PHASE II SITE CHARACTERIZATION AT EKONOL POLYESTER RESINS WHEATFIELD, NEW YORK

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Submitted by:

Group Environmental Management Company

A BP affiliated company

4850 East 49th Street MBC 3-147 Cuyahoga Heights, Ohio 44125

Prepared By:

PARSONS

180 Lawrence Bell Drive, Suite 104 Williamsville, New York 14221 Phone: (716) 633-7074 Fax: (716) 633-7195

Project Manager:	REVIEWED AND APPROVED BY:	. / /
r roject wranager.	george W. Wormine	<i>3/3/03</i> Date
Technical Manager:	Willin Hugh / Min	3/7/03
		Date

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SECTION 1 INTRODUCTION

1.1 INTRODUCTION

The former Ekonol Polyester Resins facility is located on the west side of Walmore Road, approximately one-half mile north of Niagara Falls Boulevard (Route 62) in the Town of Wheatfield, New York (Figure 1). A former concrete secondary containment tank for process water was removed from service at the facility in October 1999. Following removal of the tank and surrounding soils, soil sampling of the walls and floor of the excavation was conducted. Results of the sampling indicated the presence of several organic compounds. Among those detected, and later included on the target parameter list, were trichloroethene (TCE), tetrachloroethene (PCE), cis-1,2-dichloroethene (cis-1,2 DCE), phenol, and metals including lead and zinc. Because some of the sample results exceeded New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) 4046 values, a site characterization was required.

The Phase I Site Characterization determined the extent of the target organic compounds and metals in soil and groundwater in the vicinity of the former containment tank. The Phase I Site Characterization activities included soil borings, temporary well installations, soil and groundwater sampling, and surveying. The Phase I work was summarized and presented to the NYSDEC in a report, dated March 2001. The NYSDEC reviewed the report and requested further characterization of soil and groundwater.

To address the NYSDEC's request for further characterization, a Work Plan for Phase II Site Characterization was prepared and submitted for approval. The objective of the Phase II Site Characterization was to define the extent of impacts related to the former containment tank. The NYSDEC approved the Phase II Work Plan on September 6, 2001. The Phase II Site Characterization work included soil borings, soil sampling with groundwater field screening, overburden and bedrock monitoring well installation, two groundwater sampling events, and an investigation of site sewers. Field activities associated with this NYSDEC-approved Phase II work were completed in December 2001. Preliminary field and analytical data from this Phase II investigation showed impacts to groundwater including a dense non-aqueous phase liquid (DNAPL). The data further indicated that additional investigation activities were warranted to fully define the extent of impacts to groundwater in both the shallow water-bearing zone in overburden and the deep water-bearing zone in bedrock. In January 2002, after reviewing the preliminary Phase II data, NYSDEC concurred that additional work, similar to the Phase II work already completed, was warranted for groundwater.

To address the need for further characterization of groundwater, a Work Plan for a second stage of Phase II Site Characterization was prepared and submitted to NYSDEC for approval. The objective of the second stage of Phase II Site Characterization was to further define the extent of impacts to groundwater in both the shallow water-bearing zone in overburden and the deep water-bearing zone in bedrock. The NYSDEC approved the Additional Phase II Work Plan on May 13, 2002. The NYSDEC-approved scope of work included groundwater screening at

anticipated overburden well locations followed by overburden well installation. In bedrock, proposed investigation included groundwater screening from temporary borings, followed by installation of bedrock monitoring wells. The field activities associated with the second stage of Phase II work were completed in November 2002.

This Report presents the findings of all the Phase II Site Characterization work completed to date. The intent of the report is to combine the results of the Phase II work completed in December 2001, and November 2002 and present a summary of the data collected during both stages of the Phase II work. The report includes a description of the site, a summary of the site history, a discussion of all Phase II Site Characterization work completed through November 2002, a summary of the analytical results for all Phase II work, and conclusions drawn from the Phase II work completed to date.

1.2 SITE DESCRIPTION

The Ekonol Polyester Resins facility is located on the west side of Walmore Road, approximately 0.5 mile north of Niagara Falls Boulevard (Route 62) in the Town of Wheatfield, New York (see Figure 1). The facility is situated at the northeast end of the Saint-Gobain Performance Plastics Corporation facility. Properties adjacent to this facility include Bell Aerospace Textron to the south, Niagara Falls Air Force Base to the north, and Niagara Falls International Airport to the west. Properties to the east of Walmore Road are primarily industrial and commercial; however, residential properties do exist east of Walmore Road, adjacent to the road.

The topography at the facility is relatively flat, and located at an approximate elevation of 600 feet above mean sea level (AMSL). The investigation area, immediately south of the main building, is paved with asphalt and concrete, and is primarily used for vehicle parking and equipment storage. The facility receives its potable water supply from the Town of Wheatfield, New York. The nearest groundwater supply well for domestic use is approximately one-mile east-southeast of the facility (EDR, 2000).

1.3 SITE HISTORY

The former secondary containment tank at the facility received wastewater rinsates from floor drains inside the process area of the Ekonol plant. The tank was installed prior to 1977, and remained in use until October 1999. According to Frontier (2000), the tank was constructed of reinforced concrete walls, approximately 9.5 inches thick. The interior dimensions were approximately 18 feet long, 6 feet wide, and 9 feet deep (Frontier, 2000). At capacity, the maximum volume was 7,794 gallons (Frontier, 2000). The tank was an open top, rinsate collection point covered with large steel plates. The walls and floor were sound, with no obvious cracking or fractures. At the time the tank was removed, there was no protective coating visible on the inside walls or floor (Frontier, 2000).

Following the October 1999 tank removal, TCE was detected in concentrations ranging from 1.2 mg/kg to 200 mg/kg in soil samples collected from the excavation walls (Frontier, 2000). Cis-1,2-DCE was detected at levels ranging from 2.9 mg/kg to 100 mg/kg. Phenols were detected at concentrations ranging from 4.5 to 12 mg/kg.

The Phase I site characterization to determine the extent of the target organic compounds and metals in soil and groundwater in the vicinity of the former containment tank was completed in March 2001 (see March 2001 Site Characterization Report). The Phase II Site Characterization field activities at the Ekonol site commenced in November 2001 and were completed in November 2002. The results of the Phase II Site Characterization are presented herein.

SECTION 2 PHASE II SITE CHARACTERIZATION ACTIVITIES

2.1 INTRODUCTION

The Phase II field investigation program was completed in two stages. The first stage of field activities was completed in December 2001. The preliminary field and analytical data from this stage showed the presence of organic chemicals in groundwater including a dense non-aqueous phase liquid (DNAPL). The data further indicated that additional investigation activities would be necessary to fully characterize the site.

After reviewing the preliminary data, NYSDEC concurred that additional work of similar scope to the first stage of Phase II was warranted for groundwater. Thus, the second stage of investigation in Phase II commenced in June 2002. The first stage of work included soil borings, well installation, soil and groundwater sampling, and a sewer investigation. The second stage of Phase II work included groundwater screening at anticipated overburden and bedrock well locations followed by overburden and bedrock well installation. Packer testing and discrete-zone water quality sampling were also completed in the second stage of Phase II. Over the course of the Phase II work, groundwater samples were collected and analyzed after well installation.

The field methodologies necessary to complete stage one of the Phase II work were described in the NYSDEC-approved Phase II Work Plan (August 2001). Field methodologies completed during the second stage of the Phase II investigation were completed in accordance with the NYSDEC-approved Additional Phase II Site Investigation Work Plan (May 2002). The work tasks performed in both stages of the Phase II investigation are described below.

2.2 SOIL BORINGS

To define the horizontal extent of soil impacts, six soil borings were advanced in the vicinity of the former containment tank location. The soil borings were advanced using direct-push methodology (GeoprobeTM), at the locations shown on Figure 2. These locations were selected to better define the extent of soil impacts. The actual boring locations were based on underground utility locations, previous field screening results, and visual observations.

Each soil boring was advanced to the top of bedrock, approximately 12 to 16 feet below ground surface (bgs). After reaching the top of rock, all six soil borings were converted to temporary monitoring points. The temporary piezometer was installed to collect a groundwater sample. Using a peristaltic pump, a groundwater sample was collected from each borehole. The groundwater sample was field screened for volatile organic halides (VOH), using EPA Method 8535. This colorimetric screening procedure is not specific to any one halogenated hydrocarbon compound. Based on the groundwater screening results, the borehole may have been abandoned, and an alternate location chosen. Alternate borehole locations were considered when screening results revealed an elevated VOH concentration in groundwater that was significantly greater

than the method detection limit (typically greater than 50 μ g/L). Groundwater screening results are summarized on Table 1.

At each final soil boring location, a soil sample was collected for laboratory analysis based on photoionization detector (PID) headspace readings and visual observations. Analytical (1,1-DCA),1,1-dichloroethane (1,2-DCE),1,2-dichloroethene parameters included trichloroethene (TCE), and 1,1,1-trichloroethane (1,1,1-TCA) by EPA Method 8260; phenol and aniline by EPA Method 8270; and zinc and lead using Method 6010B. A total of six soil samples were collected and analyzed. Analysis of these samples, in conjunction with the results of the field screening, was used to confirm the extent of soil impacts from the former containment tank. Once the soil sample was retained and the groundwater sample collected, each piezometer was removed and the boring abandoned. A drilling record for each of the soil borings is presented in Attachment A. Analytical results for the soil samples collected are provided on Table 2.

2.3 MONITORING WELL INSTALLATION

A total of 17 monitoring wells were installed during the entire Phase II investigation. These wells consisted of 9 overburden wells and 8 bedrock wells.

During the first stage of the Phase II investigation, eight monitoring wells (4 overburden and 4 bedrock) were installed as well pairs consisting of one overburden well and one bedrock well at each location. The locations of these wells are shown in Figure 2. One well pair was installed upgradient of the former containment tank. A second well pair was installed adjacent to the former containment tank location and its service lines. The remaining two pairs were installed hydraulically downgradient of the service tank location. Placement of the well pairs was determined following completion of the soil boring program and receipt of soil analytical results from the laboratory.

In the second stage of Phase II, an additional 5 overburden and 4 bedrock monitoring wells were installed. The five overburden wells included one upgradient well and four wells located downgradient or sidegradient in the overburden water-bearing zone. To define the extent of impacts to groundwater in bedrock, the four additional bedrock monitoring wells were installed (see Figure 3). To determine the horizontal extent of groundwater impacts and appropriate locations for the bedrock monitoring wells, temporary borings were installed, enabling the collection of bedrock groundwater samples for screening purposes. Once a suitable location for each bedrock monitoring well was selected using the screening results, a bedrock monitoring well was installed at a location adjacent to the screening hole.

Overburden Wells

The four overburden monitoring wells (MW-1S through MW-4S) installed during the first stage of the Phase II investigation were installed using 4.25-inch inside diameter (ID), hollow-stem augers (HSAs). Each well was advanced to the top of bedrock (approximately 10 to 15 feet bgs). After the total depth of the boring was reached, a two-inch ID, schedule-40 PVC well screen with a 0.010-inch slot size was installed. Well screen length was five feet, with the

exception of MW-1S, where the well screen length was ten feet. Screen length was dependent upon the observed depth to water in the boring.

The annulus around the outside of the screen was backfilled with sand, extending to two feet above the screen, followed by a bentonite seal above the sand pack. The seal was allowed to hydrate, prior to the placement of grout above it. Each well was completed with a flush-mount protective casing.

During the second stage of the Phase II investigation, five more overburden monitoring wells were installed. Their installation was preceded by soil borings and groundwater screening at the selected overburden well locations. To complete the delineation downgradient of the former containment tank, the locations of the soil borings were selected using the groundwater analytical results from the overburden monitoring wells installed during the first stage of Phase II work.

After the soil boring reached its total depth, a temporary piezometer was installed. Using a peristaltic pump, a groundwater sample was collected from each borehole. The groundwater sample was field screened for VOHs, using EPA Method 8535. The screening of overburden groundwater continued until an overburden well location was selected. Borings used to collect groundwater samples were backfilled with bentonite holeplug and cement bentonite grout. Overburden groundwater screening results are included on Table 1. The groundwater screening results from the soil borings ultimately defined the final well locations.

Once an overburden well location was selected, overburden monitoring wells MW-5S through MW-9S were installed. One of these wells (MW-5S) was installed upgradient, and the remaining four wells were installed downgradient or sidegradient in the overburden water-bearing zone.

The shallow, overburden monitoring wells were installed using 4.25-inch inside diameter (ID), hollow-stem augers (HSAs). Each boring was advanced to the top of bedrock (approximately 10 to 15 feet bgs). After the total depth of the boring was reached, a two-inch ID, stainless steel well screen with a 0.010-inch slot size was installed. Well screens in these five wells were five feet in length. Overburden monitoring wells MW-5S through MW-9S were constructed of stainless steel rather than PVC. The switch to stainless steel was approved by NYSDEC in the Additional Phase II Site Characterization Work Plan (May 2002).

Bedrock Wells

Four bedrock wells (MW-1D through MW-4D) were installed in the first stage of Phase II by advancing 6.25-inch HSAs to the top of bedrock. After reaching the top of bedrock, a tricone roller bit was used to drill a rock socket approximately two feet into the competent bedrock. After drilling the rock socket, a four-inch steel casing was grouted in-place by tremie grouting from the bottom up. After allowing the grout to set for a minimum of 24 hours, an HQ-sized (nominal 4-inch) core barrel was advanced into bedrock. The core barrel was advanced a maximum of 20 feet into competent bedrock or until a water-bearing zone was encountered in bedrock, whichever occurred first. A two-inch ID, schedule 40 PVC well screen and riser were then installed in the boring. The screens were 10 feet in length with 0.010-inch slots (10-slot).

The annular space outside of the PVC was tremied with filter pack sand, up to a minimum of three feet above the top of the screen. The annular space around the two-inch casing was completed above the filter pack with a minimum of a three-foot bentonite seal. The bentonite seal was allowed to set for a minimum of two hours, prior to placing grout. Grout was tremied from above the bentonite seal to the surface. Below the screen, a two-foot portion of casing was installed as a sump to collect any DNAPL, if present. The bedrock wells were completed with a flush-mount protective casing.

During the second stage of the Phase II investigation, work included groundwater screening at selected locations followed by the installation of four bedrock monitoring wells. The locations of the bedrock groundwater screening holes were selected using the groundwater analytical results from the four bedrock monitoring wells installed during the first stage of Phase II. The groundwater screening results from the temporary bedrock groundwater screening borings were then used to determine the actual well locations.

Initially, temporary borings were installed at proposed locations by advancing 4-inch inner diameter spin casing to the top of rock. After reaching the top of bedrock, spin casing, equipped with a diamond shoe, was seated 6 to 12 inches into competent bedrock. After seating the casing, a pneumatic rock hammer was used to advance the boring. Using filtered compressed air as the drilling lubricant, the hammer was advanced a maximum of 20 feet into competent bedrock or until a water-bearing zone was encountered, whichever occurred first. Once the total depth of the boring was reached, the drill stem was removed, and groundwater was allowed to recharge to the boring.

After groundwater had recharged sufficiently, a groundwater screening sample was collected from the open borehole. The groundwater sample was field-screened for VOHs, using EPA Method 8535. Alternate borehole locations were considered if the screening results revealed a VOH concentration in groundwater that was greater than 50 μ g/L. If, based on the screening results, an alternate borehole location was selected; the screening was repeated at the alternate location. Unless limited by building or property boundaries, alternate boring locations were located up to 100 feet from the original boring (see Figure 3). The screening of bedrock groundwater continued until a well location that potentially defined the extent of impacts was selected. Temporary borings used to collect groundwater screening samples were backfilled with bentonite holeplug and cement bentonite grout. Bedrock groundwater screening results are provided on Table 1.

In the second stage of the Phase II investigation, the four bedrock monitoring wells (MW-10D through MW-13D) were installed by advancing 6.25-inch HSAs to the top of bedrock. After reaching the top of bedrock, a tri-cone roller bit was used to drill a rock socket approximately two feet into the competent bedrock. After drilling the rock socket, a four-inch steel casing was placed to the bottom of the boring. The casing was sealed in place by tremie grouting with cement-bentonite grout from the bottom up. After allowing the grout to set for a minimum of 24 hours, an HQ-sized core barrel (nominal 4-inch outside diameter) was advanced a maximum of 20 feet into competent bedrock or until a water-bearing zone was encountered, whichever occurred first.

After each core run, typically five-feet in length, packer testing was performed on that section of the boring (total of three tests per borehole). A single rubber packer assembly was placed in the corehole, inflated with nitrogen, and used to seal off the bottom five feet of the corehole. Five-foot sections of corehole were tested during each individual packer test. The packer test used water withdrawal methods to estimate the hydraulic conductivity of that section of the corehole. Packer testing in the open bore hole with periodic water level monitoring in adjacent borings or wells enabled identification of higher permeability zones and connectivity of fractures between holes. Packer testing results are provided in Attachment B. During the withdrawal packer testing, discrete-zone water quality samples were collected and submitted for laboratory analysis for the target parameters (See Groundwater Sampling and Analysis below for details). The groundwater was also checked for the presence of DNAPL using a hydrophobic dye.

At the completion of packer testing, a 2-inch ID, stainless steel well screen and riser was installed in the boring. The screen length was a maximum of ten feet with 0.010-inch slots. The well was screened over the most permeable section of the bedrock. Below the screen, a 2-foot section of casing was installed as a sump to collect DNAPL, if present. Bedrock monitoring wells MW-10D through MW-13D were constructed of stainless steel rather than PVC. The switch to stainless steel was approved by NYSDEC in the Additional Phase II Site Characterization Work Plan (May 2002).

Drilling records for all of the wells installed during the Phase II activities are provided in Attachment A. Following the additional monitoring well installations, all groundwater field screening borings and well locations were surveyed for location and elevation. The locations of the additional borings and monitoring wells are presented on Figure 3.

2.4 GROUNDWATER SAMPLING AND ANALYSIS

During the Phase II investigation, groundwater samples were collected from the monitoring wells. In the first stage of work, two rounds of groundwater samples were collected from the eight wells installed. In the second stage of work, two rounds of groundwater sampling were completed from all 17 wells installed. To date, the eight wells installed in the first stage of Phase II have been sampled four times, and the wells installed in the second stage of Phase II have been sampled twice. Analytical results for groundwater samples from monitoring wells are summarized on Tables 3 and 4. Analytical results for samples collected during packer testing are included on Table 5.

Screening for DNAPL was also completed during the Phase II investigation. The groundwater sampling and analysis and the separate-phase liquid monitoring and testing completed during the Phase II work is described below.

Dissolved Phase Sampling and Testing

In accordance with the August 2001 NYSDEC-approved Work Plan, two rounds of groundwater sampling were completed during the first stage of the Phase II investigation. Sampling was consistent with the methodology described in the NYSDEC-approved Work Plan (May 2001). The first round was conducted on November 2, 2001, following the installation and

development of the monitoring wells. The second round of groundwater samples was obtained on December 6, 2001. All eight of the monitoring wells (four shallow, four deep) were sampled during each round. Three volumes of water were purged from each well prior to sampling using a dedicated, disposable bailer. Field parameters including pH, specific conductance, and temperature were documented. During the first round of sampling, separate-phase liquids were not observed. Sampling records for both rounds of sampling are presented in Attachment C.

Groundwater samples colleted during the first stage of Phase II were submitted for laboratory analysis. In accordance with the NYSDEC-approved Work Plan, analytical parameters included TCE; 1,2-DCE; 1,1-DCA; and 1,1,1-TCA; phenol and aniline; and zinc and lead.

After the overburden and bedrock monitoring wells were installed during the second stage of the Phase II investigation, the new wells were developed and purged following standard NYSDEC guidelines as approved in the May 2002 Additional Phase II Work Plan. Groundwater samples were collected in accordance with NYSDEC protocols and guidance using a peristaltic pump. During development and purging, field parameters including pH, temperature, conductivity, dissolved oxygen (DO), and oxidation reduction potential (ORP) were collected. Colorimetric field test kits were utilized to test for nitrate, ferrous iron, and sulfate. In addition to the newly installed monitoring wells, the monitoring wells installed during the first stage of Phase II field activity were sampled. This round of sample collection was completed on October 2, 2002.

Seventeen groundwater samples (9 overburden, 8 bedrock) were collected and submitted for laboratory analysis. Groundwater samples were analyzed using EPA Method 8260 for the target VOC parameters (TCE, 1,2-DCE, 1,1-DCA, and 1,1,1-TCA). Target SVOC parameters, phenol and aniline, were analyzed using EPA Method 8270. Analysis for zinc and lead was performed using EPA Method 6010B.

Approximately one month following the October 2002 round, a second set of 17 groundwater samples was collected (November 7, 2002). Purging and sampling procedures were identical to the first round. The seventeen samples were collected and analyzed for the target parameters as indicated above. Well sampling records for both rounds of sampling are included in Attachment C.

Separate-Phase Liquid Monitoring

After reviewing the analytical results from the November 2, 2001 sampling event, a grab sample was collected from each of the overburden wells and each of the bedrock well sumps. These samples were used to screen for the presence of a separate phase liquid. A hydrophobic dye, Sudan IV, was mixed with each sample. The sample from MW-2D was stained red, while all other samples remained clear. This result indicated the possible presence of a separate phase liquid. A sample of the liquid in the sump from MW-2D was collected and submitted to the laboratory for chemical analysis.

During the sampling round completed October 2, 2002, the purged water was screened during purging for the presence of DNAPL using visual observation and a hydrophobic dye. If

DNAPL was observed or confirmed using Sudan IV in any of the existing or newly installed monitoring wells during groundwater sampling, the DNAPL was sampled and submitted for physical and chemical analysis. Physical properties determined for the separate-phase liquid included surface tension, density and viscosity. In addition to physical properties, samples of the DNAPL were submitted for chemical analysis. Chemical analysis included the full suite of VOCs and SVOCs by EPA Methods 8260 and 8270. The analytical results for the physical and chemical testing of DNAPL are provided on Table 6 and Table 7.

Where DNAPL samples were collected, any remaining DNAPL in the well was removed. Following removal, the recovery of DNAPL into the monitoring well was measured over time.

All investigation-derived waste (IDW) including excess soils, decontamination rinsates, well development water, purge water, and personal protective equipment, was placed in Department of Transportation (DOT)-approved 55-gallon, 17-H type drums. The IDW was characterized, and disposed of in accordance with the appropriate regulations.

2.5 SEWER INVESTIGATION

To evaluate potential preferential pathways for offsite migration of contaminants, the sewers in the vicinity of the site were investigated. Invert elevations of the storm and sanitary sewer lines in the vicinity of the containment tank were measured to establish direction of flow in the pipes. This information was used to determine the best areas to advance test pits and evaluate the condition of the sewer bedding, if any, and determine if the pipelines are above or below the water table. The location of the test pits is shown on Figure 2.

After the test pits were completed in accordance with the September 2001 NYSDEC-approved Work Plan, a soil sample was collected from beneath the pipeline, at each test pit. Each soil sample was collected from the native soil, not the pipeline bedding. Each soil sample was analyzed by EPA Method 8260 for the target VOC parameters (TCE, 1,2-DCE, 1,1-DCA, and 1,1,1-TCA). Target SVOC parameters included phenol and aniline, analyzed for using EPA Method 8270. Analysis for zinc and lead was performed using EPA Method 6010B. The analytical results for the test pit soil samples are included on Table 8.

2.6 HISTORICAL REVIEW

A review of historical data was completed during the Phase II investigation. Following review of the information sources, including tax maps, aerial photographs, reports for adjacent sites, and communications with employees on site, and using recently collected field data, a general site plan was created (see Figure 4).

SECTION 3 PHASE II SITE CHARACTERIZATION RESULTS

3.1 GEOLOGY AND HYDROGEOLOGY

The overburden deposits encountered in the Phase II soil borings consisted of silty redbrown clay, with gray silty clay lenses. A fine sand and gravel was found at the interface with bedrock. Thickness of overburden ranges from 3 feet to 19 feet throughout the region (Ecology and Environment 2000). At the Ekonol facility, the overburden thickness ranged from 12.5 feet to 15.0 feet. A description of the overburden encountered can be found on the boring logs in Attachment A.

Given the nature of the overburden and slow recharge rates observed during well development, the soil drainage is expected to be poor, and hydraulic conductivity is low. Based on data from an adjacent site, regional groundwater flow direction is to the south-southwest, at a hydraulic gradient of approximately 0.01 feet/foot (Golder, 1991). The depth to groundwater at the site varied substantially between monitoring locations (Table 9). Groundwater velocities are expected to be very low based on the high percentage of clay in the overburden, and the low regional hydraulic gradient.

The depth to bedrock, estimated as the depth to auger refusal during monitoring well installation, was approximately 12.5 to 18.7 feet bgs. This is consistent with the depth to bedrock reported in the UST Closure Report (Frontier, 2000). The bedrock observed at the Ekonol facility during the Phase II well installation consists of light to dark gray dolomite of the Lockport Group. The formation is consistent throughout, containing weathered bedding planes, vugs, stylolitic horizons, and fossiliferous corals. A fracture/rubble zone was encountered at depths ranging from 20.25 feet to 29.70 feet bgs. A loss of drilling fluid circulation was encountered in this zone. Circulation of drilling fluid did not recover once loss was encountered. A separate phase liquid was not observed during coring activities.

Background information suggests that the formation has an east-west strike, and dips to the south at approximately 25 ft./mi. The Lockport Group has been divided into four zones; the Guelpf Formation (Zone 1), the upper part of the Eramosa Formation (Zone 2), and the lower portions of the Eramosa Formation (Zones 3 and 4).

Zone 1 (10-20 feet thick) of the Lockport formation contains weathered bedding planes, vugs, and a horizontal fracture zone in stratigraphic contact with Zone 2. Zone 1 is a water-bearing zone. Core samples collected during drilling were largely from Zone 1 of the Lockport. Zone 2 is primarily massive and relatively unfractured; however, high angle vertical fractures do penetrate Zone 2. The top portion of Zone 2 was penetrated during coring. Zones 3 and 4 were not penetrated during the Phase II investigation. A description of the bedrock core obtained during the Phase II investigation is provided on the drilling records in Attachment A.

The major surface water feature in the area is the Niagara River, located approximately three miles south of the facility. Bergholtz Creek, a tributary of the Niagara River, is located approximately 0.5 miles south of the facility.

Three water supply wells identified as being for domestic use were reported to exist within 1.5 miles of the site (EDR 2000). The nearest of these three wells is approximately one mile east-southeast of the facility. None of these wells are located hydraulically downgradient of the facility. The depth to groundwater in these wells at the time of drilling (1950s) ranged from 7 to 11 feet bgs (EDR, 2000).

3.2 SOIL SAMPLING RESULTS

Soil Borings

Using the results of the field screening, including PID readings, field observations, and onsite groundwater analysis, a total of six soil samples were submitted for laboratory analysis from locations presented on Figure 2. Soil samples were analyzed for target volatile organic compounds (VOCs), including TCE, cis-1,2 DCE, 1,1-DCA, and 1,1,1-TCA, using EPA Method 8260. Target semi-volatile organic compounds (SVOCs) include phenol and aniline. Analysis for target SVOCs was performed using EPA Method 8270. Concentrations of zinc and lead in soil were determined using EPA Method 6010B. Analysis of these samples, in conjunction with the results of the field screening, confirms the extent of soil impacts from the former containment tank.

A summary of the analytical results from the soil sampling is presented in Table 2. There were no exceedences of NYSDEC Technical and Administrative Guidelines Memorandum No. 4046 (TAGM 4046) recommended soil cleanup objectives for the parameters analyzed for using EPA Method 8260 or 8270. Lead detections were below anticipated site background levels. Total zinc concentrations exceeded the state standard of 20 mg/kg in all of the borings. The concentration of zinc ranged from 44.8 mg/kg to 104 mg/kg.

Sewer Investigation

On December 3 through December 6, 2001 the sewers beneath the site were investigated. Three test pits were excavated to evaluate the condition of the sewer bedding, and determine if the pipelines were above or below the water table. The test pit locations are shown on Figure 2.

The sewer bedding material beneath the pipe was found to be comprised of a thin layer (1 to 3-inch) of sandy pea-gravel. The bedding material was above the native red, silty clay at each location. The backfill material around the pipe consisted of sand and cobbles. The backfill material above the pipe at TP-2 and TP-3 was saturated at three feet bgs. After each test pit was completed, a soil sample was collected from the native soil beneath the bedding material, but above the water table.

The soil samples were submitted for laboratory analysis for target VOCs, SVOCs, and metals. At TP-2, 1,1-DCA was detected at 24 μ g/kg. There were no detections of aniline or phenol. Lead concentrations ranged from 9.7 mg/kg to 15.1 mg/kg. Zinc concentrations ranged from 70.8 mg/kg to 87.2 mg/kg. The analytical results from the sewer investigation samples are

presented in Table 8. There were no exceedences of the TAGM 4046 recommended soil cleanup objectives in the samples collected from the test pits.

3.3 GROUNDWATER ANALYTICAL RESULTS

Groundwater Screening

Total VOH concentrations from groundwater screening samples collected during the first stage of the Phase II characterization ranged from 0.0 µg/L in SB-1 to 143 µg/L in SB-3. The detection of 143 µg/L in SB-3 prompted the completion of a soil boring 20 feet further south, denoted as SB-3A. The screening concentration for the groundwater sample from SB-3A was 10.6 µg/L. To investigate the validity of field screening results, groundwater samples were collected from the eight monitoring wells installed during the first stage of Phase II and compared to the laboratory analytical results from these wells.

Prior to the installation of overburden monitoring wells during the second stage of Phase II fieldwork, a second round of overburden field screening was conducted. There were no total VOH detections at any of the screening locations (SBA series). The second round of overburden field screening locations are shown on Figure 3.

During the second stage of Phase II work, groundwater field screening in bedrock was conducted prior to the installation of the bedrock monitoring wells. Field screening locations were based on property boundaries, utility clearances, and field observations. The bedrock field screening locations are presented on Figure 3. The results from the entire Phase II field screening effort are presented in Table 1. Bedrock groundwater screening locations are alphabetically listed on Table 1.

Groundwater Sampling from Packer Testing

Analytical results for groundwater collected from bedrock monitoring wells are summarized in Table 5. Except at MW-12D, the samples were collected in three discrete intervals as the boring was advanced. In MW-10D, the concentration of TCE decreased with depth. Only TCE and 1,2-DCE were detected in MW-10D during packer testing. The concentration of 1,1,1-TCA and TCE increased slightly with depth in MW-11D. In MW-12D only one sample could be obtained in the first interval of coring. For MW-13D, the indicator VOCs decreased in concentration with depth.

Groundwater Sampling from Monitoring Wells - Overburden

Analytical results for groundwater collected from overburden monitoring wells are summarized in Table 3. The concentrations of the indicator analytes for all sampling rounds completed to date are plotted on Figure 5. The ranges of concentrations for the most recent round of sampling (November 2002) are summarized below.

- TCE concentrations ranged from not detected (ND) at MW-5S to 9,000 $\mu g/L$ at MW-4S.
- 1,1,1-TCA was detected only in MW-4S at a concentration of 150 μg/L.

- 1,2-DCE concentrations ranged from 0.58 μg/L at MW-3S to 780,000 μg/L at MW-2S.
- 1,1-DCA ranged from ND at MW-2S to 13 μg/L at MW-4S.
- Aniline was detected only in MW-4S at a concentration of 400 μg/L.
- Phenol was detected in MW-4S at 32 μ g/L and in MW-2S at 53,000 μ g/L.
- Lead was detected in MW-7S and MW-9S at concentrations of 0.013 mg/L and 0.014 mg/L respectively.
- Zinc concentrations ranged from ND to 0.086 mg/L at MW-7S.

Groundwater Sampling from Monitoring Wells - Bedrock

Analytical results for groundwater collected from bedrock monitoring wells are summarized in Table 4. The concentrations of the indicator analytes for all sampling rounds completed to date are plotted on Figure 6. The ranges of concentrations for the most recent round of sampling (November 2002) are summarized below.

- TCE concentrations ranged from ND at MW-12D to 400,000 μg/L at MW-2D.
- 1,1,1-TCA concentration ranged from ND at MW-2D and MW-12D to 16,000 μg/L at MW-13D.
- 1,2-DCE concentrations ranged from ND at MW-12D to 28,000 μg/L at MW-13D.
- 1,1-DCA concentration ranged from ND at MW-1D, MW-2D, MW-4D, MW-10D, and MW-12D to 110 μg/L at MW-3D.
- Aniline and Phenol concentrations ranged from ND at MW-1D, MW-10D, MW-11D, MW-12D, and MW-13D to 3,800 μg/L (aniline) and 710 μg/L (phenol) at MW-2D.
- Lead was not detected.
- Zinc was not detected.

3.4 SEPARATE-PHASE LIQUID RESULTS

Physical Testing

The physical characteristics of the DNAPL samples collected during the Phase II investigation are summarized on Table 6. The sample collected from MW-2D contained two distinct layers stainable with hydrophobic dye. The sample collected from MW-2S and MW-3D were observed to contain a single layer of discolored water that tested negative with the hydrophobic dye. The density of all samples collected was greater than the density of water. The lower layer in sample MW-2DP was the most viscous. The least viscous sample was collected from shallow well MW-2S. Surface tension ranged from 32.5 to 48.0 dynes per second.

During the Phase II investigation, the presence of DNAPL was confirmed with the use of Sudan IV biological stain. No physical testing of DNAPL was performed during the first stage of Phase II work.

Chemical Analytical Results

During the first stage of Phase II work the concentration of TCE was 440,000 mg/Kg in DNAPL collected from MW-2D. Aniline was detected in MW-2D at concentration of 4,400 mg/Kg. 1,1-DCA and 1,2-DCE were detected in the sample at a concentration of 24,000 mg/Kg. 1,1,1-TCA was detected at a concentration of 48,000 mg/Kg. Phenol was detected at a concentration of 50 mg/Kg. Only one sample was collected during this stage of the Phase II investigation. Analysis was for the indicator parameters only. Results were reported in mg/Kg by the laboratory due to difficulties in analyzing the viscous sample matrix.

During the second stage of Phase II work, three samples of DNAPL were collected for chemical analysis. The full suite of analytical results for the samples collected is summarized on Table 7. The samples were collected from the sumps in monitoring wells MW-2D, MW-2S, and MW-3D. In the sample collected from MW-2D, the majority of the sample consisted of TCE. The concentration of TCE was 924,000,000 μ g/L. In the sample collected from MW-3D the concentration of TCE was 110 μ g /L. In the DNAPL sample from MW-2S, TCE was not detected, and 1,1,1-TCA was detected at 590 μ g/L. Other analytes were also detected in the DNAPL samples (see Table 7).

3.5 SITE HYDROGEOLOGY

Water levels in the seventeen monitoring wells installed during Phase II work have been collected monthly. The last three months of water level data are provided on Table 9.

Water levels were measured in the overburden and bedrock wells and used with survey elevation data to determine the local direction of groundwater flow. The November 18, 2002 groundwater contour maps of the overburden and bedrock water-bearing zones are presented in Figures 7 and 8. Only the November 2002 groundwater contour maps have been included in this report.

Shallow Groundwater

In November 2002, the shallow groundwater flow direction appears to be radial from high water level elevations seen at MW-7S and MW-2S. Variability in the elevation of top of rock, the type of subsurface material, clays and silt, and the location of MW-2S and MW-7S adjacent to buildings may have an influence on the groundwater elevations observed and gradients determined. The average gradient calculated from the water levels measured in the shallow water-bearing zone is 0.028 feet per foot. Gradient determined from groundwater level measurements made in December 2002 was consistent with November 2002. The groundwater gradient appears to flatten out moving away from MW-2S and MW-7S. Regionally, groundwater flow direction in the shallow water-bearing zone is to the southwest. On a regional scale, flow gradients are relatively shallow.

Bedrock Groundwater

In the bedrock water-bearing zone, the groundwater gradient suggests groundwater flow southeast from the western portion of the facility. From the north, the overall flow direction was

south-southeast. On the east side of the site, the flow direction appears to be southwest with a gradient of 0.01 ft./ft. In bedrock, the gradients are low and dependent upon the interconnection of fractures in bedrock. Variability in flow direction may be due to the fractures intercepted and the hydraulic conductivity of the bedrock.

Bedrock Packer Testing

Hydraulic conductivity was determined for each interval tested in the bedrock monitoring wells installed during the second stage of Phase II work. Calculated hydraulic conductivities are provided in Attachment B. Packer testing was not performed in MW-12D due to a drilling problem related to a collapsing borehole.

SECTION 4 CONCLUSIONS

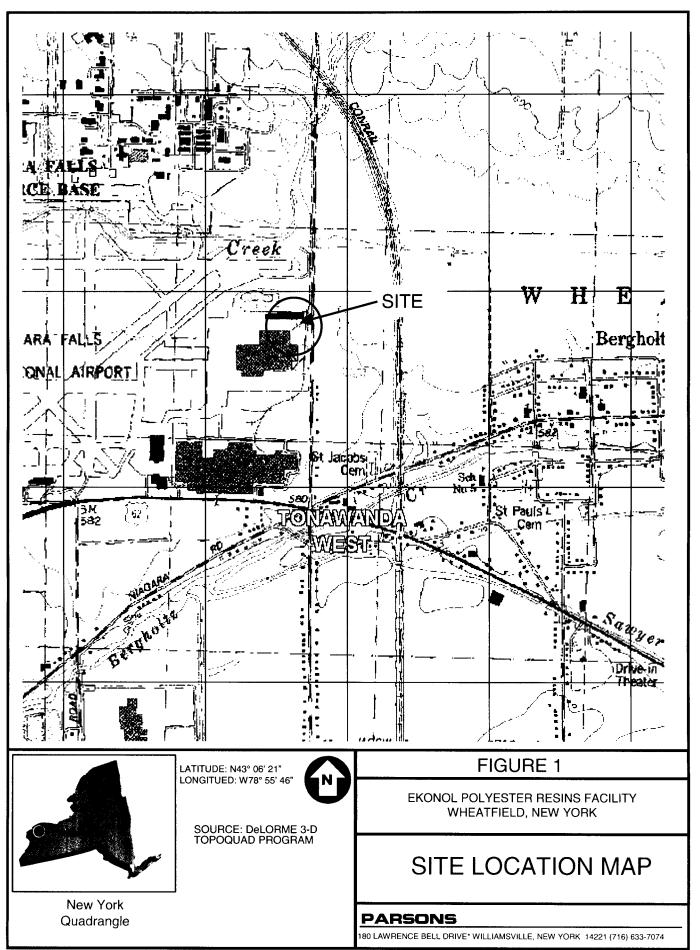
4.1 CONCLUSIONS

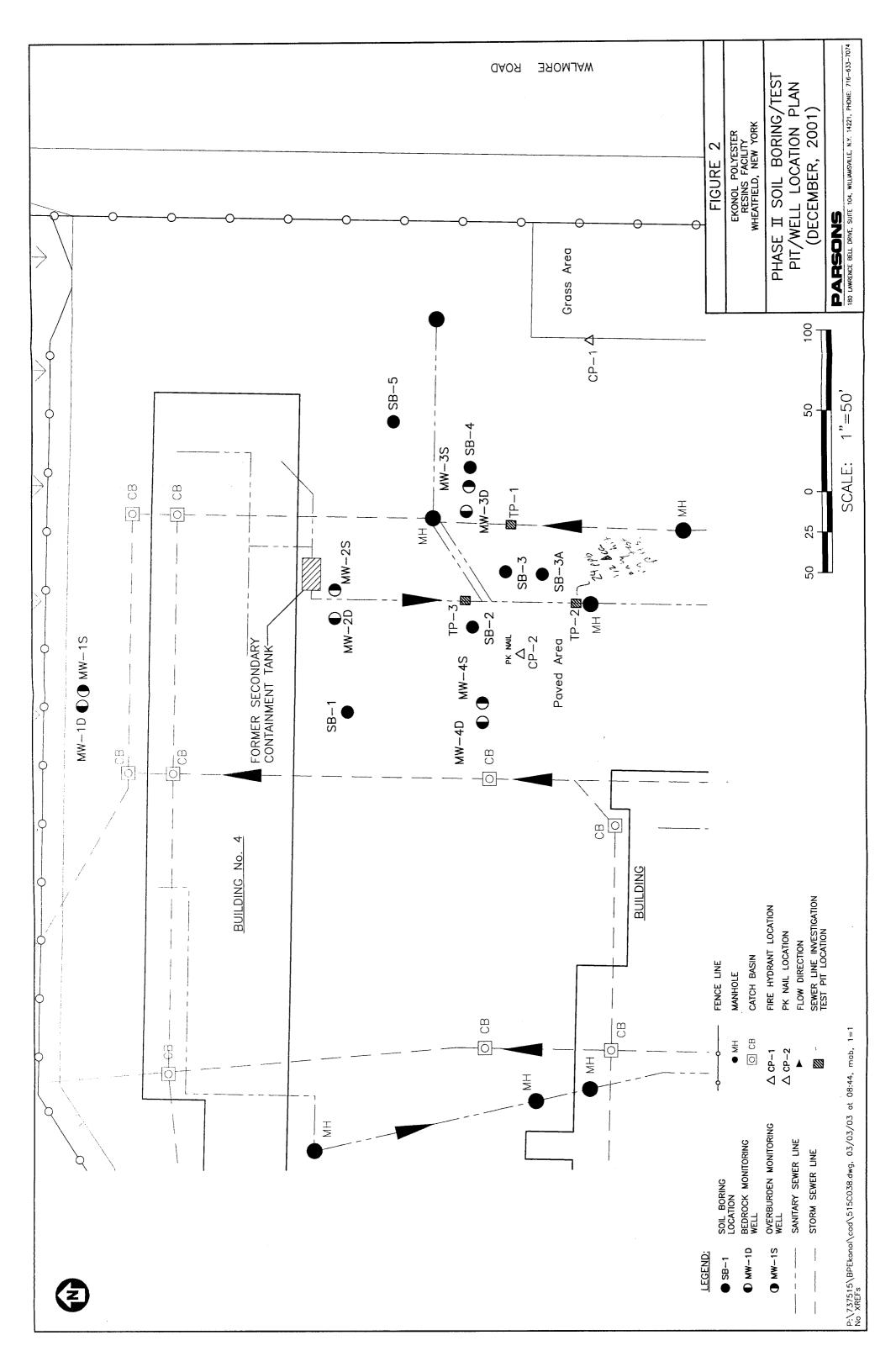
The objective of this Phase II investigation, to fully define the extent of impacts in soil and groundwater related to the former containment tank has been partially achieved. The following conclusions can be drawn from the existing data:

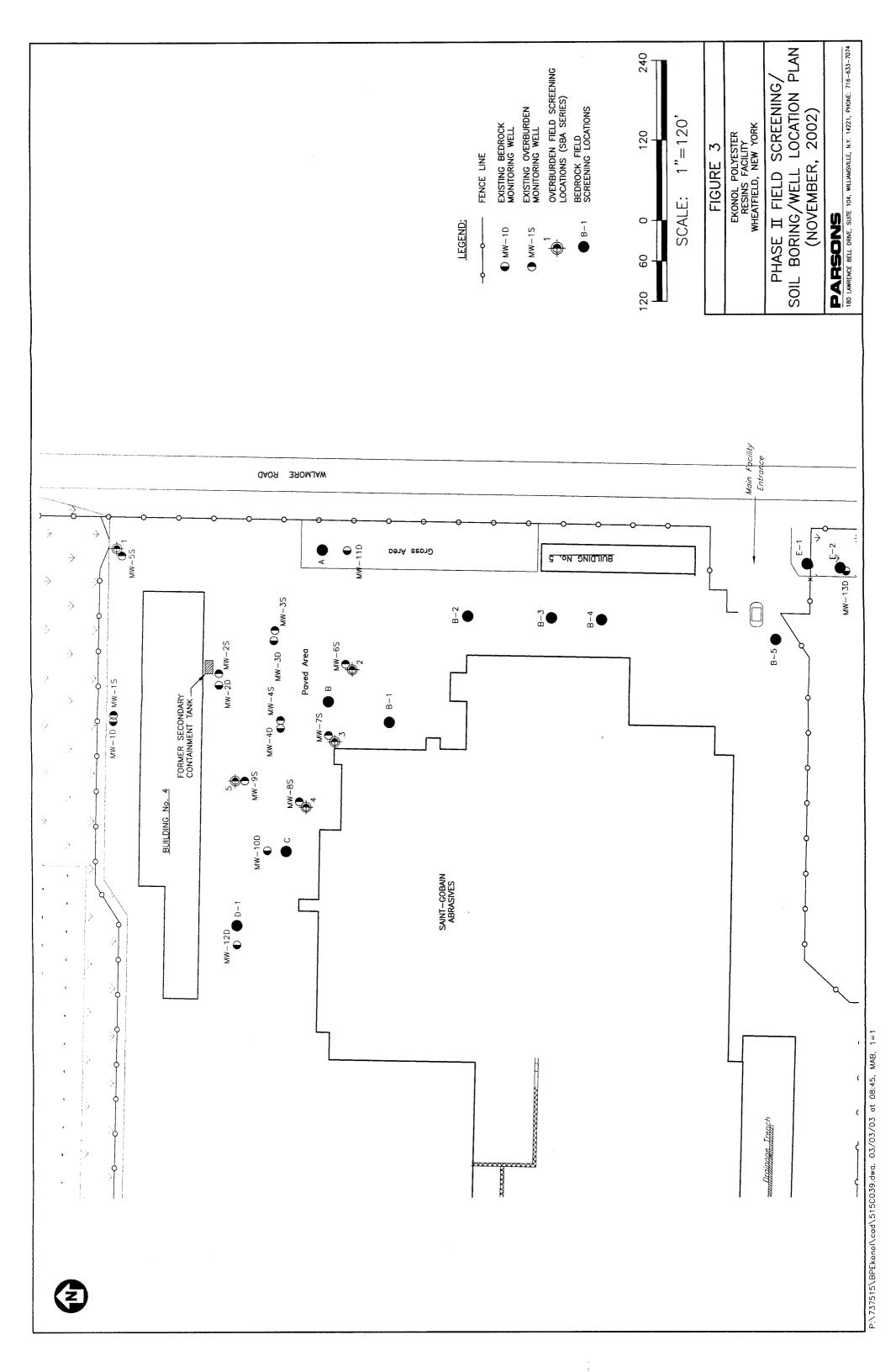
- Characterization of site soils indicates that the extent of impacts is largely confined to the immediate vicinity of the former containment tank.
- The sewer investigation analytical results indicate that the sewer bedding at the site does not appear to be acting as a preferential pathway.
- The western and southwestern extent of dissolved-phase constituents in the shallow water-bearing zone is generally defined by MW-8S and MW-9S and MW-7S. To the northeast, the extent of shallow groundwater impacts is generally defined at MW-5S.
- Northwest of the former containment tank near MW-1S, south of the former containment tank near MW-6S, and east of the former containment tank near MW-3S, the concentration of contaminants in overburden water-bearing zone indicates that the wells are close to the limit of overburden groundwater impacts.
- In the bedrock water-bearing zone, dissolved-phase impacts on the western side of the site are generally defined by MW-12D. Dissolved-phases of the indicator parameters exist at elevated concentrations in all other bedrock monitoring wells. However, concentrations are significantly lower away from the former containment tank.
- Separate-phase liquid (confirmed with Sudan IV), containing TCE, or its degradation products, and other parameters, was found in well MW-2D.
- The highest concentrations of organic indicator parameters in groundwater were observed in the vicinity of the former containment tank or its associated piping.

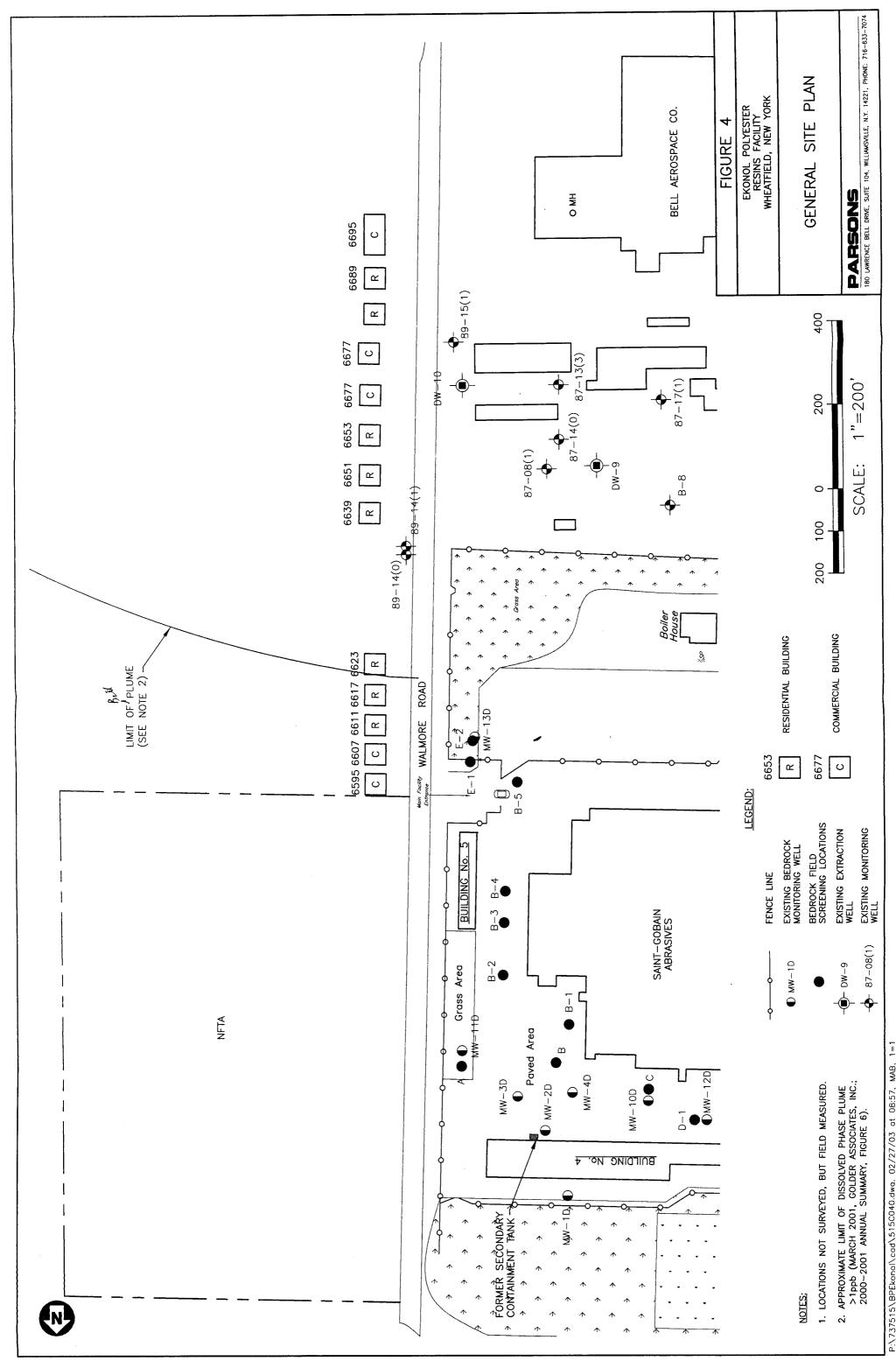
In summary, the extent of impacts in soil and shallow groundwater has been defined. Additional investigation is necessary to further define the extent of impacts in the bedrock waterbearing zone.

FIGURES

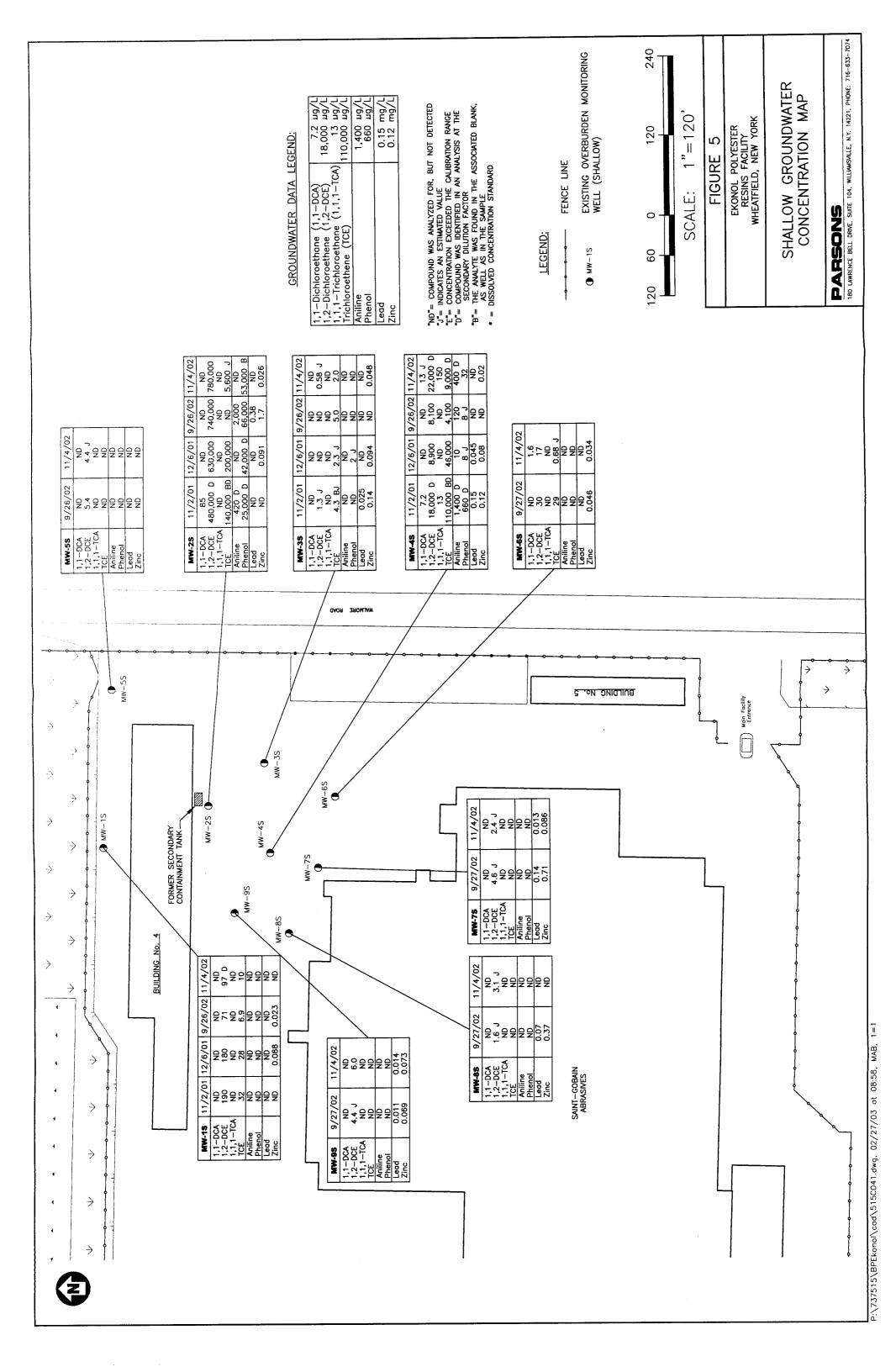


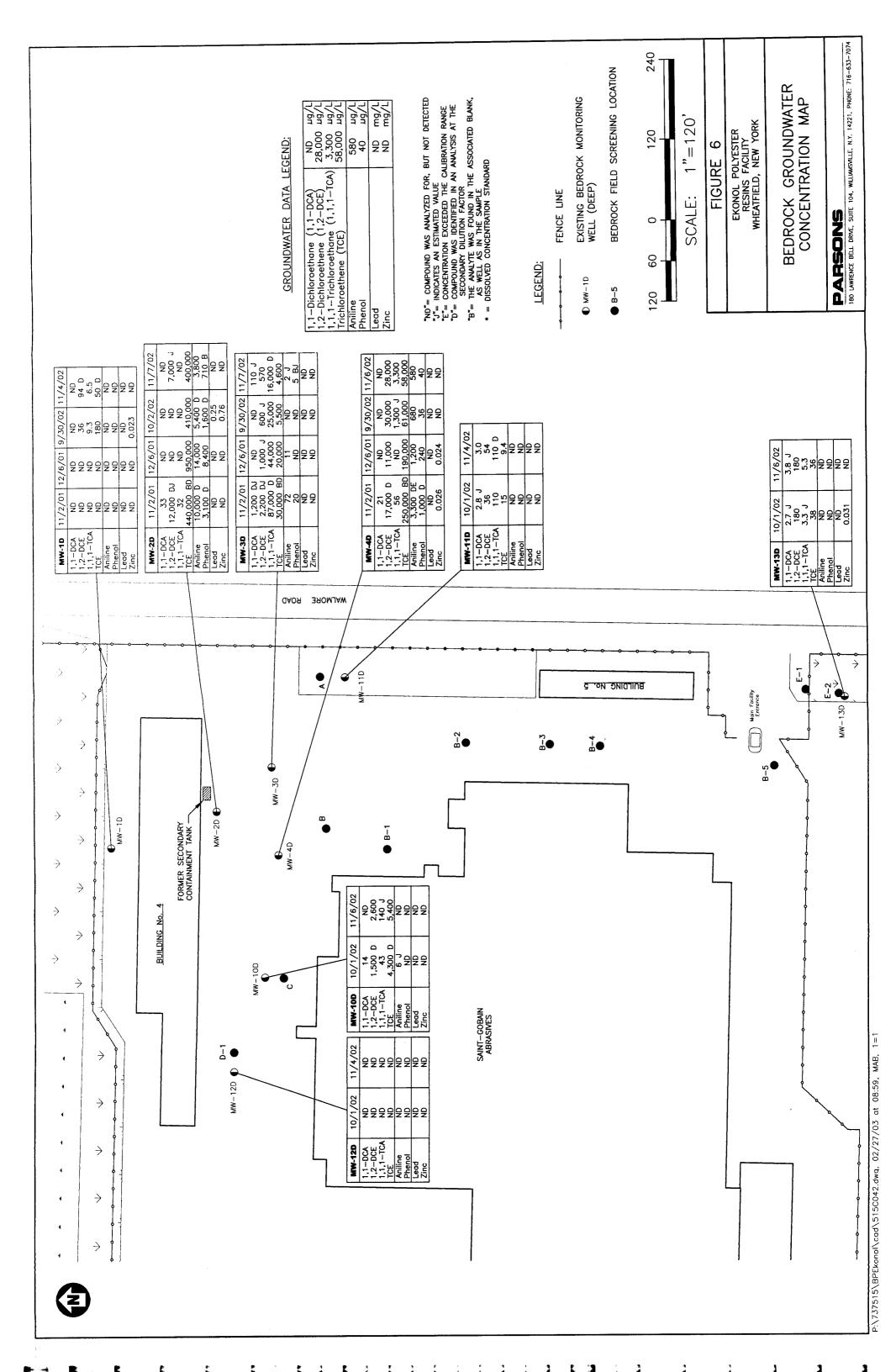


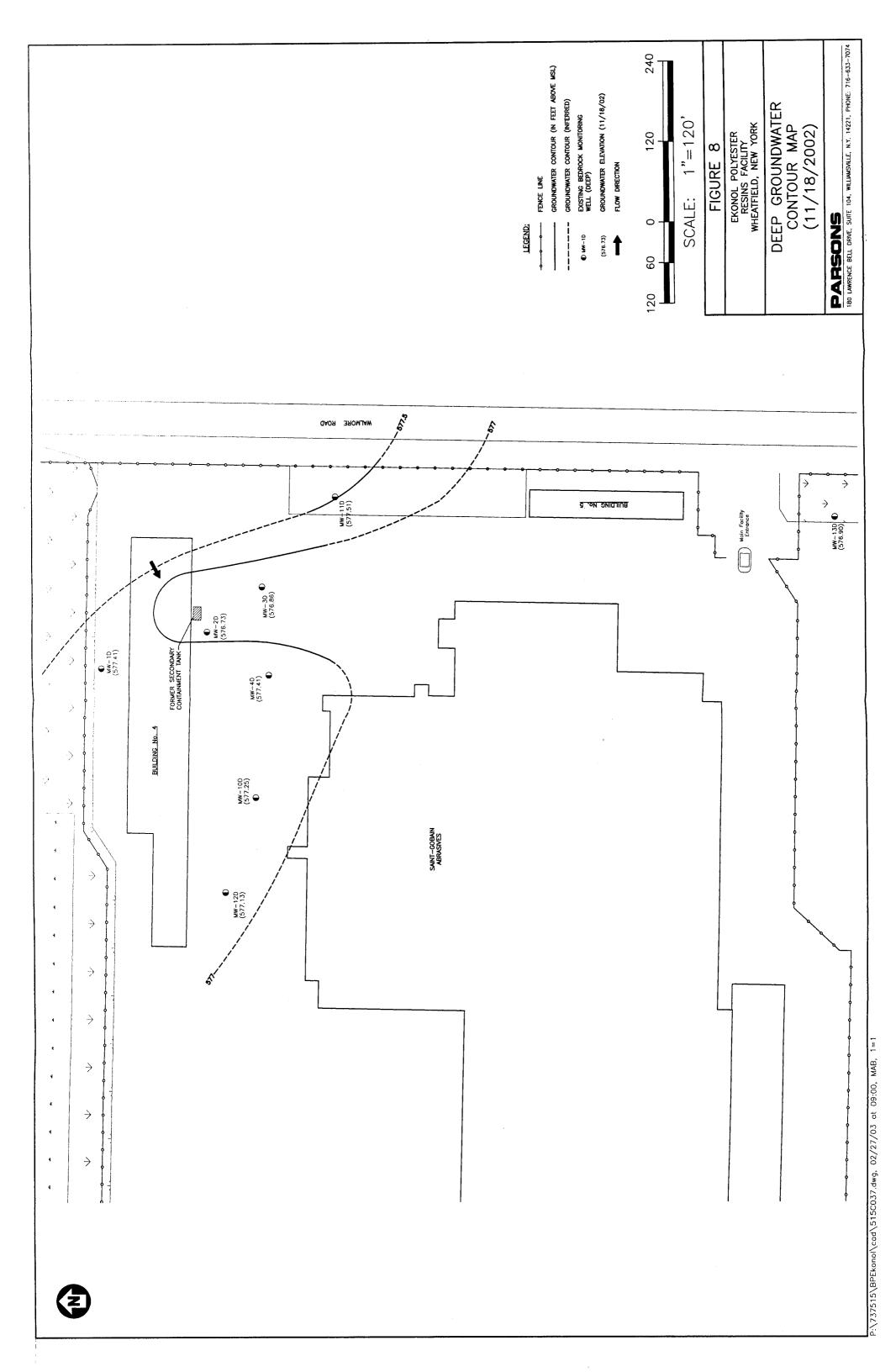




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TABLES

Table 1

Ekonol Facility Groundwater Field Screening Summary Wheatfield, New York

Field Screening	Date	VOH Result
Location ID	Sampled	(ug/L)
SB-1	10/4/01	0.0
SB-2	10/4/01	21
SB-3	10/4/01	143
SB-3A	10/4/01	10.6
SB-4	10/4/01	0.0
SB-5	10/4/01	11.9
MW-1S	6/3/02	34
MW-2S	6/3/02	>200*
MW-3S	6/3/02	0.0
MW-4S	6/3/02	24
MW-1D	6/3/02	10.0
MW-2D	6/3/02	>200*
MW-3D	6/3/02	>200*
MW-4D	6/3/02	>200*
SBA-1	6/4/02	0.0
SBA-2	6/4/02	0.0
SBA-3	6/4/02	0.0
SBA-4	6/4/02	0.0
SBA-5	6/4/02	0.0
Location A	6/13/02	>200*
Location B	6/13/02	>200*
Location C	6/13/02	0.0
Location B-1	6/20/02	>200*
MW-6S	6/20/02	>200*
MW-7S	6/20/02	12.5
Location B-2	6/24/02	>200*
Location B-3	6/27/02	18.8
Location B-4	6/27/02	130
Location B-5	6/27/02	>200*
Location D-1	9/18/02	44
Location D-1A**	9/18/02	43
Location E-1	9/18/02	191
Location E-1A**	9/18/02	106
Location E-2	9/18/02	31
Location E-2A**	9/18/02	24

^{*} Analyzing equipment does not read over 200 ug/L.

^{**} Duplicate sample

Ekonol Facility Soil Boring Analytical Summary Wheatfield, New York

		ective - 1994	Soil Cleanup Ot	 Recommended 	idance Memorandum #4046 - Recommended Soil Cleanup Objective - 1994	tive Guidance Mer	and Administra	Standards taken from the Technical and Administrative Gu	Standar
00.7	71.1	48.5	44.8	104	66.1	mg/Kg	20 or SB	Zinc - Total	7441-66-6
6 6.7	10.8	0.5	6.3	21.2	10.9	mg/Kg	SB	Lead - Total	7439-92-1
1								METALS	
Q	Q	ON	QN	QV	QN	ug/Kg	30 or MDL	Phenol	108-95-2
2 2	2 :	2 :	2	<u>Q</u>	2	ng/Kg	100	Aniline	62-53-3
								SEMIVOLATILES	
CN	ON	Q	CN	QN	Q	ug/Kg	700	Trichloroethene	79-01-6
2 2	2 2	2 :	9	2	2	ng/Kg	800	1,1,1-Trichloroethane	71-55-6
2 !	2 :	2	41	6	2	ug/Kg	300	1.2-Dichloroethene (Total)	540-59-0
2 :	2	Q N	2)	_ 	2	gy/Kg	200	1.1-Dichloroethane	75-34-3
								VOLATILES	
						Units	Standard*	Compound	CAS No
10/4/2001	10/4/2001	10/4/2001	10/4/2001	10/4/2001	10/4/2001	Sampled			
Soil	Soil	Soil	Soil	Soil	Soil	Matrix			
A01-9710	A01-9710	A01-9710	A01-9710	A01-9710	A01-9710	SDG			
STL Buffalo	STL Buffalo	STL Buffalo	STL Buffalo	STL Buffalo	STL Buffalo	Source			
2'-4'	8'-10'	6'-8'	8'-10'	8'-10'	8'-10'	Depth			
A1971006	A1971005	A1971007	A1971004	A1971003	A1971001	Lab Sample ID			
SB-5 2'-4'	SB-4 8'-10'	SB-3A 6'-8'	SB-3 8'-10'	SB-2 8'-10'	SB-18'-10'	Sample ID			

 ^{* -} Standards taken from the Technical and Administrative "MDL"= Method Detection Limit

[&]quot;SB"= Site Background
"ND"= Compound was analyzed for, but not detected
"J"= Indicates an estimated value

Table 3

Ekonol Facility MW-1S Analytical Summary Wheatfield, New York

			Sample ID	MW-1S	MW-1S	MW-1S	MW-1S
			Date Sampled	11/2/2001	12/6/2001	9/26/2002	11/4/2002
			Lab Sample ID	A1A87201	A1C13203	A2957201	A2A99705
			Source	STL Buffalo	STL Buffalo	STL Buffalo	STL Buffalo
			SDG	A01-A872	A01-C132	A02-9572	A02A997
CAS No.	Compound	Standard*	Units				
	3 VOLATILES OF				Sec. Sept.	100	
75-34-3	1,1-Dichloroethane	5	ug/L	ND	ND	ND	ND
540-59-0	1,2-Dichloroethene (Total)	5	ug/L	190	180	71	97 D
71-55-6	1,1,1-Trichloroethane	5	ug/L	ND	ND	ND	ND
79-01-6	Trichloroethene	5	ug/L	32	28	6.9	10
	SEMIVORATILES			10, 10, 10, 10, 10, 10, 10, 10, 10, 10,	\$ 20 m	30700.0	
62-53-3	Aniline	5	ug/L	ND	ND	ND	ND
108-95-2	Phenol	1	ug/L	ND_	ND	ND_	ND
	A METALSH TATE	8-75° - 11° E		rigi gara	1000	Access	
7439-92-1	Lead - Total	0.025**	mg/L	ND	ND	ND	ND
7441-66-6	Zinc - Total	2	mg/L	ND	0.088	0.023	ND

^{* =} Standards taken from the Ambient Water Quality Standards and Guidance Values (Class GA) - 1998

[&]quot;ND"= Compound was analyzed for, but not detected

[&]quot;J"= Indicates an estimated value

[&]quot;E"= Concentration exceeded the calibration range

[&]quot;D"= Compound was identified in an analysis at the secondary dilution factor

[&]quot;B"= The analyte was found in the associated blank, as well as in the sample

^{** =} Dissolved concentration standard

Ekonol Facility MW-2S Analytical Summary Wheatfield, New York

			Sample ID	MW-2S	MW-2S	MW-2S	MW-2S
			Date Sampled	11/2/2001	12/6/2001	10/3/2002	11/7/2002
			Lab Sample ID	A1A87205	A1C13208	A2980401	A2B04201
			Source	STL Buffalo	STL Buffalo	STL Buffalo	STL Buffalo
			SDG	A01-A872	A01-C132	A02-9804	A02B042
CAS No.	Compound	Standard*	Units				
de Contain	VOLATILES NAME.	to to Sance of	100	1	67.77		.
75-34-3	1,1-Dichloroethane	5	ug/L	85	ND	ND	ND
540-59-0	1,2-Dichloroethene (Total)	5	ug/L	480,000 D	630,000	740,000	780,000
71-55-6	1,1,1-Trichloroethane	5	ug/L	ND	ND	ND	ND
79-01-6	Trichloroethene	5	ug/L	140,000 BD	200,000	ND	5,600 J
0.00	SEMIVOLATILES! N	1905			CONTRACTOR OF STREET		*
62-53-3	Aniline	5	ug/L	420 D	ND	2,000	ND
108-95-2	Phenol	1	ug/L	25,000 D	42,000 D	66,000	53,000 B
23,854	SI METALSE	Paris State	44年 特別		449		
7439-92-1	Lead - Total	0.025**	mg/L	ND	ND	0.38	ND
7441-66-6	Zinc - Total	2	mg/L	ND	0.091	1.7	0.026

^{* =} Standards taken from the Ambient Water Quality Standards and Guidance Values (Class GA) - 1998

[&]quot;ND"= Compound was analyzed for, but not detected

[&]quot;J"= Indicates an estimated value

[&]quot;E"= Concentration exceeded the calibration range

[&]quot;D"= Compound was identified in an analysis at the secondary dilution factor

[&]quot;B"= The analyte was found in the associated blank, as well as in the sample

^{** =} Dissolved concentration standard

Ekonol Facility MW-3S Analytical Summary Wheatfield, New York

Date Sampled 11/2/2001 12/6/2001 9/26/2002 11/2	<i>N</i> -3S
Date Sample ID	
Source STL Buffalo STL Buffalo STL Buffalo A01-A872 A01-C132 A02-9572 A0 CAS No. Compound Standard* Units	4/2002
Source STL Buffalo A01-A872 A01-C132 A02-9572 A0 CAS No. Compound Standard* Units	99702
CAS No. Compound Standard* Units Vol-ATILES To the Compound ND	Buffalo
VOLATILESSE OF THE STATE OF THE	2A997
The state of the s	
Sill of Sill o	
1 /5-34-3 1 11-Dichioroethane 1 5 1 ug/L 1 ND 1 ND 1 ND 1	ND
540-59-0 1 2-Dichloroethene (Total) 5 ug/L 1.3 J ND ND 0	.58 J
71-55-6 1,1,1-Trichloroethane 5 ug/L ND ND ND	ND
79-01-6 Trichloroethene 5 ug/L 4.3 BJ 2.3 J 5.0	2.0
SEMICOLATILES TO THE PROPERTY OF THE PROPERTY	
62-53-3 Aniline 5 ug/L ND ND ND	ND
108-95-2 Phenol 1 ug/L ND 2 J ND	ND
THE TOP SOLVE TH	11
7439-92-1 Lead - Total 0.025** mg/L 0.025 ND ND	ND
7441-66-6 Zinc - Total 2 mg/L 0.14 0.094 ND 0	

^{* =} Standards taken from the Ambient Water Quality Standards and Guidance Values (Class GA) - 1998

[&]quot;ND"= Compound was analyzed for, but not detected

[&]quot;J"= Indicates an estimated value

[&]quot;E"= Concentration exceeded the calibration range

[&]quot;D"= Compound was identified in an analysis at the secondary dilution factor

[&]quot;B"= The analyte was found in the associated blank, as well as in the sample

^{** =} Dissolved concentration standard

Ekonol Facility MW-4S Analytical Summary Wheatfield, New York

							101/40
			Sample ID	MW-4S	MW-4S	MW-4S	MW-4S
			Date Sampled	11/2/2001	12/6/2001	9/26/2002	11/4/2002
			Lab Sample ID	A1A87207	A1C13205	A2957204	A2A99707
			Source	STL Buffalo	STL Buffalo	STL Buffalo	STL Buffalo
			SDG	A01-A872	A01-C132	A02-9572	A02A997
CAS No.	Compound	Standard*	Units				
	SPEC VORATILES SPECE	ters burgs		ŧ		27,234	
75-34-3	1.1-Dichloroethane	5	ug/L	7.2	ND	ND	13 J
540-59-0	1.2-Dichloroethene (Total)	5	ug/L	18,000 D	8,900	8,100	22,000 D
71-55-6	1,1,1-Trichloroethane	5	ug/L	13	ND	ND	150
79-01-6	Trichloroethene	5	ug/L	110,000 BD	46,000	4,100	9,000 D
70010	. ESEMIVOLATILES		A	110 844.30	244		10.00
62-53-3	Aniline	5	ug/L	1,400 D	10	120	400 D
108-95-2	Phenol	1	ug/L	660 D	8 J	8 J	32
100 00 2	TO METALS WE SE	33.4	4.5	12.004			4.0
7439-92-1	Lead - Total	0.025**	mg/L	0.15	0.045	ND	ND
7441-66-6	Zinc - Total	2	mg/L	0.12	0.08	ND	0.02

^{* =} Standards taken from the Ambient Water Quality Standards and Guidance Values (Class GA) - 1998

[&]quot;ND"= Compound was analyzed for, but not detected

[&]quot;J"= Indicates an estimated value

[&]quot;E"= Concentration exceeded the calibration range

[&]quot;D"= Compound was identified in an analysis at the secondary dilution factor

[&]quot;B"= The analyte was found in the associated blank, as well as in the sample

^{** =} Dissolved concentration standard

Ekonol Facility MW-5S Analytical Summary Wheatfield, New York

		Sample ID	MW-5S	MW-5S
		Date Sampled	9/26/2002	11/4/2002
		Lab Sample ID	A2957202	A2A88703
		Source	STL Buffalo	STL Buffalo
		SDG	A02-9572	A02A887
Compound	Standard*	Units		
VOLATILES AND	eta a	40.4		
1,1-Dichloroethane	5	ug/L	ND	ND
1,2-Dichloroethene (Total)	5	ug/L	5.4	4.4 J
1,1,1-Trichloroethane	5	ug/L	ND	ND
Trichloroethene	5	ug/L	ND	ND
SEMIVORATIVES	SECTION :		Contract of	Egg (PA)
Aniline	5	ug/L	ND	ND
Phenol	1	ug/L	ND	ND
****** METALS *****	AND LOSS	W		334 (3.1
Lead - Total	0.025**	mg/L	ND	ND
Zinc - Total	2	mg/L	ND	ND
	1,1-Dichloroethane 1,2-Dichloroethene (Total) 1,1,1-Trichloroethane Trichloroethene SEMIVE ATILES Aniline Phenol Lead - Total	1,1-Dichloroethane 1,2-Dichloroethene (Total) 1,1,1-Trichloroethane 5 Trichloroethene 5 Aniline Phenol 1 METALS Lead - Total 5 0.025**	Lab Sample ID Source SDG Compound Standard* Units VOLATILES 1,1-Dichloroethane 1,2-Dichloroethene (Total) 1,1,1-Trichloroethane Trichloroethene 5 ug/L ug/L ug/L SELVOLATILES Aniline Phenol 1 ug/L Ug/L Ug/L Ug/L Ug/L Ug/L Ug/L Ug/L U	Date Sampled 10

^{* =} Standards taken from the Ambient Water Quality Standards and Guidance Values (Class GA) - 1998

[&]quot;ND"= Compound was analyzed for, but not detected

[&]quot;J"= Indicates an estimated value

[&]quot;E"= Concentration exceeded the calibration range

[&]quot;D"= Compound was identified in an analysis at the secondary dilution factor

[&]quot;B"= The analyte was found in the associated blank, as well as in the sample

^{** =} Dissolved concentration standard

Ekonol Facility MW-6S Analytical Summary Wheatfield, New York

			Sample ID	MW-6S	MW-6S
			Date Sampled	9/27/2002	11/4/2002
			Lab Sample ID	A2961401	A2A99703
			Source	STL Buffalo	STL Buffalo
			SDG	A02-9614	A02A997
CAS No.	Compound	Standard*	Units		
(1*)-+* (1*)	FREE TREE VEHICLES PROPERTY			250000000000000000000000000000000000000	
75-34-3	1,1-Dichloroethane	5	ug/L	ND	1.6
540-59-0	1,2-Dichloroethene (Total)	5	ug/L	30	17
71-55-6	1,1,1-Trichloroethane	5	ug/L	ND	ND
79-01-6	Trichloroethene	5	ug/L	29	0.68 J
	SEMIVOMATILES :	1	CONTROL OF THE PROPERTY OF THE	1976 (22.14.12)	
62-53-3	Aniline	5	ug/L	ND	ND
108-95-2	Phenol	1	ug/L	ND	ND
	THE WHETAES PERSON				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
7439-92-1	Lead - Total	0.025**	mg/L	ND	ND
7441-66-6	Zinc - Total	2	mg/L	0.046	0.034

^{* =} Standards taken from the Ambient Water Quality Standards and Guidance Values (Class GA) - 1998

[&]quot;ND"= Compound was analyzed for, but not detected

[&]quot;J"= Indicates an estimated value

[&]quot;E"= Concentration exceeded the calibration range

[&]quot;D"= Compound was identified in an analysis at the secondary dilution factor

[&]quot;B"= The analyte was found in the associated blank, as well as in the sample

^{** =} Dissolved concentration standard

Ekonol Facility MW-7S Analytical Summary Wheatfield, New York

_					
			Sample ID	MW-7S	MW-7S
			Date Sampled	9/27/2002	11/4/2002
			Lab Sample ID	A2961402	A2A88706
			Source	STL Buffalo	STL Buffalo
			SDG	A02-9614	A02A887
CAS No.	Compound	Standard*	Units		
	AND AVOIDABLE SEET A	N. T. P.	4		
75-34-3	1,1-Dichloroethane	5	ug/L	ND	ND
540-59-0	1,2-Dichloroethene (Total)	5	ug/L	4.6 J	2.4 J
71-55-6	1,1,1-Trichloroethane	5	ug/L	ND	ND
79-01-6	Trichloroethene	- 5	ug/L	ND	ND
	EN SEMMODATILES SE	98 S	20.00		
62-53-3	Aniline	5	ug/L	ND	ND
108-95-2	Phenol	1	ug/L	ND	ND_
	* * * METALS#				
7439-92-1	Lead - Total	0.025**	mg/L	0.14	0.013
7441-66-6	Zinc - Total	2	mg/L	0.71	0.086

^{* =} Standards taken from the Ambient Water Quality Standards and Guidance Values (Class GA) - 1998

[&]quot;ND"= Compound was analyzed for, but not detected

[&]quot;J"= Indicates an estimated value

[&]quot;E"= Concentration exceeded the calibration range

[&]quot;D"= Compound was identified in an analysis at the secondary dilution factor

[&]quot;B"= The analyte was found in the associated blank, as well as in the sample

^{** =} Dissolved concentration standard

Ekonol Facility MW-8S Analytical Summary Wheatfield, New York

				101100	104/00
			Sample ID Date Sampled	MW-8S	MW-8S
				9/27/2002	11/4/2002
		Lab Sample ID	A2961403	A2A88704	
			Source	STL Buffalo	STL Buffalo
			SDG	A02-9614	A02A887
CAS No.	Compound	Standard*	Units		
	是明明VOLATILES概念。	4.486.27	46	100	
75-34-3	1,1-Dichloroethane	5	ug/L	ND	ND
540-59-0	1,2-Dichloroethene (Total)	5	ug/L	1.6 J	3.1 J
71-55-6	1,1,1-Trichloroethane	5	ug/L	ND	ND
79-01-6	Trichloroethene	5	ug/L_	ND	ND
1.2	SESTIMOTATIONS		er en	100	
62-53-3	Aniline	5	ug/L	ND	ND
108-95-2	Phenol	1	ug/L	ND	ND
5. 3	METALS A				E SAL SE
7439-92-1	Lead - Total	0.025**	mg/L	0.07	ND
7441-66-6	Zinc - Total	2	mg/L	0.37	ND_

^{* =} Standards taken from the Ambient Water Quality Standards and Guidance Values (Class GA) - 1998

[&]quot;ND"= Compound was analyzed for, but not detected

[&]quot;J"= Indicates an estimated value

[&]quot;E"= Concentration exceeded the calibration range

[&]quot;D"= Compound was identified in an analysis at the secondary dilution factor

[&]quot;B"= The analyte was found in the associated blank, as well as in the sample

^{** =} Dissolved concentration standard

Ekonol Facility MW-9S Analytical Summary Wheatfield, New York

			Sample ID	MW-9S	MW-9S
			• •	.,,,,	11/4/2002
			Date Sampled	9/27/2002	= = =
		Lab Sample ID	A2961404	A2A88705	
			Source	STL Buffalo	STL Buffalo
			SDG	A02-9614	A02A887
CAS No.	Compound	Standard*	Units		
	WWW.VOLATILESSEE	11 3 2 17 17	2.0		1.00
75-34-3	1,1-Dichloroethane	5	ug/L	ND	ND
540-59-0	1,2-Dichloroethene (Total)	5	ug/L	4.4 J	6.0
71-55-6	1,1,1-Trichloroethane	5	ug/L	ND	ND
79-01-6	Trichloroethene	5	ug/L	ND	ND
	SECTION OF STREET			46 (8 8 1 - 83) ;	t (1775 b) (1
62-53-3	Aniline	5	ug/L	ND	ND
108-95-2	Phenol	1	ug/L	ND	ND
	METALS			er ledding of	4.4
7439-92-1	Lead - Total	0.025**	mg/L	0.011	0.014
7441-66-6	Zinc - Total	2	mg/L	0.069	0.073

^{* =} Standards taken from the Ambient Water Quality Standards and Guidance Values (Class GA) - 1998

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[&]quot;J"= Indicates an estimated value

[&]quot;E"= Concentration exceeded the calibration range

[&]quot;D"= Compound was identified in an analysis at the secondary dilution factor

[&]quot;B"= The analyte was found in the associated blank, as well as in the sample

^{** =} Dissolved concentration standard

Ekonol Facility MW-1D Analytical Summary Wheatfield, New York

			Sample ID	MW-1D	MW-1D	MW-1D	MW-1D
			Date Sampled	11/2/2001	12/6/2001	9/30/2002	11/4/2002
			Lab Sample ID	A1A87202	A1C13201	A2965602	A2A99706
			Source	STL Buffalo	STL Buffalo	STL Buffalo	STL Buffalo
			SDG	A01-A872	A01-C132	A02-9656	A02A997
CAS No.	Compound	Standard*	Units				
	E VOLATILES LESS				0.794		
75-34-3	1.1-Dichloroethane	5	ug/L	ND	ND	ND	ND
540-59-0	1.2-Dichloroethene (Total)	5	ug/L	ND	ND	36	94 D
71-55-6	1.1.1-Trichloroethane	5	ug/L	ND	ND	9.3	6.5
79-01-6	Trichloroethene	5	ug/L	ND	ND	180	50 D
	IST STEMINO LATITUES DE			1.0	1	4 (B)	
62-53-3	Aniline	5	ug/L	ND	ND	ND	ND
108-95-2	Phenol	1	ug/L_	ND	ND	ND	ND
100 00 =	CONTRACTOR		100	112	100000	40.00	-
7439-92-1	Lead - Total	0.025**	mg/L	ND	ND	ND	ND
7441-66-6	Zinc - Total	2	mg/L	ND	ND	0.023	ND

^{* =} Standards taken from the Ambient Water Quality Standards and Guidance Values (Class GA) - 1998

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[&]quot;E"= Concentration exceeded the calibration range

[&]quot;D"= Compound was identified in an analysis at the secondary dilution factor

[&]quot;B"= The analyte was found in the associated blank, as well as in the sample

^{** =} Dissolved concentration standard

Ekonol Facility MW-2D Analytical Summary Wheatfield, New York

			Sample ID	MW-2D	MW-2D	MW-2D	MW-2D
			Date Sampled	11/2/2001	12/6/2001	10/2/2002	11/7/2002
			Lab Sample ID	A1A87204	A1C13209	A2980501	A2B04203
			Source	STL Buffalo	STL Buffalo	STL Buffalo	STL Buffalo
}			SDG	A01-A872	A01-C132	A02-9805	A02B042
CAS No.	Compound	Standard*	Units				
0, 10 1101	Jes VORATILESES						
75-34-3	1.1-Dichloroethane	5	ug/L	33	ND	ND	ND
540-59-0	1.2-Dichloroethene (Total)	5	ug/L	12,000 DJ	ND	ND	7,000 J
71-55-6	1,1,1-Trichloroethane	5	ug/L	32	ND	ND	ND
79-01-6	Trichloroethene	5	ug/L	440,000 BD	950,000	410,000	400,000
7001	SEMIVOLATILES	- 93	and the second second		2	V-824 F 1. 11 F	
62-53-3	Aniline	5	ug/L	10,000 D	14,000	5,400 D	3,800
108-95-2	Phenol	1	ug/L	3,100 D	8,400	1,600 D	710 B
100 00 2	SCO. MEDIALISM DA		1 2 Sec. 1.		1000	7 20 (0.00	224, 354
7439-92-1	Lead - Total	0.025**	mg/L	ND	ND	0.25	ND
7441-66-6	Zinc - Total	2	mg/L	ND	ND	0.76	ND

^{* =} Standards taken from the Ambient Water Quality Standards and Guidance Values (Class GA) - 1998

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[&]quot;E"= Concentration exceeded the calibration range

[&]quot;D"= Compound was identified in an analysis at the secondary dilution factor

[&]quot;B"= The analyte was found in the associated blank, as well as in the sample

^{** =} Dissolved concentration standard

Ekonol Facility MW-3D Analytical Summary Wheatfield, New York

			Sample ID	MW-3D	MW-3D	MW-3D	MW-3D
			Date Sampled	11/2/2001	12/6/2001	9/30/2002	11/7/2002
			Lab Sample ID	A1A87208	A1C13206	A2965603	A2B04202
1			Source	STL Buffalo	STL Buffalo	STL Buffalo	STL Buffalo
			SDG	A01-A872	A01-C132	A02-9656	A02B042
CAS No.	Compound	Standard*	Units				
3,13	VOLATILES	-a-1 (gg =	2	4 (2)	grand and the		
75-34-3	1,1-Dichloroethane	5	ug/L	1,200 DJ	ND	ND	110 J
540-59-0	1.2-Dichloroethene (Total)	5	ug/L	2,200 DJ	1,000 J	600 J	570
71-55-6	1.1.1-Trichloroethane	5	ug/L	87,000 D	44,000	25,000	16,000 D
79-01-6	Trichloroethene	5	ug/L	30,000 BD	20,000	5,500	4,600
	SEMIVOLATILES	a grant	\$44 a				
62-53-3	Aniline	5	ug/L	72	11	ND	2 J
108-95-2	Phenol	1	ug/L	20	ND	ND _	5 BJ
1.07	PRES METALS	48	CALLED TO		7 - 14C		444
7439-92-1	Lead - Total	0.025**	mg/L	ND	ND	ND	ND
7441-66-6	Zinc - Total	2	mg/L	ND	ND	ND	ND

^{7441-66-6 |} Zinc - Total | 2 | mg/L | ND | ND | * = Standards taken from the Ambient Water Quality Standards and Guidance Values (Class GA) - 1998

[&]quot;ND"= Compound was analyzed for, but not detected

[&]quot;J"= Indicates an estimated value

[&]quot;E"= Concentration exceeded the calibration range

[&]quot;D"= Compound was identified in an analysis at the secondary dilution factor
"B"= The analyte was found in the associated blank, as well as in the sample

^{** =} Dissolved concentration standard

Ekonol Facility MW-4D Analytical Summary Wheatfield, New York

			Sample ID Date Sampled Lab Sample ID Source SDG	MW-4D 11/2/2001 A1A87206 STL Buffalo A01-A872	MW-4D 12/6/2001 A1C13204 STL Buffalo A01-C132	MW-4D 9/30/2002 A2965604 STL Buffalo A02-9656	MW-4D 11/6/2002 A2A98403 STL Buffalo A02A984
CAS No.	Compound	Standard*	Units	7101712			
CA3 140.	VOLATILESTAL						44.0
75-34-3	1.1-Dichloroethane	5	ug/L	21	ND	ND	ND
540-59-0	1.2-Dichloroethene (Total)	5	ug/L	17,000 D	11,000	30,000	28,000
71-55-6	1,1,1-Trichloroethane	5	ug/L	56	ND	1,300 J	3,300
79-01-6	Trichloroethene	5	ug/L	250,000 BD	190,000	61,000	58,000
A 1898	SEMINOLATILES			* 17 4 66 THE		CONTRACT.	
62-53-3	Aniline	5	ug/L	3,300 DE	1,200	680	580
108-95-2	Phenol	1	ug/L	1,000 D	240	36	40
Ligano de la companya della companya della companya de la companya de la companya della companya	TO SHALL AUGUSTO	FW 10-25-		02.25° (*)	CAS ALLEGANA		A.S. Car
7439-92-1	Lead - Total	0.025**	mg/L	ND	ND	ND	ND ND
7441-66-6	Zinc - Total	2	mg/L	0.026	0.024	ND ND	ND

^{* =} Standards taken from the Ambient Water Quality Standards and Guidance Values (Class GA) - 1998

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[&]quot;E"= Concentration exceeded the calibration range
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[&]quot;B"= The analyte was found in the associated blank, as well as in the sample

^{** =} Dissolved concentration standard

Ekonol Facility MW-10D Analytical Summary Wheatfield, New York

			Sample ID	MW-10D	MW-10D
			Date Sampled	10/1/2002	11/6/2002
1			Lab Sample ID	A2968203	A2A98402
[Source	STL Buffalo	STL Buffalo
[•	SDG	A02-9682	A02A984
CAS No.	Compound	Standard*	Units		
1	WEST VOLATILES SEE	40.00	1.2	7. Sec. 20.	
75-34-3	1,1-Dichloroethane	5	ug/L	14	ND
540-59-0	1,2-Dichloroethene (Total)	5	ug/L	1,500 D	2,600
71-55-6	1,1,1-Trichloroethane	5	ug/L	43	140 J
79-01-6	Trichloroethene	5	ug/L	4,300 D	5,400
40.00	ME SEMIVORATIVES OF		7 ()	A Secretary	
62-53-3	Aniline	5	ug/L	6 J	ND
108-95-2	Phenol	1	ug/L	ND_	ND
3.4	METALS**		11.000		
7439-92-1	Lead - Total	0.025**	mg/L	ND	ND
7441-66-6	Zinc - Total	2	mg/L	ND	ND

^{* =} Standards taken from the Ambient Water Quality Standards and Guidance Values (Class GA) - 1998

[&]quot;ND"= Compound was analyzed for, but not detected

[&]quot;J"= Indicates an estimated value

[&]quot;E"= Concentration exceeded the calibration range

[&]quot;D"= Compound was identified in an analysis at the secondary dilution factor

[&]quot;B"= The analyte was found in the associated blank, as well as in the sample

^{** =} Dissolved concentration standard

Ekonol Facility MW-11D Analytical Summary Wheatfield, New York

			Sample ID	MW-11D	MW-11D
			Date Sampled	10/1/2002	11/4/2002
		Lab Sample ID	A2968201	A2A99704	
			Source	STL Buffalo	STL Buffalo
			SDG	A02-9682	A02A997
CAS No.	Compound	Standard*	Units		
	LE SAVOLATILES CONS	A SHEET,	100	THE PARTY OF THE P	
75-34-3	1,1-Dichloroethane	5	ug/L	2.8 J	3.0
540-59-0	1,2-Dichloroethene (Total)	5	ug/L	36	54
71-55-6	1,1,1-Trichloroethane	5	ug/L	110	110 D
79-01-6	Trichloroethene	5	ug/L	15	9.4
44.9	SEMIVO PATILESOS		B ₁ , 2	(A)	
62-53-3	Aniline	5	ug/L	ND	ND
108-95-2	Phenol	1	ug/L	ND	ND
13.00	METALS LAST				S5425 \$ 5
7439-92-1	Lead - Total	0.025**	mg/L	ND	ND
7441-66-6	Zinc - Total	2	mg/L	ND	ND 1000

^{* =} Standards taken from the Ambient Water Quality Standards and Guidance Values (Class GA) - 1998

[&]quot;ND"= Compound was analyzed for, but not detected

[&]quot;J"= Indicates an estimated value

[&]quot;E"= Concentration exceeded the calibration range

[&]quot;D"= Compound was identified in an analysis at the secondary dilution factor

[&]quot;B"= The analyte was found in the associated blank, as well as in the sample

^{** =} Dissolved concentration standard

Ekonol Facility MW-12D Analytical Summary Wheatfield, New York

			Sample ID	MW-12D	MW-12D
1			Date Sampled	10/1/2002	11/4/2002
			Lab Sample ID	A2968204	A2A88702
			Source	STL Buffalo	STL Buffalo
			SDG	A02-9682	A02A887
CAS No.	Compound	Standard*	Units		
	CALVORATIES PRO		4.00	44.6	
75-34-3	1,1-Dichloroethane	5	ug/L	ND	ND
540-59-0	1,2-Dichloroethene (Total)	5	ug/L	ND	ND
71-55-6	1,1,1-Trichloroethane	5	ug/L	ND	ND
79-01-6	Trichloroethene	5	ug/L	ND	ND
346 F	SERVICE TO THE SERVICE OF THE SERVIC	are e stress	Access 1994	7.68	2.0
62-53-3	Aniline	5	ug/L	ND	ND
108-95-2	Phenol	1	ug/L	ND	ND
	METALS EXPERIE		37.00		F
7439-92-1	Lead - Total	0.025**	mg/L	ND	ND
7441-66-6	Zinc - Total	2	mg/L	ND NO	ND 1000

^{* =} Standards taken from the Ambient Water Quality Standards and Guidance Values (Class GA) - 1998

[&]quot;ND"= Compound was analyzed for, but not detected

[&]quot;J"= Indicates an estimated value

[&]quot;E"= Concentration exceeded the calibration range

[&]quot;D"= Compound was identified in an analysis at the secondary dilution factor

[&]quot;B"= The analyte was found in the associated blank, as well as in the sample

^{** =} Dissolved concentration standard

Ekonol Facility MW-13D Analytical Summary Wheatfield, New York

			Sample ID	MW-13D	MW-13D
			Date Sampled	10/1/2002	11/6/2002
			•	A2968202	A2A98401
			Lab Sample ID		
			Source	STL Buffalo	STL Buffalo
			SDG	A02-9682	A02A984
CAS No.	Compound	Standard*	Units		
	NO MATTER STORM	Back St.			W-94 (F) L (C)
75-34-3	1,1-Dichloroethane	5	ug/L	2.7 J	3.8 J
540-59-0	1,2-Dichloroethene (Total)	5	ug/L	180	180
71-55-6	1,1,1-Trichloroethane	5	ug/L	3.3 J	5.3
79-01-6	Trichloroethene	5	ug/L	38	36
1 25° 25°	SEMIVORATILES	(A. 1965) 1945	474	4-12/18/2019	34
62-53-3	Aniline	5	ug/L	ND	ND
108-95-2	Phenol	1	ug/L	ND	ND
	METALS :	Jak jak	4	12.42	
7439-92-1	Lead - Total	0.025**	mg/L	ND	ND
7441-66-6	Zinc - Total	2	mg/L	0.031	ND

^{* =} Standards taken from the Ambient Water Quality Standards and Guidance Values (Class GA) - 1998

[&]quot;ND"= Compound was analyzed for, but not detected

[&]quot;J"= Indicates an estimated value

[&]quot;E"= Concentration exceeded the calibration range

[&]quot;D"= Compound was identified in an analysis at the secondary dilution factor

[&]quot;B"= The analyte was found in the associated blank, as well as in the sample

^{** =} Dissolved concentration standard

Table 5

Ekonol Facility Packer Test Analytical Summary Wheatfield, New York

			Cl elomes	MW-10D-1	MW-10D-2	MW-10D-3	MW-11D-1	MW-11D-2	MW-11D-3	MW-12D-1	MW-13D-1	MW-13D-2	MW-13D-3
			Date Sampled	7/2/2002	7/2/2002	7/2/2002	7/3/2002	7/3/2002	7/3/2002	9/23/2002	9/25/2002	9/25/2002	9/25/2002
			I ah Samula ID	A2682801	A2682802	A2682803	A2685501	A2685502	A2685503	A2943901	A2957301DL	A2957302	A2957303
			a pulling and	OT: D. Male	Closhing IFO	ological into	CT Duffelo	CTI Buffish	STI Ruffalo	ST! Buffalo	STI Buffalo	STL Buffalo	STL Buffalo
			Source	OIL DUIDBIO	Olf Dulland	O L Dullaio	OIL DUIGNO	2				0110	00.40
			SDG	A02-6828	A02-6828	A02-6828	A02-6855	A02-6855	A02-6855	A02-9439	A02-9573	A02-95/3	AUZ-9573
CAS No	Compound	Standard*	Units										
	VOLATILES												
75 24 3	1 1 Dichloroothana	5	1/01	CN	QN	QN	9.5	7.3	5.1	QN	2.8 DJ	2	2
20.50	1 2 Dichlomothene (Total)	o vo	1/01	33	18.1	12	310	240	36	35	180 D	65	7
71.55.6	1 1 1-Trichloroethane	ı vo	1/01	S	QX	2	240 D	160 D	300 D	1.7.3	3.8 DJ	3.5 J	9
79-04-6	Trichloroethene	o uc	1/01	Q 096	360	270	93	24	29	95	40 D	20	3.8 J
0-10-67	SELECTION OF SELEC	è	1										
6 63 63	SEMILACIES AND	2	1/511	CN	CN	CN	CN	QN	S	QN	Q	QN	Q
2-55-70			7	2 2	2 -	2	Ş	Ş	Ę	Š	2	2	2
108-95-2	Phenol		ng/L	Q.	6.7	Q.	5	CN	CV.	2			
	METALS				200							9, 9	000
7439-92-1	Lead - Total	0.025**	mg/L	ΩN	9.	0.029	0.39	0.62	0.19	J.3	//0.0	0.70	0.00
7441-66-6	Zinc - Total	8	mg/L	0.027	1.8	0.14	0.23	0.93	0.44	4.0	0.11	0.10	960.0
* = Standards	= Standards taken from the Ambient Water Quality Standards and Guidan	ater Quality Star	ndards and Guidar	nce Values (C	ice Values (Class GA) - 1998	98							
"ND"= Comp	ND"= Compound was analyzed for but not detected	not detected											
"!"= Indicates	","= indicates an estimated value												

[&]quot;J"= Indicates an estimated value

[&]quot;E"= Concentration exceeded the calibration range
"D"= Compound was identified in an analysis at the secondary dilution factor
"B"= The analyte was found in the associated blank, as well as in the sample
** = Dissolved concentration standard

Separate Phase Physical Analytical Summary Wheatfield, New York **Ekonol Facility**

-				_	T				
MW-3DP	10/2/2002	0210-68	Saybolt	L2210.213A		A/N	48.0	0.979	1.0004
MW-2SP	10/2/2002	0210-67	Saybolt	L2210.213A		N/A	33.0	0.925	1.0016
MW-2DP Lower Layer	10/2/2002	0210-66	Saybolt	L2210.213A		N/A	32.5	1.228	1.0004
MW-2DP Upper Layer	10/2/2002	0210-66	Saybolt	L2210.213A		N/A	47.5	1.01	1.0003
Sample ID	Date Sampled	Lab Sample ID	Source	SDG	Units	m/m	dvnes/cm	SS (g/cm3
					Method	ASTM D-971	ASTM D-1331A	ASTM D-445	ASTM D-4052
					Test	Interfacial Tension	Surface Tension	Viscocity at 20 C	Density at 20 C

Definitions of units used:

Interfacial Tension- mn/m = milli newton / meters

Surface Tension-dynes/cm = unit of force / centimeters

Viscosity- cSt = centistroke Density- g/cm3 = grams / cubic centimeter

Ekonol Facility Separate Phase Chemical Analytical Summary Wheatfield, New York

г						1884 202	ARMADD
				Sample ID	MW-2DP	MW-2SP	MW-3DP
ı				Date Sampled	10/2/2002	10/2/2002	10/2/2002
1				Lab Sample ID	A2980702	A2980703	A2980701
				Source	STL Buffalo	STL Buffalo	STL Buffalo
ı				SDG	A02-9807	A02-9807	A02-9807
Γ	CAS No.	Compound	Standard*	Units			
		VOLATILES AND TO A CONTRACT			1 3 3 3 T		A STEE
Γ	67-64-1	Acetone	50	ug/L	ND	ND	ND
1	71-43-2	Benzene	1	ug/L	ND	ND	ND
ı	75-27-4	Bromodichloromethane	5	ug/L	ND	ND	ND
	75-25-2	Bromoform	50	ug/L	ND	ND	ND
İ	74-83-9	Bromomethane	5	ug/L	ND	ND	ND
	78-93-3	2-Butanone	NS	ug/L	ND	ND	ND
	75-15-0	Carbon Disulfide	NS	ug/L	ND	ND	ND
	56-23-5	Carbon Tetrachloride	5	ug/L	ND	ND	ND
ŀ	108-90-7	Chlorobenzene	5	ug/L	ND	ND	ND
	75-00-3	Chloroethane	5	ug/L	ND	ND	ND
ı	67-66-3	Chloroform	7	ug/L	101,000	ND	ND
١	74-87-3	Chloromethane	NS	ug/L	ND	ND	ND
1	124-48-1	Dibromochloromethane	5	ug/L	ND	ND	ND
1		1,1-Dichloroethane	5	ug/L	ND	ND	5.9
-	75-34-3	1,2-Dichloroethane	0.6	ug/L ug/L	ND I	ND	ND
1	107-06-2	•	5	ug/L ug/L	ND I	ND	4.4 J
١	75-35-4	1,1-Dichloroethene	5	ug/L ug/L	611,000	970,000 D	46
1	540-59-0	1,2-Dichloroethene (Total)	1 1	ug/L ug/L	ND	970,000 D ND	ND ND
1	78-87-5	1,2-Dichloropropane	1 .		ND ND	ND	ND ND
	10061-01-5	cis-1,3-Dichloropropene	5	ug/L	ND ND	ND	ND
	10061-02-6	trans-1,3-Dichloropropene	0.4	ug/L	ND ND	ND	ND ND
-	100-41-4	Ethylbenzene	5	ug/L		ND ND	ND
-	591-78-6	2-Hexanone	50	ug/L	ND		ND ND
-	75-09-2	Methylene Chloride	5	ug/L	ND	ND	ND ND
-	108-10-1	4-Methyl-2-pentanone	NS	ug/L	ND I	ND	t ·
-	100-42-5	Styrene	5	ug/L	ND	ND	ND
H	79-34-5	1,1,2,2-Tetrachloroethane	5	ug/L	ND	ND	ND
-	127-18- 4	Tetrachloroethene	5	ug/L	15,900,000 D	ND	8.9
- 1	108-88-3	Toluene	5	ug/L	ND	ND	ND
	71-55-6	1,1,1-Trichloroethane	5	ug/L	ND	ND	590 D
- [79-00-5	1,1,2-Trichloroethane	1	ug/L	ND	ND	ND
- 1	79-01-6	Trichloroethene	5	ug/L	924,000,000 D	ND	110 D
-	108-05-4	Vinyl Acetate	NS	ug/L	ND	ND	ND
-	75-01-4	Vinyl Chloride	2	ug/L	ND	50,000 D	ND ND
1			1 -	1 49,-			
	1330-20-7	Total Xylenes	5 _	ug/L	ND	ND	ND
	1330-20-7	Total Xylenes	5 _	ug/L			ND
ľ		Total Xylenes	5 _	ug/L	ND	ND	ND ND
ľ	7.4	Total Xylenes SEMIVORATILES	5	ug/L	ND ND	ND ND	ND ND ND
	83-32-9	Total Xylenes SEMIVOLATILES Acenaphthene	20	ug/L ug/L	ND ND 540,000 D	ND ND 1,900 D	ND ND ND 2 J
	83-32-9 208-96-8	Total Xylenes SEMIVOLATILES Acenaphthene Acenaphthylene Analine Anthracene	5 20 NS	ug/L ug/L ug/L	ND ND 540,000 D ND	ND ND 1,900 D ND	ND ND ND 2 J ND
	83-32-9 208-96-8 62-53-3	Total Xylenes SEMIVOLATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene	5 20 NS 5 50 0.002	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ND ND 540,000 D ND 22,000 DJ	ND ND 1,900 D ND ND	ND ND ND 2 J ND ND
	83-32-9 208-96-8 62-53-3 120-12-7	Total Xylenes SEMIVOLATILES Acenaphthene Acenaphthylene Analine Anthracene	5 20 NS 5 50	ug/L ug/L ug/L ug/L ug/L ug/L	ND ND 540,000 D ND 22,000 DJ ND	ND ND 1,900 D ND ND ND	ND ND ND 2 J ND ND ND
	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3	Total Xylenes SEMIVOLATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene	5 20 NS 5 50 0.002 0.002 0.002	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ND ND 540,000 D ND 22,000 DJ ND ND	ND ND 1,900 D ND ND ND ND	ND ND ND 2 J ND ND ND ND
	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2	Total Xylenes SEMIVOLATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene	5 20 NS 5 50 0.002 0.002	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ND ND 540,000 D ND 22,000 DJ ND	ND ND 1,900 D ND ND ND ND	ND ND ND 2 J ND
	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9	Total Xylenes SEMIVOLATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene	5 20 NS 5 50 0.002 0.002 0.002	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ND ND 540,000 D ND 22,000 DJ ND ND ND ND	ND ND 1,900 D ND ND ND ND ND	ND ND ND 2 J ND
	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2	Total Xylenes SEMIVOLATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(ghi)perylene	5 20 NS 5 50 0.002 0.002 0.002 NS NS	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ND ND 540,000 D ND 22,000 DJ ND ND ND ND ND	ND ND 1,900 D ND ND ND ND ND ND ND	ND ND ND 2 J ND
***	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 1863-63-4	Total Xylenes SEMIVOLATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene	5 20 NS 5 50 0.002 0.002 0.002 NS NS	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ND ND 540,000 D ND 22,000 DJ ND ND ND ND	ND ND 1,900 D ND ND ND ND ND ND ND ND ND	ND ND ND 2 J ND
V.A	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8	Total Xylenes SEMIVOLATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene Benzoic acid	5 20 NS 5 50 0.002 0.002 0.002 NS NS	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ND ND 540,000 D ND 22,000 DJ ND ND ND ND ND ND	ND ND 1,900 D ND ND ND ND ND ND ND ND ND ND ND	ND ND ND 2 J ND
	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 1863-63-4 100-51-6	Total Xylenes SEMIVOLATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene Benzoic acid Benzyl alcohol	5 20 NS 5 50 0.002 0.002 0.002 NS NS NS NS NS	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ND ND 540,000 D ND 22,000 DJ ND ND ND ND ND ND	ND ND 1,900 D ND ND ND ND ND ND ND ND 3,300 DJ ND ND	ND ND ND 2 J ND
	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 1863-63-4 100-51-6 111-92-1	Total Xylenes SEMIVOLATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene Benzoic acid Benzyl alcohol Bis(2-chloroethoxy) methane	5 20 NS 5 50 0.002 0.002 0.002 NS NS NS NS	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ND ND 540,000 D ND 22,000 DJ ND ND ND ND ND ND ND ND	ND ND 1,900 D ND ND ND ND ND ND 3,300 DJ ND ND ND	ND ND ND 2 J ND
	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 1863-63-4 100-51-6 111-92-1 111-44-4	Total Xylenes SEMIVOEATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene Benzoic acid Benzyl alcohol Bis(2-chloroethoxy) methane Bis(2-chloroethyl) ether	5 20 NS 5 50 0.002 0.002 0.002 NS NS NS NS NS	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ND ND 540,000 D ND 22,000 DJ ND ND ND ND ND ND	ND ND 1,900 D ND ND ND ND ND 3,300 DJ ND ND ND ND	ND ND ND 2 J ND
	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 1863-63-4 100-51-6 111-92-1 111-44-4 108-60-1 117-81-7	Total Xylenes SEMIVOEATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene Benzoic acid Benzyl alcohol Bis(2-chloroethoxy) methane Bis(2-chloroethyl) ether 2,2'-Oxybis(1-Chloropropane)	5 20 NS 5 50 0.002 0.002 0.002 NS NS NS NS NS	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ND ND 540,000 D ND 22,000 DJ ND ND ND ND ND ND ND ND	ND ND 1,900 D ND ND ND ND ND 3,300 DJ ND ND ND ND	ND ND ND 2 J ND
	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 1863-63-4 100-51-6 111-92-1 111-44-4 108-60-1 117-81-7 101-55-3	Total Xylenes SEMIVOTATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene Benzo(a cid Benzyl alcohol Bis(2-chloroethoxy) methane Bis(2-chloroethyl) ether 2,2'-Oxybis(1-Chloropropane) Bis(2-ethylhexyl) phthalate 4-Bromophenyl phenyl ether	5 20 NS 5 50 0.002 0.002 0.002 NS NS NS NS NS	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ND ND 540,000 D ND 22,000 DJ ND ND ND ND ND ND ND ND ND ND ND	ND ND 1,900 D ND ND ND ND ND 3,300 DJ ND ND ND ND	ND ND ND 2 J ND
S. C.	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 1863-63-4 100-51-6 111-92-1 111-44-4 108-60-1 117-81-7 101-55-3 85-68-7	Total Xylenes SEMIVOTATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(b)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene Benzoic acid Benzyl alcohol Bis(2-chloroethoxy) methane Bis(2-chloroethoxy) methane Bis(2-chloroethyl) ether 2,2'-Oxybis(1-Chloropropane) Bis(2-ethylhexyl) phthalate 4-Bromophenyl phenyl ether Butyl benzyl phthalate	5 20 NS 5 50 0.002 0.002 0.002 NS NS NS NS S 5 1	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ND ND 540,000 D ND 22,000 DJ ND ND ND ND ND ND ND ND ND ND ND ND	ND ND 1,900 D ND ND ND ND ND 3,300 DJ ND ND ND ND	ND ND ND 2 J ND
S. C.	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 1863-63-4 100-51-6 111-92-1 111-44-4 108-60-1 117-81-7 101-55-3 85-68-7 106-47-8	Total Xylenes SEMIVOTATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(b)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene Benzoic acid Benzyl alcohol Bis(2-chloroethoxy) methane Bis(2-chloroethyl) ether 2,2'-Oxybis(1-Chloropropane) Bis(2-ethylhexyl) phthalate 4-Bromophenyl phenyl ether Butyl benzyl phthalate 4-Chloroaniline	5 20 NS 5 50 0.002 0.002 0.002 NS NS NS NS S 5 1 NS 5 NS	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ND ND 540,000 D ND 22,000 DJ ND ND ND ND ND ND ND ND ND ND ND ND ND	ND ND 1,900 D ND ND ND ND ND 3,300 DJ ND ND ND ND ND	ND ND ND 2 J ND
S. C.	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 1863-63-4 100-51-6 111-92-1 111-44-4 108-60-1 117-81-7 101-55-3 85-68-7 106-47-8 59-50-7	Total Xylenes SEMIVOTATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(b)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene Benzoic acid Benzyl alcohol Bis(2-chloroethoxy) methane Bis(2-chloroethyl) ether 2,2'-Oxybis(1-Chloropropane) Bis(2-ethylhexyl) phthalate 4-Bromophenyl phenyl ether Butyl benzyl phthalate 4-Chloroaniline 4-Chloro-3-methylphenol	5 20 NS 5 50 0.002 0.002 0.002 NS NS NS NS 5 1 NS 5 5 5 5	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ND ND 540,000 D ND 22,000 DJ ND ND ND ND ND ND ND ND ND ND ND ND ND	ND ND 1,900 D ND ND ND ND ND ND ND ND ND ND ND ND ND	ND ND ND 2 J ND
S. C.	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 1863-63-4 100-51-6 111-92-1 111-44-4 108-60-1 117-81-7 101-55-3 85-68-7 106-47-8 59-50-7 91-58-7	Total Xylenes SEMIVORATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene Benzoic acid Benzyl alcohol Bis(2-chloroethoxy) methane Bis(2-chloroethyl) ether 2,2'-Oxybis(1-Chloropropane) Bis(2-ethylhexyl) phthalate 4-Bromophenyl phenyl ether Butyl benzyl phthalate 4-Chloro-3-methylphenol 2-Chloronaphthalene	5 20 NS 5 50 0.002 0.002 0.002 NS NS NS NS 5 1 NS 5 5 NS	ug/L	ND ND 540,000 D ND 22,000 DJ ND ND ND ND ND ND ND ND ND ND ND ND ND	ND ND 1,900 D ND ND ND ND ND ND 3,300 DJ ND ND ND ND ND ND	ND N
	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 1863-63-4 100-51-6 111-92-1 111-44-4 108-60-1 117-81-7 101-55-3 85-68-7 106-47-8 59-50-7 91-58-7 95-57-8	Total Xylenes SEMIVOEATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(b)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene Benzoic acid Benzyl alcohol Bis(2-chloroethoxy) methane Bis(2-chloroethyl) ether 2,2'-Oxybis(1-Chloropropane) Bis(2-ethylhexyl) phthalate 4-Bromophenyl phenyl ether Butyl benzyl phthalate 4-Chloro-3-methylphenol 2-Chloronaphthalene 2-Chlorophenol	5 20 NS 5 50 0.002 0.002 0.002 NS NS NS S 1 NS 5 1 NS 5 NS 5 NS	ug/L	ND ND 540,000 D ND 22,000 DJ ND ND ND ND ND ND ND ND ND ND ND ND ND	ND ND 1,900 D ND ND ND ND ND 3,300 DJ ND ND ND ND ND ND	ND N
	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 1863-63-4 100-51-6 111-92-1 111-44-4 108-60-1 117-81-7 101-55-3 85-68-7 106-47-8 59-50-7 91-58-7 95-57-8 7005-72-3	Total Xylenes SEMIVOEATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(b)fluoranthene Benzo(s)fluoranthene Benzo(gni)perylene Benzo(a)pyrene Benzoic acid Benzyl alcohol Bis(2-chloroethoxy) methane Bis(2-chloroethoxy) methane Bis(2-chloroethyl) ether 2,2'-Oxybis(1-Chloropropane) Bis(2-ethylhexyl) phthalate 4-Bromophenyl phenyl ether Butyl benzyl phthalate 4-Chloroaniline 4-Chloro-3-methylphenol 2-Chloronaphthalene 2-Chlorophenol 4-Chlorophenyl phenyl ether	5 20 NS 5 50 0.002 0.002 0.002 NS NS NS 5 1 NS 5 NS 5 NS 5 NS 5 NS	ug/L	ND ND 540,000 D ND 22,000 DJ ND ND ND ND ND ND ND ND ND ND ND ND ND	ND ND 1,900 D ND ND ND ND ND ND 3,300 DJ ND ND ND ND ND ND ND ND ND ND ND ND ND	ND N
	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 1863-63-4 100-51-6 111-92-1 111-44-4 108-60-1 117-81-7 101-55-3 85-68-7 106-47-8 59-50-7 91-58-7 95-57-8 7005-72-3 218-01-9	Total Xylenes SEMIVORATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene Benzoic acid Benzyl alcohol Bis(2-chloroethoxy) methane Bis(2-chloroethoxy) methane Bis(2-chloroethyl) ether 2,2'-Oxybis(1-Chloropropane) Bis(2-ethylhexyl) phthalate 4-Bromophenyl phenyl ether Butyl benzyl phthalate 4-Chloro-3-methylphenol 2-Chlorophenol 4-Chlorophenyl phenyl ether Chrysene	5 20 NS 5 50 0.002 0.002 0.002 NS NS NS 5 1 NS 5 NS 5 NS 5 NS 5 NS 5 N	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ND ND 540,000 D ND 22,000 DJ ND ND ND ND ND ND ND ND ND ND ND ND ND	ND ND 1,900 D ND ND ND ND ND ND 3,300 DJ ND ND ND ND ND ND ND ND ND ND ND ND ND	ND N
	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 1863-63-4 100-51-6 111-92-1 111-44-4 108-60-1 117-81-7 101-55-3 85-68-7 106-47-8 59-50-7 91-58-7 95-57-8 7005-72-3 218-01-9 53-70-3	Total Xylenes SEMIVOLATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene Benzoic acid Benzyl alcohol Bis(2-chloroethoxy) methane Bis(2-chloroethoxy) methane Bis(2-chloroethyl) ether 2,2'-Oxybis(1-Chloropropane) Bis(2-ethylhexyl) phthalate 4-Bromophenyl phenyl ether Butyl benzyl phthalate 4-Chloroaniline 4-Chloro-3-methylphenol 2-Chlorophenol 4-Chlorophenyl phenyl ether Chrysene Dibenzo(a,h)anthracene	5 20 NS 5 50 0.002 0.002 0.002 NS NS NS 5 1 NS 5 NS 5 NS 5 NS 5 NS 5 N	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ND ND S40,000 D ND 22,000 DJ ND ND ND ND ND ND ND ND ND ND ND ND ND	ND ND 1,900 D ND ND ND ND ND ND 3,300 DJ ND ND ND ND ND ND ND ND ND ND ND ND ND	ND N
	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 1863-63-4 100-51-6 111-92-1 111-44-4 108-60-1 117-81-7 101-55-3 85-68-7 106-47-8 59-50-7 91-58-7 95-57-8 7005-72-3 218-01-9 53-70-3 132-64-9	Total Xylenes SEMIVOTATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(b)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene Benzo(a cid Benzyl alcohol Bis(2-chloroethoxy) methane Bis(2-chloroethoxy) methane Bis(2-chloroethyl) ether 2,2'-Oxybis(1-Chloropropane) Bis(2-ethylhexyl) phthalate 4-Bromophenyl phenyl ether Butyl benzyl phthalate 4-Chloroanliine 4-Chloro-3-methylphenol 2-Chloronaphthalene 2-Chlorophenol 4-Chlorophenyl phenyl ether Chrysene Dibenzo(a,h)anthracene	5 20 NS 5 50 0.002 0.002 0.002 NS NS NS 5 1 NS 5 NS 5 NS 5 NS 5 NS 50 0.002 NS NS NS NS NS NS NS NS NS NS NS NS NS	ug/L ND ND S40,000 D ND 22,000 DJ ND ND ND ND ND ND ND ND ND ND ND ND ND	ND ND 1,900 D ND ND ND ND ND ND 3,300 DJ ND ND ND ND ND ND ND ND ND ND ND ND ND	ND N	
	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 1863-63-4 100-51-6 111-92-1 111-44-4 108-60-1 117-81-7 101-55-3 85-68-7 106-47-8 59-50-7 91-58-7 95-57-8 7005-72-3 218-01-9 53-70-3 132-64-9 84-74-2	Total Xylenes SEMIVOTATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(b)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene Benzo(a cid Benzyl alcohol Bis(2-chloroethoxy) methane Bis(2-chloroethoxy) methane Bis(2-chloroethyl) ether 2,2'-Oxybis(1-Chloropropane) Bis(2-ethylhexyl) phthalate 4-Bromophenyl phenyl ether Butyl benzyl phthalate 4-Chloro-3-methylphenol 2-Chloronaphthalene 2-Chlorophenol 4-Chlorophenyl phenyl ether Chrysene Dibenzo(a,h)anthracene Dibenzofuran Di-n-butyl phthalate	5 20 NS 5 50 0.002 0.002 0.002 NS NS NS NS 5 1 NS 5 NS 5 NS 50 0.002 NS NS NS NS NS NS S NS NS NS NS NS NS N	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ND ND 540,000 D ND 22,000 DJ ND ND ND ND ND ND ND ND ND ND ND ND ND	ND ND 1,900 D ND ND ND ND ND ND ND ND ND ND ND ND ND	ND N
	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 1863-63-4 100-51-6 111-92-1 111-44-4 108-60-1 117-81-7 101-55-3 85-68-7 106-47-8 59-50-7 91-58-7 95-57-8 7005-72-3 218-01-9 53-70-3 132-64-9 84-74-2 95-50-1	Total Xylenes SEMIVOTATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(b)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene Benzoic acid Benzy alcohol Bis(2-chloroethoxy) methane Bis(2-chloroethoxy) methane Bis(2-chloroethyl) ether 2,2'-Oxybis(1-Chloropropane) Bis(2-ethylhexyl) phthalate 4-Bromophenyl phenyl ether Butyl benzyl phthalate 4-Chloro-3-methylphenol 2-Chloronaphthalene 2-Chlorophenol 4-Chlorophenyl phenyl ether Chrysene Dibenzo(a,h)anthracene Dibenzofuran Di-n-butyl phthalate 1,2-Dichlorobenzene	5 20 NS 5 50 0.002 0.002 NS NS NS NS NS 5 1 NS 5 NS 5 NS 5 NS 5	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ND ND S40,000 D ND 22,000 DJ ND ND ND ND ND ND ND ND ND ND ND ND ND	ND ND ND 1,900 D ND ND ND ND ND ND ND ND ND ND ND ND ND	ND N
	83-32-9 208-96-8 62-53-3 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 1863-63-4 100-51-6 111-92-1 111-44-4 108-60-1 117-81-7 101-55-3 85-68-7 106-47-8 59-50-7 91-58-7 95-57-8 7005-72-3 218-01-9 53-70-3 132-64-9 84-74-2	Total Xylenes SEMIVOTATILES Acenaphthene Acenaphthylene Analine Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(b)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene Benzo(a cid Benzyl alcohol Bis(2-chloroethoxy) methane Bis(2-chloroethoxy) methane Bis(2-chloroethyl) ether 2,2'-Oxybis(1-Chloropropane) Bis(2-ethylhexyl) phthalate 4-Bromophenyl phenyl ether Butyl benzyl phthalate 4-Chloro-3-methylphenol 2-Chloronaphthalene 2-Chlorophenol 4-Chlorophenyl phenyl ether Chrysene Dibenzo(a,h)anthracene Dibenzofuran Di-n-butyl phthalate	5 20 NS 5 50 0.002 0.002 0.002 NS NS NS NS 5 1 NS 5 NS 5 NS 50 0.002 NS NS NS NS NS NS S NS NS NS NS NS NS N	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	ND ND 540,000 D ND 22,000 DJ ND ND ND ND ND ND ND ND ND ND ND ND ND	ND ND 1,900 D ND ND ND ND ND ND ND ND ND ND ND ND ND	ND N

PARSONS

Ekonol Facility Separate Phase Chemical Analytical Summary Wheatfield, New York

			Sample ID	MW-2DP	MW-2SP	MW-3DP
			Date Sampled	10/2/2002	10/2/2002	10/2/2002
			Lab Sample ID	A2980702	A2980703	A2980701
			Source	STL Buffalo	STL Buffalo	STL Buffalo
			Source	A02-9807	A02-9807	A02-9807
			SDG	A02-9607	A02-9807	A02-3007
	SEMIVOLATILES CONTO A	Standard*	Units			
CAS No.	Compound		ug/L	ND	ND	ND
91-94-1	3,3'-Dichlorobenzidine	5 5	ug/L ug/L	ND	ND ND	ND
120-83-2	2,4-Dichlorophenol	50	ug/L ug/L	ND	ND	ND
131-11-3	Diethyl phthalate	50	ug/L ug/L	ND	ND	ND ND
105-67-9	2,4-Dimethylphenol			ND	ND	ND
84-66-2	Dimethyl phthalate	50	ug/L	ND ND	ND	ND
534-52-1	4,6-Dinitro-2-methylphenol	NS	ug/L	ND ND	ND	ND
51-28-5	2,4-Dinitrophenol	10	ug/L	ND	ND	ND
121-14-2	2,4-Dinitrotoluene	5	ug/L	ND	ND	ND
606-20-2	2,6-Dinitrotoluene	5	ug/L	ND 1	ND ND	ND ND
117-84-0	Di-n-octyl phthalate	50	ug/L	ND ND	0.8 J	ND ND
206-44-0	Fluoranthene	50	ug/L		ND	ND ND
86-73-7	Fluorene	50	ug/L	6,800 DJ	ND ND	ND ND
118-74-1	Hexachlorobenzene	0.04	ug/L	ND	ND ND	ND
87-68-3	Hexachlorobutadiene	0.5	ug/L	ND		ND
77-47-4	Hexachlorocyclopentadiene	5	ug/L	ND	ND	ND
67-72-1	Hexachloroethane	5	ug/L	ND	ND ND	ND ND
193-39-5	Indeno(1,2,3-cd)pyrene	0.002	ug/L	ND	ND	ND ND
78-59-1	Isophorone	50	ug/L	ND	ND	
91-57-6	2-Methylnaphthalene	NS	ug/L	790 DJ	ND 440 D.I	ND ND
95-48-7	2-Methylphenol	NS	ug/L	ND	140 DJ	ND ND
106-44-5	4-Methylphenol	NS	ug/L	ND	64	
91-20-3	Naphthalene	10	ug/L	5,400 DJ	ND ND	ND ND
88-74-4	2-Nitroaniline	5	ug/L	ND	ND	ND ND
99-09-2	3-Nitroaniline	5	ug/L	ND	ND	
100-01-6	4-Nitroaniline	5	ug/L	ND	ND	ND
98-95-3	Nitrobenzene	0.4	ug/L	ND	ND ND	ND
88-75-5	2-Nitrophenol	NS	ug/L	ND	ND ND	ND
100-02-7	4-Nitrophenol	NS	ug/L	ND	ND	ND
86-30-6	N-nitrosodiphenylamine	50	ug/L	1,200 DJ	ND	ND
621-64-7	N-Nitroso-Di-n-propylamine	NS	ug/L	ND	ND	ND
87-86-5	Pentachlorophenol	1	ug/L	ND	ND	ND
85-01-8	Phenanthrene	50	ug/L	3,600 DJ	0.8 J	ND
108-95-2	Phenol	1	ug/L	53,000 D	51,000 D	11
129-00-0	Pyrene	50	ug/L	ND	0.9 J	ND
120-82-1	1,2,4-Trichlorobenzene	5	ug/L	220,000 DE	ND	ND
95-95-4	2,4,5-Trichlorophenol	NS	ug/L	ND	ND	ND
88-06-2	2,4,6-Trichlorophenol	NS	ug/L	ND	ND A) 4000	ND

^{* =} Standards taken from the Ambient Water Quality Standards and Guidance Values (Class GA) - 1998

[&]quot;NS"= No Standard

[&]quot;ND"= Compound was analyzed for, but not detected

[&]quot;J"= Indicates an estimated value

[&]quot;E"= Concentration exceeded the calibration range

[&]quot;D"= Compound was identified in an analysis at the secondary dilution factor

[&]quot;B"= The analyte was found in the associated blank, as well as in the sample

Ekonol Facility Sewer Investigation Analytical Summary Wheatfield, New York

			Sample ID	TP #1	TP #2	TP #3
			Lab Sample ID	A1B98501	A1B98503	A1B98502
			Source	STL Buffalo	STL Buffalo	STL Buffalo
			SDG	A01-B985	A01-B985	A01-B985
			Matrix	Soil	Soil	Soil
			Sampled	12/3/2001	12/4/2001	12/4/2001
CAS No.	Compound	Standard*	Units			
	VOLATILES					
75-34-3	1.1-Dichloroethane	200	ug/Kg	ΩN	24	Q
540-59-0	1.2-Dichloroethene (Total)	300	ug/Kg	Q	Q	2
71-55-6	1.1.1-Trichloroethane	800	ug/Kg	Q	9	2
79-01-6	Trichloroethene	200	ug/Kg	ND	QN	QN
	SEMIVOLATILES				and the second s	
62-53-3	Aniline	100	ug/Kg	QN	9	2
108-95-2	Phenol	30 or MDL	ug/Kg	ND	QN	QN
	METALS					
7439-92-1	Lead - Total	SB	mg/Kg	15.1	9	7.6
7441-66-6	Zinc - Total	20 or SB	mg/Kg	87.2	88.8	70.8
			The second second second	HANAG Boommond	#4046 Docommonded Soil Cleanin Objective - 1994	ive - 1994

^{* -} Standards taken from the Technical and Administrative Guidance Memorandum #4046 - Recommended Soil Cleanup Objective - 1994 "MDL"= Method Detection Limit

[&]quot;SB"= Site Background

[&]quot;ND"= Compound was analyzed for, but not detected

Ekonol Facility Groundwater Elevation Table Wheatfield, New York

			W				_		_		_	_		_		_		_		-	
Water Table Elevation	12/11/02	(Feet)		579.67	581.52	576.10	577.21	•	576.91	579.51	575.33	577.08		575.10	576.25	576.23	576.79	576.62	576.68	576.83	575.68
Depth to Water	12/11/02	(Feet TOC)		5.39	3.59	8.73	8.58	1	8.73	6.75	10.65	8.58		10.43	8.94	8.74	8.83	8.85	11.74	9.02	12.21
Water Table Elevation	11/18/02	(Feet)		575.74	581.56	575.42	577.11	577.58	575.33	579.10	577.62	574.07		577.41	576.73	576.86	577.41	577.25	577.51	577.13	576.90
Depth to Water	11/18/02	(Feet TOC)		9.32	3.55	9.41	8.68	8.03	10.31	7.16	8.36	11.59		8.12	8.46	8.11	8.21	8.22	10.91	8.72	10.99
Water Table Elevation	10/21/02	(Feet)		577.60	576.85	576.99	576.98	577.14	577.28	578.18	575.70	576.27		576.99	576.31	576.40	577.01	576.84	576.99	577.82	576.25
Depth to Water	10/21/02	(Feet TOC)		7.46	8.26	7.84	8.81	8.47	8.36	8.08	10.28	9.39		8.54	8.88	8.57	8.61	8.63	11.43	8.03	11.64
Water Table Elevation	9/25/02-10/3/02	(Feet)		578.21	580.23	579.41	575.26	575.59	575.39	576.80	574.33	575.68		576.38	575.44	575.76	576.35	576.00	576.11	576.00	575.27
Depth to Water	9/25/02-10/3/02	(Feet TOC)		6.85	4.88	5.42	10.53	10.02	10.25	9.46	11.65	96.6		9.15	9.75	9.21	9.27	9.47	12.31	9.85	12.62
Top of Well Casing	Elevation	(Feet)		585.06	585.11	584.83	585.79	585.61	585.64	586.26	585.98	585.66		585.53	585.19	584.97	585.62	585.47	588.42	585.85	587.89
Monitoring Well	Ω		Shallow	MW-1S	MW-2S	MW-3S	MW-4S	MW-5S	MW-6S	MW-7S	MW-8S	S6-MM	Deep	MW-1D	MW-2D	MW-3D	MW-4D	MW-10D	MW-11D	MW-12D	MW-13D

[&]quot;-" Unable to take reading due to snow cover

REFERENCES

- Aerial Photographs (1951, 1958, 1966, 1977), Niagara County Soil and Water Conservation District; Lockport, New York.
- Ecology and Environment, Inc. Final 1999 Sampling/Monitoring Report, Installation-Wide Groundwater Monitoring Project; Niagara Falls IAP-ARS, Niagara Falls, New York; April 2000;
- Environmental Data resources, Inc. (EDR). The EDR- Radius Map with Geocheck® and Historical Topographic Map Report for the Ekonol Polyester Resins Facility, Wheatfield, New York. Inquiry Numbers: 518284.1s and 518284-4. July 2000.
- Final Report, RCRA Facility Investigation Neutralization Pond; Bell Aerospace Textron Wheatfield Plant; June 1991; Golder Associates, Inc.
- Frontier Technical Associates, Inc. Draft Closure Plan for Underground Spill Collection and Secondary Containment Tank at Norton Perfomance Plastics Corp. Ekonol Plant, Wheatfield, New York. May 25, 1999.
- Frontier Technical Associates, Inc. Tank Closure Report for Underground Spill Collection and Secondary Containment Tank at the Ekonol Facility, St.-Gobain Performance Plastics, Wheatfield, New York. August 2000.
- Golder Associates. Final Report, RCRA Facility Investigation Neutralization Pond, Bell Aerospace Textron- Wheatfield Plant. June 1991.
- Golder Associates, Annual Summary and System Performance, Off-site and On-site Groundwater Extraction Systems, Former Textron, Inc. Wheatfield, New York Facility; March 2001;
- Parsons. Work Plan for a Site Investigation at the Ekonol Polyester Resin Facility, Wheatfield, New York. August 2000
- Saint-Gobain employees, Personal Communication (6/02 7/02).
- Shacklette and Boerngen. USGS Professional Paper 1270. Element Concentrations in Soils and Other Surficial Materials of the Conterminous US. 1984
- Town of Wheatfield Tax Accessor's Department, Tax Map Number 147.00, Town of Wheatfield, Niagara County, New York, March 1998;

ATTACHMENT A BORING LOGS AND DRILLING RECORDS

Contractor:	Zebra Envi	ronmental C	огр.		PARSONS DRILLING RECORD	BORI	G NO.	SB-1
ondacus. Oriller:	Dominic Pi							į
aspector:	Andy Janik		-		PROJECT NAME Ekonol Facility	Sheet	1	of 1
Rig Type:	Geoprobe	_*			PROJECT NUMBER 737515	Location	ı: Sou	thwest of Ekonol Facility
dethod:	Direct Push	,				Elevation		
Observations		10/4/2001			Weather Sunny 65 F	Ŋ	Walme	ore Rd.
Depth of Wat	ег	~10' bgs				1		
					Date/Time Start 10/4/01 0855	_		conol Facility
op of Boring I	Elevation				10/4/21 2025		;	·
					Date/Time Finish 10/4/01 0925			NOTE NOTE NOTE NOTE NOTE NOTE NOTE NOTE
PID	Sample	Sample	Rec.	SPT	FIELD IDENTIFICATION OF MATERIAL	۱ '	VELL CO	NSTRUCTION DIAGRAM
Reading	Code	Depth	(ft)					
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	ļ <u> </u>				UNIFI			
		0		ļ	SOIL CLA	22.	1	1" SCH 40 PVC well
	00.	1			Stiff, brown, Silty CLAY, some gray Silt throughout		1	riser
	SS-1	3			1			11,501
0.80		4	3.5		†	CL		3.5' bgs
0.00	 	5	٠.٠		Stiff, brown, Silty CLAY, some gray Silt throughout			
*****	SS-2	6		-	1			
		7]			
0.40		8	4.0			CL	▋◀	1" SCH 40 PVC well
		9		ļ	Stiff, brown, Silty CLAY, moist at 10'			screen, 0.010" slot
	SS-3	10				1		1
	-	11	4.0	ļ	-1			
5.70	CC 4	12 13	1.2	 	Stiff, moist/wet, red/brown, Silty CLAY	CL		TOR @ 13.5' bgs
0.60	SS-4	14	1.2	 	Suit, moist wel, redutowit, suity CEA 1	~~		1011 (6) 10.0 080
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	TOR:	TOP OF F	ROCK		SUMMARY:			
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-	·				PARSONS DRILLING RECORD		BORING N	ORING NO. SB-2			
	Zebra Envi	ronmental C	огр.		DIVILLING RECORD		- CARRIO IV	·			
Driller:		-			PROJECT NAME Ekonol Facility		Sheet	1 of 1			
nspector:	Andy Janil				PROJECT NUMBER 737515			Southwest of Ekonol Facility			
Rig Type: Method:	Geoprobe Direct Pusi				TROJECT NOVIDER 191919		Elevation:				
Observations	Direction	10/4/2001			Weather Sunny 65 F		Ŋ	Walmore Rd.			
Depth of Water		~10' bgs					†	111			
					Date/Time Start 10/4/01 0945			Ekonol Facility			
Top of Boring E	levation										
	<u> </u>				Date/Time Finish 10/4/01 1025			×			
PID	Sample	Sample	Rec.	SPT	FIELD IDENTIFICATION OF MATERIAL		WELL	CONSTRUCTION DIAGRAM			
Reading	Code	Depth	(ft)								
	ļ					UNIFIED					
	 	0			Stiff, brown/black, Silty CLAY	OIL CLASS.		1" SCH 40 PVC well			
	SS-1	2			Butti, Diowie Diack, Bitty CLAT		`	riser			
	33-1	3			1						
0.50	i	4	4.0			CL		2.5' bgs			
		5			Stiff, brown, Silty CLAY, some f- Sand throughout						
	SS-2	6			_						
0.6-	<u> </u>	7			4	3.54		18 COTT 40 DVC11			
0.00	-	8	4.0		Cater beauty Ciby CI AV maint at 101	ML		1" SCH 40 PVC well screen, 0.010" slot			
	SS-3	9 10			Stiff, brown, Silty CLAY, moist at 10'			Scient, 0.010 slot			
	33-3	11			1						
0.80		12	4.0		1	CL					
0.70	SS-4	13	0.4		Wet, brown, Silty CLAY, some m-Gravel	GC		TOR @ 12.5' bgs			
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	STAND	ARD PEN	ETRATIC)N							
	TOR:	TOP OF I	ROCK		SUMMARY:						
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Contractor:		ronmental C	orp.		 	DRILLING RECORD		BORING NO.	SB-3
Driller:	Dominic P		***		PROJECT NAME	Ekonol Facility		Sheet 1	of 1
Inspector: Rig Type:	Andy Janil Geoprobe				PROJECT NUMBER				uthwest of Ekonol Facility
Method:	Direct Pusi	h						Elevation:	
Observations		10/4/2001			Weather	Sunny 65 F		Ŋ	Walmore Rd.
Depth of Water	r	~ll'bgs						[†]	
				<u> </u>	Date/Time Start	10/4/01 1050		ļ LĒ	konol Facility
Top of Boring	Elevation				Date/Time Finish	10/4/01 1125		1	x
PID	S1	Sample	Rec.	SPT		D IDENTIFICATION OF MATERIAL		WELL CO	ONSTRUCTION DIAGRAM
1	Sample			51.1					
Reading	Code	Depth	(ft)		† · · · · · · · · · · · · · · · · · · ·	****			
	 						UNIFIED	,	
		0					SOIL CLASS	<u></u>	
	<u> </u>	1			Stiff, brown, Silty CLA	AY			1" SCH 40 PVC well
	SS-1	2			4			1 11	riser
0.20	+ -	3	3.0		-		CL		2.5' bgs
0,20	 	5	3.0		Stiff, brown, Silty CLA	ΥΥ			2.0 082
	SS-2	6]				
		7							
0.00		8	4.0		Stiff, red/brown, Silty	OT A37	CL	. ■	1" SCH 40 PVC well
<u> </u>	SS-3	9		-	Stiff, red/brown, Sifty	CLAY, moist at 11			screen, 0.010" slot
	30-3	11			-				
1.60	+	12	4.0		-		CL		
0.40	SS-4	13	0.9		Wet, brown, Silty CLA	Y, some m-Gravel	CL GC		TOR @ 12.5' bgs
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		ARD PEN		N	CHARA A DAY.				
	TOR:	TOP OF I	ROCK		SUMMARY:				
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					F	PARSONS			
Contractor:	Zebra Envi	ironmental C	Corp.		Y	ILLING RECORD		BORING NO.	SB-3A
Driller:	Dominic P	ino							
Inspector:	Andy Janil	ĸ			PROJECT NAME	Ekonol Facility		Sheet 1	of 1
Rig Type:	Geoprobe				PROJECT NUMBER	737515			uthwest of Ekonol Facility
Method:	Direct Pus							Elevation:	
Observations		10/4/2001		<u> </u>	Weather	Sunny 65 F		 	Walmore Rd.
Depth of Water		~11.5' bgs			Data/Time Start	10/4/01 1610		Ι' Γ	konol Facility
Top of Boring 1	70				Date/Time Start	10/4/01 1610		LE	konol Fachity
1 op or Boring I	levation				Date/Time Finish	10/4/01 1645			x
PID	Sample	Sample	Rec.	SPT		NTIFICATION OF MATERIAL		WELL CO	ONSTRUCTION DIAGRAM
Reading	Code	Depth	(ft)	J					
Keading	Code	Берін	(11)						
							UNIFIED	,	
	 	0					SOIL CLASS.		
		1			Stiff, brown, Silty CLAY, so	me black mottling		-	1" SCH 40 PVC well
	SS-1	2							riser
		3					O.		2.51
1.70		4	3.0		Stiff, brown, Silty CLAY, so	Carrol topo & Cond	CL		2.5' bgs
	SS-2	5			Stiff, brown, Slity CLAY, so	ome m-Gravei, trace 1-5and			
	33-2	7							
10.50	†	8	4.0				ML		1" SCH 40 PVC well
		9			Stiff, brown, Silty CLAY, m	oist at 11.5'			screen, 0.010" slot
	SS-3	10							
		11							
10.30	ļ.,,	12	4.0				CL		7707 O 10 (1)
2.00	SS-4	13	0.5		Wet, brown, Silty CLAY, so	me m-Gravel	GC		TOR @ 12.5' bgs
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	CTAND	ARD PEN	FTD A TT	N N	1			<u> </u>	
		TOP OF I		211	SUMMARY:				
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						PARSONS		nonn:0 ::-		00.4
Contractor:		ronmental C	orp.			DRILLING RECORD		BORING NO.		SB-4
Driller:	Dominic P	ino			Į.					,
Inspector:	Andy Janis				PROJECT NAME_	Ekonol Facility		Sheet 1	of	1
Rig Type:	Geoprobe				PROJECT NUMBER_	737515			uthwest of El	konol Facility
Method:	Direct Pus				777	S (5.E		Elevation:	Malmore D	
Observations		10/4/2001			Weather _	Sunny 65 F		<u>N</u>	Walmore Re	u. 🕕 📗
Depth of Water		~9' bgs			Date/Time Start	10/4/01 1255		l' <u>- </u>	konol Facilit	a
T 60 ' 1	7				Date/Time Start -	10/4/01 1233		<u> </u>	KOHOI I ACIII	
Top of Boring E	levation				Date/Time Finish	10/4/01 1335			;	x
PID	Samula	Sample	Rec.	SPT		IDENTIFICATION OF MATERIAL		WELL CO		ION DIAGRAM
	Sample	-		SEI		DENTIFICATION OF MATTER				
Reading	Code	Depth	(ft)							
					1		UNIFIED		j	
		0					SOIL CLASS.	3		
		1			Stiff, brown, Silty CLA	Y, some black mottling			1"	SCH 40 PVC well
	SS-1	2							ris	er
		3								_
0.30		4	3.5		***************************************		CL		2.5	5' bgs
		5			Stiff, brown, Silty CLA	Y, some m-Gravel, trace f-Sand			1	
	SS-2	6							ļ	
0.20	<u> </u>	7	4.0				ML			SCH 40 PVC well
0.30		8	4.0		Stiff, brown, Silty CLA	V moist at 0'				reen, 0.010" slot
	SS-3	10			Siiii, blowii, Siiiy CLA	1, moist at y			501	0001, 0.010 1001
	55-5	11			1				ı	
0,40	!	12	4.0				CL			
0.20	SS-4	13	0.5		Wet, brown, Silty CLA	Y, some c-Gravel	GC		TOR @	12.5' bgs
	T	14						1		
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	ETANT.	ADD DEST	ETD A TOP	I	<u>L</u>		 			
		ARD PEN TOP OF F		714	SUMMARY:					
	10K	TOI OF I	COCK		JUMPENI.					
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					PARSONS DRILLING RECORD	BORING NO.	SB-5
Contractor:	Zebra Envi	ironmental C	огр.		DRILLING RECORD	DOKING NO.	<u> </u>
Driller: Inspector:	Andy Janil				PROJECT NAME Ekonol Facility	Sheet 1	of 1
Rig Type:	Geoprobe	<u> </u>			PROJECT NUMBER 737515	1	west of Ekonol Facility
Method:	Direct Push	h				Elevation:	
Observations		10/4/2001			Weather Sunny 65 F	Ŋ w	almore Rd.
Depth of Water		~ll'bgs				T	
					Date/Time Start 10/4/01 1345	Eko	nol Facility X
Top of Boring E	levation	-			Date/Time Finish 10/4/01 1425		^
PID	Sample	Sample	Rec.	SPT	FIELD IDENTIFICATION OF MATERIAL	TEMP. CONS	STRUCTION DIAGRAM*
Reading	Code	Depth	(ft)				
Acading	Cour	Берия	(11)				
					UNIFIE)	
		0			SOIL CLASS	<u> </u>	
		1			Stiff, brown, Silty CLAY		1" SCH 40 PVC well riser
<u> </u>	SS-1	3					riser
3.90		4	3.0		CI	,	3.0' bgs
		5			Stiff, brown, Silty CLAY, trace m-Sand		
	SS-2	6					
		7	4.0	ļ	10		1" SCH 40 PVC well
1.40	-	8	4.0		Stiff, brown, Silty CLAY, moist at 11'	i	screen, 0.010" slot
	SS-3	10			inti, blowit, Sitty CLA1, most at 11		sereen, o.oro sier
	555	11					
2.30		12	4.0		CI Moist, brown, Silty CLAY, some c-Gravel GG		
1.40	SS-4	13	1.0		Moist, brown, Silty CLAY, some c-Gravel GO		TOR @ 13.0' bgs
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 	STAND	ARD PEN	ETRATIC	DN .	<u> </u>	1	I
	TOR-	TOP OF F	ROCK		SUMMARY: * Wells were removed and abandoned following sampling.		
							
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						PARSONS		DODING	NO	SBA-1	
Contractor:		ronmental Co	огр.		<u>D</u>	RILLING RECORD		BORING	INU.	ODA-1	
Driller:	Phil Orsi				PROFESTALLE.	Ekonol Facility		Sheet	1	of 1	
Inspector:	Andy Janik	-			PROJECT NAME PROJECT NUMBER	737515		Location:		east of Ekonol Facility	
Rig Type: Method:	Geoprobe Direct Pusi			··········	PROJECT NOWIBER			Elevation:			
Observations		6/4/2002			Weather	Cloudy/Showers 55 F		Ŋ		x	
Depth of Wat		~9' bgs						↑			
					Date/Time Start	6/4/02 0915		-	Ekor	nol Facility	
Top of Boring	Elevation			~	Date/Time Finish	6/4/02 0950			W	almore Rd.	
nvn	 	G	D.,	SPT	1"	ENTIFICATION OF MATERIAL				EMPORARY	
PID	Sample		Rec.	SFI	FIELDID	ENTIFICATION OF MATERIAL		WEI		STRUCTION DIAGRAM	
Reading	Code	Depth	(ft)					*****	11.00.10	, ROOTION DATIONAL	
	+				-		UNIFIED				
	1	0					SOIL CLASS.	<u></u> ,			
		1			Brown, Silty CLAY, some	gray Silt throughout			•	— 1" SCH 40 PVC w	/ell
	SS-1	2			_			1 1		riser	
	 	3	3.7		4		CL	1			
1.7	+	5	3.1	 	Stiff, red/brown, CLAY			1			
——	SS-2	6		 							
	<u> </u>	7			<u></u>			1			
1.9		8	4.0				CL	1 1			
	100.0	9			Stiff, brown, Silty CLAY,	moist at 9', saturated to 12'				10.0' bgs	
ļ	SS-3	10 11		 	-					10.0 0gs	
2.1	 	12	4.0		-		CL		•	1" SCH 40 PVC w	vell
	SS-4	13		<u> </u>	Stiff, moist/wet, red/browl	n, Silty CLAY	***************************************			screen, 0.010" slot	ŧ
		14									
2.2		15	4.0	<u> </u>			CL			TOR @ 15.0' bgs	
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		ARD PEN		N				_			
	TOR	TOP OF I	ROCK			porary piezometer installed to obtain water	sample for field	<u> </u>			
					scre	ening.	,···				

					_		BORING NO. SBA-2				
Contractor:		ronmental Co	огр.		DF	RILLING RECORD	E	BORING	NO.	SBA-2	
Driller:	Phil Orsi					Ekonol Essility		71	1	of 1	
Inspector:	Andy Janil	<u> </u>			PROJECT NAME	Ekonol Facility 737515		Sheet		of I of Ekonol Facility	
Rig Type:	Geoprobe				PROJECT NUMBER	737313		Location: levation:	South	of Ekonol Facility	
Method: Observations	Direct Pus	6/4/2002		Τ	Weather	Cloudy/Showers 55 F	- I	V	w	almore Rd.	JII
Depth of Wate	er	~11.4' bgs					- ¹	♦			
					Date/Time Start	6/4/02 1010			Eko	nol Facility	
Top of Boring I	Elevation										
	<u> </u>				Date/Time Finish	6/4/02 1045		X			
PID	Sample	Sample	Rec.	SPT	FIELD IDENTIFICATION OF MATERIAL				T	EMPORARY	
Reading	Code	Depth	(ft)	<u> </u>				WE	LL CON	STRUCTION DIAG	RAM
	ļ			<u> </u>							:
					-{		NIFIED				
		0			Red/brown, Silty CLAY, so		CLASS.	1		1" SCH 40	DVC well
	SS-1 2			<u> </u>	Treatorown, anty CLA 1, so	me gray 3m unoughout				riser	1 VC WCII
	35-1	3			1			1	1	1.501	
1.5	 	4	3.3				CL				
	1	5			Stiff, red/brown, CLAY				1		
	SS-2	6						ŀ			
		7									
4.3		8	4.0				CL				
	<u> </u>	9			Stiff, brown, Silty CLAY, r	noist at 11.4'			₫	9.0' bgs	
ļ	SS-3	10		 	4					10 0011 40	DVCII
10	1	11 12	4.0	 	4		CL			1" SCH 40 screen, 0.0	
3.8	SS-4	13	4.0	<u> </u>	Stiff, moist/wet, red/brown,	CIAV	<u>CL</u>			screen, 0.0	IO SIOL
2.3	35-4	14	2.5		Joini, moiso wee, rearorown,	CLAT	CL			TOR @ 14.0' bg	rs.
2.5	1	2 1	4.5				- 52	_		1010 @ 1110 02	,~
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		ARD PENE		N							
1	TOR:	TOP OF R	OCK			orary piezometer installed to obtain water sample	for field				
					screen	ing.					
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Contractor:	Zebra Envi	ronmental Co	огр.		PARSONS DRILLING RECORD			BORING NO. SBA-3		
Driller:	Phil Orsi									
Inspector:	Andy Janik	:			PROJECT NAME	Ekonol Facility		Sheet	1	of 1
Rig Type:	Geoprobe				PROJECT NUMBER	737515		Location:	South	of Ekonol Facility
Method:	Direct Push					Ol 1 (C) 7	5 F	Elevation:		
Observations		6/4/2002			Weather	Cloudy/Showers 5	5 F	N A	Wa	almore Rd.
Depth of Wate	er	~11.9' bgs		ļ	Date/Time Start	6/4/02 1240		T	Eko	nol Facility
Top of Boring E	levation				Date Time Start	0/4/02 1240			LKO	nor racinty
Top of Doning L	T T				Date/Time Finish	6/4/02 1315				×
PID	Sample	Sample	Rec.	SPT		ENTIFICATION OF MATERIAL				EMPORARY
Reading	Code	Depth	(ft)					WE		STRUCTION DIAGRA
Ittading	Code	Depta	(,							
					7		UNIFIED			
		0					SOIL CLASS.	İ		
		1			Brown/gray, Silty CLAY				◀—	1" SCH 40 PV
	SS-1	2						1		riser
	ļ	3			4					
2.9	ļ	4	2.0		GUCC 10 CT AST		CL			
	SS-2	5 6		<u> </u>	Stiff, red/brown, CLAY					
	33-2	7			-					
2.8	 	8	4.0	 	-		CL			
2.0		9		 	Stiff, red/brown, Silty CLA	Y, moist at 11.9']	8.5' bgs
	SS-3	10			1 ' ' '	,				
		11							←	1" SCH 40 PV
3.0		12	4.0				CL			screen, 0.010'
	SS-4	13		<u> </u>	Stiff, moist, red/brown, CL	AY, some m-gravel				mon 0 10 ft1
3.1		14	2.0				CL			TOR @ 13.5' bgs
	-			ļ	4					
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	STANDA	RD PENE	TRATIO	N	<u> </u>			'		
		TOP OF R			SUMMARY: Temp	orary piezometer installed to obtain	water sample for field			
					scree	· · · · · · · · · · · · · · · · · · ·				

						PARSONS						
Contractor:		ronmental C	orp.			DRILLING RECORD		BORING	NO.	SB	A-4	
Driller: Inspector:	Phil Orsi Andy Janik				PROJECT NAME	Ekonol Facility		Sheet	1	of 1		
Rig Type:	Geoprobe				PROJECT NUMBER	737515		Location:		of Ekonol Fac		
Method:	Direct Push				TROSECTIVOMBER	707010		Elevation:	bouu	OI LAOIIOI I II	лич	
Observations		6/4/2002			Weather	Cloudy/Showers 55 F		Ŋ	W	almore Rd	—	
Depth of Wate	r	~10.5' bgs						 			İ	
					Date/Time Start	6/4/02 1425			Eko	nol Facility		
Top of Boring E	levation											
					Date/Time Finish	6/4/02 1500			X			ш
PID	Sample	Sample	Rec.	SPT	FIEL	D IDENTIFICATION OF MATERIAL			T	EMPORARY	?	
Reading	Code	Depth	(ft)					WEI	L CON	STRUCTION	DIAGRA	M Ι
			i									
							UNIFIED					
		0					SOIL CLASS.					
		1			Stiff, brown/black, Si	lty CLAY			←		H 40 PV	C well
	SS-1	2								riser		
4.0		3					CT.					
4.2		<u>4</u> 5	1.7		CL:CC 1/L CY A	Y, some gray Silt throughout	CL					
	SS-2	6			Suii, rea/brown, CLA	1, some gray Sitt unoughout						- 1
	33-2	7										
4.2		8	4.0				CL					
		9			Stiff, red/brown, Silty	CLAY, some gray Silt				8.5' b	gs	i
	SS-3	10			Moist at 10.5'	, , ,					J.	
		11							←		H 40 PV	
4.0		12	3.0		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		CL			screer	1, 0.010"	slot
	SS-4	13			Wet/ moist, red/brown	n, CLAY, some m-gravel						1
3.8		14	2.5				CL			TOR @ 13	.5' bgs	
				<u> </u>								
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	STANDA	RD PENE	TRATIO	<u>. </u>				<u> </u>				
		TOP OF R		••	SUMMARY:	Temporary piezometer installed to obtain water	sample for field					
						screening.						
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						PARSONS		BORING NO. SBA-5			
Contractor:		ronmental Co	огр.			DRILLING RECORD		BORING NO.	3DA-3		
Driller:	Phil Orsi					Ekonol Facility		Sheet 1	of 1		
Inspector:	Andy Janik				PROJECT NAME	737515			of Ekonol Facility		
Rig Type:	Geoprobe				PROJECT NUMBER	737313		Elevation:			
Method:	Direct Push	6/4/2002			Weather	Cloudy/Showers 55 F			/almore Rd.		
Observations Depth of Water		~11.4' bgs			Wedner	0.000,7,0.00		1 ♦			
Depui of wate		~11.4 Ugs			Date/Time Start	6/4/02 1325		Eko	onol Facility		
Top of Boring E	levation							х			
Top of Dorning -					Date/Time Finish	6/4/02 1350					
PID	Sample	Sample	Rec.	SPT	FIEL	D IDENTIFICATION OF MATERIAL		1	TEMPORARY		
Reading	Code	Depth	(ft)					WELL CON	STRUCTION DIAGRAM		
Reading	Cour	Берия	()								
			****		1		UNIFIED		1		
		0					SOIL CLASS.				
		1			Stiff, red/brown, Silty	CLAY, some gray Silt			1" SCH 40 PVC well		
	SS-1	2						1 1	riser		
		3					CI				
4.7		4	3.1		Girco 17 OT A	V C:14	CL	4			
ļ	00.0	5			Stiff, red/brown, CLA	Y, some gray Siit					
	SS-2	6			-						
4.1	 	8	4.0		1		CL				
4,1	 	9	4.0		Stiff, red/brown, Silty	CLAY		1	_9.0' bgs		
	SS-3	10			Moist at 11.4'						
	1	11							1" SCH 40 PVC well		
3.7		12	4.0]		CL		screen, 0.010" slot		
	SS-4	13			Wet/ moist, red/brown	n, CLAY, some f-gravel	0.		TOP 0 14 011		
3.4		14	2.0				CL	<u> </u>	TOR @ 14.0' bgs		
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	STAND	ARD PEN	ETRATIO) N							
1		TOP OF			SUMMARY:	Temporary piezometer installed to obtain water	r sample for field	d			
						screening.					
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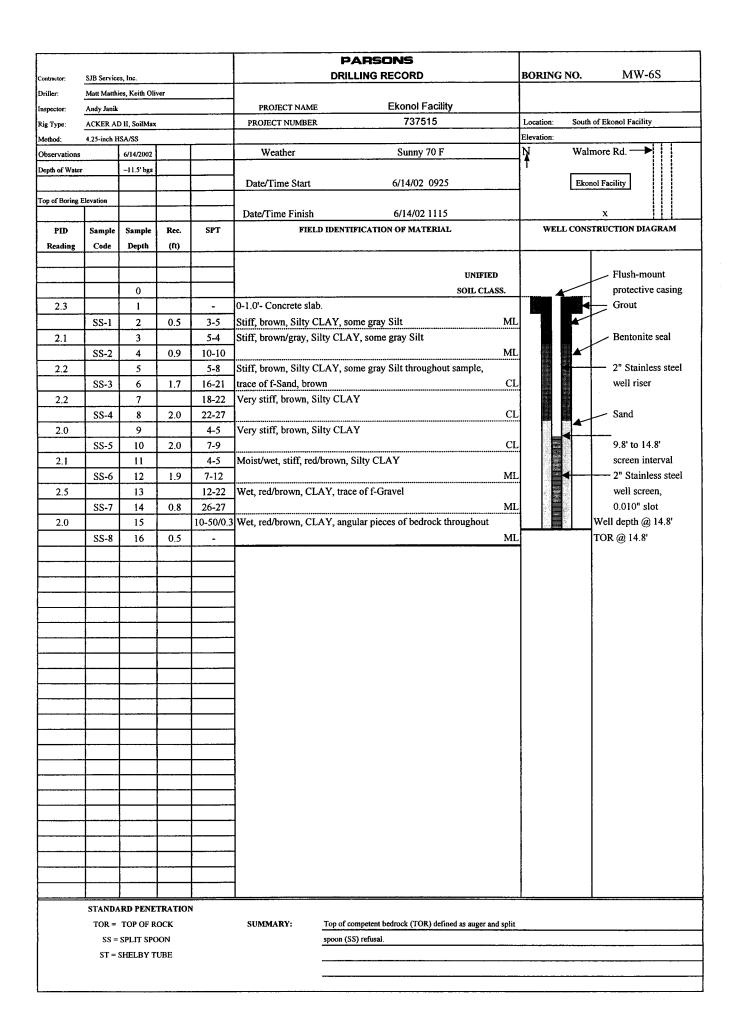
						PARSONS	PODING NO	MW-1S
	SJB Service					DRILLING RECORD	BORING NO.	MW-13
Driller:		iewicz, Andy	Morris		DROWECT MARKE	Ekonol Facility	Sheet 1	of 1
Inspector:	Andy Janik				PROJECT NAME PROJECT NUMBER	737515		h of Ekonol Facility
Rig Type:	4.25-inch H	D II, SoilMax	· · · · · · · · · · · · · · · · ·		PROJECT NOMBER	707010	Elevation:	
Method: Observations	4.23-mcn F	10/22/2001			Weather	Sunny 50 F		Imore Rd.
Depth of Water		~9' bgs			Woulde	Dulling CO 1	⊣ ¥ ```	х
Depth of Water		~7 Ugs			Date/Time Start	10/22/01 1210	Eke	onol Facility
Top of Boring E	Flevation						_	
Top or During i					Date/Time Finish	10/22/01 1515		
PID	Sample	Sample	Rec.	SPT	FIEL	D IDENTIFICATION OF MATERIAL	WELL CON	STRUCTION DIAGRAM
Reading	Code	Depth	(ft)					
						UNIFIED		Flush-mount
		0				SOIL CLASS.		protective casing
0.20		1		1	0-0.5'- concrete slab			Grout
	SS-1	2	1.0	3-7		LAY, some m-Gravel M	IL I	
0.00		3		14-15	Stiff, brown, Silty Cl	LAY, some gray Silt, well sorted pebbles	■ ■	Bentonite seal
	SS-2	4	1.5	16-14	throughout sample.	M		
0.00	<u> </u>	5		8-10	Stiff, brown, Silty C	LAY, some gray Silt throughout sample.	. 👫	2" SCH 40 PVC well
	SS-3	6	1.8	14-18		***************************************	IL	riser
0.00		7		48-35	1	lty CLAY, some gray Silt throughout sample,		5.7' to 15.7'
	SS-4	8	2.0	31-29	slightly moist at 7.8-			screen interval
0.00	ļ	9		5-5	Moist, brown, stiff, S	Silty CLAY, some gray Silt		Sand
	SS-5	10	2.0	5-8		***************************************		011 CCXX 40 DX/C11
0.00		11		6-7	1	brown, Silty CLAY, gray Silty Clay througho		2" SCH 40 PVC well
0.40	SS-6	12	1.5	10-9	some well rounded n			screen, 0.010" slot
0.40	00.7	13	1.2	2-3		y CLAY, some f-Sand throughout, at 13.8'		
0.00	SS-7	14 15	1.2	4-4 3-12	some black staining	y CLAY, angular m-Gravel throughout.		Well depth @ 15.7'
0.00	SS-8	16	1.0	3-12 14-50/.2	wet, rea/brown, Sin		ic I	TOR @ 15.7'
	33-6	10	1.0	14-307.2				
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	STAND	ARD PENE	TRATIO	v	•		<u> </u>	· · · · · · · · · · · · · · · · · · ·
		TOP OF R			SUMMARY:	Top of competent bedrock (TOR) defined as auger and sp	lit	
]		SPLIT SPO				spoon (SS) refusal.		
	ST =	SHELBY T	UBE					
I								

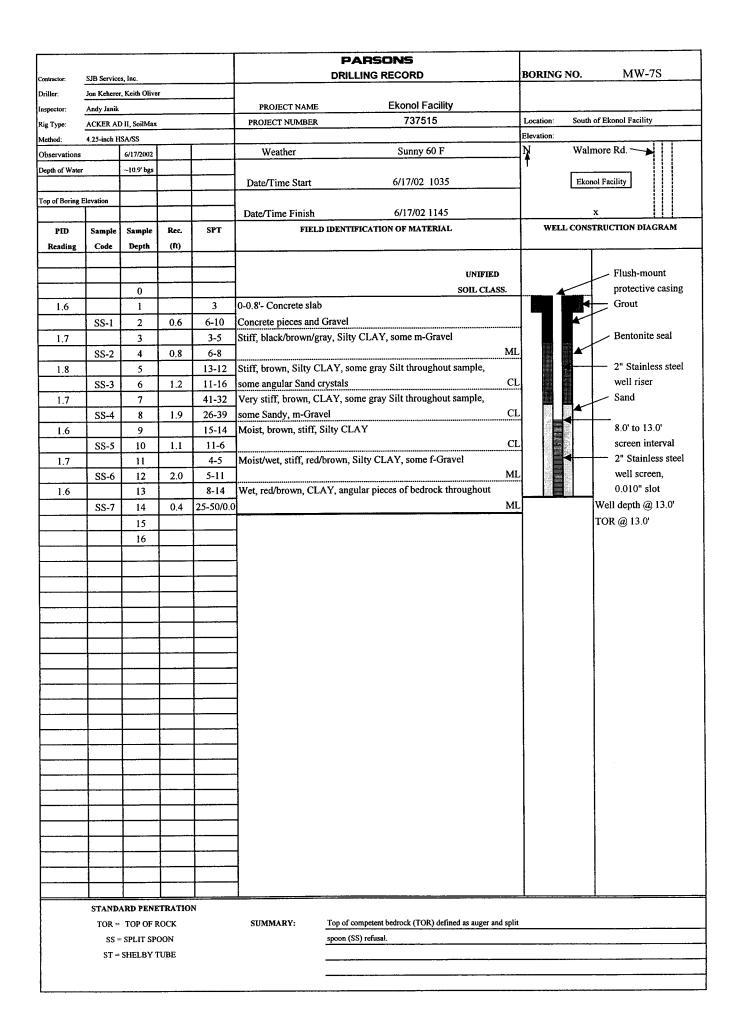
Contractor:	SJB Servic	es. Inc.				PARSONS DRILLING RECORD		BORING NO.	MW-2S
Driller:		kiewicz, Andy	Morris						
Inspector:	Andy Janik				PROJECT NAME	Ekonol Facility		Sheet 1	of 1
Rig Type:		D II, SoilMax	:		PROJECT NUMBER	737515		Location: Son	th of Ekonol Facility
Method:	4,25-inch I							Elevation:	
Observations		10/23/2001			Weather	Cloudy 50 F		N w	almore Rd.
Depth of Water		~10' bgs			·			Τ	
					Date/Time Start	10/23/01 0935		E	konol Facility
Top of Boring E	Elevation								х
	}				Date/Time Finish	10/23/01 1110			
PID	Sample	Sample	Rec.	SPT	FIELI	IDENTIFICATION OF MATERIAL		WELL CO	NSTRUCTION DIAGRAM
Reading	Code	Depth	(ft)						
							UNIFIED	•	Flush-mount
		0					SOIL CLASS.		protective casing
21.40		1		3	0-0,5'- concrete slab				Grout
	SS-1	2	0.5	5-6	Stiff, dark gray, Silty	CLAY, trace organics	ML		
33.00		3		7-12	Stiff, brown, Silty Cl	LAY, some dark staining through	out		Bentonite seal
	SS-2	4	0.4	13-12			ML		
72.40		5		20-17	Stiff, brown, Silty Cl	LAY, some gray Silt throughout	sample		2" SCH 40 PVC
	SS-3	6	1.2	16-18		***************************************	CL		well riser
69.70		7		16-9	Very stiff, brown, Si	lty CLAY, some gray Silt throug	hout sample		Sand
	SS-4	8	1.4	16-17		***************************************	CL		7.5'-12.5'
-		9		19-18	No recovery- rock in	spoon cap			screen interval
	SS-5	10	-	13-10		***************************************			2" SCH 40 PVC
107		11	<u></u>	7-5	-	wn, Silty CLAY, some m-Gravel,			well screen, 0.010"
	SS-6	12	2.0	5-7	black/green staining	***************************************	CL		slot size
133	<u> </u>	13		4-50/.1	Moist/wet, brown, S	ilty CLAY, with plastic odor			Well depth @ 12.5'
	SS-7	14	1.0				CL		TOR @ 12.5'
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	STAND	ARD PENE	TPATIO	N.				<u></u>	1
		TOP OF R		••	SUMMARY:	Top of competent bedrock (TOR) define	ed as auger and solit		
		= SPLIT SP			JUNEAU I	spoon (SS) refusal.	no angor mid split		
		= SPLIT SP = SHELBY T				speak (as) remain.			
	31 -								

						PARSONS	PODINC NO	MW-3S
Contractor:	SJB Service					DRILLING RECORD	BORING NO.	IVI W -33
Driller:		kiewicz, Andy	Morris		PROFESTALANS	Ekonol Facility	Sheet 1	of 1
Inspector:	Andy Janil				PROJECT NUMBER		+	heast of Ekonol Facility
Rig Type:		D II, SoilMax			PROJECT NUMBER	737313	Elevation:	reast of Exonol I denty
Method:	4.25-inch l				Weather	Cloudy 50 F		Valmore Rd.
Observations		10/23/2001			Weather	Cloudy 50 I	⊣ ¥ `	dinnois ita.
Depth of Water	•	~11' bgs			D . m:	10/22/01 1445	[F	- I Tradition
					Date/Time Start	10/23/01 1445	LEKO	onol Facility
Top of Boring I	Elevation I				n . m . m . 1	10/22/01 1700		
	ļ				Date/Time Finish	10/23/01 1600		X III
PID	Sample	_	Rec.	SPT	FIELD	D IDENTIFICATION OF MATERIAL	WELL CON	STRUCTION DIAGRAM
Reading	Code	Depth	(ft)		ļ			•
								Electronic and
						UNIFIED	_	Flush-mount
	<u> </u>	0				SOIL CLASS.		protective casing
9.40	<u> </u>	1			0-0.5'- concrete slab	_		- Grout
	SS-1	2	1.0		Stiff, brown, Silty Cl			
11.60	<u> </u>	3			1	LAY, some gray Silt throughout,		Bentonite seal
	SS-2	4	0.8	18-15	some m-Gravel	M		
10.20		5		3-4	Stiff, brown, Silty Cl	LAY, some gray Silt throughout sample		2" SCH 40 PVC
	SS-3	6	1.5	7-18		C	4	well riser
7.10		7		25-34	Stiff, brown, Silty Cl	LAY, some gray Silt throughout sample	 	Sand
	SS-4	8	2.0	24-48		C		7.5'-12.5'
11.10	l	9		4-7	Same description as	above		screen interval
	SS-5	10	1.5	7-8		C	L. F	2" SCH 40 PVC
6.9		11		9-10	Moist/wet, red/brow	n, Silty CLAY, some gray Silt throughout,		well screen, 0.010"
	SS-6	12	2.0	8-9	trace of m-Gravel	M		slot size
7.7		13		4-50/.1	Moist/wet, red/brow	n, Silty CLAY, some gray Silt throughout,		Well depth @ 12.6'
	SS-7	14	0.5		trace of m-Gravel	C	L I	TOR @ 12.6'
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		ARD PENE		IA.	CHRES A DT	Top of computent hadreds (TOB) defined as a second of the	·•	
		= TOP OF R = cd. et.cd.			SUMMARY:	Top of competent bedrock (TOR) defined as auger and spl	IL	
1		= SPLIT SP				spoon (SS) refusal.		
	ST =	SHELBY 1	UBE					
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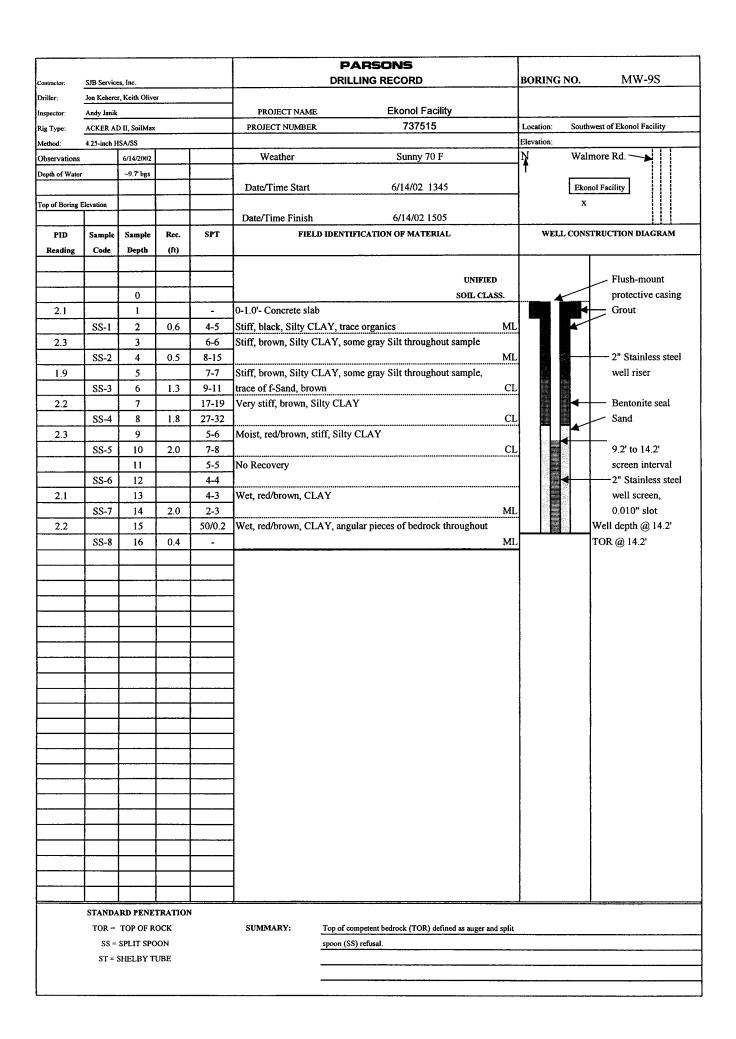
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						PARSONS		!	
Contractor:	SJB Service	es, Inc.				DRILLING RECORD		BORING NO.	MW-4S
Driller:	Steve Wol	kiewicz, Andy	Morris						
Inspector:	Andy Janil	<u> </u>			PROJECT NAME _			Sheet 1	of I
Rig Type:		D II, SoilMax			PROJECT NUMBER _	737515		Location: South	west of Ekonol Facility
Method: Observations	4.25-inch l	10/24/2001			Weather	Rain 60 F			/almore Rd.
Depth of Water		~10' bgs			-			1	
Depart of Water		10 052	-		Date/Time Start	10/24/01 1040		Eko	nol Facility
Top of Boring I	Elevation								
					Date/Time Finish	10/24/01 1140		X	
PID	Sample		Rec.	SPT	FIELD	IDENTIFICATION OF MATERIAL		WELL CON	STRUCTION DIAGRAM
Reading	Code	Depth	(ft)						T
<u> </u>							UNIFIED		_ Flush-mount
		0			1	so	OIL CLASS.		protective casing
-		1			0-0.9'- concrete slab				— Grout
	SS-1	2	-	5-4	•••••••••	ece of concrete in spoon cap			
1.70		3		8-10		AY, some gray Silt throughout,			Bentonite seal
	SS-2	4	1.2	14-16	some m-Gravel	A 77	ML		2" SCH 40 PVC
0.20	00.2	5	1.4	4-8	Stiff, brown, Silty CL	AY, some gray Silt throughout sar	mpie CL		well riser
3.20	SS-3	6 7	1.4	12-20 18-26	Stiff, brown Silty CL	AY, some gray Silt throughout sar		1 -	Sand
3.20	SS-4	8	2.0	33-38	3, 5.0, 5, 5	,	CL		8.2'-13.2'
1.90		9		4-7	Moist, stiff, red/brow	n, Silty CLAY			screen interval
	SS-5	10	2.0	9-9			CL		2" SCH 40 PVC
2.6		11		7-6	Moist/wet, red/brown	, Silty CLAY			well screen, 0.010"
	SS-6	12	2.0	9-8	3.6.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	Gilt GI AV Gilt Alex	CL		slot size
14.0	SS-7	13	0.5	12-13	Moist/wet, red/brown trace of m-Gravel	, Silty CLAY, some gray Silt throu	ugnout, ML		Well depth @ 13.2' TOR @ 13.2'
	33-7	14	0.5	<u></u>	uace of in-Glaver		1411		101.00
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	STAND	ARD PENE	TRATIO	N					
		TOP OF R			-	Top of competent bedrock (TOR) defined a	as auger and split		
		SPLIT SP			-	spoon (SS) refusal.			
	51 =	SHELBY T	UDE		-				
					-				

						PARSONS	
Contractor:	SJB Service	es, Inc.				DRILLING RECORD	BORING NO. MW-5S
Driller:	Matt Matth	ies, Keith Oli	ver				
Inspector:	Andy Janik				PROJECT NAME	Ekonol Facility	
		O II, SoilMax			PROJECT NUMBER	737515	Location: Northeast of Ekonol Facility Elevation:
Method:	4.25-inch H			i	Weather	Sunny 70 F	N x
Observations Depth of Water		6/10/2002 ~9.6' bgs			Weatter	Sunity 701	┤Ŷ
Deput of Water		~9.0 Ugs			Date/Time Start	6/10/02 1105	Ekonol Facility
Top of Boring E	levation						-
				~	Date/Time Finish	6/10/02 1225	Walmore Rd.
PID	Sample	Sample	Rec.	SPT	FIELI	D IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION DIAGRAM
Reading	Code	Depth	(ft)				
		_				UNIFIED	Flush-mount
2.2	_	0			0-1.0'- Concrete slab	SOIL CLASS.	protective casing Grout
2.2	SS-1	2	0.5	2-3		LAY, some organic staining M	
2.3	33-1	3	0.5	5-7	Stiff, brown/gray, Si		
2.3	SS-2	4	1.3	10-20	biii, olowingia, o.	м	
2.3		5		4-8	Stiff, brown, Silty C	LAY, some gray Silt throughout sample	2" Stainless steel
	SS-3	6	1.7	15-21	-	C	L well riser
2.3		7		12-15	Very stiff, brown, Si	ilty CLAY, some gray Silt throughout sample	■ ■ Bentonite seal
	SS-4	8	2.0	31-37		C	L. Sand
3.3		9		3-4	Moist, brown, stiff, S	Silty CLAY, some gray Silt	
	SS-5	10	2.0	5-4		C	
3.2	00.6	11		3-2	1	/brown, Silty CLAY, gray Silt throughout,	screen interval
- 22	SS-6	12 13	2.0	3-3	1	MAY, trace of f-Gravel	L. 2" Stainless steel well screen,
3.2	SS-7	14	1.8	3-2	wei, rearbiowii, CLA	M	
2.2	33-7	15	1.0		Wet. red/brown. CL	AY, angular pieces of bedrock throughout	Well depth @ 15.1'
	SS-8	16	0.5	-	,	M	
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	STAND	ARD PENE	TRATIO	N			
		TOP OF R			SUMMARY:	Top of competent bedrock (TOR) defined as auger and spl	it
	SS =	SPLIT SPO	OON			spoon (SS) refusal.	





	CID Comitons Inc				PARSONS	BORING NO. MW-8S			
Contractor:	SJB Service					DRILLING RECORD	BORING NO. WW-65		
Driller:	Andy Janik	Keith Olive	r		PROJECT NAME	Ekonol Facility			
Inspector: Rig Type:		II, SoilMax			PROJECT NUMBER		Location: Southwest of Ekonol Facility		
Method:	4.25-inch H						Elevation:		
Observations		6/19/2002			Weather	Sunny 65 F	N Walmore Rd.		
Depth of Water		~11.0° bgs					Ĭ [†]		
					Date/Time Start	6/18/02 0845	Ekonol Facility		
Top of Boring I	Elevation								
					Date/Time Finish	6/19/02 0940	X III		
PID	Sample	Sample	Rec.	SPT	FIELI	D IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION DIAGRAM		
Reading	Code	Depth	(ft)						
						UNIFIED	Flush-mount		
		0				SOIL CLASS.	protective casing		
1.4		1		-	0-1.2'- Concrete slab		Grout		
	SS-1	2	0.4	5-5	Stiff, brown, Silty Cl	LAY, some concrete bits M	L.		
1.6		3		5-9	Stiff, brown/gray, Si	ilty CLAY			
	SS-2	4	0.9	10-15		M			
	95.5	5		37-20	No Recovery		well riser		
	SS-3	6		11-10		ilty CLAY, some gray Silt throughout sample	Bentonite seal		
0.2	SS-4	7	1.2	6-8 38-40	very still, brown, Si	my CLAT, some gray 3nt unougnout sample			
0.5	33-4	9	1.2	40-11		Silty CLAY, some gray Silt, trace f-Gravel			
- 0.5	SS-5	10	1.2	12-14		C	L 9.2' to 14.2'		
0.5		11		10-6	Moist/wet, stiff, red/	/brown, Silty CLAY, gray Silt throughout,	screen interval		
	SS-6	12	1.4	4-5	trace of f-Gravel	M	<u>L</u>		
0.2		13		6-7	Wet, red/brown, CL/	AY, trace of f-Gravel	2" Stainless steel		
	SS-7	14	1.6	6-7		M	I India		
0.5		15		50/0.2	Wet, red/brown, CL	AY, angular pieces of bedrock throughout	0.010" slot		
	SS-8	16	0.2	-		M	-		
	ļ				-		TOR @ 14.2'		
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ļ —	STAND	ARD PENE	TRATIO	· · · · · · · · · · · · · · · · · · ·	<u> </u>				
		TOP OF R			SUMMARY:	Top of competent bedrock (TOR) defined as auger and spli	it		
	SS =	SPLIT SPO	OON			spoon (SS) refusal.			
	ST =	SHELBY T	UBE						



Janik ER AD II,	cz, Andy N		RQD	DRILLING RECORD PROJECT NAME Ekonol Facility PROJECT NUMBER 737515 Weather Cloudy 45 F Date/Time Start Coring 10/31/01 1315	BORING NO. MW-1D Sheet 1 of 1 Location: North of Ekonol Facility Elevation: N X Ekonol Facility		
Janik ER AD II, HSA/5.87	SoitMax 5* Roller (Cone/HQ	RQD	PROJECT NUMBER 737515 Weather Cloudy 45 F	Location: North of Ekonol Facility Elevation: X		
HSA/5.87	Depth	Rec.	RQD	Weather Cloudy 45 F	Elevation:		
	Depth 0	Rec.	RQD		N x		
lange	0				T x		
lange	0			Date/Time Start Coring 10/31/01 1315			
lange	0			Date Time Start Coring 10/31/01 1313	Ekonor Pacinty		
ange	0				Ekonol Facility		
lange	0			Date/Time Finish Coring 10/31/01 1520	Walmore Rd.		
	-	(%)		FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION DIAGRAM		
	-		(%)				
	-						
	-				Flush-mount		
	1 1 1				protective cas		
	2				4" Steel casin		
	3			For description of overburden material see Drilling Record of MW-1S	(0.05'-17.7' b		
	4			2 01 debeniphon of ottomated material box 21 ming 100014 of 11 11 15	(0.03-17.70		
	5				2" SCH 40 P		
	6				well riser		
	7						
	8						
	9						
	10						
	12						
	13				Grout		
6'-24.6'	14	96.0	82.0	Start of Run #1, grout from installation of 4" steel casing (14.60'-15.90')			
	15				14.0'		
	16				TOR @ 15.7'		
	17			Massive, light gray, dolomite, slightly porous to hand break (15.90'-18.10')			
	18			Massive, light gray, dolomite, porous, break on stylolitic horizon (18.10'-19.35')	Bentonite sea		
	19 20			Gray, dolomite, porous, stylolitic horizons to break on bedding plane (19.35'-20.25') Gray dolomite, fractured rubble (20.25'-20.72')	19.0'		
	21			Gray, dolomite, rugged, brownish-gray coral beddings, to break on bedding plane (20.72'-24.13')	20.14'-30.14'		
	22			Loss of circulation at 22'	screen interva		
	23				Sand		
6'-32.2'	24	99.0	94.0	Light to dark gray, dolomite, porous coral beddings, vuggy, break on weathered bedding plane with			
·	25			pieces of Shale (24.60'-26.28')			
	26 27			Gray, dolomite, vugged with orange/brown Gypsum crystals, to mineralization at break (26.28'-26.65')	2" SCH 40 P		
	28			Gray, dolomite, slightly vugged to break at bedding plane (26.65'-27.70') Gray, dolomite, at 28.63'- incomplete fracture on stylolitic horizon, slightly vugged to weathered break	well screen, 0.010" slot		
	29			(27.70'-29.13')	0.010" slot		
	30			Dark gray, dolomite, some porous coral bedding, slightly vugged (29.13'-30.21')	2' well sump		
	31			Dark gray, dolomite, fractured zone, slightly vugged with mineralization and stylolitic horizons			
	32			(30.21'-32.14')	TD @32.14		
	33						
	34						
	PENETI	RATIO	1				
	OP OF RO	OCK		SUMMARY: TOR was determined at HSA auger refusal.			
				West and the second sec			
			D PENETRATION OP OF ROCK	D PENETRATION TOP OF ROCK			

	ama					PARSONS DRILLING RECORD	PODING NO	MW-2D		
	SJB Services, I		Maria			DRILLING RECORD	BORING NO.	M W-2D		
	Steve Wolkiew Andy Janik	icz, Andy	Morns		PROJECT NAME	Ekonol Facility	Sheet 1 of	r 1		
	ACKER AD II,	SoilMax			PROJECT NUMBER	737515		konol Facility		
	6.25" HSA/5.87		Cone/HC	Coring	1110300111032211		Elevation:			
Muliou.	0.25 1101 2010	<u> </u>	<u> </u>		Weather	Cloudy 45 F	Ņ			
						·	⊣ †			
					Date/Time Start Coring	10/31/01 0845	Ekonol	Facility		
					· 		x			
					Date/Time Finish Coring	10/31/01 1118	Walmor	re Rd.		
HQ Core	Range	Depth	Rec.	RQD		FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUC	CTION DIAGRAM		
Run			(%)	(%)						
		<u> </u>						Flush-mount		
		0						protective casing		
	<u> </u>	1								
		2						4" Steel casing		
		3			For description of	overburden material see Drilling Record of MW-2S		(1.0'-15.7' bgs		
	<u> </u>	4		ļ						
	 	5	ļ <u>.</u>					2" SCH 40 PVC		
		6						well riser		
		7		ļ						
	<u> </u>	8	ļ	-				<u> </u>		
	<u> </u>	9					* 2 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	— Grout		
		10								
		12								
		13						13'		
		14						TOR @ 13.7'		
#1	15.2'-24.8'	15	99.0	89.0	Start of Run #1 grout from installa	ation of 4" steel casing (15.20'-15.56')		TOR (6, 13.7		
	13.2 24.0	16	77.0			us to break on Silty bedding plane (15.56'-16.51')		- Bentonite seal		
		17			Massive, light gray, dolomite, mor			Bentomte seur		
		18		_	Massive, light gray, dolomite, porc			17'		
		19				,		18.0'-28.0'		
		20			Gray, dolomite, porous, stylolitic h	norizons, slightly vugged (18.22'-20.11')		screen interval		
		21			Gray, dolomite, porous, to break or	on Silty bedding plane (20.11'-21.80') fracture at 22.93' (21.80'-23.32') Loss of circulation at 23' one (23.32'-24.80')				
		22			Light gray, dolomite, incomplete fi			- Sand		
		23			Light gray, dolomite, to rubble zon					
#2	24.8'-30.0'	24	99.0	94.0	Light to dark gray, dolomite, vugg	y with some Gypsum crystals, to break on mineralized bedding		- 2" SCH 40 PVC		
		25		<u> </u>	plane (24.80'-27.60')			well screen,		
		26		<u> </u>				0.010" slot		
		27				vuggy, stylolitic horizons to break (27.60'-28.15')		Ol !!		
		28 29		 	=	on weathered plane (28.15'-28.42')		2' well sump		
		30	-	 		break on Shale bedding plane (28.42'-29.22') break, near vertical fracture with Sphalerite crystals (29.22'-29.99')		TD @ 30 0'		
		31		 	ora,, doronnic, sugnity vuggeti to	oroms, nom vorteen tracture with opinaterite crystais (25.22-29.99)		TD @ 30.0'		
		32		\vdash			1			
		33								
		34								
	STANDARD	PENET	RATIO	N						
	TOR=TO				SUMMARY: TOR was	determined at HSA auger refusal.				

				 	Γ	PARSONS			
	SJB Services, In					DRILLING RECORD	BORING NO. MW-3D		
	Steve Wolkiewi	icz, Andy	Morris			Flored Facility			
l '	Andy Janik	Callb fau			PROJECT NAME PROJECT NUMBER		Sheet 1 of 1 Location: Southeast of Ekonol Facility		
	6.25" HSA/5.87		Cone/HO	Coring	PROJECT NOMBER	73/313	Location: Southeast of Ekonol Facility Elevation:		
iculod.	0.25 115/03.07	I		Curing	Weather	Sunny 45 F	N Walmore Rd.		
1					•		→		
					Date/Time Start Coring	10/30/01 1345	Ekonol Facility		
					Date/Time Finish Coring	10/30/01 1600	x		
HQ Core	Range	Depth	Rec.	RQD		FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION DIAGRAM		
Run		 	(%)	(%)					
			_	ļ					
. ——		0					Flush-mount		
		-					protective casing		
' 		2		 			48 C4-1		
	3		For descripti	on of overburden material see Drilling Record of MW-3S	4" Steel casing (0.5'-14.6' bg				
		4		<u> </u>	1 or desempt	or of the second material see Diming Record of 111 11 -35	(0.3-14.0 bgs)		
		5	<u> </u>				2" SCH 40 PVC		
		6					well riser		
		7							
		8							
·		9					Grout		
		10							
 		11		<u> </u>					
		12					11'		
#1	14.2'-15.0'	14	100.0	100.0	Light grov massive delem	ite, drill break at 14.65' (14.20'-15.00')	TOR @ 12.6		
#1	15.0'-25.0'	15	98.0	_	***************************************	te, fracture on bedding plane (15.00'-15.68')	Bentonite seal		
	15.0 25.0	16	20.0			vugging, mineralization at fracture (15.68'-16.13')	15'		
L		17				, dolomite, to drill break (16.13'-16.80')	15.9'-25.9'		
		18				, ,	screen interval		
		19			Light gray, massive, dolom	ite, some vugging, slightly porous to drill break (16.80'-19.93')			
l		20					d d Sand		
		21				ite, to weathered fracture (19.93'-22.30')	2" SCH 40 PVC		
		22				zone (22.30'-23.15') Lost circulation at 22.5'	well screen,		
		23			Light gray, massive, dolom	ite (23.15'-24.00')	0.010" slot		
		24			Tiabt anne dalamita mibble	t- 35 01 (24 001 35 000)			
#3	25.0'-26.9'		100 0	100.0	Light gray, dolomite rubble Light gray, dolomite (25.00	zone to 25.0' (24.00'-25.00')	I' well sump		
5	20.0	27	100.0			e, more porous, vuggy with some Gypsum crystals (25.60'-26.90')	TD @ 26.90'		
		28			J-17,	, 000	100 20.00		
		29							
		30							
		31							
		32							
		33 34							
		34							
	STANDARD I	PENETE	ATION						
	TOR= TO	P OF RO	CK		SUMMARY:	OR was determined at HSA auger refusal.			
					_				
					-				
					_				

						PARSONS) W. 45
Contractor:	SJB Services, la	1C.				DRILLING RECORD	BORING NO.	MW-4D
Oriller:	Steve Wolkiewi	cz, Andy	Morris					
nspector:	Andy Janik				PROJECT NAME	Ekonol Facility	Sheet 1 o	r l
Rig Type:	ACKER AD II,	SoilMax			PROJECT NUMBER	737515	Location: Southwest	of Ekonol Facility
Aethod:	6.25" HSA/5.87	5* Roller	Conc/HQ	Coring			Elevation:	
					Weather	Sunny 45 F	N Walme	ore Rd.
							' 	
				<u> </u>	Date/Time Start Coring	10/30/01 0915	Ekonol	Facility
	1	<u> </u>						
				ļ	Date/Time Finish Coring	10/30/01 1150	х	
HQ Core	Range	Depth	Rec.	RQD	FIELD I	IDENTIFICATION OF MATERIAL	WELL CONSTRUC	CTION DIAGRAM
Run	 		(%)	(%)			 	
				 				/ Flush-mount
	 	0		 				protective casing
	 	 		 				protective easing
		1						A" Staal agging
		3	 	-	For description of averb	urden material see Drilling Record of MW-4S		4" Steel casing (0.9'-14.8' bgs)
	 	4		 	1 of description of overor	arden material see Dillimig Accord of M.M42		(U.7-14.0 DgS)
		5		1				2" SCH 40 PVC
		6	 	+				well riser
-	 	7	 	 				WOII 11301
		8	 	\vdash				
	 	9	<u> </u>	\vdash				Grout
		10	ļ					Grout
		11	 					12'
		12		 				
		13						TOR @ 12.8'
#1	12.8'-14.8'	14	19.0	0.0	Grout from 4" steel casing installation (12.	.80'-14.80')		Bentonite seal
#2	14.8'-24.8'	15	99.0	92.0				
		16			Light gray, laminated, dolomite to drill bre	eak (14.80'-16.40')		15.5'
		17			1			
		18			į			17.6'-27.6'
		19		L				screen interval
		20			Light gray, massive, dolomite to drill breal	k (16.40'-20.90')		- Sand
		21			ĺ			2" SCH 40 PVC
		22			Light gray, massive, dolomite to break on	,		well screen,
		23			Light gray, dolomite, some vugging and m			0.010" slot
	ļ	24			Light gray, dolomite rubble zone (23.37'-2	***************************************		
#3	24.8'-29.6'	25	100.0	100.0	Brownish-gray, dolomite, vuggy, porous to	o break (24.80'-26.97')		
		26		-	Daniel and the second	Bakkan anan as 27 Okas har da 200 OFF OFF OFF		21 **
		27 28	-	 		lighter gray at 27.2' to break (26.97'-27.74')		2' well sump
\longrightarrow	 	28		 	Light gray, dolomite, vuggy to fracture (27 Light gray, dolomite, vuggy with Gypsum			TD @ 29.60'
	 	30		 	Eight gray, dolonine, vuggy with Gypsum	VI y SIGIS TO UTGAK (20.70 -27.00)		TD (J) 29.00
	 	31		\vdash				
		32			i			
		33		\vdash				
		34		-				
				 			}	
	Ī			<u> </u>				
							1	
(STANDARD	PENETI	RATION	٧				
	TOR= TO	P OF RO	OCK		SUMMARY: TOR was determine	ed at HSA auger refusal.		
					-			
		<u></u>						

		PARSONS				nonwayo My 10
Contractor:	SJB Services, Inc.				DRILLING RECORD	BORING NO. MW-10
Driller:	Jon Keherer, Mike				Plant Parity	1
Inspector:	Andy Janik/Jim Sc				PROJECT NAME Ekonol Facility	
Rig Type:	ACKER AD II, So	-			PROJECT NUMBER 737515	Location: Southwest of Ekonol Facility
Method:	6.25" HSA/5.875"	5' HSA/5.875" Roller ConeHQ Coring Weather Hazzi/Llumid 95 F			Wd	Elevation: N Walmore Rd.
			ļ		Weather Hazy/Humid 85 F	Walmore Rd.
				<u> </u>	Date/Time Start Coring 7/2/02 0820	Ekonol Facility
		-	<u> </u>		Date/Time Start Coring 7/2/02 0820	x
	T	-			Date/Time Finish Coring 7/2/02 1230	1
HO C	P	Donet	Pa	RQD	Date/Time Finish Coring 7/2/02 1230 FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION DIAGRA
HQ Core	Range	Depth	Rec. (%)	(%)	FIGER INESTIFICATION OF MATERIAL	
Run			(/*)	(/•)		
	-		 			Flush-mou
-	 	0				protective
		1				
		2				4" Steel ca
		3			Description of overburden material is consistent with other well locations.	
	<u> </u>	4				
		5		 -		2" Stainles
		6		 		well riser
		7				
		8				
		9				
		10				
		11				
		12				
		13				Grout
		14				
		15				
		16	L			TOR @ 14
#1	17.20'-21.00	17	100,0	100.0	Start of Run #1, grout from installation of 4" steel casing	
	ļ	18		ļ	Massive, light to dark gray dolomite, laminated to fracture on bedding plane (17.20'-18.43')	Bentonite :
	<u> </u>	19	<u> </u>	<u> </u>		
	Ļ	20	ļ	<u> </u>		
	<u> </u>	21	L		Massive, light to dark gray dolomite, laminated, porous, with stylolitic horizons (18.43'-21.00')	19.50'-29.5
#2	21.00'-26.50		96.0	67.0	Light to dark gray dolomite, laminated, porous, fossiliferous, vugged with mineralization (21.00'-24.00')	screen inte
	 	23	 		Light to dealt area delemits leminated account familiference many desired with mineral color of and an	← Sand
	 	24	 -	 	Light to dark gray dolomite, laminated, porous, fossiliferous, vugged with mineralization (21.00'-24.00')	Sand
	1	25	 	\vdash	Light to dark gray dolomite, rubble zone, weathered fractures and stylolitic horizons (24.00'-26.50')	2" Stainles
#3	26.50'-31.50	26	100.0	100.0	Light to dark gray dolomite, rubble zone, weathered tractures and stylonic nonzons (24.00-26.30) Light to dark gray dolomite, finely laminated, to break on mineralized bedding plane (26.50-26.92)	well screen
#3	20.30-31.30	27	100.0	100.0	Light to dark gray dotomite, there faminated, to oreak on militeratized occurring plane (20.30-20.92)	0.010" slo
	 	29	 	 	Light to dark gray dolomite, laminated to drill break (26.92'-29.00')	0.010 sit
	 	30	l	t	Light to dark gray dolomite, laminated to first ture (29.00'-29.40')	2' well sur
	†	31	 		Light to dark gray dolomite, laminated to fracture on mineralized bedding plane (29.40'-30.50')	
	 	32	\Box		Light to dark gray dolomite, laminated to drill break (30.50'-31.50')	TD @31.5
	<u> </u>	33	†	 		
		34				
	<u> </u>			ļ		
	<u> </u>	<u> </u>	<u> </u>	ļ		
	<u> </u>					
STANDARD PENETRATION			RATION	1		
TOR= TOP OF ROCK					SUMMARY: TOR was determined at HSA auger refusal.	
					MANUAL CO. AND	

					PARSONS		
	SJB Services, Inc.				DRILLING RECORD	BORING NO.	MW-11D
Driller:	Jon Keherer, Mike	Kukoleca			— 1 1— 111		
	Andy Janik				PROJECT NAME Ekonol Facility		
	ACKER AD II, Soi				PROJECT NUMBER 737515		of Ekonol Facility
Method:	6.25" HSA/5.875" I	Roller Con	ie/HQ Coi	ing	Weather Hazy/Humid 85 F	Elevation: N Walmor	- Rd
					Weather Hazy/Humid 85 F	† †	e Ru.
					Date/Time Start Coring 7/3/02 0940	Ekonol	Facility
					Date Time Start Coring	- L	
7					Date/Time Finish Coring 7/3/02 1455		x
HQ Core	Range	Depth	Rec.	RQD	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUC	CTION DIAGRAM
Run		i i	(%)	(%)			
							Stick-up
		0					protective casing
		1					
		2					Concrete pad
		3		<u> </u>	Description of overburden material is consistent with other well locations.		
		4		ļ			
		5		ļ			— 2" Stainless steel
		6 7		<u> </u>			well riser
		8		 			
		9					4" Steel casing
		10					
		11					Grout
		12					
		13					TOR @ 12.30'
#1	14.50'-19.30'	14	100.0	50.0	Light to dark gray, dolomite, rubble zone, heavily fractured (14.50'-15.45')		
		15			Light to dark gray, dolomite, laminated, some stylolitic horizons (15.45'-16.05')		
		16	<u> </u>		Light to dark gray, dolomite, rubble zone, heavily fractured (16.05'-17.40')		Bentonite seal
		17		ļ	Light to dark gray, dolomite, to fracture at 18.05' on mineralized bedding plane (17.40'-18.40') Light to dark gray, dolomite, laminated, some stylolitic horizons to break on bedding plane (18.40'-18.65')		17.40'-27.40'
<u></u>		19		-	Light to dark gray, dolomite, nammated, some stylonuc nortzons to break on bedding plane (18.40-18.65) Light to dark gray, dolomite, mineralized bedding planes to drill break (18.65'-19.30')		screen interval
#2	19.30'-24.50'	20	100.0	87.0	Light to dark gray, dolomite, fracture at 19.55' on bedding plane (19.30'-19.80')		2010021 21101 /
		21			Light to dark gray dolomite, laminated with stylolitic horizons, to fracture on bedding plane (19.80'-22.40')		Sand
		22					
		23					2" Stainless steel
		24	ļ		Light to dark gray dolomite, laminated with stylolitic horizons, to drill break (22.40'-24.50')		well screen,
#3	24.50'-29.80'	25	100.0	94.0	Light to dark gray dolomite, some stylolitic horizons to fracture on bedding plane (24.50'-25.27')		0.010" slot
ļ		26 27	ļ		Light to dark gray dolomite, porous, some vugging to weathered fracture (25.27-25.46') Light gray dolomite, porous, vuggy, numerous stylolitic horizons to fracture with c-Gravel (25.46'-26.38')		
		28	<u> </u>		Light gray dolomite, porous, vuggy, municious systematic nonzons to fracture with e-Gravet (25.40-25.50) Light gray dolomite, porous, vuggy, with mineralization, some fossiliferous corals (26.38'-29.80')		2' Well sump
		29	 	 	Hand break at 28.39'		
		30	 			[]7]	TD @ 29.40'
		31					
		32					
			<u> </u>				
		<u> </u>	 	<u> </u>			
<u> </u>			 				
		ļ	 -				
ļ							
			ļ				
<u> </u>	OTANE :	EN'IN-	L	<u> </u>		<u> </u>	
	TOR= TO				SUMMARY: TOR was determined at HSA auger refusal.		
	101-101	OI KU	C.R.		COLDINAL I CA HIS GEOMETRIC II INTERIGE ICIDAL		
}							
L							

					PARSONS		_	. av. 100	١
Contractor:	SJB Services, Inc.				DRILLING RECORD	BORING NO.	. <u>r</u>	MW-12D	┨
Driller:	Dale Matthies, Mat	Matthies							-
Inspector:	Andy Janik				PROJECT NAME Ekonol Facility	 		1	\dashv
Rig Type:	CME 550-X, ATV				PROJECT NUMBER 737515	Location:	Southwest of Ek	onol Facility	ᅱ
Method:	6.25" HSA/5.875" I	Roller Con	re/HQ Cor	ing	Weather Sunny 65 F	Elevation:	Walmore Rd.		\exists
			-		Weather Sunny 65 F	1 1	waimore Ku.		
					Date/Time Start Coring 9/23/02 1005		Ekonol Facili	III	
				_	Date/Time Start Coring 9/23/02 1005	1 .	X Ekonol Facin	<u>.</u>	
	r		 -	_	Date/Time Finish Coring 9/24/02 1540	1	•		
HQ Core	Range	Depth	Rec.	RQD	FIELD IDENTIFICATION OF MATERIAL	WELL	CONSTRUCTION	N DIAGRAM	٦
Run	Kange	Depail	(%)	(%)					١
			(,	(,,,,			-		٦
							F	Flush-mount	
		0					A I	protective casing	-
		1							
		2				l e		Concrete pad	1
		3			Description of overburden material is consistent with other well locations.				
		4							Į
		5					2	2" Stainless steel	1
		6					,	well riser	
		7					The same of the sa		
		8	<u> </u>	L					
		9					4	4" Steel casing	
		10							
		11		ļ				.	
		12						Grout	
		13		ļ <u>.</u>					ı
		14		 					
		15		-					
		16 17							
 		18					,	TOR @ 18.7'	
#1	19.70'-24.70'	19	78.0	57.0	Light to dark gray dolomite, heavily fractured rubble zone, some pieces of grout (19.70'-20.70')			1011 (6) 10	٦
	15.70 -24.70	20	70.0	37.0	bight to think gray dolomics, heavily materials radio some process or ground (15.770 20.770)			Bentonite seal	
		21			Light to dark gray dolomite, porous, some stylolitic horizons, to break on bedding plane (20.70'-21.75')				
		22		1	Light to dark gray dolomite, porous, to break on Sandy (brown), weathered bedding plane (21.75'-22.45')			20.40'-30.40'	
		23			Light to dark gray dolomite, some brown, fossiliferous corals, porous with stylolitic horizons, to drill]	screen interval	
		24			break (22.45'-23.55')		1		
#2	24.70'-29.70'	25	100.0	100.0	Gray dolomite, heavily fractured rubble zone (24.70'-26.40')				
		26			Brown, porous, fossiliferous corals in gray, dolomite, to fracture (26.40'-26.80')		 :	Sand	
		27	<u> </u>		Brown, porous, fossiliferous corals in gray, dolomite, to fracture (26.80'-27.65')				-
		28		<u> </u>	Brown, porous, fossiliferous corals in gray, dolomite, becoming laminated in light to dark gray		24 (1)	2" Stainless steel	
<u> </u>		29			dolomite, slightly vugged, some mineralization, hand break at 28.60' (27.65'-29.68')		3 · 1	well screen,	
#3	29.70'-35.00'	30	100.0	95.0	Gray, dolomite, heavily fractured, rubble zone (29.70'-30.10')		1	0.010" slot	
	_	31	<u> </u>	 	Gray dolomite, to weathered bedding plane (30.10'-30.70') Dark gray, dolomite, laminated, yugged with some mineralization, to fracture (30.70'-32.30')			2' Weli sump	
-		32	\vdash		Dark gray, dolomite, laminated, vugged with some mineralization, to tracture (30.70-32.30') Dark gray, dolomite, laminated, vugged, some mineralization, stylolitic horizons to fracture (32.30'-33.14')			z vveli sump TD of Well @ 32.40	ار
	 	34	 	-	Dark gray, dolomite, laminated, vugged with mineralization and corals, horizontal and vertical stylolitic		_ 0	,	-
	 	35	 	 	horizons to vertical fracture (33.14'-34.19') Hand break at 33.59'				
		36	T		Dark gray/brown, dolomite, some vugging, laminated to vertical fracture/drill break (34.19'-35.00')	Т	D of Boring @	35.0	
		37				1	······································		
		38							
		39							
		1							
	1								
		<u> </u>	<u> </u>	L.,		<u> </u>			_
	STANDARD I								
	TOR= TO	P OF RO	CK		SUMMARY: TOR was determined at HSA auger refusal.				
					Due to difficulty in drilling, well was not set at total depth of boring.				_
									_
									-

					PARSONS			
Contractor:	SJB Services, Inc.				DRILLING RECORD	BORING NO.	MW-13D	
Driller:	Dale Matthies, Ma	tt Matthie	s		Planet Feetile.			
Inspector:	Andy Janik				PROJECT NAME Ekonol Facility	l	. CT . LT . W.	
	CME 550-X, ATV				PROJECT NUMBER 737515	 	st of Ekonol Facility	
Method:	6.25" HSA/5.875"	Roller Co	ne/HQ Co	ring	Weather Sun 70 F	Elevation: N Waln	iore Rd.	
					Weather Suit 701	† *	lore Ru.	
					Date/Time Start Coring 9/25/02 1115	Fkor	nol Facility	
					Date time duit comig	1		
					Date/Time Finish Coring 9/25/02 1550		x	
HQ Core	Range	Depth	Rec.	RQD	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTR	UCTION DIAGRAM	
Run		· .	(%)	(%)				
						[Stick-up	
		0				J L L	protective casing	
		1						
		2					Concrete pad	
		3		ļ	Description of overburden material is consistent with other well locations.	. (1) - 4 전 건강 (2) - 1 선생		
		4						
		5		ļ			2" Stainless steel	
		6		-			well riser	
		7						
		8		 			4" Steel casing	
		10					4 Steel Cashing	
}		11					Grout	
		12					0,000	
		13		<u> </u>			TOR @ 12.70'	
#1	14.00'-19.00'		100.0	22.0	Light to dark gray, dolomite, porous, numerous breaks on bedding planes and stylolitic horizons, 21			
		15			breaks in this core section (14.00'-17.83')			
		16					Bentonite seal	
		17						
		18			Light to dark gray, dolomite, stylolitic horizons to near vertical fracture with mineralization (17.83'-18.32')		17.90'-27.90'	
		19			Light to dark gray, dolomite, stylolitic horizons to weathered, vertical fracture (18.32'-19.00')	.	screen interval	
#2	19.00'-24.00'	_	100.0	68.0	Light to dark gray, dolomite, numerous breaks on bedding planes and stylolitic horizons, 13			
ļ		21	ļ	ļ	breaks in this core section (19.00'-21.85')		Sand	
<u>-</u>		22	 	ļ	Light to dark gray, dolomite, stylolitic horizons to vertical, weathered fracture (21.85'-22.31')		2" [4:-]	
		23	-	·	Light to dark gray, dolomite, stylolitic horizons, large vug and vertical fracture at 23.30', to vertical fracture/drill break (22.31'-24.00')		2" Stainless steel well screen,	
#3	24.50'-29.80'		90.0	90.0	Light to dark gray, massive, dolomite, some stylolitic horizons to mineralized fracture (24.00'-25.00')	-	0.010" slot	
#3	24.50 -27.00	26	70.0	70.0	Dark gray, dolomite, massive, to mineralized bedding plane (25.00'-28.55') Hand break at 27.70'		0.010 0.00	
		27		· · · · ·	pain gan, account, masses, to minimate containing plant (account masses) to minimate and account masses of the containing account masses of the containing a			
		28			Dark gray, dolomite, massive, to break on weathered bedding plane (28.55'-29.90')		2' Well sump	
		29						
		30					TD @ 29.90'	
		31						
		32	L	ļ				
		<u> </u>	ļ	<u> </u>				
		ļ		<u> </u>				
		ļ	 -	 -				
		 	 -	 				
			 	 				
		 		<u> </u>				
			L					
	STANDARD I	PENETI	LATION					
	TOR= TO	P OF RO	CK		SUMMARY: TOR was determined at HSA auger refusal.	· - ···		

ATTACHMENT B PACKER TEST RESULTS

MEMORANDUM

December 17, 2002

To:

File

From:

Eric A. Felter

Subject:

Packer Test Analytical Results

Attached are the preliminary results of the packer testing of two bedrock wells. Test data collected from MW-10 in the deeper two test zones did not provide a solution due to the well going dry during each test at one (1) gallon per minute (gpm). Preliminary results have been calculated for the shallowest zone in MW-10 and for all three zones in MW-11.

	Summary of Packer Test Analyses (cm/s)										
MW-11D											
	Depth (ft.)	1 gpm test	3 gpm test	6 gpm test							
Interval 1	14.5 to 19.3	9.8*10 ⁻³	1.1*10 ⁻²	1.0*10 ⁻²							
Interval 2	19.3 to 24.5	4.4*10 ⁻³	8.7*10 ⁻³	6.8*10 ⁻³							
Interval 3	24.5 to 29.8	3.0*10 ⁻²	2.7*10 ⁻²	2.7*10 ⁻²							
		MW-1	1 0D								
	Depth (ft.)	1 gpm test	3 gpm test	6 gpm test							
Interval 1	16.5 to 21	1.8*10 ⁻³	3.0*10 ⁻³	3.5*10 ⁻³							
Interval 2	21 to 26.5	2.9*10 ⁻⁴	Dry	Dry							
Interval 3	26.5 to 31.5	2.3*10-4	Dry	Dry							

Note: The 1 gpm tests for MW-10D intervals 2 and 3 were analyzed using the Theis equations:

$$T = \frac{Q}{4\pi s}W(u) \qquad \qquad \& \qquad \qquad S = \frac{4Tt}{r^2 \frac{1}{u}}$$

Where:

 $Q = pumping rate (ft^3/min)$

r = radius of or from the pumping well (ft)

s = drawdown (ft)

m = aquifer saturated thickness (feet)

MEMORANDUM

December 19, 2002

To:

File

From:

Eric A. Felter

Subject:

Packer Test Analytical Results

Attached are the preliminary results of the packer testing of the bedrock well MW-13D.

Summary of Packer Test Analyses (cm/s) MW-13D										
Interval 1	14 to 19	9.3*10 ⁻²	8.0*10 ⁻²	1.3*10 ⁰						
Interval 2	19 to 24	4.0*10 ⁻³	1.6*10 ⁻²	5.6*10 ⁻²						
Interval 3	24 to 29.9	4.8*10 ⁻³	4.0*10 ⁻²	4.7*10 ⁻¹						

ATTACHMENT C GROUNDWATER SAMPLING RECORDS

Phase II

November 2001

Site Name _E	Ekonol Facilit	у			Well _	MW-1S
Samplers A	Andy Janik				Date _ Time _	11/2/2001 1000
Total Well Dep Initial Static W Well Diameter	ater Level (T	OC)	14.77 6.11 2.0	feet feet		
Purging Dat	<u>:a</u>					
Method _	Dedicate	d Bailer				
Water Volume	= (Total Dep = =	oth of Well - E 14.77 1.4	Depth To W - gallons	ater)x Casi 6.11	ing Volume pe	er Foot 0.16
	(1/6.)					
Casing Volum 1-inch	es (gal/π.): 0.041	1.5-inch	0.092		2-inch	0.16
3-inch	0.041	4-inch	0.092		6-inch	1.4
8-inch	2.5	4-111011	0.04		10 inch	4
Sampling D Method	Ū			5	gallons	
- Parameters		Bott	tle	Pres.	Method	
TCE; 1,2-DCE	: :	2-40ml		HCI	8260	
1,1-DCA; 1,1,						
phenol & anilii	ne	2-1L ambe	er bottles	-	8270	
Zn & Pb		1- 10oz. Pla	stic bottle	HNОз	6010B	
Field Param	neters I	1 Volume	2 Volume	3 Volume	Sample	
pH		8.11	8.97	9.14	8.16	
Temp. (F)		65.3	62.9	60.4	60.6	
Spec. Cond. (uS/cm)	1.45	1.23	1.29	1.27	
Turbidity (NT	J) .	-	-	-	-	
Comments: 1	Nater was bi	rown in color,	turbid. San	nple was tak	en from well	

Site Name	Ekonol Facil	ity			Well	MW-2S
Samplers	Andy Janik				Date_ Time_	11/2/2001 1200
Total Well D	enth (TOC)		11.90	feet		
	Water Level (TOC)		feet		
Purging D	ata					
Method	Dedicat	ed Bailer				
Water Volur	ne = (Total De		Depth To W		ing Volume pe	
	=	11.90		8.95	X	0.16
	=	0.5	gallons			
Casing Volu	ımes (gal/ft.):					
1-inch		1.5-inch	0.092		2-inch	0.1
3-inch			0.64		6-inch	1.
8-inch				2	10 inch	
8-inch	Purge Water F			3	10 inch	
8-inch Volume of I	Purge Water F <u>Data</u>			3		· · · · · · · · · · · · · · · ·
8-inch Volume of I	Purge Water F <u>Data</u> Dedicat	Removed	tle	3 Pres.		
8-inch Volume of I Sampling Method Parameters	Purge Water F <u>Data</u> <u>Dedicat</u>	Removed ed Bailer			gallons	
8-inch Volume of I Sampling Method Parameters TCE; 1,2-D0	Purge Water F <u>Data</u> <u>Dedicate</u> CE;	Removed ed Bailer Bott		Pres.	gallons Method	
8-inch Volume of I Sampling Method Parameters TCE; 1,2-DC 1,1-DCA; 1,	Purge Water F Data Dedicate CE; 1,1-TCA	Removed ed Bailer Bott	vials	Pres.	gallons Method	
8-inch Volume of I Sampling Method Parameters TCE; 1,2-D0	Purge Water F Data Dedicate CE; 1,1-TCA	Removed ed Bailer Bott 2-40ml	vials pottles	Pres. <i>HCl</i>	gallons Method 8260	
8-inch Volume of I Sampling Method Parameters TCE; 1,2-D0 1,1-DCA; 1,	Purge Water F Data Dedicate CE; 1,1-TCA	ed Bailer Bott 2-40ml 2-1L amber b	vials pottles	Pres. HCl	gallons Method 8260	
8-inch Volume of I Sampling Method Parameters TCE; 1,2-D0 1,1-DCA; 1, phenol & an Zn & Pb	Purge Water F Data Dedicate CE; 1,1-TCA	Removed ed Bailer Bott 2-40ml 2-1L amber t 1- 10oz. Plas	oottles stic bottle 2 Volume	Pres. HCl - HNO3	gallons Method 8260 8270 6010B	
8-inch Volume of I Sampling Method Parameters TCE; 1,2-D0 1,1-DCA; 1, phenol & an Zn & Pb Field Para pH	Purge Water F Data Dedicate CE; 1,1-TCA	Removed ed Bailer Bott 2-40ml 2-1L amber t 1- 10oz. Plas 1 Volume 8.15	oottles stic bottle 2 Volume 8.06	Pres. HCl - HNO3	gallons Method 8260 8270 6010B Sample 7.96	
8-inch Volume of I Sampling Method Parameters TCE; 1,2-D0 1,1-DCA; 1, phenol & an Zn & Pb Field Para pH Temp. (F)	Purge Water F Data Dedicate CE; 1,1-TCA iiline	Removed ed Bailer Bott 2-40ml 2-1L amber t 1- 10oz. Plas 1 Volume 8.15 61.8	oottles stic bottle 2 Volume 8.06 62.5	Pres. HCl - HNO 3 3 Volume 8.01 62.6	gallons Method 8260 8270 6010B Sample 7.96 61.0	
8-inch Volume of I Sampling Method Parameters TCE; 1,2-D0 1,1-DCA; 1, phenol & an Zn & Pb Field Para pH	Purge Water F Data Dedicate CE; 1,1-TCA iiline ameters (uS/cm)	Removed ed Bailer Bott 2-40ml 2-1L amber t 1- 10oz. Plas 1 Volume 8.15	oottles stic bottle 2 Volume 8.06	Pres. HCl - HNO3	gallons Method 8260 8270 6010B Sample 7.96	

Site Name	Ekonol Facilit	у		·····	Well _	MW-3S
Samplers	Andy Janik				Date _ Time _	11/2/2001 1500
Total Well D Initial Static Well Diamet	Water Level (T	oc)		feet		
Purging D	<u>ata</u>					
Method	Dedicate	d Bailer				
Water Volun	ne = (Total Dep = =	12.15	Depth To Ware	ater) x Cas 5.70	ing Volume pe <i>x</i>	er Foot 0.16
Casing Volu	mes (gal/ft.):					
1-inch		1.5-inch	0.092		2-inch	0.16
3-inch	0.36	4-inch	0.64		6-inch	1.4
8-inch	2.5				10 inch	4
Volume of E Sampling Method	Purge Water Ro Data Dedicate			4	gallons	
Parameters		Bott	le	Pres.	Method	
TCE; 1,2-D		2-40ml		HCI	8260	
1,1-DCA; 1,						
phenol & an	iline	2-1L ambe	er bottles	-	8270	
		,				
Zn & Pb		1- 10oz. Pla	stic bottle	НNО з	6010B	
Field Para		1 Volume 8.24 61.0	2 Volume 8.18 61.4	8.15 61.3	Sample 8.32 60.6	
Spec. Cond		1.05	1.26	1.40	1.39	
Turbidity (N	(U)	-	-	<u>-</u>		
Comments:	Water was bi	rown in color,	turbid. Sam	iple was tak	en from well a	nt 1615.

Site Name	Ekonol Facili	ty			Well	MW-4S
					-	11/2/2001
Samplers	Andy Janik				Time	1330
						
Total Well D		TOC)		feet		
Well Diamet	Water Level (1 er (inches)	100)	8.91 2.0	feet		
		•			•	
Purging D	<u>ata</u>					
Method	Dedicate	ed Bailer				
Water Volun	ne = (Total De		Depth To Wa		ing Volume pe	
	=	12.47 0.6	- gallons	8.91	X	0.16
		0.0	galions			
Casing Volu	mes (gal/ft.):					
1-inch		1.5-inch	0.092		2-inch	0.16
3-inch		4-inch	0.64		6-inch	1.4
8-inch	<u>1 2.5</u>			· ·	10 inch	4
Volume of I	Durgo Wotor D	lomoved		3	gallons	
volume of i	Purge Water R	emoveu			galions	
Sampling	<u>Data</u>					
Method	Dedicate	ed Bailer				
Parameters	i	Bot	tle	Pres.	Method	
TCE; 1,2-D		2-40ml	vials	HCI	8260	
1,1-DCA; 1,						
	******	0.41	- h-Hl		0070	
phenol & an	iline	2-1L ambe	er Dotties	-	8270	
Zn & Pb		1- 10oz. Pla	stic bottle	HNОз	6010B	
Field Para	motoro	1 Volume	2 Volume	3 Volume	Sample	1
pH	<u>IIIIeteis</u>	8.19	8.12	8.07	8.23	
рп Temp. (F)		61.3	62.2	61.8	61.0	
Spec. Cond	. (uS/cm)	1.69	1.77	2.01	1.86	
Turbidity (N		-	-	-	-	
•	Water was b	rown in color,	turbid. San	nple was tai	ken from well	at 1445.
						

Site Name	Ekonol Facili	ity		-	. Well _	MW-1D
Samplers	Andy Janik				Date _ Time _	11/2/2001 1020
Total Well D Initial Static Well Diamet	Water Level (*	TOC)	31.57 8.00 2.0	feet feet		
Purging D	<u>ata</u>					
Method	Dedicate	ed Bailer				
Water Volur	ne = (Total De = =	epth of Well - I 31.57 3.8	Depth To W	ater) x Cas 8.00	sing Volume pe	er Foot 0.16
Casina Valu	(mal/ft):					
1-inch	mes (gal/ft.): 0.041	1.5-inch	0.092		2-inch	0.16
3-inch			0.64		6-inch	1.4
8-inch	2.5				10 inch	4
Volume of I	Purge Water R <u>Data</u>	Removed		12	gallons	
Method	Dedicate	ed Bailer				
Parameters TCE; 1,2-D0 1,1-DCA; 1,	CE;	Bott <i>2-40ml</i>		Pres. <i>HCl</i>	Method 8260	
1,1-DOA, 1,	1,1-10/1					
phenol & an	iline	2-1L ambe	er bottles	-	8270	
Zn & Pb		1- 10oz. Pla	stic bottle	НПО з	6010B	
Field Para	meters	1 Volume	2 Volume	3 Volume	Sample	
pH	motors	9.49	9.22	8.79	8.14	
Temp. (F)		61.3	58.7	58.3	60.2	
Spec. Cond	. (uS/cm)	0.88	0.93	0.91	0.93	
Turbidity (N			-	#	-	

Comments: Water was light gray in color. Sample was taken from well at 1130. Duplicate sample, MS, and MSD were also taken from this well.

Site Name Ekonol Facili	ty			Well	MW-2D
Samplers Andy Janik				Date _ Time _	11/2/2001 1225
Total Well Depth (TOC) Initial Static Water Level (Well Diameter (inches)	ГОС)	29.91 8.36 2.0	feet feet	•	
Purging Data					
Method Dedicate	ed Bailer				
Water Volume = (Total De		Depth To Wa			
=	29.91 3.4	gallons	8.36	X	0.16
Casing Volumes (gal/ft.): 1-inch 0.041 3-inch 0.36 8-inch 2.5		0.092 0.64	-	2-inch 6-inch 10 inch	0.16 1.4 4
Volume of Purge Water R	Removed		12	gallons	
Sampling Data					
Method Dedicate	ed Bailer				
Parameters <u>TCE; 1,2-DCE;</u> <u>1,1-DCA; 1,1,1-TCA</u>	Bot 2-40mi		Pres. HCI	Method <i>8260</i>	
phenol & aniline	2-1L ambe	er bottles	-	8270	
Zn & Pb	1- 10oz. Pla	astic bottle	HNO 3	6010B	
Field Parameters	1 Volume	2 Volume	3 Volume	Sample	
pH Temp. (F)	8.05 60.7	8.04 60.3	8.17 59.9	8.29 60.4	
Spec. Cond. (uS/cm) Turbidity (NTU)	1.15 -	1.16 -	1.07 -	1.03	
Comments: Water was li	ght gray in co	lor. Sample	was taken i	from well at 13	100.

						
Site Name	Ekonol Facilit	у			Well _	MW-3D
Samplers	Andy Janik				Date _ Time _	11/2/2001 1530
Total Well D Initial Static Well Diame	Water Level (1	OC)		feet feet		
Purging D	ata					
Method	Dedicate	d Bailer				
Water Volur	me = (Total Del	oth of Well - E 26.27 2.9	Depth To Ware gallons	ater) x Cas 8.21	ing Volume pe	er Foot 0.16
Casing Volu	mes (gal/ft.):					
1-incl		1.5-inch	0.092		2-inch	0.16
3-incl		4-inch	0.64		6-inch	1.4
8-incl	2.5				10 inch	4
Volume of Sampling	Purge Water R <u>Data</u>	emoved		10	gallons	
Method	Dedicate	ed Bailer				
Parameters	3	Bott	tle	Pres.	Method	
TCE; 1,2-D	CE;	2-40ml	vials	HCI	8260	
1,1-DCA; 1,	1,1-TCA					
phenol & ar	iline	2-1L ambe	r bottles	-	8270	
Zn & Pb		1- 10oz. Pla	stic bottle	HNOз	6010B	
						
Field Para	ameters	1 Volume	2 Volume	3 Volume	Sample	
pH	41.10.010	8.26	8.19	8.15	8.33	
Temp. (F)		63.0	60.2	59.9	60.7	
Spec. Cond	. (uS/cm)	1.01	1.07	1.09	1.08	
Turbidity (N		-	-	-	-	
				 		
Comments:	Water was lig	ght gray in co	lor. Sample	was taken	from well at 16	500.

Site Name	Ekonol Facil	ity			Well	MW-4D
					Date	11/2/2001
Samplers	Andy Janik				Time	
,					•	
			00.05	•		
Total Well D		TOC	28.85 8.27	feet feet		
Well Diamet	Water Level (er (inches)	100)	2.0	ICCL		
vven Diamot	51 (II.IG.1100)					
Purging D	<u>ata</u>					
Method	Dedicat	ed Bailer				
	-					
Material	(T-4-1 D	math of Mall F	Sonth To M	otor) v Coo	ina Valuma n	or Eggt
vvater volun	ne = (≀otai D€ =	epth of Well - [28.85	peptri io vv	8.27	x	0.16
	=	3.3	gallons			
	mes (gal/ft.):					
1-inch			0.092		2-inch	0.16
3-inch			0.64		6-inch 10 inch	1.4
8-inch	2.5	<u> </u>			10 111011	
Volume of F	Purge Water F Data	Removed		10	gallons	
-						
Method	Dedicat	ed Bailer	·			
Parameters		Bot	tle	Pres.	Method	
TCE; 1,2-DC		2-40ml		HCI	8260	
1,1-DCA; 1,						
						
phenol & an	iline	2-1L ambe	er bottles	-	8270	
Zn & Pb		1- 10oz. Pla	stic hottle	HNO з	6010B	
211 0 1 2		. ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
Field Para	<u>meters</u>	1 Volume	2 Volume	3 Volume	Sample	
pН	_	8.65	8.38	8.26	8.58	
Temp. (F)		63.7	60.7	60.3	61.3	
Spec. Cond.		1.23	1.16	1.14	1.15	
Turbidity (N	IU)	-	-	-		
Comments:	Water was I	ight gray in co	lor. Sample	was taken	from well at 1	430.

Phase II

December 2001

WELL SAMPLING RECORD Ekonol Facility Well MW-1S Site Name Date 12/5/2001 Andy Janik Time 1515 Samplers Total Well Depth (TOC) 14.77 feet Initial Static Water Level (TOC) 5.12 Well Diameter (inches) Purging Data Method Dedicated Bailer Water Volume = (Total Depth of Well - Depth To Water) x Casing Volume per Foot 14.77 6.12 = 1.5 gallons Casing Volumes (gal/ft.): 1-inch 0.041 1.5-inch 0.092 2-inch 0.16 3-inch 0.36 4-inch 0.64 6-inch 1.4 10 inch 4 8-inch 2.5 Volume of Purge Water Removed gallons Sampling Data Dedicated Bailer Method Pres. Method **Bottle Parameters** HCI 8260 TCE; 1,2-DCE; 2-40ml vials 1,1-DCA; 1,1,1-TCA 8270 2-1L amber bottles phenol & aniline HNO з 6010B Zn & Pb 1- 4 oz. Plastic bottle Field Parameters 1 Volume 2 Volume 3 Volume Sample 8.44 8.48 8.48 8.58 pН 53.8 Temp. (F) 62.5 60.8 59.7 Spec. Cond. (uS/cm) 1.25 1.36 1.32 1.37 Turbidity (NTU) Comments: Water was light brown in color. Sample was taken from well

at 1045 on 12/6/01.

WELL SAMPLING RECORD Well MW-2S Site Name Ekonol Facility Date 12/5/2001 1530 Time Andy Janik Samplers 11.90 feet Total Well Depth (TOC) Initial Static Water Level (TOC) 3.57 feet 2.0 Well Diameter (inches) **Purging Data** Dedicated Bailer Method Water Volume = (Total Depth of Well - Depth To Water) x Casing Volume per Foot 0.16 11.90 3.57 gallons 1.3 Casing Volumes (gal/ft.): 1.5-inch 0.092 2-inch 0.16 0.041 1-inch 0.36 4-inch 0.64 6-inch 1.4 3-inch 10 inch 8-inch 2.5 gallons Volume of Purge Water Removed Sampling Data Method Dedicated Bailer Method **Bottle** Pres. **Parameters** 8260 HCI TCE; 1,2-DCE; 2-40ml vials 1,1-DCA; 1,1,1-TCA 8270 phenol & aniline 2-1L amber bottles HNO 3 6010B 1- 4 oz. Plastic bottle Zn & Pb Field Parameters 1 Volume 2 Volume 3 Volume Sample 8.61 8.27 8.28 7.76 рΗ Temp. (F) 60.3 61.5 61.6 53.2 1.61 1.69 1.73 1.48 Spec. Cond. (uS/cm) Turbidity (NTU) Comments: Water was clear. Sample was taken from well at 1425 on 12/6/01.

WELL SAMPLING RECORD Ekonol Facility Well MW-3S Site Name Date 12/5/2001 Time 1550 Samplers Andy Janik Total Well Depth (TOC) 12.15 feet Initial Static Water Level (TOC) 5.41 feet Well Diameter (inches) 2.0 **Purging Data** Dedicated Bailer Method Water Volume = (Total Depth of Well - Depth To Water) x Casing Volume per Foot 12.15 5.41 x 1.1 gallons Casing Volumes (gal/ft.): 0.16 0.092 2-inch 1-inch 0.041 1.5-inch 6-inch 1.4 0.64 3-inch 0.36 4-inch 10 inch 4 2.5 8-inch Volume of Purge Water Removed 3 gailons Sampling Data Method Dedicated Bailer Pres. Method **Bottle Parameters** 2-40ml vials HCI 8260 TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TCA 8270 2-1L amber bottles phenol & aniline HNO 3 6010B 1- 4 oz. Plastic bottle Zn & Pb 2 Volume 3 Volume Field Parameters 1 Volume Sample 8.10 9.43 9.17 8.40 pН 60.2 54.5 60.4 Temp. (F) 61.0 1.26 Spec. Cond. (uS/cm) 1.34 1.63 0.88 Turbidity (NTU) Comments: Water was light brown in color. Sample was taken from well at 1410

on 12/6/01.

WELL SAMPLING RECORD MW-4S Well Site Name Ekonol Facility Date 12/5/2001 Time 1610 Samplers Andy Janik 12.47 Total Well Depth (TOC) feet 8.47 feet Initial Static Water Level (TOC) 2.0 Well Diameter (inches) **Purging Data** Dedicated Bailer Method Water Volume = (Total Depth of Well - Depth To Water) x Casing Volume per Foot 12.47 8.47 0.6 = gallons Casing Volumes (gal/ft.): 0.041 1.5-inch 0.092 2-inch 0.16 1-inch 0.64 6-inch 1.4 0.36 4-inch 3-inch 10 inch 2.5 8-inch 3 gallons Volume of Purge Water Removed Sampling Data Dedicated Bailer Method Method **Parameters Bottle** Pres. TCE; 1,2-DCE; 2-40ml vials HCI 8260 1,1-DCA; 1,1,1-TCA 8270 phenol & aniline 2-1L amber bottles 6010B HNO 3 Zn & Pb 1- 4 oz. Plastic bottle Field Parameters 1 Volume 2 Volume 3 Volume Sample 7.90 8.51 8.17 8.11 61.3 61.0 57.3 61.2 Temp. (F) Spec. Cond. (uS/cm) 1.83 1.89 1.97 1.63 Turbidity (NTU) Comments: Water was brown in color, turbid. Sample was taken from well at 1225 on 12/6/01.

	ility			Well _	MW-1D
Samplers <u>Andy Janik</u>				Date _ Time _	12/6/2001 0925
Total Well Depth (TOC) Initial Static Water Level Well Diameter (inches)	(TOC)	31.57 7.45 2"	feet feet		
Purging Data					
Method Dedica	ated Bailer	-			
Water Volume = (Total D	epth of Well - I	Depth To W	ater) x Cas	ing Volume pe	er Foot
=	31.57	-	7.45	x .	0.16
=	3.9	gallons			
· · · · · · · · · · · · · · · · · · ·					
Casing Volumes (gal/ft.)		0.092		2-inch	0.16
1-inch 0.04 3-inch 0.3				6-inch	1.4
8-inch 2.		0.04		10 inch	1.*
Volume of Purge Water	Removed		12	gallons	
Sampling Data	Removed		12	gallons	
Sampling Data Method Dedica	ated Bailer	_			
Sampling Data Method Dedica Parameters	ated Bailer Bot		Pres.	Method	
Sampling Data Method Dedica Parameters TCE; 1,2-DCE;	ated Bailer				
Sampling Data Method Dedica Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TCA	ated Bailer Bot 2-40m	l vials	Pres. <i>HCl</i>	M ethod 8260	
Sampling Data Method Dedica Parameters TCE; 1,2-DCE;	ated Bailer Bot	l vials	Pres.	Method	
Sampling Data Method Dedica Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TCA	ated Bailer Bot 2-40m	l vials er bottles	Pres. <i>HCl</i>	M ethod 8260	
Sampling Data Method Dedica Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TCA phenol & aniline	ated Bailer Bot 2-40m 2-1L ambe	l vials er bottles	Pres. <i>HCl</i>	Method 8260 8270	
Sampling Data Method Dedica Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TCA phenol & aniline Zn & Pb	ated Bailer Bot 2-40m 2-1L ambo 1- 4 oz. Pla	er bottles	Pres. HCl - HNO 3	Method 8260 8270 6010B	
Sampling Data Method Dedica Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TCA phenol & aniline Zn & Pb Field Parameters	ated Bailer Bot 2-40m 2-1L ambot 1- 4 oz. Pla	er bottles estic bottle 2 Volume	Pres. HCl - HNO 3	Method 8260 8270 6010B	
Sampling Data Method Dedica Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TCA phenol & aniline Zn & Pb Field Parameters pH	ated Bailer Bot 2-40m 2-1L ambo 1- 4 oz. Pla	er bottles	Pres. HCl - HNO 3	Method 8260 8270 6010B	
Sampling Data Method Dedica Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TCA phenol & aniline Zn & Pb Field Parameters pH Temp. (F)	Bot 2-40m 2-1L ambot 1- 4 oz. Pla 1 Volume 9.91	er bottles estic bottle 2 Volume 9.61	Pres. HCl - HNO 3	Method 8260 8270 6010B Sample 8.66	
Sampling Data Method Dedica Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TCA phenol & aniline Zn & Pb Field Parameters pH	2-1L ambout 1- 4 oz. Plate 9.91 56.7	er bottles estic bottle 2 Volume 9.61 54.8	Pres. HCl - HNO 3 3 Volume 8.57 54.6	Method 8260 8270 6010B Sample 8.66 53.9	
Sampling Data Method Dedica Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TCA phenol & aniline Zn & Pb Field Parameters pH Temp. (F) Spec. Cond. (uS/cm)	2-1L ambout 1- 4 oz. Plate 1 Volume 9.91 56.7 0.64 -	er bottles estic bottle 2 Volume 9.61 54.8 0.87	Pres. HCI - HNO 3 3 Volume 8.57 54.6 0.88 -	Method 8260 8270 6010B Sample 8.66 53.9 0.87	

Site Name	Ekonol Facilit	<u>/</u>			Well _	MW-2D
Samplers	Andy Janik				Date _ Time _	12/6/2001 1430
Total Well D Initial Static	Water Level (T	OC)		feet feet		
Purging D	<u>ata</u>					
Method	Dedicate	d Bailer				
Water Volun	ne = (Total Deg	oth of Well - D	epth To Wa	ater) x Casi	ng Volume pe	
	=	29.91 3.5	- gallons	7.77	X	0.16
					 	
	mes (gal/ft.):				0 :	0.46
1-inch		1.5-inch	0.092		2-inch	0.16
3-inch		4-inch	0.64		6-inch 10 inch	1.4
8-inch	2.5	·· ·····			10 111011	
Volume of I	Purge Water Ro <u>Data</u>	emoved		11	gallons	
Method	Dedicate	d Bailer				
Parameters		Bott	la	Pres.	Method	
TCE; 1,2-D		2-40ml		HCI	8260	
1,1-DCA; 1,						
1,1 2011, 1)	.,,					
phenol & an	iline	2-1L ambe	r bottles	-	8270	
Zn & Pb		1- 4 oz. Pla	stic bottle	HNO 3	6010B	
Cald Dag	motoro	1 \/a/ı.ma	2 Volumo	3 Volume	Sample]
Field Para	meters	1 Volume 8.37	8.30	7.83	7.75	
pH Temp. (F)		54.9	55.3	54.6	54.5	
Spec. Cond	(uS/cm)	0.88	1.10	1.04	1.03	
Turbidity (N		-	-	-	-	1
ruibidity (IV	. 5,		L		<u> </u>	,
Comments:	Water was c	ear with visib	le sheen. S	ample was	taken from we	ell at 1510.

Site Name	Ekonol Facilit	у			Well _	MW-3D
Samplers	Andy Janik				Date Time	12/6/2001 1305
Total Well D Initial Static Well Diamet	Water Level (T	roc)		feet		
Purging D	<u>ata</u>					
Method	Dedicate	d Bailer				
Water Volun	ne = (Total De _l	oth of Well - D	Depth To Wa		ng Volume p	
	=	26.27 2.9	gallons	7.59	x	0.16
	mes (gal/ft.):	4 E inch	0.002		2-inch	0.16
1-inch 3-inch		1.5-inch 4-inch	0.092 0.64		6-inch	1.4
8-inch	•	4-111011	0.04		10 inch	4
Sampling Method	Data Dedicate	ed Bailer				
		Bot	· Ho	Pres.	Method	
Parameters TCE; 1,2-D		2-40ml		HCI	8260	
1,1-DCA; 1,		2 /0	Vidio .			
phenol & an	iline	2-1L ambe	er bottles		8270	
Zn & Pb		1- 4 oz. Pla	stic bottle	НNО з	6010B	
Field Para	ameters	1 Volume	2 Volume	3 Volume	Sample	
pH		8.63	8.27	7.93	7.94]
Temp. (F)		57.8	56.8	55.4	55.2]
Spec. Cond		0.89	0.94	0.93	0.94	
Turbidity (N	TU)	-	-		-]
Comments:	Water was li	ght gray in co	lor. Sample	was taken f	rom well at 1	400.

WELL SAMPLING RECORD Well MW-4D Ekonol Facility Site Name Date 12/6/2001 Time 1130 Samplers Andy Janik 28.85 Total Well Depth (TOC) feet 7.65 feet Initial Static Water Level (TOC) 2.0 Well Diameter (inches) **Purging Data** Dedicated Bailer Method Water Volume = (Total Depth of Well - Depth To Water) x Casing Volume per Foot 7.65 0.16 28.85 3.4 gallons Casing Volumes (gal/ft.): 0.041 0.092 2-inch 0.16 1.5-inch 1-inch 0.36 4-inch 0.64 6-inch 1.4 3-inch 10 inch 8-inch 2.5 Volume of Purge Water Removed 11 gallons Sampling Data Dedicated Bailer Method Method **Bottle** Pres. **Parameters** TCE; 1,2-DCE, 2-40ml vials HCI 8260 1,1-DCA; 1,1,1-TCA 8270 phenol & aniline 2-1L amber bottles 6010B Zn & Pb 1- 4 oz. Plastic bottle HNO 3 Field Parameters 2 Volume 3 Volume Sample 1 Volume 8.34 8.07 8.14 pН 8.58 56.5 56.5 56.8 Temp. (F) 56.5 0.91 0.97 0.99 Spec. Cond. (uS/cm) 0.27 Turbidity (NTU)

Comments: Water was light gray in color. Sample was taken from well at 1210.

Phase II

September 2002

Site Name	Ekonol Facili	ty	Well	MW-1S		
Samplers	Dan Lipp		Date _ Time _	9/25/2002 1350		
Total Well D Initial Static Well Diamet	Water Level (гос)	14.75 6.85 2.0			
Purging D	<u>ata</u>					
Method	Peristaltic pu	mp at 500mL	per minute			
Water Volur	ne = (Total De = =	pth of Well - [14.75 1.3		ater) x Cas 6.85		er Foot 0.16
	mes (gal/ft.):					
1-inch		1.5-inch	0.092		2-inch 6-inch	0.16 1.4
3-inch 8-inch		4-inch	0.64		10 inch	4
Sampling Method		ımp at 500mL	per minute			
Parameters	i	Bottle		Pres.	Method	
TCE; 1,2-D		2-40ml vials		HCI	8260	
1,1-DCA; 1,	1,1-TCA			•		
phenol & an	iline	2-1L amber l	bottles	-	8270	
Zn & Pb		1- 4 oz. Plas	tic	НМОз	6010B	
		bottle				
Field Para	meters	1 Volume	2 Volume	3 Volume	Sample	
pН		6.84	7.51	7.43	7.85	
Temp. (C)		15.80	17.76	16.05	16.10	
Spec. Cond	•	5.00	4.46	4.51	4.78	
Turbidity (N	•	114.0	24.2	18.5	799.0	
	xygen (DO)	2.00	0.29	0.11	0.51	
ORP	• `	-127	-116	-95	-143	
Nitrate (mg/		-	-	0.0	0.0	
Ferrous Iron		-	-	1.5	1.8	
Sulfate (mg	(L)	-	<u> </u>	80	42	
	Sudan IV tes 45 on 9/26/02.	st was negativ	re. Water wa	as light brov	vn in color. Sa	imple was

Site Name	Ekonol Facili	ty			Well _	MW-2S		
					Date_	10/2/2002		
Samplers	Andy Janik				Time _	1030		
•	Jaime Davids	son						
Total Well D			12.12					
	Water Level (roc)	4.88	teet				
Well Diamet	ter (inches)		2.0					
Purging D	ata							
Method	Peristaltic pu	mp at 500mL	per minute					
Water Volume = (Total Depth of Well - Depth To Water) x Casing Volume per Foot = 12.12 - 4.88 x 0.16								
	=	12.12 1.2	gallons	4.00	^	0.10		
			ganono					
Casing Volu	ımes (gal/ft.):							
1-incl		1.5-inch	0.092		2-inch	0.16		
3-incl		4-inch	0.64		6-inch 10 inch	1.4		
8-incl	1 <u>2.5</u>				10 111011			
Volume of	Purge Water R	emoved		4	gallons			
Sampling Method		mp at 500mL	per minute					
Parameters	•	Bottle		Pres.	Method			
TCE; 1,2-D		2-40ml vials		HCI	8260			
1,1-DCA; 1,								
		- 44	- 40		0070			
phenol & ar	niline	2-1L amber l	ootties	-	8270			
Zn & Pb		1- 4 oz. Plas	tic	НМОз	6010B			
		bottle						
Field Para	<u>ameters</u>	1 Volume	2 Volume	3 Volume	Sample			
pН		5.92	6.67	7.15	6.70			
Temp. (C)		22.22	25.81	23.27	15.57			
Spec. Cond	l. (uS/cm)	0.000	0.000	0.000	0.000			
Turbidity (N	ITU)	258.0	239.0	252.0	249.0			
Dissolved C	Oxygen (DO)	8.97	5.76	6.97	8.95			
ORP		70	36	-67	-6			
Nitrate (mg/	/L)	-	-	0.0	0.0			
Ferrous Iroi		-	-	3.6	3.8			
Sulfate (mg		-	_	80	80			
	Sudan IV tes 15 on 10/3/02.	st was negativ	ve. Water w	as clear witi	h sheen. Sam	ple was		

Site Name E	konol Facilit	у			Well _	MW-3S		
					Date	9/26/2002		
Samplers Da	an Lipp				Time	0820		
					-			
Total Well Dept	th (TOC)		12.05	foot				
Initial Static Wa		·OC)	5.42					
Well Diameter (,	2.0					
Purging Data								
Method Pe	eristaltic pui	mp at 500mL	per minute					
Water Volume = (Total Depth of Well - Depth To Water) x Casing Volume per Foot								
_=	: :	12.05 1.1	gallons	5.42	<u> </u>	0.16		
		1.1	34.10.10					
Casing Volume								
1-inch	0.041	1.5-inch	0.092		2-inch	0.16		
3-inch	0.36	4-inch	0.64		6-inch 10 inch	1.4		
8-inch	2.5				TO ITIGIT			
Volume of Pur	ge Water R	emoved	2.5 t	o dry	gallons			
Sampling Da Method P		mp at 500mL	per minute					
Parameters		Bottle		Pres.	Method			
TCE; 1,2-DCE;		2-40ml vials		HCI	8260			
1,1-DCA; 1,1,1								
phenol & anilin	e	2-1L amber l	oottles		8270			
Zn & Pb		1- 4 oz. Plas	tic	HNO 3	6010B			
	·	bottle						
Field Parame	eters l	1 Volume	2 Volume	3 Volume	Sample			
pH		7.69	7.64	7.62	7.44			
Temp. (C)		18.82	18.44	17.75	18.67			
Spec. Cond. (u	S/cm)	3.14	3.13	3.28	3.51			
Turbidity (NTU)		143.0	17.0	28.0	66.2			
Dissolved Oxyg		3.52	0.95	1.80	4.33			
ORP	· · · /	-148	-151	-127	-94			
Nitrate (mg/L)		_	-	0.0	0.0			
Ferrous Iron (m	na/L)	-	-	3.0	2.8			
Sulfate (mg/L)	· J· =/	-	_	80	80			
Comments: S		t was negativ	e. Water wa	as light brov	vn in color. Sa	ample was		

Site Name <u>Ekonol Facil</u>	Name Ekonol Facility					
Samplers <u>Dan Lipp</u>				Date Time	9/26/2002 0930	
Total Well Depth (TOC) Initial Static Water Level (Well Diameter (inches)	12.50 10.53 2.0					
Purging Data						
Method Peristaltic po	ump at 500mL	. per minute				
Water Volume = (Total De	epth of Well - 12.50 0.3		/ater) x Cas 10.53		er Foot 0.16	
Casing Volumes (gal/ft.):						
1-inch 0.041	1.5-inch	0.092	,	2-inch	0.16	
3-inch 0.36		0.64		6-inch	1.4	
8-inch 2.5				10 inch	4	
Sampling Data Method Peristaltic po	ump at 500mL	. per minute	,			
Parameters	Bottle		Pres.	Method		
TCE; 1,2-DCE;	2-40ml vials		HCI	8260		
1,1-DCA; 1,1,1-TCA						
phenol & aniline	2-1L amber	bottles	-	8270		
Zn & Pb	1- 4 oz. Plas	tic	HNO 3	6010B		
	bottle					
Field Parameters	1 Volume	2 Volume	3 Volume	Sample		
pH	7.19	7.04	7.01	7.35		
Temp. (C)	17.48	17.43	17.33	18.38		
Spec. Cond. (uS/cm)	6.78	6.70	6.81	7.12		
Turbidity (NTU)	311.0	150.0	99.6	>1000		
Dissolved Oxygen (DO)	2.24	1.14	0.59	2.19		
ORP	-53	-49	-47	-133		
Nitrate (mg/L)	_	-	0.0	0.0		
Ferrous Iron (mg/L)	_	-	0.4	0.3		
Sulfate (mg/L)	-	_	80	42		
Comments: Sudan IV testaken at 1530 on 9/26/02.		ve. Water wa	as light brov	vn in color. Sa	mple was	

Site Name	Ekonol Facilit	у			Well _	MW-5S	
Samplers	Dan Lipp				Date _ Time _	9/25/2002 1515	
Total Well Depth (TOC) Initial Static Water Level (TOC) Well Diameter (inches)			14.52 feet 10.02 feet 2.0				
Purging D	<u>ata</u>						
Method	Peristaltic pu	mp at 500mL	per minute				
Water Volume = (Total Depth of Well - Depth To Water) x Casing Volume per Foot = 14.52 - 10.02 x 0.16							
		0.7	gallons				
Casing Volu	imes (gal/ft.):	1.5-inch	0.092		2-inch	0.16	
3-incl		4-inch	0.64		6-inch	1.4	
8-incl	n 2.5				10 inch	4	
Volume of Purge Water Removed 3 gallons Sampling Data Method Peristaltic pump at 500mL per minute							
Parameters <u>TCE; 1,2-D</u> <u>1,1-DCA; 1,</u>	CE;	Bottle 2-40ml vials		Pres. <i>HCl</i>	Method 8260		
phenol & ar	iline	2-1L amber l	ottles	-	8270		
Zn & Pb		1- 4 oz. Plas bottle	tic	НМОз	6010B		
Field Para	ameters	1 Volume	2 Volume	3 Volume	Sample		
pН		6.85	6.84	6.98	6.62		
Temp. (C)		14.43	14.03	13.88	15.48		
Spec. Cond	l. (uS/cm)	5.69	4.43	3.79	3.59	ı	
Turbidity (N	TU)	>1000	>1000	>1000	451.0	l	
Dissolved C	Oxygen (DO)	2.56	0.60	0.29	2.58	l	
ORP		-11	-31	-43	-19	l	
Nitrate (mg	L)	<u>-</u>	-	0.0	0.0	l	
Ferrous Iron	n (mg/L)	<u> </u>	-	0.0	1.2	ı	
Sulfate (mg	/L)	<u> </u>	1 -	0.0	80		
	Sudan IV tes 18 on 9/26/02.	st was negativ	ve. Water w	as brown in	color, turbid.	Sample was	

Site Name	Ekonol Facilit	у	<u></u>		Well	MW-6S
					Date	9/27/2002
Samplers	Dan Lipp				Time	0920
Campiois	Andy Janik				-	
			14.00	faat		
Total Well D	eptn (100) Water Level (1	-OC)	14.00 10.25			
Well Diamet	-	-	2.0			
	(,	•	Att			
Purging D	<u>ata</u>					
Method	Peristaltic pu	mp at 500mL	per minute			
Water Volur	ne = (Total De	pth of Well - [14.00		ater) x Cas 10.25		er Foot <i>0.16</i>
	=		gallons	10.20	^	0.70
	ımes (gal/ft.):				0: 1	0.40
1-inch		1.5-inch	0.092		2-inch 6-inch	0.16 1.4
3-inch 8-inch		4-inch	0.04		10 inch	4
U-IIICI	1 2.0					
Volume of I	Purge Water R	emoved		2	galions	
Sampling Method	<u>Data</u> Peristaltic pu	mp at 500mL	per minute			
Parameters	.	Bottle		Pres.	Method	
TCE; 1,2-D		2-40ml vials		HCI	8260	
1,1-DCA; 1,	1,1-TCA					
phenol & ar	niline	2-1L amber l	oottles	_	8270	
priorior a ar						
Zn & Pb		1- 4 oz. Plas	tic	НИО з	6010B	
		bottle		<u> </u>		
Field Para	meters	1 Volume	2 Volume	3 Volume	Sample	
pH	<u>arriciors</u>	6.11	6.07	6.20	6.22	
Temp. (C)	•	17.81	17.00	16.75	17.01	
Spec. Cond	i. (uS/cm)	6.33	6.39	6.44	6.46	
Turbidity (N		23.1	23.7	34.6	16.7	
- '	Oxygen (DO)	7.34	4.98	5.03	4.90	
ORP	75 (= -)	146	136	117	122	
Nitrate (mg/	/L)	-	-	0.0	0.0	
Ferrous Iron		-	-	0.0	0.0	
Sulfate (mg		-	-	80	80	
Comments:	Sudan IV tes 40 on 9/27/02.	st was negativ	ve. Water w	as light brov	wn in color. S	ample was

Dan Lipp	Site Name	Ekonol Facilit	ty			Well _	MW-7S		
Samplers Dan Lipp Andy Janik Time 1000						Date	9/27/2002		
Total Well Depth (TOC)	Samplers	Dan Linn				-			
Total Well Depth (TOC)	Samplers					_			
Initial Static Water Level (TOC) 9.46 feet									
Purging Data									
Number Purging Data			roc)		reet				
Method Peristaltic pump at 500mL per minute Water Volume = (Total Depth of Well - Depth To Water) x Casing Volume per Foot = 12.50 - 9.46 x 0.16 = 0.5 gallons Casing Volumes (gal/ft.): 1-inch 0.041 1.5-inch 0.092 2-inch 0.16 3-inch 0.36 4-inch 0.64 6-inch 1.4 8-inch 2.5 10 inch 4 Volume of Purge Water Removed 3 gallons Sampling Data Method Peristaltic pump at 500mL per minute Parameters Bottle Pres. Method Free. 1.2-DCE; 2-40ml vials HCI 2-1L amber bottles Pres. Method Action Pres. Method 1.1-DCA; 1,1,1-TCA Phenol & aniline 2-1L amber bottles - 8270 In April 1-4 oz. Plastic HNO 3 6010B bottle Field Parameters 1 Volume 2 Volume 3 Volume Sample Field Parameters 1 Volume 2 Volume 3 Volume Sample Colspan="4"	well Diamet	er (inches)	•	2.0					
Water Volume = (Total Depth of Well - Depth To Water) x Casing Volume per Foot = 12.50 - 9.46 x 0.16 = 0.5 gallons Casing Volumes (gal/ft.): 1-inch 0.041 1.5-inch 0.092 2-inch 0.16 3-inch 0.36 4-inch 0.64 6-inch 1.4 8-inch 2.5 10 inch 4 Volume of Purge Water Removed 3 gallons Sampling Data Method Peristaltic pump at 500mL per minute Parameters Bottle Pres. Method HCl 8260 1.1-DCA; 1,2-DCE; 2-40ml vials HCl 8260 1.1-DCA; 1,1,1-TCA Phenol & aniline 2-1L amber bottles - 8270 Zn & Pb 1-4 oz. Plastic HNO 3 6010B bottle Field Parameters PH 6.18 6.45 6.33 6.74 Temp. (C) 16.91 17.13 16.40 16.56 Spec. Cond. (uS/cm) 5.32 5.28 5.30 5.26 Turbidity (NTU) 450.0 317.0 >10000 >10000 Dissolved Oxygen (DO) 3.93 5.46 2.16 4.92 ORP 123 123 55 30 Nitrate (mg/L) - NT NT Sulfate (mg/L) - NT NT Sulfate (mg/L) - NT NT Comments: Sudan IV test was negative. Water was brown in color, turbid. Sample was taken at 1030 on 9/27/02. Casing Volume of Dottle value of the period of the	Purging D	<u>ata</u>							
Casing Volumes (gal/ft.): 1-inch	Method	Peristaltic pu	mp at 500mL	per minute					
Casing Volumes (gal/ft.): 1-inch 0.041 1.5-inch 0.092 2-inch 0.16 3-inch 0.36 4-inch 0.64 6-inch 1.4 8-inch 2.5 10 inch 4 Volume of Purge Water Removed 3 gallons									
1-inch		=	0.5	gallons					
1-inch		(10)							
3 - inch 0.36 4 - inch 0.64 6 - inch 1.4 8 - inch 2.5 10 inch 4 Volume of Purge Water Removed 3 gallons Sampling Data Method Peristaltic pump at 500mL per minute Parameters Bottle Pres. Method RCE; 1,2-DCE; 2-40ml vials HCI 8260 1,1-DCA; 1,1,1-TCA			1.5-inch	0.092		2-inch	0.16		
Note	1								
Sampling Data Method Peristaltic pump at 500mL per minute						10 inch	4		
Parameters Bottle Pres. Method									
Parameters Bottle Pres. Method TCE; 1,2-DCE; 2-40ml vials HCI 8260 1,1-DCA; 1,1,1-TCA			ımn at 500ml	ner minute					
TCE; 1,2-DCE; 2-40ml vials	Wicthod	7 Orlotanio pu	mp at oronia	<i>F</i>		•			
1,1-DCA; 1,1,1-TCA	Parameters	3	Bottle						
Phenol & aniline 2-1L amber bottles - 8270			2-40ml vials	· "n	HCI	8260			
Tield Parameters	1,1-DCA; 1,	1,1-TCA							
Tield Parameters	nhenol & ar	niline	2-1L amber l	bottles	_	8270			
Field Parameters	phonor a ar								
Field Parameters 1 Volume 2 Volume 3 Volume Sample pH 6.18 6.45 6.33 6.74 Temp. (C) 16.91 17.13 16.40 16.56 Spec. Cond. (uS/cm) 5.32 5.28 5.30 5.26 Turbidity (NTU) 450.0 317.0 >1000 >1000 Dissolved Oxygen (DO) 3.93 5.46 2.16 4.92 ORP 123 123 55 30 Nitrate (mg/L) - - NT NT Ferrous Iron (mg/L) - - NT NT Sulfate (mg/L) - - NT NT Comments: Sudan IV test was negative. Water was brown in color, turbid. Sample was taken at 1030 on 9/27/02.	Zn & Pb		1- 4 oz. Plas	tic	НNО з	6010B			
pH 6.18 6.45 6.33 6.74 Temp. (C) 16.91 17.13 16.40 16.56 Spec. Cond. (uS/cm) 5.32 5.28 5.30 5.26 Turbidity (NTU) 450.0 317.0 >1000 >1000 Dissolved Oxygen (DO) 3.93 5.46 2.16 4.92 ORP 123 123 55 30 Nitrate (mg/L) - - NT NT Ferrous Iron (mg/L) - - NT NT Sulfate (mg/L) - - NT NT Comments: Sudan IV test was negative. Water was brown in color, turbid. Sample was taken at 1030 on 9/27/02.			bottle						
pH 6.18 6.45 6.33 6.74 Temp. (C) 16.91 17.13 16.40 16.56 Spec. Cond. (uS/cm) 5.32 5.28 5.30 5.26 Turbidity (NTU) 450.0 317.0 >1000 >1000 Dissolved Oxygen (DO) 3.93 5.46 2.16 4.92 ORP 123 123 55 30 Nitrate (mg/L) - - NT NT Ferrous Iron (mg/L) - - NT NT Sulfate (mg/L) - - NT NT Comments: Sudan IV test was negative. Water was brown in color, turbid. Sample was taken at 1030 on 9/27/02.	Field Daw		4 1/2/11/20	2 1/a/uma	2 Valuma	Comple	l		
Temp. (C)		ameters			1				
Spec. Cond. (uS/cm) 5.32 5.28 5.30 5.26 Turbidity (NTU) 450.0 317.0 >1000 >1000 Dissolved Oxygen (DO) 3.93 5.46 2.16 4.92 ORP 123 123 55 30 Nitrate (mg/L) - - NT NT Ferrous Iron (mg/L) - - NT NT Sulfate (mg/L) - - NT NT Comments: Sudan IV test was negative. Water was brown in color, turbid. Sample was taken at 1030 on 9/27/02.	-								
Turbidity (NTU) Dissolved Oxygen (DO) ORP 123 123 123 55 30 Nitrate (mg/L) Ferrous Iron (mg/L) Sulfate (mg/L) Comments: Sudan IV test was negative. Water was brown in color, turbid. Sample was taken at 1030 on 9/27/02.	• • •	. (C/ama)					1		
Dissolved Oxygen (DO) 3.93 5.46 2.16 4.92	•	•							
ORP 123 123 55 30 Nitrate (mg/L) - - NT NT Ferrous Iron (mg/L) - - NT NT Sulfate (mg/L) - - NT NT Comments: Sudan IV test was negative. Water was brown in color, turbid. Sample was taken at 1030 on 9/27/02.					1				
Nitrate (mg/L) Ferrous Iron (mg/L) Sulfate (mg/L) Comments: Sudan IV test was negative. Water was brown in color, turbid. Sample was taken at 1030 on 9/27/02.		oxygen (DO)							
Ferrous Iron (mg/L) Sulfate (mg/L) NT NT Sulfate (mg/L) - NT NT Comments: Sudan IV test was negative. Water was brown in color, turbid. Sample was taken at 1030 on 9/27/02.		м	123						
Sulfate (mg/L) NT NT Comments: Sudan IV test was negative. Water was brown in color, turbid. Sample was taken at 1030 on 9/27/02.			-		 				
Comments: Sudan IV test was negative. Water was brown in color, turbid. Sample was taken at 1030 on 9/27/02.		. • .			 				
taken at 1030 on 9/27/02.	Sultate (mg	/L)			I NI	<u> </u>]		
			st was negativ	ve. Water w	as brown in	color, turbid.	Sample was		
			taken due to	turbidity of v	water.				

Site Name	Ekonol Facilit	y			Well _	MW-8S		
					Date	9/27/2002		
Samplers	Dan Lipp				Time			
Campioro	Andy Janik				-			
Total Well D		-	13.55					
	Water Level (1	OC) _	11.65	teet				
Well Diamet	er (inches)		2.0					
Purging D	<u>ata</u>							
Method	Peristaltic pu	mp at 500mL	per minute					
Water Volume = (Total Depth of Well - Depth To Water) x Casing Volume per Foot = 13.55 - 11.65 x 0.16								
	=		gallons					
	ımes (gal/ft.):							
1-inch		1.5-inch	0.092		2-inch	0.16		
3-inch		4-inch	0.64		6-inch 10 inch	1.4		
8-incl	n 2.5				TO ITICIT			
Volume of	Purge Water R	emoved		1	gallons			
	3 -	•						
Sampling	<u>Data</u>							
Method		mp at 500mL	per minute					
		D-W-		Droo	Method			
Parameters <i>TCE; 1,2-D</i>		Bottle 2-40ml vials		Pres. <i>HCl</i>	8260			
1,1-DCA; 1,		2-40III VIAIS		1101	0200			
1,1 001, 1,	1,1 1011							
phenol & ar	niline	2-1L amber b	oottles	-	8270			
					22125			
Zn & Pb		1- 4 oz. Plas	tic	HNO 3	6010B			
		bottle						
Field Para	ameters	1 Volume	2 Volume	3 Volume	Sample			
pH	arrictoro	6.42	6.53	6.57	6.51			
Temp. (C)		16.57	16.66	16.51	16.98			
Spec. Cond	L (uSlom)	7.62	7.67	7.69	7.12			
•		>1000	326.0	>1000	530.0			
Turbidity (N	-	5.72	2.36	3.00	2.59			
	oxygen (DO)		2.50	5	-17			
ORP	<i>n</i> \	29	25		0.0			
Nitrate (mg			-	0.0	 			
Ferrous Iro		-	<u> </u>	0.4	1.2			
Sulfate (mg	/L)			80	80	J		
	Sudan IV tes	st was negativ	ve. Water w	as brown in	color, turbid.	Sample was		
taken at 12	50 on 9/27/02.							

Site Name	Ekonol Facilit	y			Well _	MW-9S		
					Date	9/27/2002		
Samplers	Dan Lipp				Time	1315		
Campions	Andy Janik				_			
			44.00	foot				
Total Well D	epth (TOC) Water Level (T	·OC)	9.98					
Well Diamet		-	2.0					
YYON DIGINO	(11.51.65)	-	· · · · · · · · · · · · · · · · · · ·					
Purging D	ata							
Method	Peristaltic pui	mp at 500mL	per minute					
Water Volume = (Total Depth of Well - Depth To Water) x Casing Volume per Foot = 14.02 - 9.98 x 0.16								
	=	0.6	gallons	9.98	X	0.70		
		0.0	ganono					
Casing Volu	umes (gal/ft.):							
1-incl		1.5-inch	0.092		2-inch	0.16		
3-incl		4-inch	0.64		6-inch 10 inch	1.4 4		
8-incl	h 2.5				TOTAL			
Volume of	Purge Water R	emoved		2	gallons			
		•		,,,,,,,,				
Sampling								
Method	Peristaltic pu	mp at 500mL	per minute					
Parameters	•	Bottle		Pres.	Method			
TCE; 1,2-D		2-40ml vials		HCI	8260			
1,1-DCA; 1,								
					0070			
phenol & ar	niline	2-1L amber b	oottles	*	8270			
Zn & Pb		1- 4 oz. Plas	tic	HNO з	6010B			
ZITOTO		bottle						
			· · · · · · · · · · · · · · · · · · ·	г -		1		
Field Para	<u>ameters</u>	1 Volume	2 Volume	3 Volume	Sample			
рН		6.31	6.34	6.27	6.28			
Temp. (C)		17.52	17.98	17.29	18.31			
Spec. Cond	d. (uS/cm)	6.54	5.68	7.26	7.01			
Turbidity (N	ITU)	>1000	819.0	>1000	>1000	1		
Dissolved (Oxygen (DO)	6.41	6.20	5.76	3.77			
ORP		76	99	102	57			
Nitrate (mg	/L)	-		0.0	0.2]		
Ferrous Iro	n (mg/L)			0.0	0.0	ļ		
Sulfate (mg	₃ /L)	-		80	80	j		
	: Sudan IV tes 345 on 9/27/02.	st was negativ	ve. Water w	as brown in	color, turbid.	Sample was		

Site Name	Ekonol Facili	ty			Well _	MW-1D
					Date	9/30/2002
Samplers	Andy Janik				Time	0850
Campiois	Jaime Davids	son			-	
			21 -2			
Total Well Do		feet feet				
Well Diamete	Water Level (* er (inches)	100)	2.0	1661		
Wen Diamet	or (monoc)					
Purging Da	<u>ata</u>					
Method	Peristaltic pu	mp at 500mL	per minute			
Water Volum	ne = (Total De	pth of Well - [Depth To W	ater) x Cas	ing Volume p	er Foot
	=	31.76		9.15	Χ	0.16
	=	3.6	gallons			
Casing Volu	mes (dal/ft):					
1-inch		1.5-inch	0.092		2-inch	0.16
3-inch		4-inch	0.64		6-inch	1.4
8-inch	2.5				10 inch	4
Volume of F	Purge Water R	emoved		12	gallons	
Sampling Method		ımp at 500mL	per minute	· · · · · · · · · · · · · · · · · · ·		
Danamatana		Bottle		Pres.	Method	
Parameters TCE; 1,2-DC	e.	2-40ml vials		HCI	8260	
1,1-DCA; 1,		Z TOTTI TIGIO				
phenol & an	iline	2-1L amber l	bottles	-	8270	
Zn & Pb		1- 4 oz. Plas	tic	HNO 3	6010B	
27. 47. 5		bottle				

Field Para	<u>meters</u>	1 Volume	2 Volume	3 Volume	Sample	
pН		7.68	7.78	7.79	7.67	
Temp. (C)		19.14	14.55	16.75	15.20	
Spec. Cond.	(uS/cm)	0.00	2.75	2.85	2.87	
Turbidity (N	ΓU)	257.0	31.2	52.3	67.5	
Dissolved O	xygen (DO)	11.87	2.11	1.50	1.44	
ORP		-175	-240	-252	-242	
Nitrate (mg/l	_)		-	4.0	2.0	
Ferrous Iron	(mg/L)	-	-	0.6	0.7	
Sulfate (mg/		-	-	80	80	
, ,	,					•
	Sudan IV tes		·			

Site Name	Ekonol Facilit	'y			Well _	MW-2D			
Samplers	Andy Janik Jaime Davids				Date _ Time _				
	Jaime Davius	ion							
Total Well D	epth (TOC)	feet							
	Water Level (7	TOC)	9.75	feet					
Well Diame	ter (inches)		2.0						
Purging D	<u>ata</u>								
Method	Peristaltic pu	mp at 500mL	per minute						
Water Volui	me = (Total De			ater) x Cas <i>9.75</i>		er Foot 0.16			
	=	30.06 3.2	gallons	9.70	<u> </u>	0.70			
		<u> </u>	ganono						
	ımes (gal/ft.):					0.40			
1-incl		1.5-inch	0.092		2-inch 6-inch	0.16			
3-incl		4-inch	0.64		10 inch	1.4			
O-IIIC	8-inch 2.5 10 inch 4								
Volume of	Purge Water R	emoved		11	gallons				
Sampling									
Method	Peristaltic pu	mp at 500mL	per minute						
Parameters	•	Bottle		Pres.	Method				
TCE; 1,2-D		2-40ml vials		HCI	8260				
1,1-DCA; 1									
					0070				
phenol & ar	niline	2-1L amber l	ootties	<u></u>	8270				
Zn & Pb		1- 4 oz. Plas	tic	HNO з	6010B				
		bottle							
			1	T		Í			
Field Para	<u>ameters</u>	1 Volume	2 Volume	3 Volume	Sample				
рН		6.75	7.10	7.25	7.38				
Temp. (C)		23.53	15.88	15.39	15.23				
Spec. Cond	•	0.000	0.000	0.000	0.000				
Turbidity (N	ITU)	217.0	283.0	290.0	289.0				
Dissolved (Oxygen (DO)	8.36	9.24	8.83	8.52	ł			
ORP		-87	-130	-161	-169				
Nitrate (mg		<u>-</u>	-	5.0	5.0				
Ferrous Iro	n (mg/L)	-	<u> </u>	0.0	0.0				
Sulfate (mg	յ/L)			80	80				
	: Sudan IV tes at 1415 on 10/		ve. Water w	as clear wit	h sheen and c	odor. Sample			
was landii	at 1710 011 10/	~ V C .							

Site Name	Ekonol Facili	ty			Well	MW-3D
Samplers	Andy Janik				_	9/30/2002 1120
	Jaime Davids	son				
Total Well F	epth (TOC)		26.43	feet		
	Water Level (roc)	9.21			
Well Diame	ter (inches)		2.0			
Purging D	Purging Data					
Method	Peristaltic pu	mp at 500mL	per minute			
Water Volui	me = (Total De	pth of Well - [26.43		ater) x Cas 9.21		er Foot 0.16
	=		gallons	9.21	Λ	0.70
	ımes (gal/ft.):					0.40
1-incl	-	1.5-inch	0.092 0.64		2-inch 6-inch	0.16 1.4
3-incl 8-incl		4-inch	0.04		10 inch	4
Sampling Method	Data Peristaltic pu	ımp at 500mL	. per minute			
Davamatan	_	Bottle		Pres.	Method	
Parameters TCE; 1,2-D		2-40ml vials		HCI	8260	
1,1-DCA; 1						
phenol & ar	niline	2-1L amber	bottles	•	8270	
Zn & Pb		1- 4 oz. Plas	tic	НМОз	6010B	
ZITOCTO		bottle	<u></u>			
						1
Field Para	<u>ameters</u>	1 Volume	2 Volume	3 Volume	Sample	
рН		7.55	7.46	7.19	7.30	
Temp. (C)		21.06	16.88	17.35	16.62	
Spec. Cond	•	2.92	2.97	2.96	2.99	
Turbidity (N	•	74.3	56.9	47.6	47.9	
	Oxygen (DO)	2.38	1.70	1.53	1.40	
ORP		-221	-230	-193	-209	
Nitrate (mg	-		-	0.0	0.0	
Ferrous Iro		-	-	0.8	0.4	
Sulfate (mg	_I /L)	-		80	80	J
	Sudan IV tes at 1330 on 9/3		ve. Water w	as clear witi	h sheen and d	odor. Sample

Site Name	Ekonol Facili	ty			Well _	MW-4D		
Samplers	Andy Janik Jaime Davids	son			Date _ Time _	9/30/2002 1400		
Total Well Depth (TOC) Initial Static Water Level (TOC) Well Diameter (inches)			28.94 9.27 2.0					
Purging D	ata							
Method	Peristaltic pu	mp at 500mL	per minute					
Water Volui	me = (Total De = =	28.94		ater) x Cas 9.27		er Foot 0.16		
FG	(-16)							
1-incl 3-incl 8-incl	0.36	1.5-inch 4-inch	0.092 0.64	10.200	2-inch 6-inch 10 inch	0.16 1.4 4		
Volume of Purge Water Removed 10 gallons								
Sampling Method		mp at 500mL	per minute	- 				
Parameters TCE; 1,2-D		Bottle 2-40ml vials		Pres. <i>HCl</i>	Method <i>8260</i>			
1,1-DCA; 1,		Z-40III VIGIS			0200			
phenol & ar	niline	2-1L amber l	bottles	-	8270			
		1 4 az Dias	tio	HNO 3	6010B			
Zn & Pb		1- 4 oz. Plas bottle	uc	HIVO 3	00106			
Field Para	ameters	1 Volume	2 Volume	3 Volume	Sample			
pH Tarra (C)		7.13 19.36	7.27 17.37	7.26 17.80	7.25 16.30			
Temp. (C) Spec. Cond	L (uS/om)	3.26	3.76	3.79	3.65			
Turbidity (N		29.8	28.7	30.0	31.1			
- '	Oxygen (DO)	2.14	1.23	1.12	0.90			
ORP	oxygen (DO)	-176	-218	-217	-219			
Nitrate (mg	/L)		_	1.0	0.2			
Ferrous Iron		_	_	0.0	0.0			
Sulfate (mg		-	-	80	80			
	Sudan IV tes at 1500 on 9/30		ve. Water w	as clear witi	h sheen and c	odor. Sample		

Site Name Ekonol Facil	ity			Well _	MW-10D
Samplers Andy Janik Jaime David	son				10/1/2002 1120
Total Well Depth (TOC) Initial Static Water Level (Well Diameter (inches)		30.93 9.47 2.0			
Purging Data					
Method Peristaltic pu	ımp at 500mL	per minute			
Water Volume = (Total De	epth of Well - I 30.93		ater) x Cas 9.47		er Foot 0.16
=	3.4	gallons			
[
Casing Volumes (gal/ft.): 1-inch 0.041	1.5-inch	0.092		2-inch	0.16
3-inch 0.36				6-inch	1.4
8-inch 2.5			-	10 inch	4
Volume of Purge Water F Sampling Data Method Peristaltic pu	Removed ump at 500mL	. per minute	11	gallons	
Parameters	Bottle		Pres.	Method	
TCE; 1,2-DCE;	2-40ml vials		HCI	8260	
1,1-DCA; 1,1,1-TCA					
phenol & aniline	2-1L amber	bottles	•	8270	
Zn & Pb	1- 4 oz. Plas bottle	tic	НМО з	6010B	
Field Descriptors	4 Velume	2 Valum=	3 Volume	Sample	
<u>Field Parameters</u>	1 Volume 8.78	2 Volume 8.48	8.31	Sample 8.25	
pH	20.12	17.87	18.06	17.75	
Temp. (C) Spec. Cond. (uS/cm)	0.000	0.000	0.004	0.002	
Turbidity (NTU)	235.0	235.0	0.004	0.002	
Dissolved Oxygen (DO)	10.87	11.05	10.68	10.47	
ORP	-191	-167	-147	-142	
Nitrate (mg/L)		† <u></u>	0.0	0.0	
Ferrous Iron (mg/L)		-	1.0	0.9	
Sulfate (mg/L)	_	-	80	80	
Comments: Sudan IV te was taken at 1345 on 10		ve. Water w	<u> </u>		. Sample

Site Name	Ekonol Facili	ty			Well _	MW-11D
					Date	10/1/2002
Samplers	Andy Janik				Time	0835
	Jaime Davids	son			_	
Total Wall F	Conth (TOC)		30.91	feet		
	Depth (TOC) : Water Level (1	FOC)	12.31			
Well Diame			2.0			
Purging D)ata					
Method	Peristaltic pu	mp at 500mL	per minute			
Water Volu	me = (Total De	pth of Well - [30.91		ater) x Cas 12.31		er Foot 0.16
	=	3.0	gallons	12.01	^	0.10
		0.0	, 5			
Casing Volu	umes (gal/ft.):					
1-incl		1.5-inch			2-inch	0.16
3-incl		4-inch	0.64		6-inch 10 inch	1.4
8-inc	11 2.0	· · · · · · · · · · · · · · · · · · ·			10 111011	<u>-</u>
Volume of	Purge Water R	emoved		10	gallons	
Sampling			. ,			
Method	Peristaltic pu	mp at 500mL	. per minute			
Parameter	s	Bottle		Pres.	Method	
TCE; 1,2-D		2-40ml vials		HCI	8260	
1,1-DCA; 1	,1,1-TCA				*	
phenol & a	nilino	2-1L amber l	hottles		8270	
prierioi & ai	mine	Z IZ dilibori	5011.00		<u> </u>	
Zn & Pb		1- 4 oz. Plas	tic	НNО з	6010B	
		bottle				
Field Par	ameters	1 Volume	2 Volume	3 Volume	Sample	
pH	arrecers	6.14	5.87	6.92	6.94	
Temp. (C)		16.55	13.75	13.22	13.17	
Spec. Cond	d (uS/cm)	3.830	3.630	3.690	3.690	
Turbidity (N		30.2	24.8	28.7	28.0	
• •	Oxygen (DO)	2.69	2.29	2.32	2.60	
ORP		2	-9	-132	-146	
Nitrate (mg	/L)	-	-	3.0	4.0]
Ferrous Iro		-	-	0.0	0.2	1
Sulfate (mg	· -	_	-	80	80	
					•	•
	: Sudan IV tes	st was negativ	ve. Water w	as clear. Sa	ample was tak	ren
at 0930 on	10/1/02.					

Site Name	Ekonol Facili	ty			Well _	MW-12D
					Date_	
Samplers	Andy Janik Jaime Davids	son			Time	1400
Total Well De	onth (TOC)		32.22	feet		
Initial Static V		roc)	9.85			
Well Diamete	r (inches)		2.0			
Purging Da	ı <u>ta</u>					
Method	Peristaltic pu	mp at 500mL	per minute			
Water Volum	e = (Total De		Depth To W		ing Volume p	
	=	32.22 3.6	- gallons	9.85	X	0.16
•		3.0	gallons			
Casing Volun	nes (gal/ft.):					
1-inch	0.041	1.5-inch			2-inch	0.16
3-inch 8-inch	0.36 2.5	4-inch	0.64		6-inch 10 inch	1.4 4
0-111011	2.0				10 111011	
Volume of P	urge Water R	emoved		12	gallons	
Sampling [<mark>Data</mark> Peristaltic pu	mp at 500mL	. per minute			
Parameters		Bottle		Pres.	Method	
TCE; 1,2-DC		2-40ml vials		HCI	8260	
1,1-DCA; 1,1	,1-TCA					
phenol & anii	line	2-1L amber	bottles		8270	
Zn & Pb	 	1- 4 oz. Plas	tic	HNO 3	6010B	
		bottle				
Field Pers	motors	1 Volume	2 Volume	2 Volume	Sample	
Field Parar	neters	1 Volume 8.53	8.09	3 Volume 8.68	Sample 8.83	
pH Tarrar (C)		26.88	20.82	20.23	19.99	
Temp. (C)	(··C/o)				0.000	
Spec. Cond.	•	0.001	0.000	0.000 89.4	177.0	
Turbidity (NT		230.0	261.0			
Dissolved Ox	(ygen (DO)	8.74 203	8.25 -248	7.82 -277	7.02 -298	
ORP	`	-203		5.2	5.3	
Nitrate (mg/L	-	-	-		0.0	
Ferrous Iron				0.0		
Sulfate (mg/l	-)	-	<u> </u>	80	80	
	Sudan IV tes		/e. Water w	as light gray	ı in color. San	nple

	Ekonol Facili	ty			Well _	MW-13D
					Date	10/1/2002
Samplers	Andy Janik				Time	1000
•	Jaime Davids	son				
Total Well D	Depth (TOC)		31.64	feet		
	Water Level (TOC)	12.62	feet		
Well Diame	ter (inches)	-	2.0			
Purging D	<u>ata</u>					
Method	Peristaltic pu	mp at 500mL	per minute			
Water Volu	me = (Total De			ater) x Cas 12.62		er Foot 0.16
	=	31.64 3.0	gallons	12.02	^	0.70
			J-			
	umes (gal/ft.):	4.5 :	0.002		2-inch	0.16
1-inc		1.5-inch 4-inch	0.092 0.64		2-inch	1.4
3-inc 8-inc	••		0.04		10 inch	4
Sampling Method		ımp at 500mL	per minute			
Method	Peristaltic pu		per minute	Pres.	Method	
	<u>Peristaltic ρυ</u> s	ump at 500mL Bottle 2-40ml vials	per minute		Method 8260	
Method Parameter	Peristaltic pu s CE;	Bottle	per minute	Pres.		
Method Parameter TCE; 1,2-D	Peristaltic pu s PCE; ,1,1-TCA	Bottle		Pres.		
Parameter TCE; 1,2-D 1,1-DCA; 1	Peristaltic pu s PCE; ,1,1-TCA	Bottle 2-40ml vials 2-1L amber l	bottles	Pres. HCI	8260 8270	
Method Parameter TCE; 1,2-D 1,1-DCA; 1	Peristaltic pu s PCE; ,1,1-TCA	Bottle 2-40ml vials	bottles	Pres.	8260	
Method Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & aa Zn & Pb	Peristaltic pu s iCE; ,1,1-TCA nilline	Bottle 2-40ml vials 2-1L amber to the second secon	bottles tic	Pres. HCI - HNO 3	8260 8270 6010B	
Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & al Zn & Pb Field Par	Peristaltic pu s iCE; ,1,1-TCA nilline	Bottle 2-40ml vials 2-1L amber I 1- 4 oz. Plas bottle 1 Volume	pottles tic 2 Volume	Pres. HCl - HNO 3	8260 8270 6010B Sample	
Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & al Zn & Pb Field Par pH	Peristaltic pu s iCE; ,1,1-TCA nilline	Bottle 2-40ml vials 2-1L amber l 1- 4 oz. Plas bottle 1 Volume 4.98	tic 2 Volume 5.02	Pres. HCI - HNO 3 3 Volume 5.27	8260 8270 6010B Sample 5.09	
Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & ad Zn & Pb Field Par pH Temp. (C)	Peristaltic puss SCE; ,1,1-TCA nilline ameters	Bottle 2-40ml vials 2-1L amber t 1- 4 oz. Plast bottle 1 Volume 4.98 17.83	oottles tic 2 Volume 5.02 15.25	Pres. HCI - HNO 3 3 Volume 5.27 15.11	8260 8270 6010B Sample 5.09 14.94	
Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & ai Zn & Pb Field Par pH Temp. (C) Spec. Cond	Peristaltic puss SCE; ,1,1-TCA milline ameters d. (uS/cm)	Bottle 2-40ml vials 2-1L amber to the second secon	2 Volume 5.02 15.25 0.000	Pres. HCl - HNO 3 3 Volume 5.27 15.11 0.000	8270 6010B Sample 5.09 14.94 0.000	
Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & al Zn & Pb Field Par pH Temp. (C) Spec. Cond Turbidity (N	Peristaltic puss scept; 1,1,1-TCA milline ameters d. (uS/cm)	Bottle 2-40ml vials 2-1L amber l 1- 4 oz. Plas bottle 1 Volume 4.98 17.83 0.000 241.0	2 Volume 5.02 15.25 0.000 249.0	Pres. HCI - HNO 3 3 Volume 5.27 15.11	8260 8270 6010B Sample 5.09 14.94	
Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & an Zn & Pb Field Par pH Temp. (C) Spec. Conc Turbidity (N Dissolved (C)	Peristaltic puss SCE; ,1,1-TCA milline ameters d. (uS/cm)	Bottle 2-40ml vials 2-1L amber l 1- 4 oz. Plas bottle 1 Volume 4.98 17.83 0.000 241.0 11.49	2 Volume 5.02 15.25 0.000	Pres. HCl - HNO 3 3 Volume 5.27 15.11 0.000 249.0	8270 6010B Sample 5.09 14.94 0.000 249.0	
Parameter. TCE; 1,2-D 1,1-DCA; 1 phenol & a Zn & Pb Field Par. pH Temp. (C) Spec. Conc. Turbidity (N Dissolved (ORP)	Peristaltic puss SCE; ,1,1-TCA nilline ameters d. (uS/cm) NTU) Oxygen (DO)	Bottle 2-40ml vials 2-1L amber l 1- 4 oz. Plas bottle 1 Volume 4.98 17.83 0.000 241.0	2 Volume 5.02 15.25 0.000 249.0 10.80	Pres. HCI - HNO 3 3 Volume 5.27 15.11 0.000 249.0 10.54	8260 8270 6010B Sample 5.09 14.94 0.000 249.0 10.34	
Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & ai Zn & Pb Field Par pH Temp. (C) Spec. Cond Turbidity (N Dissolved (ORP Nitrate (mg	Peristaltic puss Secondary	Bottle 2-40ml vials 2-1L amber l 1- 4 oz. Plas bottle 1 Volume 4.98 17.83 0.000 241.0 11.49	2 Volume 5.02 15.25 0.000 249.0 10.80	Pres. HCl - HNO 3 3 Volume 5.27 15.11 0.000 249.0 10.54 51	8260 8270 6010B Sample 5.09 14.94 0.000 249.0 10.34 66	
Volume of	Purge Water R	Removed		10	gallons	
Method Parameter TCE; 1,2-D 1,1-DCA; 1	Peristaltic pu s PCE; ,1,1-TCA	Bottle 2-40ml vials		Pres.	8260	
Method Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & a	Peristaltic pu s PCE; ,1,1-TCA	Bottle 2-40ml vials 2-1L amber l	bottles	Pres. HCI	8260 8270	
Parameter TCE; 1,2-D 1,1-DCA; 1	Peristaltic pu s PCE; ,1,1-TCA	Bottle 2-40ml vials 2-1L amber l 1- 4 oz. Plas	bottles	Pres. HCI	8260 8270	
Method Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & a	Peristaltic pu s PCE; ,1,1-TCA	Bottle 2-40ml vials 2-1L amber l 1- 4 oz. Plas	bottles	Pres. HCI	8260 8270	
Method Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & as Zn & Pb	Peristaltic pu s iCE; ,1,1-TCA nilline	Bottle 2-40ml vials 2-1L amber to the second secon	bottles tic	Pres. HCI - HNO 3	8260 8270 6010B	
Method Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & au Zn & Pb	Peristaltic pu s iCE; ,1,1-TCA nilline	Bottle 2-40ml vials 2-1L amber I 1- 4 oz. Plas bottle 1 Volume	pottles tic 2 Volume	Pres. HCl - HNO 3	8260 8270 6010B Sample	
Method Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & al Zn & Pb Field Par	Peristaltic pu s iCE; ,1,1-TCA nilline	Bottle 2-40ml vials 2-1L amber I 1- 4 oz. Plas bottle 1 Volume	pottles tic 2 Volume	Pres. HCl - HNO 3	8260 8270 6010B Sample	
Method Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & al Zn & Pb Field Par	Peristaltic pu s iCE; ,1,1-TCA nilline	Bottle 2-40ml vials 2-1L amber I 1- 4 oz. Plas bottle 1 Volume	pottles tic 2 Volume	Pres. HCl - HNO 3	8260 8270 6010B Sample	
Method Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & al Zn & Pb Field Par	Peristaltic pu s iCE; ,1,1-TCA nilline	Bottle 2-40ml vials 2-1L amber I 1- 4 oz. Plas bottle 1 Volume	pottles tic 2 Volume	Pres. HCl - HNO 3	8260 8270 6010B Sample	
Method Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & al Zn & Pb Field Par	Peristaltic pu s iCE; ,1,1-TCA nilline	Bottle 2-40ml vials 2-1L amber l 1- 4 oz. Plas bottle 1 Volume 4.98	tic 2 Volume 5.02	Pres. HCI - HNO 3 3 Volume 5.27	8260 8270 6010B Sample 5.09	
Method Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & al Zn & Pb Field Par pH	Peristaltic pu s iCE; ,1,1-TCA nilline	Bottle 2-40ml vials 2-1L amber l 1- 4 oz. Plas bottle 1 Volume 4.98	tic 2 Volume 5.02	Pres. HCI - HNO 3 3 Volume 5.27	8260 8270 6010B Sample 5.09	
Method Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & al Zn & Pb Field Par pH	Peristaltic pu s iCE; ,1,1-TCA nilline	Bottle 2-40ml vials 2-1L amber l 1- 4 oz. Plas bottle 1 Volume 4.98	tic 2 Volume 5.02	Pres. HCI - HNO 3 3 Volume 5.27	8260 8270 6010B Sample 5.09	
Method Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & al Zn & Pb Field Par pH	Peristaltic pu s iCE; ,1,1-TCA nilline	Bottle 2-40ml vials 2-1L amber l 1- 4 oz. Plas bottle 1 Volume 4.98	tic 2 Volume 5.02	Pres. HCI - HNO 3 3 Volume 5.27	8260 8270 6010B Sample 5.09	
Method Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & a Zn & Pb Field Par pH Temp. (C)	Peristaltic puss SCE; ,1,1-TCA nilline ameters	Bottle 2-40ml vials 2-1L amber t 1- 4 oz. Plast bottle 1 Volume 4.98 17.83	oottles tic 2 Volume 5.02 15.25	Pres. HCI - HNO 3 3 Volume 5.27 15.11	8260 8270 6010B Sample 5.09 14.94	
Method Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & a Zn & Pb Field Par pH Temp. (C)	Peristaltic puss SCE; ,1,1-TCA nilline ameters	Bottle 2-40ml vials 2-1L amber t 1- 4 oz. Plast bottle 1 Volume 4.98 17.83	oottles tic 2 Volume 5.02 15.25	Pres. HCI - HNO 3 3 Volume 5.27 15.11	8260 8270 6010B Sample 5.09 14.94	
Method Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & a Zn & Pb Field Par pH Temp. (C)	Peristaltic puss SCE; ,1,1-TCA nilline ameters	Bottle 2-40ml vials 2-1L amber t 1- 4 oz. Plast bottle 1 Volume 4.98 17.83	oottles tic 2 Volume 5.02 15.25	Pres. HCI - HNO 3 3 Volume 5.27 15.11	8260 8270 6010B Sample 5.09 14.94	
Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & ad Zn & Pb Field Par pH Temp. (C) Spec. Cond	Peristaltic puss SCE; ,1,1-TCA milline ameters d. (uS/cm)	Bottle 2-40ml vials 2-1L amber to the second secon	2 Volume 5.02 15.25 0.000	Pres. HCl - HNO 3 3 Volume 5.27 15.11 0.000	8270 6010B Sample 5.09 14.94 0.000	
Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & ad Zn & Pb Field Par pH Temp. (C) Spec. Cond	Peristaltic puss SCE; ,1,1-TCA milline ameters d. (uS/cm)	Bottle 2-40ml vials 2-1L amber to the second secon	2 Volume 5.02 15.25 0.000	Pres. HCl - HNO 3 3 Volume 5.27 15.11 0.000	8270 6010B Sample 5.09 14.94 0.000	
Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & al Zn & Pb Field Par pH Temp. (C) Spec. Cond	Peristaltic puss scept; 1,1,1-TCA milline ameters d. (uS/cm)	Bottle 2-40ml vials 2-1L amber l 1- 4 oz. Plas bottle 1 Volume 4.98 17.83 0.000 241.0	2 Volume 5.02 15.25 0.000 249.0	Pres. HCl - HNO 3 3 Volume 5.27 15.11 0.000 249.0	8270 6010B Sample 5.09 14.94 0.000 249.0	
Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & al Zn & Pb Field Par pH Temp. (C) Spec. Cond Turbidity (N	Peristaltic puss scept; 1,1,1-TCA milline ameters d. (uS/cm)	Bottle 2-40ml vials 2-1L amber l 1- 4 oz. Plas bottle 1 Volume 4.98 17.83 0.000 241.0	2 Volume 5.02 15.25 0.000 249.0	Pres. HCl - HNO 3 3 Volume 5.27 15.11 0.000 249.0	8270 6010B Sample 5.09 14.94 0.000 249.0	
Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & al Zn & Pb Field Par pH Temp. (C) Spec. Cond Turbidity (N	Peristaltic puss scept; 1,1,1-TCA milline ameters d. (uS/cm)	Bottle 2-40ml vials 2-1L amber l 1- 4 oz. Plas bottle 1 Volume 4.98 17.83 0.000 241.0 11.49	2 Volume 5.02 15.25 0.000 249.0 10.80	Pres. HCI - HNO 3 3 Volume 5.27 15.11 0.000 249.0 10.54	8260 8270 6010B Sample 5.09 14.94 0.000 249.0 10.34	
Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & an Zn & Pb Field Par pH Temp. (C) Spec. Conc Turbidity (N Dissolved (C)	Peristaltic puss scept; 1,1,1-TCA milline ameters d. (uS/cm)	Bottle 2-40ml vials 2-1L amber l 1- 4 oz. Plas bottle 1 Volume 4.98 17.83 0.000 241.0 11.49	2 Volume 5.02 15.25 0.000 249.0 10.80	Pres. HCI - HNO 3 3 Volume 5.27 15.11 0.000 249.0 10.54	8260 8270 6010B Sample 5.09 14.94 0.000 249.0 10.34	
Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & an Zn & Pb Field Par pH Temp. (C) Spec. Conc Turbidity (N Dissolved (C)	Peristaltic puss scept; 1,1,1-TCA milline ameters d. (uS/cm)	Bottle 2-40ml vials 2-1L amber l 1- 4 oz. Plas bottle 1 Volume 4.98 17.83 0.000 241.0 11.49	2 Volume 5.02 15.25 0.000 249.0 10.80	Pres. HCI - HNO 3 3 Volume 5.27 15.11 0.000 249.0 10.54	8260 8270 6010B Sample 5.09 14.94 0.000 249.0 10.34	
Parameter. TCE; 1,2-D 1,1-DCA; 1 phenol & a. Zn & Pb Field Par. pH Temp. (C) Spec. Conc. Turbidity (N Dissolved (ORP)	Peristaltic puss SCE; ,1,1-TCA nilline ameters d. (uS/cm) NTU) Oxygen (DO)	Bottle 2-40ml vials 2-1L amber l 1- 4 oz. Plas bottle 1 Volume 4.98 17.83 0.000 241.0 11.49	2 Volume 5.02 15.25 0.000 249.0 10.80	Pres. HCl - HNO 3 3 Volume 5.27 15.11 0.000 249.0 10.54 51	8260 8270 6010B Sample 5.09 14.94 0.000 249.0 10.34 66	
Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & ai Zn & Pb Field Par pH Temp. (C) Spec. Cond Turbidity (N Dissolved (ORP Nitrate (mg	Peristaltic puss Secondary	Bottle 2-40ml vials 2-1L amber l 1- 4 oz. Plas bottle 1 Volume 4.98 17.83 0.000 241.0 11.49	2 Volume 5.02 15.25 0.000 249.0 10.80	Pres. HCl - HNO 3 3 Volume 5.27 15.11 0.000 249.0 10.54 51 0.00	8270 8270 6010B Sample 5.09 14.94 0.000 249.0 10.34 66 0.0	
Parameter. TCE; 1,2-D 1,1-DCA; 1 phenol & a Zn & Pb Field Par. pH Temp. (C) Spec. Conc. Turbidity (N Dissolved (ORP)	Peristaltic puss Secondary	Bottle 2-40ml vials 2-1L amber l 1- 4 oz. Plas bottle 1 Volume 4.98 17.83 0.000 241.0 11.49 118	2 Volume 5.02 15.25 0.000 249.0 10.80	Pres. HCl - HNO 3 3 Volume 5.27 15.11 0.000 249.0 10.54 51 0.00	8270 8270 6010B Sample 5.09 14.94 0.000 249.0 10.34 66 0.0	
Parameter TCE; 1,2-D 1,1-DCA; 1 phenol & all Zn & Pb Field Part pH Temp. (C) Spec. Cond Turbidity (N Dissolved (ORP Nitrate (mg	Peristaltic puss scept; 1,1,1-TCA milline ameters d. (uS/cm) NTU) Oxygen (DO) n/L) on (mg/L)	Bottle 2-40ml vials 2-1L amber l 1- 4 oz. Plas bottle 1 Volume 4.98 17.83 0.000 241.0 11.49 118	2 Volume 5.02 15.25 0.000 249.0 10.80 110	Pres. HCl - HNO 3 3 Volume 5.27 15.11 0.000 249.0 10.54 51 0.00	8270 8270 6010B Sample 5.09 14.94 0.000 249.0 10.34 66 0.0	

Phase II

November 2002

Site Name Ekonol	Facility				Well ID	MW-1S
Causalana Andri Is	anile					
Samplers Andy Ja						
<u>Dan Lip</u>	ρ					
Total Well Depth (TO Initial Static Water Le)C)	14.75 7.15 2.0	feet feet inches		
Well Diameter		-	2.0	HIGHES		
Purging Data						
Method Peris	staltic Pu	ımp @ 500	mL/min.	Date/Time _	11/5/02	2 - 1245
Water Volume = (Tot	tal Dept	h of Well - D	epth To W	ater) x Casi	ing Volume p	er Foot
=		14.75	•	7.15	x	0.16
= 1.:	2 q:	allons				
<u></u>						
		Casing	Volumes (g	al/ft.):		
1-inch (0.041	1.5-inch	0.092		2-inch	0.16
3-inch	0.36	4-inch	0.64		6-inch	1.4
8-inch	2.5				10 inch	4
Volume of Purge Was Sampling Data		•		•		
Method Peris	staltic P	ump @ 500	mL/min	Date/Time	11/5/02	2 - 1320
Method Peris	staltic P			·		
Method <u>Peris</u> Parameters	staltic P	Bott	ile	Pres.	Me	thod
Parameters TCE; 1,2-DCE;			ile	·	Me	
Parameters <i>TCE; 1,2-DCE;</i> <i>1,1-DCA; 1,1,1-T</i>	CA	Bott 2-40ml	ile vials	Pres.	Me: 82	thod 260
Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TC	CA	Bott 2-40ml 2-1L ambe	le vials er bottles	Pres. <i>HCl</i>	Mei 82 82	thod 260
Parameters <i>TCE; 1,2-DCE;</i> <i>1,1-DCA; 1,1,1-T</i>	CA	Bott 2-40ml	le vials er bottles	Pres.	Mei 82 82	thod 260
Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-T(phenol & aniline Zn & Pb	CA e	Bott 2-40ml 2-1L ambe 1- 4 oz. Pla	ile vials er bottles stic bottle	Pres. HCI - HNO 3	Mei 82 82 60	thod 260
Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TC phenol & aniline Zn & Pb Field Parameters	CA e	Bott 2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume	tle vials r bottles stic bottle 2 Volume	Pres. HCI - HNO 3	82 82 60 Sample	thod 260
Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TC phenol & aniline Zn & Pb Field Parameters pH	CA e	Bott 2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume 7.39	tle vials or bottles stic bottle 2 Volume 7.11	Pres. HCl - HNO 3 3 Volume 7.10	82 82 60 Sample 7.11	thod 260
Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TC phenol & aniline Zn & Pb Field Parameters pH Temp. (F)	CA e	2-40ml 2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume 7.39 58.3	tle vials or bottles stic bottle 2 Volume 7.11 60.4	Pres. HCl - HNO 3 3 Volume 7.10 60.3	82 82 60° Sample 7.11 59.5	thod 260
Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TC phenol & aniline Zn & Pb Field Parameters pH Temp. (F) Spec. Cond. (uS/cm)	CA e	Bott 2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume 7.39 58.3 4.83	er bottles stic bottle 2 Volume 7.11 60.4 4.02	Pres. HCl - HNO 3 3 Volume 7.10 60.3 4.00	82 82 60 Sample 7.11 59.5 4.00	thod 260
Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TC phenol & aniline Zn & Pb Field Parameters pH Temp. (F) Spec. Cond. (uS/cm) Turbidity (NTU)	CA ==	2-1L ambe 1- 4 oz. Pla 1 Volume 7.39 58.3 4.83 >1,000	tle vials r bottles stic bottle 2 Volume 7.11 60.4 4.02 48.6	Pres. HCl - HNO 3 3 Volume 7.10 60.3	82 82 60° Sample 7.11 59.5	thod 260
Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TC phenol & aniline Zn & Pb Field Parameters pH Temp. (F) Spec. Cond. (uS/cm) Turbidity (NTU) Dissolved Oxygen (I	CA ==	Bott 2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume 7.39 58.3 4.83	er bottles stic bottle 2 Volume 7.11 60.4 4.02 48.6 0.39	Pres. HCl - HNO 3 3 Volume 7.10 60.3 4.00 0	82 82 60 Sample 7.11 59.5 4.00	thod 260
Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TC phenol & aniline Zn & Pb Field Parameters pH Temp. (F) Spec. Cond. (uS/cm) Turbidity (NTU) Dissolved Oxygen (IORP	CA ==	2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume 7.39 58.3 4.83 >1,000 2.32	tle vials r bottles stic bottle 2 Volume 7.11 60.4 4.02 48.6	Pres. HCl - HNO 3 3 Volume 7.10 60.3 4.00 0 0.33 -97	82 82 60 Sample 7.11 59.5 4.00 0	thod 260
Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TC phenol & aniline Zn & Pb Field Parameters pH Temp. (F) Spec. Cond. (uS/cm) Turbidity (NTU) Dissolved Oxygen (IORP Nitrate (mg/L)	CA ==	2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume 7.39 58.3 4.83 >1,000 2.32	er bottles stic bottle 2 Volume 7.11 60.4 4.02 48.6 0.39	Pres. HCl - HNO 3 3 Volume 7.10 60.3 4.00 0 0.33	82 82 60° Sample 7.11 59.5 4.00 0 0.29 -97	thod 260
Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TC phenol & aniline Zn & Pb Field Parameters pH Temp. (F) Spec. Cond. (uS/cm) Turbidity (NTU) Dissolved Oxygen (IORP	CA ==	Bott 2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume 7.39 58.3 4.83 >1,000 2.32 -146 -	er bottles stic bottle 2 Volume 7.11 60.4 4.02 48.6 0.39 -117	Pres. HCI - HNO 3 3 Volume 7.10 60.3 4.00 0 0.33 -97 0.0	82 82 60 Sample 7.11 59.5 4.00 0 0.29 -97 0.0	thod 260
Parameters TCE; 1,2-DCE; 1,1-DCA; 1,1,1-TC phenol & aniline Zn & Pb Field Parameters pH Temp. (F) Spec. Cond. (uS/cm) Turbidity (NTU) Dissolved Oxygen (EORP Nitrate (mg/L) Ferrous Iron (mg/L)	CA	Bott 2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume 7.39 58.3 4.83 >1,000 2.32 -146	er bottles stic bottle 2 Volume 7.11 60.4 4.02 48.6 0.39 -117	Pres. HCI - HNO 3 3 Volume 7.10 60.3 4.00 0 0.33 -97 0.0 0.6 80	82 82 60 Sample 7.11 59.5 4.00 0 0.29 -97 0.0 0.6	thod 260

Site Name	Ekonol Facilit	ty			Well ID	MW-2S
Samplers	Andy Janik Dan Lipp					
Total Well D Initial Static Well Diamet	Water Level (7	FOC)	11.95 4.05 2.0	feet feet inches		
Purging [<u>Data</u>					
Method	Peristaltic	Pump @ 500	mL/min.	Date/Time	11/6/0	2 - 1520
Water Volun	ne = (Total De	11.95	Depth To W		ing Volume x	per Foot 0.16
	= 1.3	gallons				
		Casing	Volumes (g	al/ft.):		
1-inch	0.041	1.5-inch	0.092		2-inch	0.16
3-inch	0.36	4-inch	0.64		6-inch	
8-inch	2.5				10 inch	4
Sampling Method		Pump @ 500	mL/min.	Date/Time	11/7/0	2 - 0945
Doro	motoro	Bot	tla	Pres.	Me	ethod
	meters 1,2-DCE;	2-40ml		HCI		260
	1,1,1-TCA	2 40/1/1	77070			
	& aniline	2-1L ambe	er bottles	-	8:	270
	& Pb	1- 4 oz. Pla	stic bottle	НИО з	60	10B
						_
Field Para	ameters	1 Volume	2 Volume	3 Volume	Sample	_
pH		6.47	6.43	6.49	6.49	_
Temp. (F)		60.8	61.7	61.5	60.8	4
Spec. Cond		5.34	5.40	5.49	5.47	4
Turbidity (N		35.8	3.4	13.3	0	4
	xygen (DO)	2.55	0.26	1.98	2.01	4
ORP		-48	-111	-81	-52	4
Nitrate (mg/	•	-	-	0.0	0.0	-{
Ferrous Iron			-	3.3 80	3.4 80	-{
Sulfate (mg	/L)	<u> </u>		00	00	J
Comments:	Water was c	lear, Sudan I	V test was n	egative		

Site Name	Ekonol Facili	ty	,		Well ID	MW-3S
Samplers	Andy Janik Dan Lipp					
Total Well D Initial Static Well Diamet	Water Level (7	COC)	12.02 7.42 2.0	feet feet inches		
Purging [<u>Data</u>					
Method	Peristaltic	Pump @ 500	mL/min.	Date/Time	11/5/02	- 0835
Water Volur	me = (Total De = = 0.7	pth of Well - [12.02 gallons	Depth To W	ater) x Cas 7.42	ing Volume p	er Foot 0.16
		Caeina	Volumes (g	al/ft)·		
1-inch	0.041	1.5-inch	0.092	anti.j.	2-inch	0.16
3-inch 8-inch	0.36	4-inch	0.64		6-inch 10 inch	1.4
Sampling Method						
	Peristaltic	Pump @ 500	mL/min.	Date/Time	11/5/02	- 0915
Para	Peristaltic meters	<i>Pump @ 500</i> Boti		Pres.	11/5/02 Met	
TCE; 1	meters 1,2-DCE;		tle	•		hod
TCE; 1 1,1-DCA;	meters 1,2-DCE; 1,1,1-TCA	Bott 2-40ml	tle vials	Pres.	Met 82	hod 60
TCE; 1 1,1-DCA; phenol	meters 1,2-DCE; 1,1,1-TCA & aniline	Bott 2-40ml 2-1L ambe	tle vials er bottles	Pres. HCl	Met 82 82	hod 60 70
TCE; 1 1,1-DCA; phenol	meters 1,2-DCE; 1,1,1-TCA	Bott 2-40ml	tle vials er bottles	Pres.	Met 82	hod 60 70
TCE; 1 1,1-DCA; phenol Zn	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb	Bott 2-40ml 2-1L ambe 1- 4 oz. Pla	tle vials er bottles stic bottle	Pres. HCI - HNO3	Met 82 82 601	hod 60 70
TCE; 1 1,1-DCA; phenol Zn Field Para	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb	Bott 2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume	tile vials er bottles stic bottle 2 Volume	Pres. HCI - HNO 3	Met 82 82	hod 60 70
TCE; 1 1,1-DCA; phenol Zn Field Para	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb	Bott 2-40ml 2-1L ambe 1- 4 oz. Pla	tle vials er bottles stic bottle	Pres. HCI - HNO3	Met 82 82 601 Sample	hod 60 70
TCE; 1 1,1-DCA; phenol Zn Field Para pH Temp. (F)	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb	2-40ml 2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume 7.10	tile vials er bottles stic bottle 2 Volume 6.90	Pres. HCI - HNO 3 3 Volume 7.08	82 82 601 Sample 7.08	hod 60 70
TCE; 1 1,1-DCA; phenol Zn Field Para	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb ameters . (uS/cm)	2-1L ambe 1- 4 oz. Pla 1 Volume 7.10 61.7	tile vials er bottles stic bottle 2 Volume 6.90 62.1	Pres. HCI - HNO 3 3 Volume 7.08 60.8	82 82 601 Sample 7.08 60.4 4.18 9.1	hod 60 70
TCE; 1 1,1-DCA; phenol Zn Field Para pH Temp. (F) Spec. Cond Turbidity (N	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb ameters . (uS/cm)	2-40ml 2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume 7.10 61.7 3.94 61.2 0.39	tle vials er bottles stic bottle 2 Volume 6.90 62.1 3.57 8.5 0.21	Pres. HCI - HNO 3 3 Volume 7.08 60.8 4.07 0 0.17	82 601 Sample 7.08 60.4 4.18 9.1 0.18	hod 60 70
TCE; 1 1,1-DCA; phenol Zn Field Para pH Temp. (F) Spec. Cond Turbidity (N Dissolved CORP	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb ameters . (uS/cm) TU) Dxygen (DO)	2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume 7.10 61.7 3.94 61.2	tle vials er bottles stic bottle 2 Volume 6.90 62.1 3.57 8.5	Pres. HCI - HNO 3 3 Volume 7.08 60.8 4.07 0 0.17 -147	82 601 Sample 7.08 60.4 4.18 9.1 0.18 -140	hod 60 70
TCE; 1 1,1-DCA; phenol Zn Field Para pH Temp. (F) Spec. Cond Turbidity (N Dissolved CORP Nitrate (mg/	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb ameters . (uS/cm) TU) Dxygen (DO)	Bott 2-40ml 2-1L ambet 1- 4 oz. Pla 1 Volume 7.10 61.7 3.94 61.2 0.39 -127	tle vials er bottles stic bottle 2 Volume 6.90 62.1 3.57 8.5 0.21 -112	Pres. HCI - HNO 3 3 Volume 7.08 60.8 4.07 0 0.17 -147 0.0	82 601 Sample 7.08 60.4 4.18 9.1 0.18 -140 0.0	hod 60 70
TCE; 1,1-DCA; phenol Zn Field Para pH Temp. (F) Spec. Cond Turbidity (N Dissolved CORP Nitrate (mg/Ferrous Iror	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb ameters . (uS/cm) TU) Dxygen (DO)	3.94 61.2 0.39 127	tle vials er bottles stic bottle 2 Volume 6.90 62.1 3.57 8.5 0.21 -112	Pres. HCI HNO 3 3 Volume 7.08 60.8 4.07 0 0.17 -147 0.0 3.0	82 82 601 Sample 7.08 60.4 4.18 9.1 0.18 -140 0.0 3.3	hod 60 70
TCE; 1,1-DCA; phenol Zn Field Para pH Temp. (F) Spec. Cond Turbidity (N Dissolved CORP Nitrate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate Iron Sulfate	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb ameters . (uS/cm) TU) Dxygen (DO)	Bott 2-40ml 2-1L ambet 1- 4 oz. Pla 1 Volume 7.10 61.7 3.94 61.2 0.39 -127 -	tle vials er bottles stic bottle 2 Volume 6.90 62.1 3.57 8.5 0.21 -112 -	Pres. HCI HNO 3 3 Volume 7.08 60.8 4.07 0 0.17 -147 0.0 3.0 80	82 601 Sample 7.08 60.4 4.18 9.1 0.18 -140 0.0	hod 60 70
TCE; 1,1-DCA; phenol Zn Field Para pH Temp. (F) Spec. Cond Turbidity (N Dissolved CORP Nitrate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate Iron Sulfate	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb ameters (uS/cm) TU) 0xygen (DO) (L) n (mg/L) //L)	Bott 2-40ml 2-1L ambet 1- 4 oz. Pla 1 Volume 7.10 61.7 3.94 61.2 0.39 -127 -	tle vials er bottles stic bottle 2 Volume 6.90 62.1 3.57 8.5 0.21 -112 -	Pres. HCI HNO 3 3 Volume 7.08 60.8 4.07 0 0.17 -147 0.0 3.0 80	82 82 601 Sample 7.08 60.4 4.18 9.1 0.18 -140 0.0 3.3	hod 60 70
TCE; 1,1-DCA; phenol Zn Field Para pH Temp. (F) Spec. Cond Turbidity (N Dissolved CORP Nitrate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate (mg/Ferrous Iror Sulfate Iron Sulfate	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb ameters (uS/cm) TU) 0xygen (DO) (L) n (mg/L) //L)	Bott 2-40ml 2-1L ambet 1- 4 oz. Pla 1 Volume 7.10 61.7 3.94 61.2 0.39 -127 -	tle vials er bottles stic bottle 2 Volume 6.90 62.1 3.57 8.5 0.21 -112 -	Pres. HCI HNO 3 3 Volume 7.08 60.8 4.07 0 0.17 -147 0.0 3.0 80	82 82 601 Sample 7.08 60.4 4.18 9.1 0.18 -140 0.0 3.3	hod 60 70

Site Name	Ekonol Facili	ty			Well ID	MW-4S
Samplers	Andy Janik Dan Lipp					
Total Well D Initial Static Well Diamet	epth (TOC) Water Level (1	FOC)	12.45 9.52 2.0	feet feet inches		
Purging D	<u>Data</u>					
Method	Peristaltic	Pump @ 500	mL/min.	Date/Time	11/5/02	? - 1510
Water Volum	ne = (Total De	pth of Well - [Depth To W	ater) x Cas	ing Volume p	er Foot
	=	12.45		9.52	X	0.16
	= 0.5	gallons				
		Casing	Volumes (g	al/ft.):		
1-inch	0.041	1.5-inch	0.092	ши.,	2-inch	0.16
3-inch		4-inch	0.64		6-inch	1.4
8-inch	2.5				10 inch	4
Volume of F Sampling Method		emoved Pump @ 500	2 mL/min.	gallons Date/Time	11/5/02	2 - 1540
Para	meters	Bot	tle	Pres.		thod
	,2-DCE;	2-40ml	vials	HCI	82	260
	1,1,1-TCA					
	& aniline	2-1L ambe		-		100
Zn	& Pb	1- 4 oz. Pla	Stic Dottie	НNО з	60	10B
Field Para	meters	1 Volume	2 Volume	3 Volume	Sample]
pН		6.82	6.70	6.67	6.68	
Temp. (F)		62.1	62.6	62.1	60.8	
Spec. Cond	. (uS/cm)	6.89	6.69	6.87	6.77	
Turbidity (N		>1,000	179	399	101	
	xygen (DO)	3.63	0.40	0.21	0.23	-
ORP	1.	-160	-160	-211 0.0	-243 1.0	
Nitrate (mg/ Ferrous Iror	•	-	<u> </u>	0.8	0.6	
Sulfate (mg/		-	_	80	80	
	Water was c	lear, Sudan IV	/ test was n	negative		
						

Site Name	Ekonol Facilit	'y			Well ID	MW-5S
Samplers	Andy Janik Dan Lipp					•
Total Well D Initial Static Well Diamet	Water Level (1	-oc) -	14.44 9.33 2.0	feet feet inches		
Purging [<u>Data</u>					
Method	Peristaltic	Pump @ 500	mL/min	Date/Time _	11/4/02	2 - 1225
Water Volur	me = (Total De = = 0.8	pth of Well - [14.44 gallons	Depth To W	ater) x Cas 9.33	ing Volume p	oer Foot 0.16
			Volumes (g	al/ft.):	0:	0.40
1-inch 3-inch 8-inch	0.36	1.5-inch 4-inch	0.092 0.64		2-inch 6-inch 10 inch	1.4
Sampling	Purge Water R <u>I Data</u>	emoved	3	gallons		
Method	Peristaltic	Pumn @ 500	mL/min.	Date/Time	11/4/02	2 - 1320
Method _		Pump @ 500		•	11/4/02	
Para	meters	Bott	tle	Pres.	Me	thod
Para <i>TCE</i> ;	meters 1,2-DCE;		tle	•	Me	
Para TCE; 1,1-DCA	meters 1,2-DCE; ; 1,1,1-TCA	Boti 2-40ml	tle <i>vials</i>	Pres. HCl	Me 82	thod 260
Para TCE; 1,1-DCA phenol	nmeters 1,2-DCE; ; 1,1,1-TCA ' & aniline	Bott 2-40ml 2-1L ambe	tle vials er bottles	Pres. HCl	Me 82 82	thod 260
Para TCE; 1,1-DCA phenol	meters 1,2-DCE; ; 1,1,1-TCA	Boti 2-40ml	tle vials er bottles	Pres. HCl	Me 82 82	thod 260
Para TCE; 1,1-DCA phenol Zn	ameters 1,2-DCE; ; 1,1,1-TCA & aniline & Pb	Bott 2-40ml 2-1L ambe 1- 4 oz. Pla	tle vials er bottles stic bottle	Pres. HCI - HNO 3	Me 82 82 60	thod 260
Para TCE; 1,1-DCA phenol Zn	ameters 1,2-DCE; ; 1,1,1-TCA & aniline & Pb	Bott 2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume	tle vials er bottles stic bottle 2 Volume	Pres. HCI - HNO 3	82 82 60 Sample	thod 260
Para TCE; 1,1-DCA phenol Zn Field Para pH	ameters 1,2-DCE; ; 1,1,1-TCA & aniline & Pb	2-40ml 2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume 7.12	tle vials er bottles stic bottle 2 Volume 6.97	Pres. HCI - HNO 3	82 82 60 Sample 6.97	thod 260
Para TCE; 1,1-DCA phenol Zn Field Para pH Temp. (F)	ameters 1,2-DCE; ; 1,1,1-TCA & aniline & Pb ameters	2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume 7.12 56.1	tle vials er bottles stic bottle 2 Volume	Pres. HCI - HNO 3	82 82 60 Sample	thod 260
Para TCE; 1,1-DCA phenol Zn Field Para pH Temp. (F) Spec. Cond	ameters 1,2-DCE; ; 1,1,1-TCA & aniline & Pb ameters 1. (uS/cm)	2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume 7.12 56.1 4.28	tle vials er bottles stic bottle 2 Volume 6.97 56.5	Pres. HCI - HNO 3 3 Volume 6.97 55.9	82 82 60 Sample 6.97 55.9	thod 260
Para TCE; 1,1-DCA phenol Zn Field Para pH Temp. (F) Spec. Cond Turbidity (N	ameters 1,2-DCE; ; 1,1,1-TCA & aniline & Pb ameters I. (uS/cm)	2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume 7.12 56.1	tle vials er bottles stic bottle 2 Volume 6.97 56.5 3.76	Pres. HCl - HNO 3 3 Volume 6.97 55.9 2.78	82 82 60 Sample 6.97 55.9 2.73	thod 260
Para TCE; 1,1-DCA phenol Zn Field Para pH Temp. (F) Spec. Cond Turbidity (N	ameters 1,2-DCE; ; 1,1,1-TCA & aniline & Pb ameters 1. (uS/cm)	2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume 7.12 56.1 4.28 488	tle vials er bottles stic bottle 2 Volume 6.97 56.5 3.76 235	Pres. HCI - HNO 3 3 Volume 6.97 55.9 2.78 35.2	82 82 60 Sample 6.97 55.9 2.73 42.3	thod 260
Para TCE; 1,1-DCA phenol Zn Field Para pH Temp. (F) Spec. Conc Turbidity (N Dissolved C	ameters 1,2-DCE; ; 1,1,1-TCA 2 & aniline 2 Pb ameters 1. (uS/cm) ITU) Oxygen (DO)	2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume 7.12 56.1 4.28 488 4.52	tle vials er bottles stic bottle 2 Volume 6.97 56.5 3.76 235 0.40	Pres. HCI - HNO 3 3 Volume 6.97 55.9 2.78 35.2 0.18	82 82 60 Sample 6.97 55.9 2.73 42.3 0.00	thod 260
Para TCE; 1,1-DCA phenol Zn Field Para pH Temp. (F) Spec. Conc Turbidity (N Dissolved CORP	ameters 1,2-DCE; 1,1,1-TCA 2 aniline 2 Pb ameters 1. (uS/cm) ITU) 0xygen (DO)	2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume 7.12 56.1 4.28 488 4.52	tle vials er bottles stic bottle 2 Volume 6.97 56.5 3.76 235 0.40 -45	Pres. HCI - HNO 3 3 Volume 6.97 55.9 2.78 35.2 0.18 -60	82 82 60 Sample 6.97 55.9 2.73 42.3 0.00 -57	thod 260
Para TCE; 1,1-DCA phenol Zn Field Para pH Temp. (F) Spec. Conc Turbidity (N Dissolved C ORP Nitrate (mg.	ameters 1,2-DCE; 1,1,1-TCA 2 aniline 2 Pb ameters I. (uS/cm) ITU) Dxygen (DO) /L) n (mg/L)	2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume 7.12 56.1 4.28 488 4.52	tle vials er bottles stic bottle 2 Volume 6.97 56.5 3.76 235 0.40 -45	Pres. HCI - HNO 3 3 Volume 6.97 55.9 2.78 35.2 0.18 -60 0.0	82 82 60 Sample 6.97 55.9 2.73 42.3 0.00 -57	thod 260
Para TCE; 1,1-DCA phenol Zn Field Para pH Temp. (F) Spec. Conc Turbidity (N Dissolved C ORP Nitrate (mg Ferrous Iros Sulfate (mg	ameters 1,2-DCE; 1,1,1-TCA 2 aniline 2 Pb ameters I. (uS/cm) ITU) Dxygen (DO) /L) n (mg/L)	2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume 7.12 56.1 4.28 488 4.52 -42 -	tle vials er bottles stic bottle 2 Volume 6.97 56.5 3.76 235 0.40 -45 -	Pres. HCI - HNO 3 3 Volume 6.97 55.9 2.78 35.2 0.18 -60 0.0 0.8 80	82 82 60 Sample 6.97 55.9 2.73 42.3 0.00 -57 0.9 0.8	thod 260

Site Name	Ekonol Facili	ty			Well ID	MW-6S
Samplers	Andy Janik Dan Lipp					
Total Well D Initial Static Well Diamet	Water Level (ГОС)	14.03 8.39 2.0	feet feet inches		
Purging [<u>Data</u>					
Method	Peristaltic	Pump @ 500	mL/min.	Date/Time _	11/5/02	2 - 0920
Water Volur	me = (Total De = = 0.9	pth of Well - I 14.03 gallons	Depth To W -		ing Volume _I <i>x</i>	0.16
		Cocina	Volumes (g	al/# \·		
1-inch	0.041	1.5-inch	0.092	airit.).	2-inch	0.16
3-inch		4-inch	0.032		6-inch	
8-inch		4 111011	0.01		10 inch	1
Sampling Method		Pump @ 500	mL/min.	Date/Time_	11/5/0	2 - 1000
Dava	meters	Bot	Ho	Pres.	Mo	thod
	nieters 1,2-DCE;	2-40ml		HCI		260
	1,1,1-TCA	2-401111	VIGIO	1101		
	& aniline	2-1L ambe	er bottles	-	82	270
	& Pb	1- 4 oz. Pla		НОО 3	60	10B
	_					
Field Para	<u>meters</u>	1 Volume	2 Volume	3 Volume	Sample	
рН		6.68	6.72	6.69	6.68	
Temp. (F)		59.7	62.4	61.7	61.5	1
Spec. Cond		5.78	5.79	5.79	5.95	4
Turbidity (N		716	17.6	10.3	6.2	4
	xygen (DO)	2.32	0.56	0.36	0.32	4
ORP	1 \	-14	74	59	50 0.0	-
Nitrate (mg/		-	<u>-</u>	0.0 0.8	0.7	1
Ferrous Iron Sulfate (mg.				80	80	1
Sunate (mg	, L)		L	00 1		J
Comments:	Water was c	lear, Sudan I\	/ test was n	egative		

Site Name	Ekonol Facilit	ty			Well ID	MW-7S
Samplers	Andy Janik					
·	Dan Lipp					
Total Well D	epth (TOC) Water Level (1	LOC)	12.50 7.89	feet feet		
Well Diamet	-		2.0	inches		
Tron Blanco		•				
Purging [<u>Data</u>					
Method	Peristaltic I	Pump @ 500	mL/min.	Date/Time _	11/4/02	- 1500
Water Volur	ne = (Total De	pth of Well - [Depth To W		ing Volume p	
	_=	12.50	-	7.89	X	0.16
	= 0.7	gallons				
		Cooing	Valumas (a	ol/ft):		
1-inch	0.041	1.5-inch	Volumes (g 0.092	ai/it.).	2-inch	0.16
3-inch		4-inch	0.64		6-inch	1.4
8-inch					10 inch	4
Sampling Method	-	Pump @ 500	mL∕min.	Date/Time	11/4/02	! - 1540
Dana		Bot	Ho	Pres.	Met	hod
	meters	2-40ml		HCI	82	
	1,2-DCE; : 1,1,1-TCA	2-401111	VIGIS	1101		
	& aniline	2-1L ambe	er bottles	-	82	70
	& Pb	1- 4 oz. Pla		НNО з	601	10B
						•
Field Para	<u>ameters</u>	1 Volume	2 Volume	3 Volume	Sample	
pН		6.75	6.66	6.70	6.71	
Temp. (F)		61.2	62.4	61.2	60.8	
Spec. Cond		4.89	4.86 122	4.90 80.1	4.93 88.0	
Turbidity (N	(DO) Oxygen (DO)	63.7 4.32	1.74	2.60	3.44	
ORP	xygen (DO)	70	89	86	87	
Nitrate (mg/	4.)		-	0.0	0.0	
Ferrous Iron		-	_	0.0	0.0	
Sulfate (mg	· • ·	-	-	80	80	
Comments:	Water was c	lear, Sudan I	/ test was r	egative		
						· · · · · · · · · · · · · · · · · · ·
				· · · · · · · · · · · · · · · · · · ·		

Site Name	Ekonol Facili	ty			Well ID	MW-8S
Samplers	Andy Janik Dan Lipp					
Total Well D Initial Static Well Diamet	Water Level (roc)	13.65 9.58 2.0	feet feet inches		
Purging [<u>Data</u>					
Method	Peristaltic	Pump @ 500	mL/min.	Date/Time	11/4/02	- 1220
Water Volur	me = (Total De = = 0.7	pth of Well - [13.65 gallons	Depth To W	ater) x Cas 9.58	ing Volume p	er Foot 0.16
		O i	\/_l	-1/ 4 \.	····	
1 in al	0.041	1.5-inch	Volumes (g 0.092	al/π.):	2-inch	0.16
1-inch 3-inch			0.092		6-inch	1.4
8-inch		4-111011	0.04		10 inch	4
Sampling Method						
	Penstaltic	Pump @ 500	mL/min.	Date/Time	11/4/02	- 1400
Para		Pump @ 500 Bot		Date/Time	<i>11/4/02</i> Met	
	Penstaltic meters 1,2-DCE;		tle			hod
TCE; 1	meters	Bot	tle	Pres.	Met 82	hod 60
TCE; 1 1,1-DCA, phenol	meters 1,2-DCE; 1,1,1-TCA & aniline	Bott 2-40ml 2-1L ambe	tle vials er bottles	Pres. HCl	Met 82	hod 60 70
TCE; 1 1,1-DCA, phenol	meters 1,2-DCE; 1,1,1-TCA	Boti <i>2-40ml</i>	tle vials er bottles	Pres. HCl	Met 82	hod 60 70
TCE; 1 1,1-DCA, phenol Zn	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb	Bott 2-40ml 2-1L ambe 1- 4 oz. Pla	tle vials er bottles stic bottle	Pres. HCI - HNO 3	Met 82 82 601	hod 60 70
TCE; 1 1,1-DCA, phenol Zn Field Para	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb	Bott 2-40ml 2-1L ambe	tle vials er bottles	Pres. HCI - HNO 3	Met 82 82 601 Sample	hod 60 70
TCE; 1 1,1-DCA, phenol Zn Field Para pH	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb	Bott 2-40ml 2-1L ambe 1- 4 oz. Pla	ttle vials er bottles stic bottle 2 Volume -	Pres. HCI - HNO 3 3 Volume 6.67	82 82 601 Sample 6.70	hod 60 70
TCE; 1 1,1-DCA, phenol Zn Field Para pH Temp. (F)	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb	Bott 2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume	tle vials er bottles stic bottle	Pres. HCI - HNO 3 3 Volume 6.67 60.6 6.89	Met 82 82 601 Sample	hod 60 70
TCE; 1 1,1-DCA, phenol Zn Field Para pH	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb ameters	2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume - 59.6	ttle vials er bottles stic bottle 2 Volume - 58.5	Pres. HCI - HNO 3 3 Volume 6.67 60.6	82 82 601 Sample 6.70 61.3	hod 60 70
TCE; 1,1-DCA, phenol Zn Field Para pH Temp. (F) Spec. Cond Turbidity (N Dissolved Conditions)	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb ameters	2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume - 59.6	ttle vials er bottles stic bottle 2 Volume - 58.5	Pres. HCI - HNO 3 3 Volume 6.67 60.6 6.89 1.5 1.89	Met 82 601 Sample 6.70 61.3 6.80 1.6 1.40	hod 60 70
TCE; 1,1-DCA, phenol Zn Field Para pH Temp. (F) Spec. Cond Turbidity (N Dissolved CORP	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb ameters (uS/cm) TU) (xygen (DO)	2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume - 59.6	ttle vials er bottles stic bottle 2 Volume - 58.5	Pres. HCI - HNO 3 3 Volume 6.67 60.6 6.89 1.5 1.89 53	Met 82 601 Sample 6.70 61.3 6.80 1.6 1.40 65	hod 60 70
Field Para pH Temp. (F) Spec. Cond Turbidity (N Dissolved C ORP Nitrate (mg/	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb ameters (uS/cm) TU) (xygen (DO)	2-40ml 2-1L ambe 1- 4 oz. Pla 1 Volume - 59.6	ttle vials er bottles stic bottle 2 Volume - 58.5 10.75	Pres. HCI - HNO 3 3 Volume 6.67 60.6 6.89 1.5 1.89 53 0.0	Met 82 82 601 Sample 6.70 61.3 6.80 1.6 1.40 65 0.0	hod 60 70
Field Para pH Temp. (F) Spec. Cond Turbidity (N Dissolved C ORP Nitrate (mg/ Ferrous Iron	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb ameters (uS/cm) TU) (xygen (DO)	Bott 2-40ml 2-1L ambet 1- 4 oz. Pla 1 Volume - 59.6 10.22	ttle vials er bottles stic bottle 2 Volume - 58.5 10.75	Pres. HCI - HNO 3 3 Volume 6.67 60.6 6.89 1.5 1.89 53 0.0 0.5	82 82 601 Sample 6.70 61.3 6.80 1.6 1.40 65 0.0 0.5	hod 60 70
Field Para pH Temp. (F) Spec. Cond Turbidity (N) Dissolved CORP Nitrate (mg/	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb ameters (uS/cm) TU) (xygen (DO)	Bott 2-40ml 2-1L ambet 1- 4 oz. Pla 1 Volume - 59.6 10.22	ttle vials er bottles stic bottle 2 Volume - 58.5 10.75	Pres. HCI - HNO 3 3 Volume 6.67 60.6 6.89 1.5 1.89 53 0.0	Met 82 82 601 Sample 6.70 61.3 6.80 1.6 1.40 65 0.0	hod 60 70
Field Para pH Temp. (F) Spec. Cond Turbidity (N Dissolved CORP Nitrate (mg/ Ferrous Iror Sulfate (mg/	meters 1,2-DCE; 1,1,1-TCA & aniline & Pb ameters (uS/cm) TU) (xygen (DO)	Bott 2-40ml 2-1L ambet 1- 4 oz. Pla 1 Volume	ttle vials er bottles stic bottle 2 Volume - 58.5 10.75	Pres. HCI - HNO 3 3 Volume 6.67 60.6 6.89 1.5 1.89 53 0.0 0.5 80	82 82 601 Sample 6.70 61.3 6.80 1.6 1.40 65 0.0 0.5 80	hod 60 70
Field Para pH Temp. (F) Spec. Cond Turbidity (N Dissolved CORP Nitrate (mg/ Ferrous Iror Sulfate (mg/	ameters 1,2-DCE; 1,1,1-TCA & aniline & Pb ameters (uS/cm) TU) 0xygen (DO) (L) n (mg/L) //L)	Bott 2-40ml 2-1L ambet 1- 4 oz. Pla 1 Volume	ttle vials er bottles stic bottle 2 Volume - 58.5 10.75	Pres. HCI - HNO 3 3 Volume 6.67 60.6 6.89 1.5 1.89 53 0.0 0.5 80	82 82 601 Sample 6.70 61.3 6.80 1.6 1.40 65 0.0 0.5 80	hod 60 70

Site Name	Ekonol Facili	ity		Well ID	MW-9S		
Camplara	Andy Janik						
Samplers	Andy Janik						
	Dan Lipp			·			
Total Well D	epth (TOC)		14.00	feet			
	Water Level (TOC)	9.62	feet			
Well Diamet	er	•	2.0	inches			
Purging D)ata						
r diging L	Zata						
Method	Method Peristaltic Pump @ 500 mL/min. Date/Time 11/4/02 - 1420						
Water Volun	ne = (Total De	14.00	Depth To W	/ater) x Cas 9.62	ing Volume p	oer Foot 0.16	
	= 0.7	gallons					
		Casina	Volumes (g	ıal/ft)·			
1-inch	0.041	1.5-inch			2-inch	0.16	
3-inch		4-inch			6-inch		
8-inch					10 inch	i i	
Sampling Method		Pump @ 500	mL/min.	Date/Time	11/4/02	2 - 1445	
Dave	4	Dat	lla.	Dree	Ma	the ad	
	meters	Bot		Pres. <i>HCl</i>	Method <i>8260</i>		
	,2-DCE; 1,1,1-TCA	2-40ml	viais	<u>nu</u>	02	:00	
	& aniline	2-1L ambe	r hottlas	_	82	70	
	& Pb	1- 4 oz. Pla		HNO 3	8270 6010B		
211	Q F D	1- 4 UZ. 1 Id	Suc Douie	111403		100	
Field Para	meters	1 Volume	2 Volume	3 Volume	Sample]	
pH		6.57	6.58	6.58	6.68		
Temp. (F)		60.8	63.7	63.0	60.6]	
Spec. Cond.	(uS/cm)	6.97	6.87	6.82	6.36	1	
Turbidity (N		399	99.1	518	286		
Dissolved O	xygen (DO)	2.40	0.64	6.07	0.29		
ORP		3	-3	-29	-28]	
Nitrate (mg/l	•	-	-	0.0	0.0 1.0		
	rrous Iron (mg/L) 0.6					1	
Sulfate (mg/	L)	-		80	80]	
Comments:	Water was c	lear, Sudan I\	/ test was n	egative			

Site Name	Ekonol Facil	ity		Well ID	MW-1D			
Samplers	Andy Janik Dan Lipp							
Total Well D Initial Static Well Diamet	Water Level (ТОС)	31.60 9.45 2.0	feet				
Purging D	<u>Data</u>							
Method Peristaltic Pump @ 500 mL/min. Date/Time 11/5/02 - 1325						? - 1325		
Water Volun	Water Volume = (Total Depth of Well - Depth To Water) x Casing Volume per Foot = 31.60 - 9.45 x 0.16							
	= 3.5	gallons						
			Volumes (g					
1-inch		1.5-inch			2-inch	1		
3-inch		4-inch	0.64		6-inch			
8-inch	2.5				10 inch	4		
Volume of F	Purge Water R	emoved	11	gallons				
Sampling	<u>Data</u>							
Method	Peristaltic	Pump @ 500	mL/min.	Date/Time	11/5/02	2 - 1445		
Para	meters	Bot	tla	Pres.	Moi	thad		
	,2-DCE;	2-40ml		HCI	Method <i>8260</i>			
	1,1,1-TCA	2-401111	VIGIO	1101				
	& aniline	2-1L ambe	er hottles		82	70		
	& <i>Pb</i>	1- 4 oz. Pla		НИО з		10B		
			0.10 10 11.10					
Field Para	meters	1 Volume	2 Volume	3 Volume	Sample			
pH		6.82	6.88	6.89	6.90			
Temp. (F)		55.9	56.3	56.3	56.3			
Spec. Cond.	(uS/cm)	3.09	2.64	2.58	2.57			
Turbidity (N7	ru)	48.5	11.4	0.3	0			
Dissolved O		5.24	0.00	0.00	0.00			
ORP		-298	-312	-306	-306			
Nitrate (mg/L	•	-	•	4.0	4.0			
Ferrous Iron		-	-	0.8	0.8			
Sulfate (mg/	L)	-		80	80			
Comments:	Water was cl	ear, Sudan I\	/ test was n	egative				
				·				

Site Name	Ekonol Facilit	γ		Well ID	MW-2D				
Samplers	Andy Janik Dan Lipp								
Total Well D Initial Static Well Diamet	Water Level (T								
Purging Data									
Method Peristaltic Pump @ 500 mL/min. Date/Time 11/7/02 - 1240									
Water Volur	ne = (Total De _l	oth of Well - [Depth To W	ater) x Casi	ing Volume _l	per Foot			
	= `	29.85	-	9.60	х	0.16			
	= 3.2	gallons							
r		Cosing	Volumos (a	al/ft):	<u> </u>				
1 inch	0.041	1.5-inch	Volumes (g 0.092	ai/ii.).	2-inch	0.16			
1-inch 3-inch		4-inch	0.032		6-inch				
8-inch	•	4-111011	0.04		10 inch	1			
Volume of Purge Water Removed									
Method	renstatio	Pump @ 500		Date/Time					
Para	meters	Bott	tle	Pres.	Me	thod			
TCE; 1	1,2-DCE;	2-40ml	vials	HCI	82	260			
1,1-DCA,	1,1,1-TCA								
phenol	& aniline	2-1L ambe		-		270			
Zn	& Pb	1- 4 oz. Pla	stic bottle_	HNO 3	60	10B			
Elele Dese		4.1/-1	0.1/2/11	21/2/11	Comple	7			
Field Para	meters	1 Volume 6.77	2 Volume 6.80	3 Volume 6.83	Sample 6.86	┨			
pH		58.6	58.5	58.6	58.6	-			
Temp. (F) Spec. Cond	(uS/cm)	3.06	3.36	3.18	2.88	1			
		85.4	85.2	335	365	1			
Turbidity (N)xygen (DO)	5.16	0.13	0.00	0.02	1			
ORP	xygon (DO)	-293	-344	-344	-336	1			
Nitrate (mg/	4.)	-	-	6.5	7.0	7			
Ferrous Iron		-	_	0.0	0.3	1			
Sulfate (mg	· • ·	-	-	80	80	1			
ounate (ing	/					-			
Approximat	Water was controlled Water was controlled Water was controlled Water Wat	PL in well su	mp, with 0.5		e phase liqu	id above			

Site Name	Ekonol Facili	ty			Well ID	MW-3D			
Samplers	Andy Janik Dan Lipp								
Initial Static	Total Well Depth (TOC) Initial Static Water Level (TOC) Well Diameter 26.50 feet 9.38 feet 2.0 inches								
Purging Data									
Method Peristaltic Pump @ 500 mL/min. Date/Time 11/7/02 - 0955									
Water Volume = (Total Depth of Well - Depth To Water) x Casing Volume per Foot = 26.50 - 9.38 x 0.16 = 2.7 gallons									
		0	\/_l	-1/6					
4 :	0.041		Volumes (g		2 inch	0.16			
1-inch 3-inch		1.5-inch 4-inch			2-inch 6-inch				
8-inch		4-111011	0.04		10 inch				
Sampling Data Method Peristaltic Pump @ 500 mL/min. Date/Time 11/7/02 - 1130									
_		5.		_					
	meters	Bot		Pres.		thod			
	,2-DCE;	2-40ml	viais	<u>HCI</u>	82	60			
	1,1,1-TCA	2.41 amb	r bottlee		02	70			
	& aniline & Pb	2-1L ambe 1- 4 oz. Pla		HNO 3	601	70 10B			
ZII	Q F D	1- 4 UZ. F1a	Suc Dottie	111403	001	100			
Field Para	meters	1 Volume	2 Volume	3 Volume	Sample	1			
pH		8.55	6.90	6.91	6.29				
Temp. (F)		59.2	58.8	59.0	58.8				
Spec. Cond.	. (uS/cm)	0.60	2.63	2.68	2.62				
Turbidity (N		54.2	16.2	2.0	0				
Dissolved O		2.97	0.08	0.02	0.04				
ORP		-228	-284	-285	-276				
Nitrate (mg/		<u>-</u>	-	0.0	0.0				
Ferrous Iron		-	-	0.6	0.7				
Sulfate (mg/	'L)		-	80	80				
	Water was cl								

Site Name	Ekonol Facili		Well ID	MW-4D			
0	Amalu lamile						
Samplers	Andy Janik Dan Lipp						
	<i>Dan црр</i>						
Total Well De	epth (TOC)		28.80	feet			
	Water Level (roc)	9.08	feet			
Well Diamete	•	,	2.0	inches			
Purging D	ata						
Method Peristaltic Pump @ 500 mL/min. Date/Time 11/6/02 - 1240							
Water Volum	e = (Total De	-	Depth To W				
	=	28.80	-	9.08	X	0.16	
	= 3.2	gallons					
		Casina	Valumas (a	-1/64 \.			
1-inch	0.041	Lasing 1.5-inch	Volumes (g 0.092	ai/IL.).	2-inch	0.16	
3-inch	0.041	4-inch			6-inch	.	
8-inch	2.5	4-111011	0.04		10 inch		
0 111011						<u></u>	
Sampling Method		Pump @ 500	mL/min.	Date/Time	11/6/0	2 - 1355	
_				_			
	neters	Bot			Method 8260		
TCE; 1,		2-40ml	viais	HCI	87	260	
	1,1,1-TCA	2 11 amb	ar hattles		0	270	
phenol 8		2-1L ambe 1- 4 oz. Pla		HNO 3		270 10B	
Zn 8	k PD	1- 4 0Z. Pla	ISUC DOME	HIVO 3	00	TUB	
Field Parai	meters	1 Volume	2 Volume	3 Volume	Sample	7	
pH	neters	7.05	6.78	6.82	6.83	4	
Temp. (F)		59.5	59.5	59.5	59.4	-	
Spec. Cond.	(uS/cm)	3.02	4.01	3.45	3.32	1	
Turbidity (NT		109	11.9	0	0	1	
Dissolved Ox		5.70	2.85	0.01	0.00	1	
ORP	, ,	-152	-273	-285	-283.00]	
Nitrate (mg/L	.)	•	-	0.0	0.0]	
Ferrous Iron		-	-	0.0	0.0]	
Sulfate (mg/L	-)		-	80	80		
_							
	Water was cl						
Approximate	ly one foot of	black, discol	ored water i	n well sump			
					···		

Site Name	Ekonol Facili	ty		Well ID	MW-10D			
Samplers	Andy Janik Dan Lipp							
Total Well D Initial Static Well Diamet	Water Level (1	гос)	30.80 9.05 2.0	feet feet inches				
Purging D	<u>ata</u>							
Method Peristaltic Pump @ 500 mL/min. Date/Time 11/6/02 - 1030								
Water Volume = (Total Depth of Well - Depth To Water) x Casing Volume per Foot = 30.80 - 9.05 x 0.16 = 3.5 gallons								
		Casing	Volumes (g	al/ft.):				
1-inch	0.041	1.5-inch	0.092		2-inch	0.16		
3-inch		4-inch	0.64		6-inch	1.4		
8-inch	2.5				10 inch	4		
Sampling Method	Sampling Data Method Peristaltic Pump @ 500 mL/min. Date/Time 11/6/02 - 1145							
Doros	meters	Bot	llo	Pres.	Met	hod		
	,2-DCE;	2-40ml		HCI	82			
	1,1,1-TCA	2 40111	7/0/0	1101				
	& aniline	2-1L ambe	er bottles	-	82	70		
	& Pb	1- 4 oz. Pla		НОО 3	601			
	T. J 17							
Field Para	meters	1 Volume	2 Volume	3 Volume	Sample			
pH		6.86	6.89	6.88	6.87			
Temp. (F)		59.7	60.3	60.4	60.1			
Spec. Cond.	(uS/cm)	2.78	2.49	2.47	2.47			
Turbidity (N		208	13.5	0	0			
Dissolved O	xygen (DO)	3.75	0.02	0.00	0.00			
ORP		-293	-289	-283	-280			
Nitrate (mg/l		-	-	2.5	1.0			
Ferrous Iron		-	-	0.9	0.8			
Sulfate (mg/	L)	-	-	80	80			
	Water was cl							

	\ <u></u>							
Site Name	Ekonol Facil	ity			Well ID	<u>MW-11D</u>		
Samplers	Andy Janik							
Gampiers	Dan Lipp							
	Dan Lipp							
Total Well D	epth (TOC)		30.75	feet				
	Water Level (TOC)	12.45	feet				
Well Diamet	er	•	2.0	inches				
Purging [<u>Data</u>							
Method Peristaltic Pump @ 500 mL/min. Date/Time 11/5/02 - 1005								
Water Volum	ne = (Total De	pth of Well -	Depth To W	/ater) x Cas	ing Volume	per Foot		
	=	30.75		12.45	x	0.16		
	= 2.9	gallons		·				
·								
			Volumes (g	jal/ft.):				
1-inch					2-inch			
3-inch			0.64		6-inch			
8-inch	2.5				10 inch	1 4		
Volume of F	Purge Water F	Removed	9	gallons				
Sampling	<u>Data</u>							
14-01	Di - t - 16i -	D 0 500		D. C. C.	441510	0 1115		
Method	Peristaltic	Pump @ 500	m∟/min.	Date/Time	11/5/0	<u> 2 - 1115 </u>		
Daras	meters	Bot	tla	Pres.	Ma	thod		
	,2-DCE;	2-40ml		HCI	Method <i>8260</i>			
	1,1,1-TCA	2-401111	Viais	ПСІ	02	200		
	& aniline	2-1L ambe	er hottles		8:	270		
	& Pb	1- 4 oz. Pla		HNO з	8270 6010B			
	<u> </u>	1- 4 02.7 10	Sho Dollic	111103		100		
Field Para	meters	1 Volume	2 Volume	3 Volume	Sample	1		
pH	· · · · · · · · · ·	6.96	6.83	6.82	6.83	1		
Temp. (F)		53.8	53.9	53.9	53.8	1		
Spec. Cond.	(uS/cm)	3.18	3.29	3.29	3.26	1		
Turbidity (N7	ΓÙ)	39.0	1.4	11.7	14.7	1		
Dissolved O		2.84	0.00	0.30	0.00	1		
ORP		-220	-276	-287	-290	1		
Nitrate (mg/l		-	-	5.0	5.0			
Ferrous Iron	(mg/L)	-	-	0.4	0.3	1		
Sulfate (mg/	L)	<u>-</u>	-	80	80			
Comments: Water was clear, Sudan IV test was negative								
 								
-				···				
								

Site Name	Ekonol Facil	ity		Well ID	<u>MW-12D</u>		
Samplers	Andy Janik Dan Lipp						
Total Well D Initial Static Well Diame	Water Level (feet feet inches					
Purging [<u>Data</u>						
Method	Peristaltic	Pump @ 500	mL/min.	Date/Time	11/4/02	2 - 0930	
Water Volume = (Total Depth of Well - Depth To Water) x Casing Volume per Foot = 32.10 - 9.89 x 0.16 = 3.6 gallons							
		Casina	\/al/a				
1-inch	0.041	Lasing 1.5-inch	Volumes (g 0.092		2-inch	0.16	
3-inch					6-inch		
8-inch		4-11011	0.04		10 inch	L	
Sampling Method		Pump @ 500	mL/min.	Date/Time	11/4/02	2 - 1115	
Para	meters	Bot	tla	Pres.	Mo	thad	
	,2-DCE;	2-40ml		HCI	Method <i>8260</i>		
	1,1,1-TCA	2 101111	viaio .	7101		.00	
	& aniline	2-1L ambe	er bottles		82	270	
	& Pb	1- 4 oz. Pla		НИО з		10B	
Ciald Dans		414.4		01//		7	
Field Para	meters	1 Volume 6.81	2 Volume 6.76	3 Volume	Sample		
рп Temp. (F)		65.3	65.5	6.79 65.5	6.80 63.9	1	
Spec. Cond.	(uS/cm)	3.15	3.00	2.98	2.99		
Turbidity (N		111	389	>1,000	505	i	
Dissolved O		0.76	0.19	0.15	0.14		
ORP	, ,	-292	-335	-342	-338	1	
Nitrate (mg/l		-	-	0.0	4.8]	
Ferrous Iron		-		0.2	0.2		
Sulfate (mg/	L)	_	-	80	80]	
Comments: Duplicate sa	Water was ci		ay in color,	Sudan IV te	st was nega	tive	
	impio tanon ne						

Site Name	Ekonol Facili		Well ID	MW-13D		
Samplers	Andy Janik					
	Dan Lipp					
	Water Level (ГОС)	31.60 11.72			
Well Diamet	er		2.0	inches		
Purging C	<u>Data</u>					
Method Peristaltic Pump @ 500 mL/min. Date/Time 11/6/02 - 0835						
Water Volun	ne = (Total De =	pth of Well - I 31.60	Depth To W	ater) x Cas	sing Volume ր <i>x</i>	oer Foot 0.16
	= 3.2	gallons		,,,,,		0.70
		Casing	Volumes (g	al/ft.):		
1-inch	0.041	1.5-inch	0.092		2-inch	0.16
3-inch		4-inch	0.64		6-inch	
8-inch	2.5	- · · · · · · · · · · · · · · · · · · ·			10 inch	4
Volume of F	Purge Water R	emoved	10	gallons		
Sampling	<u>Data</u>					
Method	Peristaltic	Pump @ 500	mL/min.	Date/Time	11/6/02	2 - 1010
Para	meters	Bot	tle	Pres.	Me	thod
	,2-DCE;	2-40ml vials HCl			8260	
	1,1,1-TCA					
	& aniline	2-1L ambe	er bottles		82	270
	& Pb	1- 4 oz. Pla	stic bottle	НNО з	60	10B
						_
Field Para	meters	1 Volume	2 Volume	3 Volume	Sample	
pН		7.32	6.97	6.99	7.00	
Temp. (F)		55.0	55.6	<i>55.4</i>	54.7	
Spec. Cond.		2.56	2.58	2.58	2.60	
Turbidity (N7	TU)	75.7	0	0	0	
Dissolved O	xygen (DO)	3.68	0.01	0.00	0.00	
ORP		-112	-204	-222	-228	
Nitrate (mg/l		-	-	0.0	0.0	
Ferrous Iron	(mg/L)	-	-	0.6	0.5	
Sulfate (mg/	L)		-	80	80	
Comments:	Water was cl	ear, Sudan I\	/ test was n	egative		