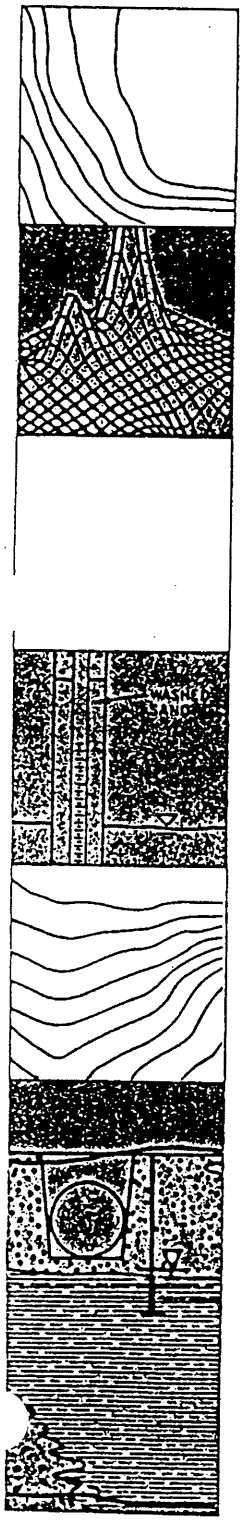
HYDRO-FLUENT, INC.



February 16, 1989

Project No. 1614-04

California Regional Water Quality
Control Board, Los Angeles Region
107 South Broadway, Suite 4027
Los Angeles, California 90012-4596

Attention: Mr. Dainis Kleinbergs

Subject: Ground Water Assessment and Monitoring
Well Construction Work Plan
17300 East Chestnut Street
City of Industry, California

Mr. Kleinbergs:

HYDRO-FLUENT, INC. is pleased to submit this work plan for further ground water assessment at the subject site. The proposed ground water monitoring procedures, including monitoring well construction details, are described herein. A tentative time schedule is included for your review and approval. We anticipate a four week review period by your agency.

The opportunity to submit this work plan on Utility Trailer's behalf is appreciated. Should you have any question regarding the enclosed work plan, please contact Chuck Stultz at your convenience.

Yours sincerely,

HYDRO-FLUENT, INC.

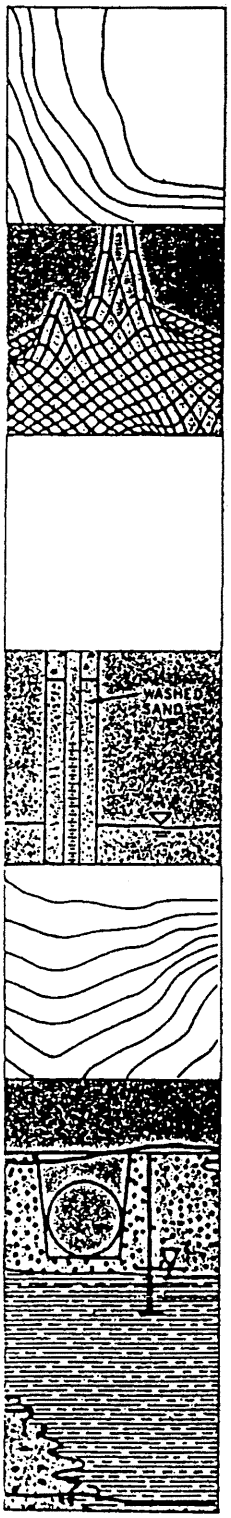
John F. Dablow III
President

enclosure

cc: Mr. Gary Little, Utility Trailer Manufacturing
Mr. John Stanton, Utility Trailer
Manufacturing Company
Mr. Dominic Holzhaus, Latham and Watkins

UTM 000241

HYDRO-FLUENT, INC.



Prepared for:

Utility Trailer Manufacturing, Inc.
P.O. Box 1299
City of Industry, California 91749

Attention: Mr. Gary Little

Ground Water Assessment and
Monitoring Well Construction
Workplan

Utility Trailer Manufacturing Company
17300 East Chestnut Street
City of Industry, California 91749

Project Number 1614-04

February 16, 1989

Chuck Stultz
Project Geologist

UTM 000242

TABLE OF CONTENTS

GROUND WATER ASSESSMENT AND MONITORING WELL CONSTRUCTION WORK PLAN

Utility Trailer Manufacturing Company City of Industry, California

1.0 OBJECTIVE

The purpose of this subsurface investigation is to determine whether the operations at Utility Trailer Manufacturing Company, Inc. (the Site) have had an impact on the subsurface soils and ground water beneath the facility. The possibility that off-site sources have caused or contributed to the presence of chlorinated hydrocarbons in the soil and ground water will be addressed by the investigation.

2.0 SITE DESCRIPTION

The Utility Trailer Manufacturing Company property is located at 17300 East Chestnut Street in the City of Industry, Los Angeles County, California. The Site is comprised of a main manufacturing building, plant operations building and numerous small operational support buildings. The property is paved with asphalt and concrete, except for a small unpaved parking lot located to the north of the main gated entrance, and is used to store the numerous parts required for plant operations.

The Site is bounded by Chestnut Street and San Jose Creek to the north, Los Angeles Water Company to the east, Somitex Prints of California, Inc. to the south and a dirt field abutting Azusa Road to the west. In the past, the site has been used for raising hogs and other agricultural activities.

Drainage is by sheet flow to existing drainage conduits and swales. All property drainage is directed to the north towards the San Jose flood control channel. Drainage from Somitex Prints flows over the Site in a northerly direction. The location of the existing well, MW1, is next to the concrete drainage channel that carries runoff from the Somitex Prints property.

3.0 BACKGROUND

In response to the Regional Board's request for a subsurface assessment, Utility Trailer Manufacturing contracted with Triad Engineering to perform soil borings and later HYDRO-FLUENT, INC. to construct one two inch diameter discovery well and collect ground water samples for analysis.

Results of these assessments, were submitted to the CRWQCB and summarized in the HYDRO-FLUENT, INC. report entitled "Discovery Well Assessment", dated December 30, 1988. After

the Regional Board's staff had reviewed the report, Utility Trailer requested a meeting to discuss the report and set forth a proposal for additional assessment. At this meeting, Utility Trailer agreed to construct four strategically located ground water monitoring wells at the Site. These wells are the subject of this work plan.

4.0 GEOLOGY AND HYDROGEOLOGY

4.1 Regional Geology and Hydrogeology

The site is located in the Puente Valley between the San Jose Hills to the north and the Puente Hills to the south. The stratigraphic sequence, from oldest to youngest includes:

* Basement Complex
* Puente Formation
* Repetto Formation
* Pico Formation
* Older and Recent Alluvium

Water bearing zones exist in the upper member of the Pico Formation and the unconsolidated and semi-consolidated non-marine alluvium. The recent alluvium consists of coarse boulders, gravels, sand, silts and some clay. Their thickness varies from a few inches to 100 feet depending upon the distance from the local hills. The finer grained sediments increase as distance from the hills increase.

Ground water flow is generally east to west towards the Whittier Narrows area. The ground water gradient generally follows the San Jose Creek flood control channel. Rough hydraulic conductivity values for the Puente Valley range from 100 to 300 feet per day near the hills, and decrease to 10 to 50 feet per day in the central valley areas.

4.2 Site Geology

Soil samples collected during construction of discovery well MW1 consisted of fine to medium grained silty sands with minor amounts clay in the vadose zone. Samples collected below the water level were described as fine to medium grained sands. A soil sample was collected at a depth of 38.5 feet below grade. A sieve analysis determined that the sample was composed of 68% sand, 21% silt and 11% clay.

4.3 Local Hydrogeology

The ground water gradient in the vicinity of the Site has been determined by reviewing local site investigation files. Current investigations east of the Site indicate a gradient from the east/southeast. We anticipate encountering a similar gradient across the Site. Generally speaking, the gradient moves towards and follows the San Jose Creek drainage. As you move laterally away from the creek, the ground water is observed to be flowing from the low hills north and south of San Jose Creek into the creek drainage (Figure 3).

5.0 SOIL BORINGS

Soil borings will be drilled with a Mobile Drill B61 drill rig equipped with 12-inch diameter, hollow-stem, continuous flight augers. These borings will be drilled to further characterize the vertical limits of chemicals detected in the soils. In addition, these borings will be converted into ground water monitoring wells. A geologist under the supervision of a Certified Engineering Geologist and/or Professional Engineer will be on-site at all times during the soil sampling and monitoring well construction. Soil samples will be collected from each boring at a minimum of five-foot intervals for lithologic description. The Unified Soil Classification System will be used for soil descriptions in the field.

Relatively undisturbed soil samples will be collected from each boring using a Modified California Sampler. The Modified California Sampler consists of a split outer sampler barrel. Placed inside, are removable thin walled tubes. The tubes are three inches long by two and a half inches in diameter, and made of stainless steel. Soil is forced into the sample barrel and tubes by repeatedly striking the top of the sampler with a 140 pound hammer. The hammer is attached to a steel cable and pulley system on the drill rig, and travels a distance of 30 inches before impacting the sampler. After the sampler is retrieved and disassembled, the tubes containing the soil are removed.

Samples collected for analytical testing will have their ends covered with aluminum foil and plastic caps before being secured with duct tape. Each sample will be labeled and placed in an ice chest to be chilled to four degrees centigrade before shipment to an analytical laboratory certified by the state of California for hazardous waste analysis.

To avoid cross-contamination between samples and bore holes, the sampler and tubes will be cleaned before each use in an aqueous solution of Alconox, followed by double rinsing with distilled water. Clean auger flights will be used for new borings. If clean flights are not available, the drill augers will be steam cleaned between each bore hole to further reduce the potential for cross contamination.

Soil samples will be analyzed in the field with a Bacharach Instruments Threshold Limit Value (TLV) combustible gas meter or by a Thermo Environmental Instruments Photo Ionization Detector (PID) OVM for the presence of hydrocarbon vapors. A portion of each sample will be placed into a stainless steel sampling tube sealed on both ends by plastic end caps. Head space readings are measured by inserting the devices sampling probe through an opening in one of the plastic end caps.

Organic vapors are either drawn into the TLV meter and analyzed for combustible gas on a heated catalytic platinum element or in the case of the PID, the organic molecules are ionized by an ultraviolet lamp. Results of the analysis are given in parts per million (ppm), and are used only as a qualitative field measure for the presence of hydrocarbons. Field vapor levels will be noted on the lithological log. The instruments are calibrated prior to being taken into the field. The TLV is calibrated with 100 ppm Hexane calibration gas, the OVM is calibrated with 100 ppm Isobutylene calibration gas. The factory instructions are used as the calibration procedures. All field personnel are trained in the proper use of the instruments.

A minimum of three analytical samples are expected to be collected at ten foot intervals from MW2. A minimum of two analytical samples per monitoring well boring will be collected from MW3, MW4 and MW5 unless field observations indicate otherwise.

6.0 GROUND WATER MONITORING WELLS

6.1 Monitoring Well Locations

Ground water monitoring wells are designed exclusively to monitor the ground water quality and to establish a local ground water gradient. Placement of the wells is based on estimated regional and local ground water gradients. Data obtained from local agencies, file reviews and past investigations is used to place these wells in the optimum locations.

HYDRO-FLUENT, INC. is proposing to construct four ground water monitoring wells and abandon one discovery well (MW1). All new wells will be constructed out of four inch diameter, schedule 40 PVC casing. The locations of the proposed monitoring wells are shown in Figure 2.

Monitoring well MW2 will be located adjacent to MW1. In samples previously collected from MW1, turbidity levels above the Regional Boards limit of ten NTU may have adversely effected the acceptability of the chemical analysis. Because of the difficulty in obtaining an acceptable sample, we are proposing to abandon this monitoring well by pressure grouting as described in DWR Bulletin No. 74-82. Furthermore, the location of MW2 will be in the general down gradient position below MW3.

MW3 is located next to the eastern fence and will provide information on the water quality from the east as it moves across the northern portion of the Site. Because MW2 is generally downgradient of MW3, the two wells will show any changes in water quality as it moves beneath the northern portions of the Site.

MW4 will be placed next to the southern boundary of the Site. This location should be able to identify any contamination that is moving on-site from the south/southeast. In addition, the spacing of the wells will assist in determining the gradient beneath the Site.

Finally, MW5 will be located on the western side of the Site down gradient of MW4. This well will be able to sample ground water that has passed the beneath the southern portion of the Site. The four new monitoring wells will provide accurate local gradient information.

6.2 Monitoring Well Construction

Soil borings are completed as ground water monitoring wells by installing four inch diameter, schedule 40, flush-threaded, PVC well casings through the hollow-stem of the auger. The lower thirty feet of the well casings will be factory slotted with 0.010-inch slots. The slotted casing will extend twenty feet below the level at which ground water is encountered and ten feet above ground water level. Blank schedule 40 PVC casing will be used above the slotted casing to ground surface.

The casing will be suspended above the bottom of the boring with one to two feet of clean Monterey sand in the bottom of the boring. Centralizers may be used along every 20 feet of

the casing as required. No solvent-based cements of any description will be used in well construction and all well casings will be steam-cleaned prior to installation. A sand filter pack consisting of No. 0/30 Monterey sand will be placed in the well annulus around the casing screen to a point approximately three feet above the top of the slots. The 0.010" slot screen and the No. 0/30 Monterey sand were determined by using the procedures outlined in the Department of Health Services, Toxic Substances Control Division, Site Mitigation Decision Tree (Figure 7).

The hollow-stem auger will be used as a tremie for emplacement of the filter pack to preclude any bridging of the sand. The sand filter pack will be sealed by at least two feet of chipped bentonite (Hole Plug), also installed through the hollow-stem of the auger (i.e. tremie pipe) to reduce the chance of bridging. The bentonite will be hydrated in place with bottled distilled water prior to installing the remainder of the annular seal. The remaining annular space will be sealed with a bentonite/cement slurry grout using the auger as a tremie pipe.

The monitoring wells will be located in areas where vehicular access is required; therefore, the wells will be completed flush with the ground surface and protected by cast-aluminum boxes with water-tight lids (Figure 5). A locking well cap will be placed on the top of the casing for each well. Each well box will be constructed in manner which will allow drainage away from the box.

Reference elevations will be determined for the top of the casing for each monitoring well measured from a local bench mark elevation. Depths to ground water in each well will be measured using a Well Wizard Water Level Meter Model 6000 electric well sounding instrument. The exact location of each monitoring well will be surveyed and presented on the final report plot plan. In addition, the location of each well will be given in California Coordinates to the nearest .1 of a foot.

6.3 Well Development

The main objective of well development is to achieve a level of turbidity less than ten nephelometric turbidity units (NTU). A Nalgene 1,000 ml. graduated Imhoff Cone will be used in the field to measure turbidity to a limit of .5 ml per 1,000 ml (approximately part per million). An additional sample may also be collected to measure the turbidity at the laboratory during sample analysis. The ground water monitoring wells will be surged immediately

following installation. This will include surging using tight fitting, four inch diameter surge blocks and bailing to remove those fine sediments drawn into the well. The following day the well will be fully developed to remove the fine-grained sediments which are lodged in the sand pack and have accumulated in the bottoms of the wells. This subsequent pumping and bailing will be done by HYDRO-FLUENT, INC. personnel using a hand surge tool, a PVC development pump and a three and a half inch diameter PVC bailer.

6.4 Ground Water Sampling Procedures

Approximately one week later, prior to sampling, the wells will be purged to remove standing water from the well casing and to promote the flow of water from the surrounding formation into the well casing. Well purging will be accomplished through the use of either an electric stainless steel submersible pump or a teflon bailer. Well volumes will be calculated based on the height of the water column in the well casing and the casing diameter. All purging equipment will be thoroughly steam cleaned and washed using an aqueous solution of Alconox and double rinsed in bottled distilled water before being placed into a well.

Water will be collected from the mid point of the screened section either by installing the pump at the mid-point of the screened interval of each well or by lowering the bailer this depth. The wells will be purged until the pH, electric conductance (EC) and temperature stabilize, or until at least five casing volumes have been removed. A Presto-Tek model DspH-3 pH and conductivity meter will be used to measure pH and EC, and a Taylor Instruments pocket mercury thermometer will be used to measure temperature.

Water samples will be collected using a clean teflon bailer. The teflon bailer will be properly steam cleaned, washed with an aqueous solution of Alconox and double rinsed in distilled water prior to use.

The volatile organic compound (VOC) samples will be collected in 40-ml, "zero head-space" glass vials with teflon septa. The pre-cleaned vials will be filled such that a positive (upward) meniscus results. The caps will be secured and the vial inverted and tapped on a hard surface. If air bubbles are observed, the sample will be discarded and the sampling procedure repeated.

Ground water samples will be immediately labeled, placed into an ice chest with blue ice and chilled to 4 degrees

Centigrade. Samples will be delivered to a California State certified laboratory for analysis.

Should other analytical methods be required, the samples will be collected in the appropriate clean laboratory container. Proper preservation methods as required by the Environmental Protection Agency (EPA) will be used. Chain of custody procedures will be utilized and strictly followed. All personnel who have control over the samples will sign the chain of custody documents. Copies of these documents will be included in the final report.

7.0 ANALYTICAL METHODS

All analytical samples will be transported to a California Department of Health Service's Certified Laboratory. In the case of this project, the samples will be taken to BCL Laboratories, 5702 Bolsa Avenue, Huntington Beach, California 92649. Their phone number is 714-892-2565. As an alternate, West Coast Analytical Services, Inc., 9840 Alburtis Avenue, Santa Fe Springs, California 90670 may be used. Their phone number is 213-948-2225.

Soil samples will be analyzed by EPA Method 8240. The detection limit for most compounds will be in the five to ten parts per billion (ppb) range. Ground water samples will be analyzed by EPA Method 624. The detection limits for most identified compounds will be five to ten ppb. A copy of the laboratory's QA/QC procedures will be provided in the final report.

8.0 SCHEDULE OF COMPLETION

An estimated Schedule Of Completion time line is provide in Figure 6. The work plan has been submitted to the CRWQCB by February 21, 1989. We estimate a period of four weeks for the Regional Board to review and comment on the work plan. An additional four weeks will be required to review, implement and resubmit the work plan if changes are required. Following work plan approval, two weeks will be required to secure the drilling subcontractor and the required supplies.

Field work should be completed within two weeks following initiation of the drilling, analytical testing should be completed within two weeks following completion of the field activities. Report preparation and consultation with Utility Trailer Manufacturing Company is expected to take six weeks. The total estimated time required for implementation of this work plan, including submittal of the final assessment report, is twenty weeks.

9.0 FINAL REPORT

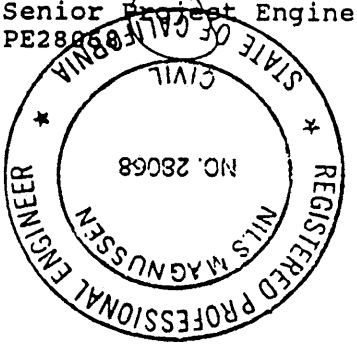
A final assessment report of this phase of the ground water assessment will be submitted after field work is completed. This report will provide all analytical data collected, field logs, summary of results and conclusions. The report will be signed off by the Project Geologist and the Senior Project Engineer, who is a Certified Professional Civil Engineer.

Should you have any questions regarding the work plan and the proposed investigation, please contact Chuck Stultz.

Respectfully submitted,

HYDRO-FLUENT, INC.

Nils Magnussen
Senior Project Engineer
PE28068



Charles R. Stultz
Project Geologist

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FIGURES

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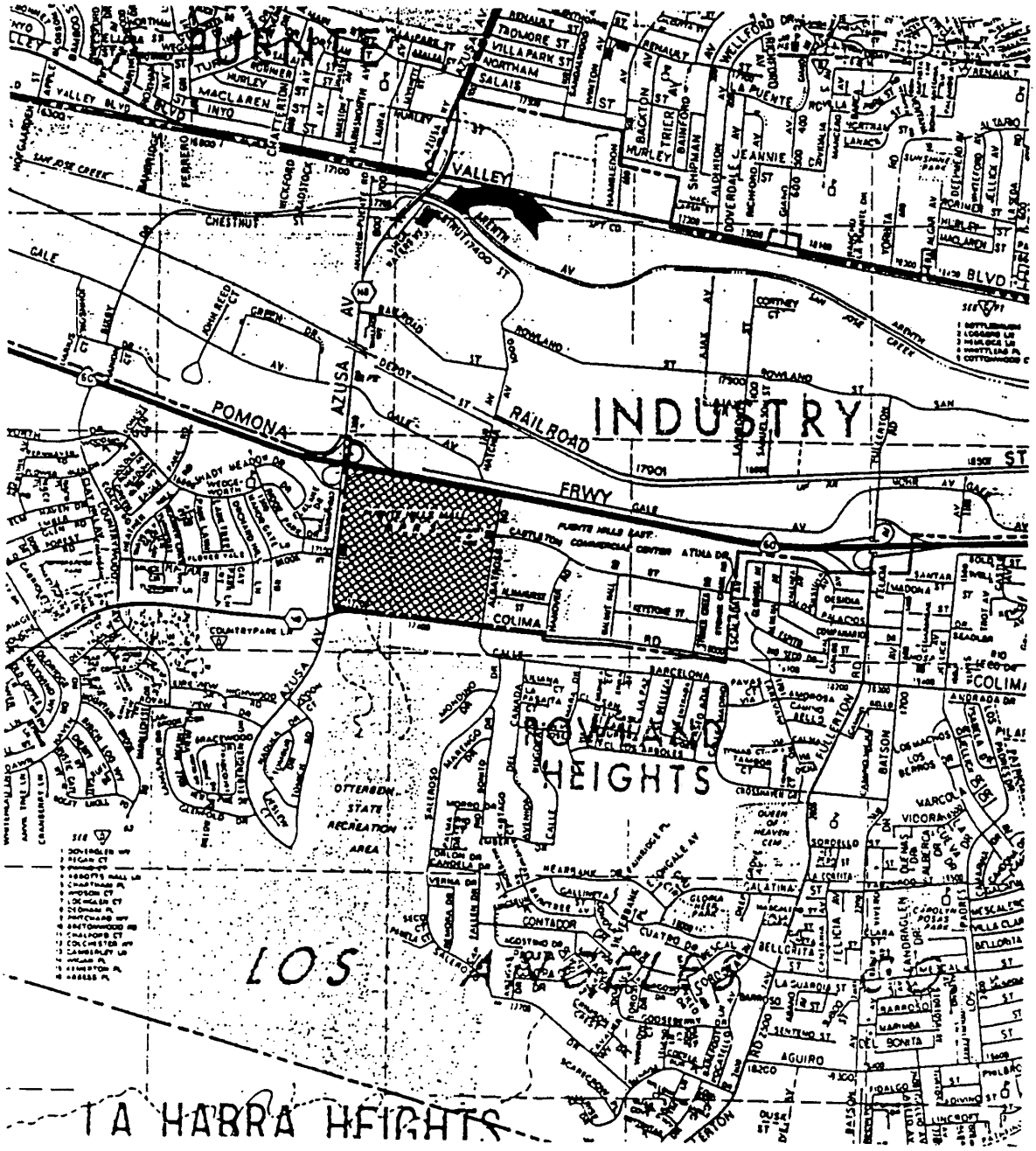
SITE LOCATION MAP



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UTILITY TRAILER MANUFACTURING CO
1730 E CHESTNUT STREET
CITY OF INDUSTRY, CALIFORNIA

Project No.: 1614-04	Figure No.: 1

UTM 000255

121648

PLOT PLAN W/ PROPOSED WELLS

N

LOS ANGELES WATER CO.

SPILL CONTAINMENT AREA

STATIONARY CRANE

LOADING

SCALES

MW-3

PAINT

MAINTENANCE

DRIVE

CHESTNUT STREET

PARTS SALES

EMPLOYEE PARKING

MANUFACTURING

DRIVE

DRIVE

DRAIN

OFFICES

MW-4

SOMITEX PRINTS OF CALIFORNIA

MW-1

MW-2

LOADING DOCK

PARKING

DRAIN

DIRT

DRIVE

MW-5

GUARD SHACK

PARKING

TEST TRACK

CORPORATE OFFICES

DIRT FIELD

KEY

MW-1 PROPOSED WELL ABANDONMENT

MW-5 PROPOSED MONITORING WELL

0 100 200

SCALE FEET

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Figure No.: 2

UTM 000256

ESTIMATED GRADIENT

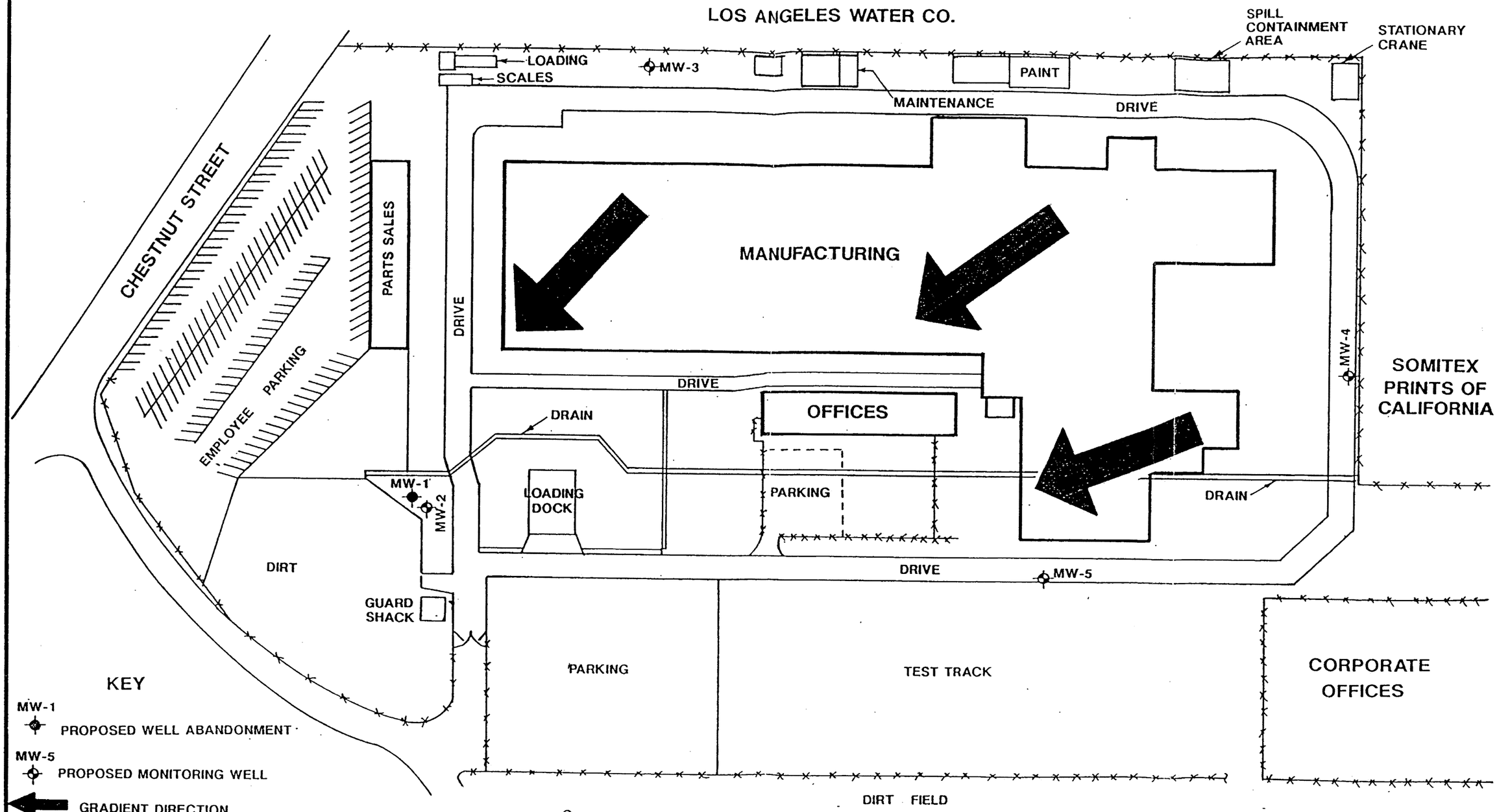

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Figure No.: 3

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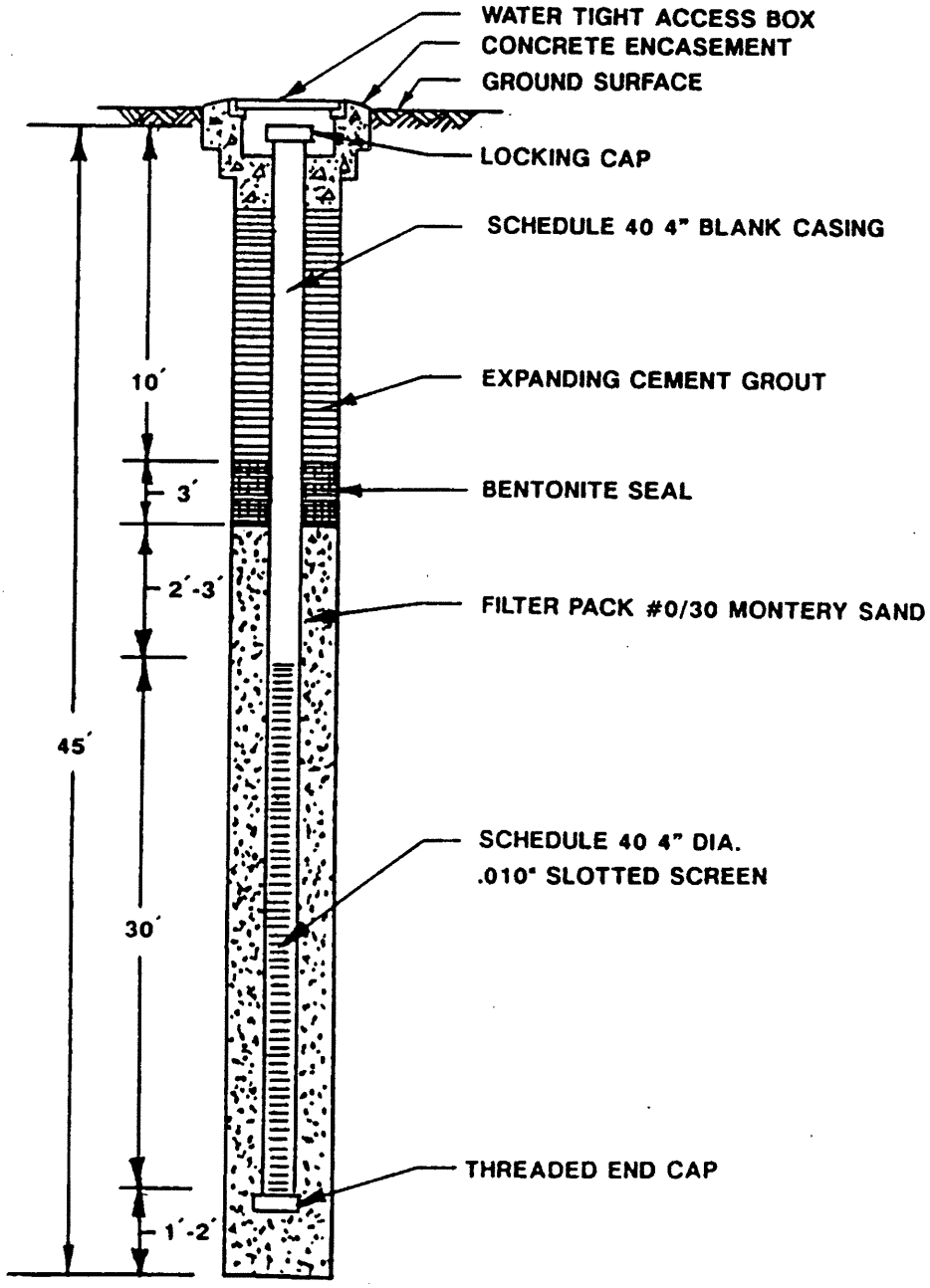
TYPICAL MONITORING WELL CONSTRUCTION DETAIL



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Project No.: 1614-04

Figure No.: 4

UTM 000258

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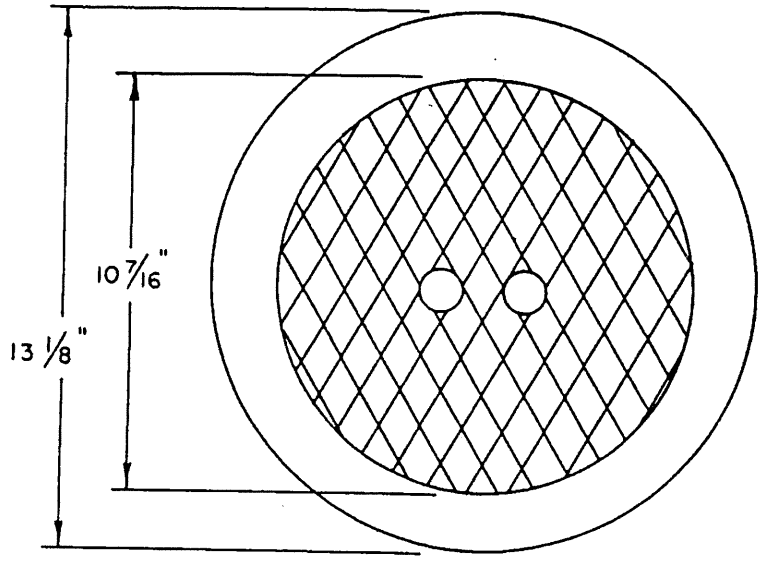
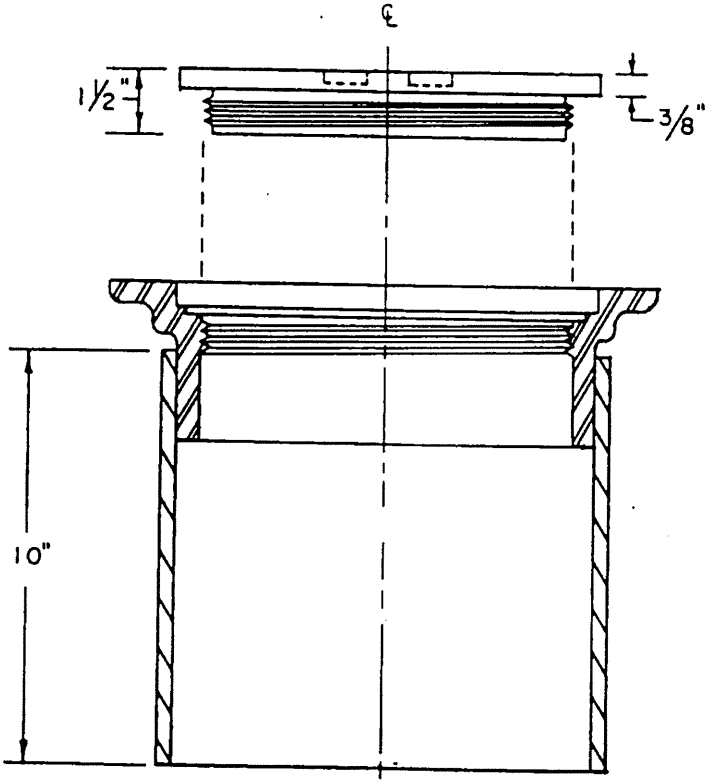
WATER TIGHT MONITORING WELL ACCESS BOX

CNI MODEL 208



TOP



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Project No.: 1614-04

Figure No.: 5

1648

UTILITY TRAILER MANUFACTURING COMPANY
CITY OF INDUSTRY, CALIFORNIA

TIME SCHEDULE

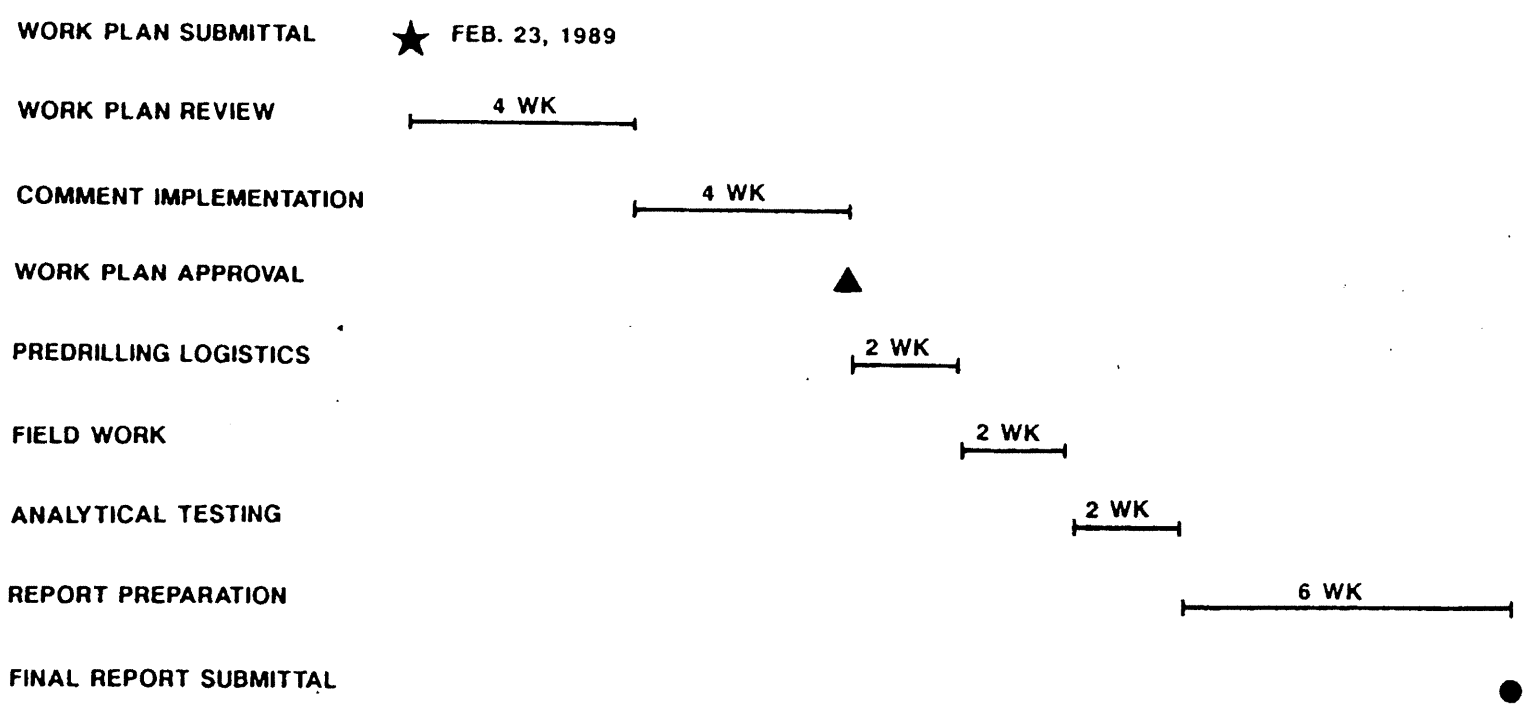

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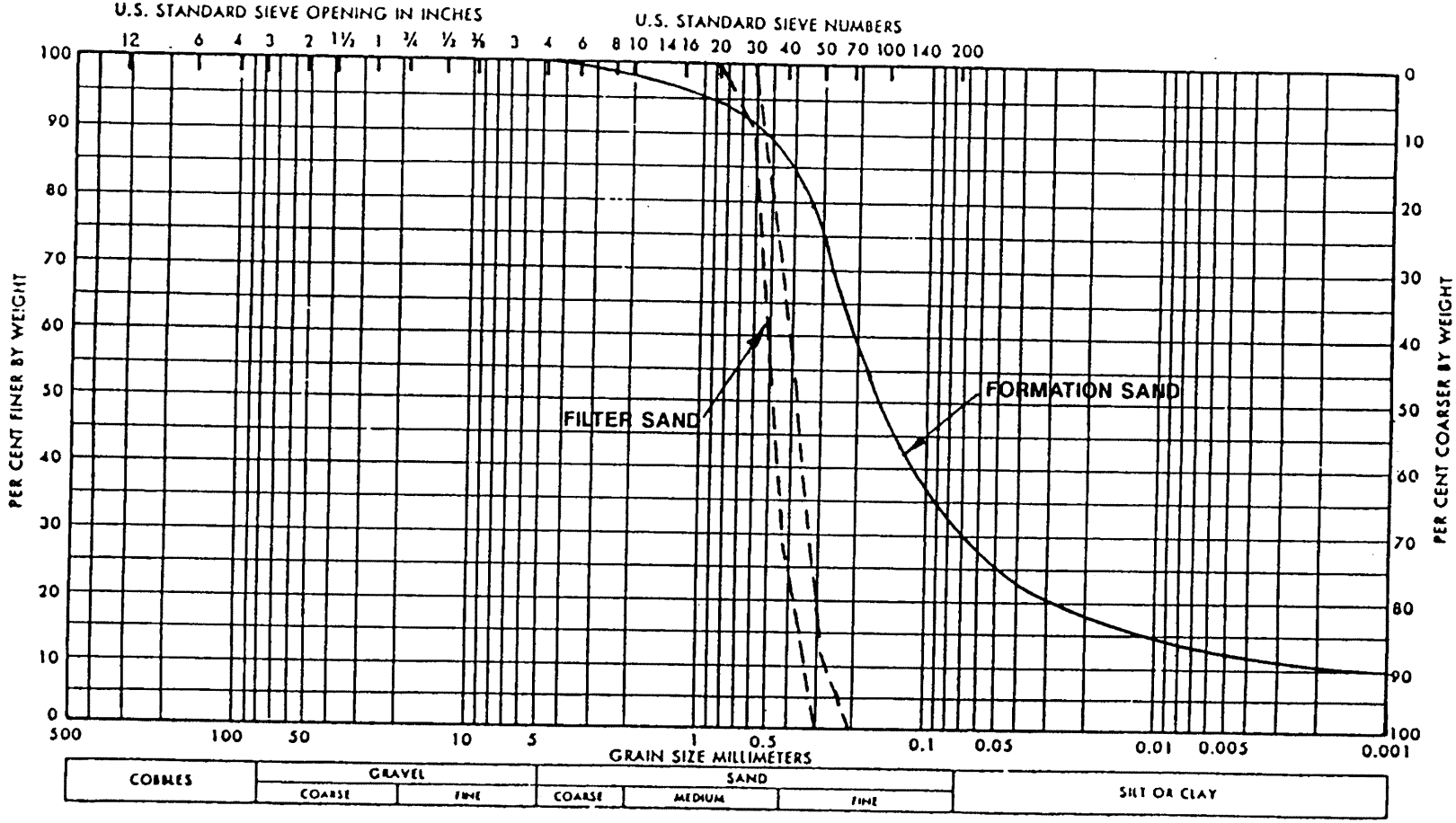
Figure No.: 6



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SYMBOL	SAMPLE NO.	ELEVATION OR DEPTH	USCS
— —	MW-1	38.5ft	SM

GRAIN-SIZE DISTRIBUTION CHART

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UTILITY TRAILER

Date: FEBRUARY 16, 1989

Project No: 1614-04

Figure No: 7

SIEVE ANALYSIS AND FILTER PACK DESIGN

Utility Trailer Manufacturing Company
City of Industry, California
Project 1614-04

Formation Uniformity Coefficient:

D_{10} = .001 mm (% Finer)

D_{60} = 0.2 mm (% Finer)

$$C = \frac{D_{60}}{D_{10}} = \frac{0.2}{.001} = 200$$

D_{30} = 0.07 mm

0.07 x 6 = 0.42
0.07 x 9 = 0.63

Lonestar No. 0/30 (30x50) Filter Sand Uniformity Coeffient:

D_{10} = 0.30

D_{60} = 0.45

$$C = \frac{D_{60}}{D_{10}} = \frac{0.45}{0.30} = 1.5$$

Determination:

Use 4" PVC, Schedule 40 with .010 inch slots.

Less than 10% of filter sand will pass thru the slots.