedrock~~ materials."
- ▶ Section 4.1.1, 1st paragraph, 4th sentence, revise as follows:..... silt and silty sand was encountered which is ~~defined as the~~ **interpreted as** a glacio-lacustrine unit and ranged *in depth thickness* between 0 ~~to~~ and 6 feet."
- ▶ Section 4.1.3.a, Soils, 4th paragraph, 1st sentence, revise as follows: " In 1996, ~~confirmatory~~ **additional** soil sampling was conducted..... Confirmatory samples were taken in 1994 as part of the IRM excavation. The samples taken in 1996 were not confirmatory; rather, these samples were intended to delineate any additional area of excavation.

- ▶ Section 4.4, 1st paragraph, 4th sentence, revise as follows: "...have impacted the overburden aquifers downgradient..."
- ▶ Section 7, 1st paragraph, 1st sentence revise as follows:.....evaluated in a ~~two-phased~~ feasibility Study ..."
- ▶ Section 7, 1st paragraph, 3rd sentence, revise as follows: "As a ~~addendum~~ **supplement** to the FS....."
- ▶ Section 7.1, General Comment: The titles identifying each remedial alternative are not consistent with the titles assigned to these alternatives in the FS Report and FS Report Supplement.
- ▶ Section 7.1, 4th paragraph under heading of Alternative 1 - Limited Action: Replace the word "insure" with "ensure". Though this is the first reference, this term is used similarly in later passages in the PRAP; we request that all such citations be revised accordingly.
- ▶ Section 7.1, 1st paragraph under heading of Alternatives 2 through 6, 4th sentence, revise as follows: "All Soils exceeding cleanup goals are proposed to be excavated, treated and taken off site for disposal."
- ▶ Section 7.1, 1st paragraph under heading of Alternatives 2 through 6, 7th sentence, revise as follows:..... area would be ~~backfilled, graded and a vegetative cover established~~ restored."
- ▶ Section 8, elements of the proposed remedy, 1st bullet, 2nd, sentence, revise as follows: "Based upon the Feasibility Study, **approximately** 2,200 and 870 cubic yards"
- ▶ Section 8, elements of the proposed remedy, 3rd bullet, 2nd sentence, revise as follows: ~~Additional~~ **Alternative** groundwater cleanup"
- ▶ Section 8, elements of the proposed remedy, 6th bullet, 2nd sentence, revise as follows: ~~Any~~ Uncertainties identified during...". Also, from a sequential standpoint, the remedial design will precede all of the other elements of the proposed remedy identified in this section. LMC suggests that this bullet item be included as the first, not last bullet item.
- ▶ Section 8, basis of the Department's proposal, 6th bullet, revise as follows:..... from migrating ~~deeper~~ into the bedrock aquifer." There is no data to suggest that the bedrock aquifer has been impacted.

- ▶ Section 8, basis of the Department's proposal, 8th bullet, revise as follows: "*would insure ensure that all remedies are the selected remedy is* functioning as required by the Record of Decision.
- ▶ Figure 9: This figure is identified as Figure 7.
- ▶ Administrative Record: Items 13, 15, and 16 are unrelated to the West Lot site. Delete these items from this listing.

Administrative Record
GE WEST LOT SITE
SITE NO. 6-33-036

1. Soil Gas Investigation, Prepared by Dunn Geoscience Corp., Dated April 12, 1990
2. Site Assessment, Prepared by O'Brien and Gere Engineers, Inc., Dated May 1991
3. Focused Remedial Investigation, Prepared by O'Brien and Gere Engineers, Inc., Dated July 1992
4. Hydro geological Investigation, Prepared by ERM-Northeast, Dated October 23, 1992
5. Additional Investigation, Prepared by O'Brien and Gere Engineers, Inc., Dated April 16, 1993
6. Work Plan - Interim Remedial Measure, Prepared by O'Brien and Gere Engineers, Inc., Dated September 1993
7. Interim Remedial Measure, Technical Specifications, Prepared by O'Brien and Gere Engineers, Inc., Dated December 1993
8. Historical Data Summary, Prepared by Blasland, Bouck and Lee, Inc., Dated March 1994
9. Citizen Participation Plan, Prepared by Blasland, Bouck and Lee, Inc., March 1994, Revised May 1994
10. Remedial Investigation, Feasibility Study Work Plan, Prepared by Blasland, Bouck and Lee, Inc., Dated March 1994, Revised May 1994
11. Sampling and Analysis Plan, Prepared by Blasland, Bouck and Lee, Inc., Dated March 1994, Revised May 1994
12. Interim Remedial Measure Program, Prepared by O'Brien and Gere Engineers, Inc., Dated June 1994
13. Remedial Investigation Report, Prepared by Blasland, Bouck and Lee, Inc., Dated August 1995
14. Addendum Remedial Investigation Report, Prepared by O'Brien and Gere Engineers, Inc., Dated September 1996
15. Feasibility Study Report, Prepared by SECOR International Incorporation, Dated July 14, 1997
19. Feasibility Study Report Supplement, Blasland, Bouck & Lee, Inc., Dated January 1998.