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PHASE-I INTEGRATED SITE ASSESSMENT

PRELIMINARY ASSESSMENT/SITE INSPECTION
FOR THE
NEOSHO WELLS SITE
NEOSHO, MISSOURI

October 9, 1995

Prepared For:

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION VII SITE ASSESSMENT AND RESPONSE SUPPORT SECTION

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1. INTRODUCTION

Under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 and the Superfund Amendments and Reauthorization Act (SARA) of 1986, the U.S. Environmental Protection Agency (EPA), Region VII Site Assessment and Response Support (SARS) Section tasked the Ecology and Environment, Inc. (E & E), Technical Assistance Team (TAT) to conduct an integrated site assessment (PA/SI) of the Neosho Wells site (CERCLIS ID MO0000958835) in Neosho, Missouri. PA/SIs are conducted under the auspices of EPA's Superfund Accelerated Cleanup Model (SACM) and result in the combination of the site assessment activities of the Remedial/Site Assessment and Removal Programs. The work was conducted under Technical Direction Document (TDD) T07-9411-510F.

The objectives of the PA/SI were to collect information concerning conditions at the Neosho Wells site sufficient to assess the threat posed to human health and the environment and to determine the need for additional investigation under CERCLA or other authority, and to support site evaluation using the Hazard Ranking System (HRS) for proposal to the National Priorities List (NPL). The PA/SI included reviewing previous information, sampling environmental media to test preliminary assessment (PA) hypotheses and to evaluate and document HRS factors, collecting additional non-sampling information, and investigating the potential for removals, if warranted. Information obtained during the PA/SI was incorporated into the site inspection (SI) narratives and score sheets.

Specific objectives of this PA/SI were to determine the source(s) of volatile organic compounds (VOCs) contaminating ground water at the site and to characterize the overall extent of VOC contamination in domestic ground water wells in the site's vicinity. In order to achieve these objectives, TAT was tasked to conduct a soil gas investigation to determine the source(s) of contamination and conduct domestic well sampling to learn the areal extent and the degree of contamination in domestic wells.

2. SITE DESCRIPTION AND HISTORY

2.1 SITE LOCATION

The site is located in Newton County, approximately 2.5 miles south of Neosho, Missouri (Figure 2-1). The contaminated residential wells identified to date are located in Sections 8, 17, 18, 20, and 29 T24N, R32W. The well that has exhibited the most extensive contamination during past sampling events (Shockley) is located just west of the intersection of County Road 14-D and U.S. Highway 71. The geographic coordinates of the site area (area of wells contaminated with at least one VOC) are 36° 47' 2" to 36° 49' 0" North latitude and 94° 23' 39" to 94° 24' 53" West longitude. For the purpose of referencing the site location, the site is being defined based on the center of the trichloroethylene (TCE) plume. This area was delineated by the domestic wells and monitoring well that exhibited TCE contamination (Figure 4-2). TCE is the primary contaminant of concern. The coordinates of the approximate center of this plume are 36° 48' 2.3" North latitude and 94° 23' 52.2" West longitude. The coordinates calculation worksheet is included in Appendix B.

2.2 SITE DESCRIPTION

The area's land use is characterized as mixed rural/industrial. The Crowder Industrial Park extends south to within a half mile (east) of the Shockley well, which is located directly across Highway 71. Also located within a mile of the Shockley well are the Neosho Memorial Airport, the Newton-McDonald County Landfill, the Missouri National Guard's Camp Crowder, and several businesses along Highway 71 (Figure 3-2).

Located approximately 3.5 miles northeast of the Neosho Wells site is the Former Air Force Plant No. 65, Rocketdyne Test site, which is part of the Fort Crowder Military Reservation located approximately 3 miles southeast of the city of Neosho, Missouri (Reference 8). The Rocketdyne Test site (CERCLIS I.D.# MO08750090013) has been under investigation by the U.S. Army Corps of Engineers for soil and ground water contamination including VOCs contamination. The Rocketdyne Test site encompasses an area of approximately 300 acres, and is located in the SE 1/4 of Section 11 and SW 1/4 of Section 12 in T 24N, R 32W [(Figure 3-2) (Reference 9)].

2.3 OPERATIONAL HISTORY AND WASTE CHARACTERISTICS

2.3.1 Operational History

On July 20, 1994, the Newton County Health Department (NCHD) received a citizen's complaint of a leaking gasoline storage tank at the Southgate Truck Plaza located immediately north of the intersection of County Road 14-D and U.S. Highway 71. The complainant alleged that the family's well, located at the first house west of Highway 71 on County Road 14-D, had been contaminated by the leaking tank. NCHD notified the Missouri Department of Natural Resources (MDNR) of the complaint. MDNR agreed to investigate the possibility of a leaking underground or aboveground storage tank (UST or AST, respectively). By August 24, 1994, NCHD had not received a response from MDNR. NCHD contacted MDNR, which stated that its AST investigation had not determined any leak from the Southgate Truck Plaza. MDNR, however, suspected a possible leaking UST from an abandoned service station located immediately south of the Southgate Truck Plaza on the northwest corner of the intersection of County Road 14-D and Highway 71 (Reference 2).

On August 30, 1994, NCHD sampled the well of the complainant. NCHD stated that results of the analysis reported no gasoline, but eight other VOCs (including some chlorinated compounds), were detected. Most notably, TCE and carbon tetrachloride (CCl_4) were detected at 110 micrograms per liter ($\mu g/L$) and 5.2 $\mu g/L$, respectively (Reference 3). On September 8, 1994, MDNR was notified of the results (Reference 4). The maximum contaminant level (MCL) for both TCE and CCl_4 is 5 $\mu g/L$.

In September 1994, NCHD received requests for sampling from residents neighboring the Shockley residence. NCHD selected four wells for sampling based on well depth and distance from the Shockley well. TCE was detected in three of the four wells, although two of these were below the MCL. TCE was detected above the MCL in the third well at 25 $\mu g/L$ (Reference 5).

Additional follow-up sampling was conducted by NCHD in October and November 1994, when eight additional private wells, including the Mother Goose Day-Care facility were sampled. Chloromethane was detected in two wells at 0.4 $\mu g/L$ and in the day-care's well at 0.5 $\mu g/L$. TCE was detected in one well at 0.9 $\mu g/L$ (Reference 6).

On October 26, 1994, MDNR conducted sampling at 13 residential wells. VOCs were detected in five of those wells. TCE was detected in those five wells at concentrations ranging from 1.1 $\mu g/L$ to 115 $\mu g/L$ (Shockley well). Four of those wells had TCE concentrations above the MCL. CCl_4 was detected in four wells at concentrations ranging from 0.5 $\mu g/L$ to 5.1 $\mu g/L$ (Shockley well). Only the Shockley well had a CCl_4 concentration above its MCL (Reference 7). MDNR and NCHD sample results are summarized in Table 2-1.

On October 21, 1994, MDNR referred the site to EPA for a possible removal action. On November 14, 1994, EPA contacted TAT and initially requested sampling of residential wells to determine whether an alternative water supply could be warranted as part of a removal action. As of November 14, 1994, no contaminant's concentration had exceeded its respective removal action levels (RALs), although contaminants had been detected in 10 domestic wells. RALs are drinking water concentrations of contaminants that are considered, along with other factors, in determining whether to provide alternate water supplies under Superfund removal authority. EPA also tasked TAT to conduct a soil gas study at a later date to potentially determine the source(s) of contamination and aid in the completion of a PA and SI.

Air Force Plant No. 65 was operated for the Air Force by Teledyne Industries for testing rocket engines from 1956 through 1967. The property was transferred as excess to the city of Neosho in 1970 and to Teledyne Neosho in approximately 1972. Newly assembled rocket engines were tested at the engine testing area (ETA) from 1957 to 1967. Turbo-jet engines were tested at the components testing area (CTA) from 1967 to 1973. The testing facilities were abandoned in 1973 (Reference 9).

Several train tanker cars of liquid rocket fuel were delivered and used per week during the main period of operations. Operations at the test site created large quantities of waste fuel and lubricants, however, no records exist of the exact amounts produced. After rocket testing, waste liquids flowed to hazardous waste storage areas via concrete drain troughs. Wastes created from these activities contained TCE, methyl alcohol, RP-1 (a fuel), hydrazine, red fuming nitric acid, JP-4 jet fuel, and various aircraft hydraulic and lubricating oils. Various investigations have been conducted at the site since 1986. Numerous VOCs

have been detected in soils at the ETA and CTA, including TCE up to 5,910,000 micrograms/kilogram (μg/kg). TCE has been detected in the ground water at the test area at concentrations up to 200,000 μg/L. No carbon tetrachloride has been detected at the Rocketdyne Test site (Reference 9).

The plant is now owned and operated by Sabreliner Corporation. Sabreliner began operations at the plant in September 1992. Sabreliner representatives have stated that they have never used TCE in their operations at the plant. They currently use perchloroethylene (PCE, also known as tetrachloroethylene) and have used 1,1,1-trichloroethane (TCA) in the past. Teledyne used TCE at the plant until 1986 (Reference 20).

2.3.2 Waste Characteristics for Trichloroethylene and Carbon Tetrachloride

2.3.2.1 Trichloroethylene (TCE)

TCE (also known as trichloroethene and ethylene trichloride) is commonly used as an industrial solvent. It rapidly volatilizes into the atmosphere, where it reacts with hydroxyl radicals to produce hydrochloric acid, carbon monoxide, carbon dioxide, and carboxylic acid. This is probably the most important transport and fate process for TCE in surface water and in the upper layer of soil. TCE adsorbs to organic materials and can be bioaccumulated to some degree. However, it is unclear whether TCE bound to organic material can be degraded by microorganisms or must be desorbed to be destroyed. TCE leaches into the ground water fairly readily and has a specific gravity of 1.4642 at 20° Celsius (C). TCE is carcinogenic to mice after oral administration, producing hepatocellular carcinomas. Estimates of the carcinogenic risks to humans associated with lifetime exposure to various concentrations of TCE in water are:

Risk	Concentration
10^{-5}	27 μg/L
10^{-6}	2.7 μg/L
10^{-7}	0.27 μg/L

TCE does not appear to cause reproductive toxicity or teratogenicity. It has been shown to cause renal toxicity, hepatotoxicity, neurotoxicity, and dermatological reactions in animals following chronic exposure to vapor levels greater than 2,000 milligrams/cubic meter (mg/m^3) for 6 months. TCE has low acute toxicity; the acute oral LD_{50} value in several species ranged from 6,000 to 7,000 milligrams/kilogram [(mg/kg) (Reference 8)]. Several experiments have shown that under anaerobic conditions, TCE is biotransformed to 1,2 dichloroethylene (1,2-DCE) and finally to vinyl chloride (Reference 26). See Appendix F for additional waste characteristics information about TCE.

2.3.2.2 Carbon Tetrachloride

CCl_4 (also known as tetrachloromethane and perchloromethane) is used as an industrial solvent and chemical intermediate. It has a high vapor pressure and therefore volatilizes rapidly into the atmosphere from surface water and soil. It is relatively soluble in water and therefore would be expected to be transported in ground water. At a specific gravity of 1.59 at 20° C, CCl_4 may move independently from the ground water as a nonaqueous phase liquid. It is an animal carcinogen, causing liver tumors in mice, rats, and hamsters. CCl_4 also causes liver and kidney damage in animals and humans (Reference 8).

CCl_4 has been shown to degrade under anaerobic conditions to chloroform and then to methylene chloride (Reference 26). Additional waste characteristics information about CCl_4 can be found in Appendix F.

2.4 INTEGRATED SITE ASSESSMENT ACTIVITIES

2.4.1 Interviews

A two-member TAT team and EPA mobilized to the site on November 28, 1994, to collect domestic well samples and conduct background research to determine potential sources of VOCs contamination in the area of the contaminated wells. TAT and EPA conducted a reconnaissance of the area, including the Crowder Industrial Park (CIP), and identified nearby businesses and industries.

As a result of interviews and research, TAT and EPA determined the following businesses and facilities to be the primary potential sources to be targeted for sampling during a soil gas investigation at a later date:

- Sabreliner Corporation (formerly Teledyne Neosho and Rocketdyne),
- "900 Building" (owned by Sabreliner),
- Newton-McDonald County Landfill,
- Neosho Memorial Airport,
- Former Camp Crowder jail building (owned by the City of Neosho),
- Kansas City Southern Railroad rights-of-way,
- Southgate Truck Plaza and adjacent abandoned service station,
- Hoppy Lines Trucking Company.

Southgate Truck Plaza

On November 29, 1994, TAT and EPA met with NCHD Environmental Sanitarians Rebecca Heffren and Rayna Broadway to discuss EPA's activities. NCHD provided a list of domestic wells that had been previously sampled. NCHD's representatives also indicated that their primary potential sources were: industries in the CIP that use or have used TCE; UST's at the Southgate Truck Plaza and an adjacent abandoned service station; and other businesses along U.S. Highway 71.

"900 Building" at Sabreliner, Hoppy Lines Trucking Company, and former Camp Crowder Jail Building

Also on November 29, 1994, TAT and EPA met with the Local Emergency Planning Committee (LEPC) Director and Neosho Assistant Fire Chief Mike Goldsworthy. Neosho Fire Chief Bo Blauert also was present for part of the meeting. Goldsworthy had compiled Tier II reports submitted to him, as required under Title III of the Superfund Amendment and Reauthorization Act of 1986, for facilities south of U.S. Highway 60. TAT and EPA reviewed the reports and noted facilities that use or used solvents in their operations. Blauert informed TAT that the "900 Building" at the CIP, now owned by Sabreliner Corporation, was Camp Crowder's laundry facility until the Korean War. This building was also part of Teledyne's operations. Blauert also informed TAT of two incidents that occurred within the past year in the site's vicinity that might have been solvent-related. He said there was an incident of leaking drums at the old Camp Crowder jail involving Dwyer Enterprises. He said local authorities conducted excavation and disposal of the contaminated soil. The City of Neosho owns the property where the incident occurred. In a second incident, a building on Highway 71 approximately 0.5 miles north of the Shockley well burned down. Blauert said that solvents may have been present in the fire. He said the building was owned and operated by Hoppy Lines Trucking Company.

Southgate Truck Plaza and Adjacent Abandoned Service Station

While sampling the domestic well at the Shockley residence on November 29, 1994, TAT interviewed Lyle Fisher of Goodman, Missouri. Fisher said he was employed at the former service station (referenced in Section 2.3.1) from approximately 1965 to until 1979, when it was abandoned. He said the owner of the service station was Kenneth Plumley, whom he believed currently resides in Bentonville, Arkansas. Fisher claimed that there had been USTs at the service station since the 1930's. He stated that no dumping of solvents occurred at the service station during his employment there. The only cleaning agent he recalled being used at the service station was a product named "Mr. Clean". Fisher also claimed he witnessed the leak at the Southgate Truck Plaza that was referred to in the original complaint that led to TAT's inspection. He described the leak as saturating the ground with gasoline. He said contaminated soil was dug up and buried, though he did not specify the burial location.

Newton-McDonald County Landfill

On December 1, 1994, Goldsworthy contacted TAT and said that Neosho City Manager Jim Cole had information on the alleged disposal of 6 to 12 drums, potentially containing TCE, at the Newton-McDonald County Landfill. On December 16, 1994, Hayes interviewed Cole concerning the alleged disposal of drums at the landfill. A summary of the interview was submitted in a memorandum to EPA SAM Paul Doherty.

2.4.2 Domestic Well Sampling

On November 29 and 30, 1994, TAT collected 20 domestic well water samples, including two duplicates and one field blank. Sampling was conducted in accordance with the "Quality Assurance Sampling Plan (QASP) for the Neosho Wells Site", U.S. EPA Region VII and E & E/TAT, November 23, 1994. TAT completed well survey forms, with resident and well information for each domestic well. All TAT, MDNR, and NCHD domestic well

sample locations are indicated on Figure 2-2. Seventeen samples were collected from 15 domestic wells, including nine that had been previously sampled by NCHD or MDNR. Domestic well samples were collected from a hydrant or spigot located as near as possible to the well, before any filter or treatment system. The only exception was a postfilter sample collected at the Honey House to compare to the prefilter sample. Wells were purged for approximately 5 minutes and field parameters (pH, temperature, and conductivity) were measured for stability to insure that all lines were purged. All water samples were preserved with hydrochloric acid (HCL) and were placed on ice. New surgical gloves were worn for each sample to avoid cross-contamination. Samples were submitted on December 1, 1994, to the Region VII EPA Laboratory under activity number DSX90 for lower detection limit (LDL) VOCs analysis.

Results of the analyses are summarized in Table 2-2 (under sample numbers DSX90-). Thirteen VOCs were detected in domestic well samples during the sampling event. Four of these were detected in the field blank [chloroform, tetrachloroethylene, ethyl benzene, and 1,2-(ortho)-dichlorobenzene]. Acetone was detected in the field blank, though not in any other sample. TCE was detected in nine wells at concentrations ranging from 0.6 to 150 μg/L (Shockley). Five of the wells showed TCE concentrations above the MCL of 5 μg/L. CCl_4 was detected in four wells at concentrations ranging from 1 to 5 μg/L (Shockley). The Shockley well had CCl_4 at its MCL of 5 μg/L. None of the 11 other VOCs was detected above its respective MCL. No contaminants were detected above their respective RALs.

On April 3 through 6, 1995, TAT conducted another round of domestic well sampling at the site. The sampling was conducted in accordance with the "QASP for An Integrated Site Assessment at the Neosho Wells Site", U.S. EPA Region VII and E & E/TAT, March 21, 1995. Environmental sanitarians from NCHD accompanied TAT during the sampling. TAT targeted all residences within an approximately 1-mile radius of the Shockley well located near Highway 71 and County Road 14-D. TAT completed well survey forms, with resident and well information for each domestic well. Samples were collected in the same manner described for sampling conducted on November 29 and 30, 1994. TAT and EPA collected 52 water samples, including 46 samples from 45 domestic wells, one ground water sample (collected with the Geoprobe and discussed at the end of this section), and five quality control (QC) samples. Each sample was collected in four 40-ml VOA vials and submitted to the Region VII EPA Laboratory under activity DSX03 for LDL VOCs analysis on April 7, 1995.

VOCs were detected in 12 of the 45 domestic wells sampled. The remaining 33 wells were non-detect for VOCs. TCE was detected in seven wells at concentrations ranging from 1 to 130 μg/L (Shockley). All of these wells had previously indicated TCE contamination. No TCE was present in any wells where it had not been detected previously. Only one well (Rhodes) showed an increased level of TCE, from 8 to 38 μg/L. The Rhodes well is located on County Road 14-D and is the furthest well west with TCE contamination. $CC1_4$ was detected in five wells at concentrations ranging from 0.7 to 5 μg/L. Only the S. Sprenkle well (0.7 μg/L) contained $CC1_4$ where it had previously not been detected. Chloroform was detected in five wells at concentrations ranging from 0.5 to 12 μg/L, including the Mother Goose Day-Care (12 μg/L), where it had not been detected previously. The only other VOCs detected during this sampling event were chloromethane; 1,1-dichloroethane; and 1,2-(cis)-dichloroethylene at concentrations ranging from 0.6 to 3 μg/L. The only wells not sampled previously that had contamination were four wells where chloromethane was detected at concentrations of 2 to 3 μg/L. No other VOCs were detected in these four wells. Results of

this sample event are included on Table 2-2 (under sample numbers DSX03-) and Figure 2-2. Also included in Figure 2-2 are all domestic well locations where at least one VOC has been detected during at least one sampling event.

On April 5, 1995, a ground water sample (DSX03-064) was collected from the east side of the "900 Building" at screening location 900-02 (Figure 2-3). The sample was collected by advancing polyethylene tubing down the hollow Geoprobe pipe assembly and then pumping the ground water to the surface with a portable peristaltic pump and directly into the sample containers. The sample was preserved in the same manner as the domestic well samples and was submitted for LDL VOCs analysis to the Region VII EPA Laboratory. Analytical results indicated the presence of TCE at 2 μg/L; 1,4-dichlorobenzene at 8 μg/L; 1,3-dichlorobenzene at 0.8 μg/L; 1,2-dichlorobenzene at 20 μg/L; and 1,2-(cis)-DCE at 2 μg/L.

2.4.3 Monitoring Well Sampling

On December 12, 1994, EPA requested that TAT sample the monitoring wells at the Newton-McDonald County Landfill, while TAT was in the Neosho area on unrelated site work. Ten monitoring wells were located around the perimeter of the site. No QASP was developed for the sampling due to the short notice. Eight wells were sample. One well was dry and one well was not sampled due to limited time and resources available for preparation for the sampling event. The monitoring wells were purged of 3-times the volume of standing water in each well utilizing disposable polyethylene bailers. A new bailer was used for each well to avoid cross-contamination. Field parameters were measured for stability and then samples were collected. New surgical gloves were donned before each sample was collected to avoid cross-contamination. Samples were collected in four 40-ml VOA vials, preserved with HCL, and placed on ice. Samples were submitted for LDL VOCs analysis to the Region VII EPA Laboratory on December 15, 1994, under activity DSX94.

No VOCs were detected in seven of the eight wells sampled. Eight VOCs were detected in monitoring well (MW) 109, which is located at the southwest corner of the landfill. The depth of the well was approximately 38 feet. VOCs detected that had been previously detected by EPA in domestic wells at the site included 1,2-DCE at 45 μg/L, TCE at 12 μg/L, ethylbenzene at 27 μg/L, and total xylenes at 33 μg/L. Chloroethane at 23 μg/L and 1,1-DCA at 29 μg/L were detected in MW 109 and previously by MDNR and/or NCHD in at least one domestic well at the site. Vinyl chloride at 26 μg/L and toluene at 15 μg/L also were detected in MW 109, though not previously detected in domestic wells at the site. Results for sample number DSX94-007 (MW 109) are summarized in Table 2-3.

On March 6, 1995, EPA requested that TAT, again on short notice, resample the 10 monitoring wells at the Newton-McDonald County Landfill. The EPA had just learned that the wells were scheduled to be decommissioned and replaced with new wells on orders from MDNR. EPA requested that MDNR allow a delay in the decommissioning of the wells until TAT could resample them.

A three-member TAT team mobilized to the site on March 7, 1995. TAT began sampling on March 8, 1995. Sampling was conducted in the same manner as described for the sampling conducted on December 12, 1995. The only exception was that a Waterra inertial pump and disposable polyethylene tubing were used to purge the deeper wells. These four monitoring wells were purged dry and allowed to recharge overnight. All monitoring

wells were sampled with disposable polyethylene bailers. New tubing and bailers were used for each well to avoid cross-contamination. MW 114 was dry and could not be sampled. Each sample consisted of one 1-liter amber jar and two 40-ml VOA vials. Samples were submitted for semivolatiles (BNAs) and VOCs analyses to the Region VII EPA Laboratory on March 10, 1995, under activity DSX04.

Results of the analyses indicated the presence of at least one contaminant in MW 109, MW 110, MW 113, and MW 116 (Table 2-3). The five other sampled wells were non-detect for all analyses.

Samples collected on December 13-14, 1994, under DSX94 were submitted to the Region VII EPA Laboratory for LDL VOCs analysis. Samples collected under DSX04 on March 8-9, 1995, were submitted to the same laboratory for LDL VOCs and semivolatiles analysis. Samples not addressed in the preceding paragraph were non-detect for all analyses.

2.4.4 Subsurface Soil Sampling and On-site Screening

On April 3, 1995, TAT and EPA mobilized to the site to conduct sampling and on-site screening of subsurface soil or soil gas in accordance with the "QASP for an Integrated Site Assessment at the Neosho Wells Site", U.S. EPA and E & E/TAT, March 21, 1995. Soil screening was to be conducted in the areas identified in November 1994, to assist with determining potential sources of contamination. Kansas City Southern Railroad properties were not sampled because access had not been granted.

Beginning on April 4, 1994, TAT used a Geoprobe Systems hydraulic subsurface sampler (commonly referred to as the Geoprobe) to collect soil samples for on-site headspace screening at locations where contaminants might have been deposited on the soil surface. These locations were selected at the facilities mentioned previously, based on locations of each facility's structures and the known or potential operations at the facilities.

TAT compared a soil gas and soil sample (for headspace analysis) at the first sample location and determined, based on soil type and results of the screening, that soil head-space screening would be used. Soil samples for on-site analysis were collected, according to draft EPA Standard Operating Procedure #2230.5A "Soil Gas Investigations", by advancing a 2-foot sample tube lined with an acetate sleeve to the desired sampling depth with 1-inch hollow steel pipe sections. Sample depths at each location ranged from 4 to 9 feet, depending on depth to bedrock. Steel rods were then inserted through the hollow pipe string to activate a piston in the sample tube. The sample tube was then advanced 1 to 2 feet to fill the sample tube with soil from the selected depth. The sample was then retrieved to the surface and placed in 40-ml VOA vials for delivery to the screening location. The acetate sleeve was discarded and the piston tip and cutting shoe on the sample tube were decontaminated between samples. Decontamination consisted of wiping and brushing soil from the components and then heating them to drive off any residual volatile contaminants.

Field screening consisted of on-site analysis using a Photovac 10S70 portable gas chromatograph (GC) using TCE and CCl_4 as indicator compounds. The detection limits estimated for TCE and CCl_4 were 10 parts per billion by volume (ppbv) and 500 ppbv, respectively.

TAT collected and screened 31 soil samples from 27 locations, including a background sample. Although CCl_4 was detected in two samples at 1,430 ppbv and 144,269 ppbv, the TAT field chemist determined that the compound may have actually been another VOC. This was based on a slight difference in the retention times between the CCl_4 standard and the peaks in the two samples. TCE was detected in 14 samples from 10 locations at "normalized" concentrations ranging from 63 to 2,325,158 ppbv. Of the 10 locations where TCE was detected, four were at the "900 Building", four were at the Sabreliner plant, one was at the ETA, and one was in an open field just southeast of the "900 Building". Screening results are summarized on Table 2-4 and Figure 2-3. Screening results are reported by concentration for the actual sample and a "normalized" concentration calculated for a 25.0 gram (g) weight of each sample. The actual weight of each sample varied from 15.6 grams to 28.8 grams. The head-space concentrations for the on-site screening were "normalized" to 25 grams solely for ease of comparison. TAT collected and submitted eight soil samples, including a field blank, to the Region VII EPA Laboratory on April 10, 1995, for VOCs analysis. Samples were collected at four locations where TCE had been detected with on-site screening and three locations where it had not, in order to confirm screening results. Laboratory samples were collected, in several cases, after the original screening sample was collected and analyzed. These laboratory samples were collected from locations collocated with the original screening sample locations. A second and separate screening sample also was collected when these laboratory samples were collected. Samples were collected in the same manner as previously described for screening samples, with the exception of preservation methods. For each laboratory sample, two 40-ml VOA vials were preweighed and prepreserved with 10 ml of methanol. Approximately 20 grams of soil were placed in each vial and the vials weighed to determine the actual soil weight. For each sample, a third VOA vial of soil was collected for percent solids analysis.

Laboratory soil sample analysis indicated the presence of TCE in one sample (DSX03-003) which was collected from the west side of the "900 Building" at 4,600 micrograms/kilogram (μg/kg). No other VOCs were present in this sample. This sample location yielded the highest concentration of TCE during on-site screening. The three other samples collected from locations where on-site screening indicated the presence of TCE were non-detect for all VOCs in the laboratory analysis. A comparison of the on-site screening sample result and the laboratory result for DSX03-003 yielded a ratio of 418. If this ratio were applied to the on-site screening results from the three other locations where TCE was detected and sampled for laboratory analysis, the resulting values would be below the laboratory's measurement detection limit. This may explain why the laboratory did not report TCE for those samples. No VOCs were detected in the three samples collected from locations where no TCE was found during on-site screening. No VOCs were found in the field blank. Results are summarized on Table 2-4.

2.4.5 Surface Water Sampling

On November 29, 1994, three surface water samples (DSX90-009, -010, and -011) were collected on the Missouri National Guard's Camp Crowder from springs located south of the Newton-McDonald County Landfill (Attachment 1; Figure 3). Surface water samples were collected directly into four 40-milliliter (ml) volatile organic analysis (VOA) vials, preserved with hydrochloric acid and placed on ice. New surgical gloves were worn for each sample to avoid cross-contamination. Samples were submitted on December 1, 1994, to the Region VII EPA Laboratory under activity DSX90 for lower detection limit VOCs analysis.

Tetrachloroethylene (PCE) was detected in the sample collected from the unnamed spring north of Hamon Spring at 0.3μg/L. PCE was also detected in the field blank at that concentration. No VOCs were detected in the other two samples. Surface water sample locations are depicted on Figure 2-3.

On April 5, 1995, EPA collected two surface water samples. Sample DSX03-062 was collected from Elm Spring, which is located east of the Rocketdyne Test site. Sample DSX03-063 was collected from a stream located north of the Rocketdyne Test site. Samples were collected in the same manner described for sampling conducted on November 29 and 30, 1994. Each sample was collected in four 40-ml VOA vials and submitted to the Region VII EPA Laboratory under activity DSX03 for LDL VOCs analysis on April 7, 1995. The surface water sample collected from the stream north of the Rocketdyne Test site and the sample from Elm Spring located east of the Rocketdyne Test site were non-detect for all VOCs.

Table 2-1

ANALYTICAL RESULTS OF DOMESTIC WELLS SAMPLED BY NCHD AND MDNR
NEOSHO WELLS SITE
NEOSHO, MISSOURI
T07-9411-510/EMO1183SAA

Well Owner	Well Depth	Contaminant	Concentration Detected By NCHD (date sampled) in µg/L	Preliminary Concentration Detected By MDNR on 10/26/94 in µg/L
Shockley	60-65 feet	Carbon tetrachloride	5.2 (8/30/94)	5.1
		Chloromethane	0.4	ND (<2.5)
		Chloroform	1.2	1.1
		Dichlorodifluoromethane	3.4	3.7
		1,1-Dichloroethane	0.5	ND (<1.0)
		1,2-Dichloroethane	0.7	ND (<0.5)
		cis-1,2-Dichloroethene	1.1	1.2
		Trichloroethylene	110.0	115.0
The Honey House	50 feet	Bromoform	0.6 (9/20/94)	ND (<2.5)
		Carbon tetrachloride	1.7	2.2
		Chloroethane	ND (<0.4)	4.0
		Chloroform	0.5	ND (<1.0)
		Dibromochloromethane	0.5	ND (<1.0)
		Trichloroethylene	25.0	47.0
Jackson, E.	35 feet	Carbon tetrachloride	1.8 (10/4/94)	2.3
		Chloromethane	0.4	ND (<2.5)
		Chloroform	0.4	ND (<1.0)
		Dichlorodifluoromethane	1.5	ND (<2.5)
		1,2-Dichloroethane	0.6	ND (<0.5)
		cis-1,2-Dichloroethene	ND (<0.4)	0.6
		Trichloroethylene	31.0	57.0
Sprenkle, S.	247 feet	Carbon tetrachloride	0.6 (10/4/94)	0.5
		Trichloroethylene	8.8	10.0
		1,2-Dichloroethane	0.4	ND (<0.5)
Mahan, L.	500 feet	Chloromethane	0.5 (9/20/94)	ND (<2.5)
		Trichloroethylene	1.8	1.1
Flint, M.	555 feet	Chloromethane	0.4 (10/18/94)	Not Sampled
		Trichloroethylene	0.9	
Herrin, C.	230 feet	Trichloroethylene	1.7 (9/13/94)	ND (<0.5)
Herrin, R.	240 feet	Chloromethane	0.5 (9/20/94)	ND (<2.5)
Wilson	350 feet	Chloromethane	0.4 (10/18/94)	ND (<2.5)
Naylor, L.	30 feet	All VOCs	ND (10/19/94)	ND
Naylor, G.	32 feet	All VOCs	ND (11/2/94)	Not Sampled
Hill	300 feet	All VOCs	ND (10/19/94)	ND
Mother Goose Day-Care	unknown	Chloromethane	0.5 (11/2/94)	ND (<2.5)

Table 2-1

ANALYTICAL RESULTS OF DOMESTIC WELLS SAMPLED BY NCHD AND MDNR
NEOSHO WELLS SITE
NEOSHO, MISSOURI
T07-9411-510/EMO1183SAA

Well Owner	Well Depth	Contaminant	Concentration Detected By NCHD (date sampled) in µg/L	Preliminary Concentration Detected By MDNR on 10/26/94 in µg/L
Griggs	unknown	All VOCs	Not Sampled	ND
Farlo Chihuahua World	unknown	All VOCs	Not Sampled	ND

Source: Behrns, Gary T., Chief, Superfund Section, MDNR, letter to Daryl Roberts, Chief, Bureau of Environmental Epidemiology, MDOH, Jefferson City, Missouri.

Note: All sampling results were reported in micrograms per liter, which is equivalent to parts per billion (ppb).

Key:

ND = Non Detect.
µg/L = Micrograms per liter.
NCHD = Neosho County Health Department.
MDNR = Missouri Department of Natural Resources.
VOCs = Volatile organic compounds.

Table 2-2

DOMESTIC WELLS AND SPRINGS SAMPLES WHERE VOCs WERE DETECTED
NOVEMBER 29-30, 1994 (DSX90) and March 4-7, 1995 (DSX03)
NEOSHO WELLS SITE
NEOSHO, MISSOURI
T07-9411-510D/EMO1183SAA

Sample Number	Owner/ Description	Well Depth (feet)	Contaminants (µg/L)							
			Chloroform	CCl^4	TCE	PCE	Ethyl-benzene	CS_2	1,2-(cis)-DCE	Other VOCs Detected
DSX90-001	Shockley (kitchen)	60-65	1	4	150	0.3	0.3	U	2	
DSX90-002	Shockley (at well)	60-65	1	5	150	0.3	U	7	1	Chloroethane = 2 (no MCL)
DSX03-068	Shockley (at well)	60-65	1	5	130	U	U	U	2	1,1 Dichloroethane = 0.6 (no MCL)
DSX90-003	Morrison, P. (Rosey, owner)	Unknown	0.7	4	48	U	U	5	0.7	
DSX03-066	Morrison, P. (Rosey, owner)	Unknown	0.5	5	40	U	U	U	U	
DSX90-004 (*)	Naylor, G.	23.5	U	U	U	U	0.3	U	U	
DSX90-005	Honey House-Johnson, B. (prefilter)	~50	U	U	U	U	0.3	U	U	
DSX90-006	Honey House-Johnson, B. (postfilter)	~50	U	U	U	U	0.3	U	U	
DSX03-065	Honey House-Johnson, B. (postfilter)	~50	0.7	U	3	U	U	U	U	
DSX03-065D	Honey House-Johnson, B. (postfilter)	~50	0.6	U	U	U	U	U	U	
DSX90-007	Jackson, E.	35	0.8	3	60	0.3	0.3	U	0.9	
DSX03-049	Jackson, E.	35	U	0.8	15	U	U	U	U	
DSX90-008(*)	Herrin, R.	240-247	U	U	U	U	U	U	U	
DSX90-012	Southgate Truck Plaza (Rosey, Owner)	280	U	U	1	U	U	U	U	
DSX90-013	Rhodes, N.	Unknown	0.5	1	8	U	U	U	U	
DSX90-013D	Rhodes, N. (Duplicate)	Unknown	0.4	1	8	U	U	U	U	
DSX03-067	Rhodes, N.	Unknown	0.5	4	38	U	U	U	U	

Table 2-2

DOMESTIC WELLS AND SPRINGS SAMPLES WHERE VOCs WERE DETECTED
NOVEMBER 29-30, 1994 (DSX90) and March 4-7, 1995 (DSX03)
NEOSHO WELLS SITE
NEOSHO, MISSOURI
T07-9411-510D/EMO1183SAA

Sample Number	Owner/ Description	Well Depth (feet)	Contaminants (µg/L)							
			Chloroform	CCl^4	TCE	PCE	Ethyl-benzene	CS_2	1,2-(cis)-DCE	Other VOCs Detected
DSX90-014	Herrin, C. (prefilter)	230	U	U	1	U	U	U	U	1,3-(meta) Dichlorobenzene = 0.4 1,2-(ortho) Dichlorobenzene = 0.4 (MCL for both = 600)
DSX03-052	Herrin, C. (prefilter)	230	U	U	1	U	U	U	U	
DSX90-015(a) (Not sampled under DSX03)	Mahan, L.	500-550	U	U	2	U	U	U	U	
DSX90-016(a)	Flint, M.	555	U	U	U	U	U	U	U	
DSX90-018(a)	Sprunkle, H., Sr.	505	0.4	U	U	U	U	U	U	
DSX90-019	Sprunkle, S.	247	0.5	U	12	U	U	U	U	
DSX03-048	Sprunkle, S.	247	U	0.7	10	U	U	U	U	
DSX90-020(a)	Smith, G. (Bradford, owner)	605	U	U	0.6	0.4	U	U	U	methyl ethyl ketone = 12 (no MCL)
DSX90-020D	Smith, G. (Bradford, owner)	605	U	U	0.6	U	U	U	U	methyl ethyl ketone = 14 styrene = 0.4 (MCL = 100)
DSX03-013(b)	Uranga, E.	600-660	U	U	U	U	U	U	U	chloromethane = 2
DSX03-013D	Uranga, E.	600-660	U	U	U	U	U	U	U	chloromethane = 3
DSX03-018(b)	Hopper, H.	440	U	U	U	U	U	U	U	chloromethane = 2
DSX03-020(b)	Reynolds, R.	Unknown	U	U	U	U	U	U	U	chloromethane = 2
DSX03-035(b)	Jamison, J.	40	U	U	U	U	U	U	U	chloromethane = 2
DSX90-010	Spring north of Hannon Spring	NA	U	U	U	0.3	U	U	U	
DSX03-069(b)	Mother Goose Day-Care	Unknown	12	U	U	U	U	U	U	

Table 2-2

DOMESTIC WELLS AND SPRINGS SAMPLES WHERE VOCs WERE DETECTED
NOVEMBER 29-30, 1994 (DSX90) and March 4-7, 1995 (DSX03)
NEOSHO WELLS SITE
NEOSHO, MISSOURI
T07-9411-510D/EMO1183SAA

Sample Number	Owner/ Description	Well Depth (feet)	Contaminants (µg/L)							
			Chloroform	CCl^4	TCE	PCE	Ethyl-benzene	CS_2	1,2-(cis)-DCE	Other VOCs Detected
DSX90-021F	Field Blank	NA	0.5	U	U	0.3	0.3	U	U	acetone = 22 (no MCL) 1,2-(ortho) Dichlorobenzene = 0.5
NA	MCL RAL	NA NA	80 100	5 30	5 300	5 70	700 1,000	no MCL no RAL	70 400	

Key:

NA = Not applicable.
U = Actual value of sample is < the measurement detection limit.
* = All non-detect in March 1995.
a = Not sampled in March 1995.
b = Not sampled in November 1994.
CCl_4 = Carbon tetrachloride.
TCE = Trichloroethylene
PCE = Tetrachloroethylene
CS_2 = Carbon Disulfide.
DCE = 1,2-cis-dichloroethylene
VOCs = Volatile organic compounds.
µg/L = Micrograms per liter.
MCL = Maximum contaminant level.
RAL = Removal action level.

Table 2-3

SELECTED ANALYTICAL RESULTS FOR NEWTON-MCDONALD COUNTY LANDFILL MONITORING WELLS
DECEMBER 13-14, 1994 (DSX94) AND MARCH 8-9, 1995 (DSX04)
NEOSHO WELLS SITE
NEOSHO, MISSOURI
T07-9411-510D/EMO1183SAA

Sample Number	Well Number	Well Depth (feet)	Static Water Level (feet)	Contaminants(µg/L)													
				Vinyl Chloride	Chloro-ethane	1,1-DCA	1,2-DCE (total)	1,2-DCE (cis)	Benzene	TCE	PCE	Toluene	Chloro-benzene	Ethyl-benzene	Methyl 2-Pentanone	Xylenes (total)	1,4-Dichloro-benzene
DSX94-007	109	38	32	26	23	29	45	--	K	12	K	15	K	27	K	33	--
DSX04-002	109	38	30	57	14	16	--	15	6	3	0.5	3	0.3	12	U	8	2
DSX04-001	116	29	6.5	U	U	0.5	U	U	0.3	U	U	U	1	U	U	U	0.7
DSX04-003D	110	50	29	U	U	U	U	U	U	U	U	U	U	U	0.9	U	U
DSX04-009	113	133	56	Di-N-Butyl-, Phthalate = 12													

Key:

µg/L = Micrograms per liter.
-- = Not reported.
K = Actual value was < 10 µg/L.
U = Actual value has < measurement detection limit.
1,1-DCA = 1,1-dichloroethane.
1,2-cis-DCE = Total 1,2-dichloroethylene.
TCE = Trichloroethylene.
PCE = Tetrachloroethylene.

Table 2-4

ON-SITE SOIL HEADSPACE AND LABORATORY SOIL SAMPLE ANALYSES RESULTS
APRIL 4-7, 1995
NEOSHO WELLS SITE
T07-9411-510D/EMO1183SAA

Sample I.D. (Lab: Sample #)	Location Description	Depth (feet)	Screening Sample Soil Weight (grams)	On-Site Soil Headspace TCE (ppbv)	Normalized On-Site Soil Headspace TCE (ppbv)	Laboratory Soil Samples TCE (µg/kg)
900-01	Near southeast corner of "900 Building"	4-5	25.2	1,140	1,131	---
900-02 (DSX03-001)	In northwest corner of "horse-shoe" on east side of "900 Building"	6-7	24.6	249.8	254	ND
900-03	North side of "900 Building"	6-7	26.5	17,792	16,785	---
900-03 (DSX03-002)	Collocated sample	6-7	22.9	3,232	3,528	ND
900-04	West side of "900 Building"	4-5	23.7	2,204,250	2,325,158	---
900-04 (DSX03-003)	Collocated sample	4-5	20.1	1,545,500	1,922,264	4,600
SAB-01	Southwest end of Sabreliner plant along loading dock	6-7	25.3	86,450	85,425	---
SAB-02	Southeast end of Sabreliner plant along loading dock	6-7	28.8	1,754	1,523	---
SAB-03A	Middle of former lagoon of Sabreliner plant (clay)	8-9	24.3	293,000	301,440	---
SAB-03B	Middle of former lagoon at Sabreliner plant (limestone)	8-9	28.5	202,800	177,895	---
SAB-03 (DSX03-004)	Collocated sample	7.5-9	27.9	136,550	122,357	ND
SAB-04	Northeast of former lagoon at Sabreliner plant	8-9	24.1	61.01	63	---
CITY-01	Southeast of "900 Building" in northeast corner of open field	4-5	20.4	96.7	119	---
CITY-02	Southeast end of open field south of "900 Building	5-6	28.0	ND	ND	---
CITY-03	Loading dock at old jailhouse near airport	5-6	17.7	ND	ND	---
CITY-04	Near shop at Neosho airport	5-6	17.3	ND	ND	---
CITY-05	Roadside, halfway between "900 Building" and Shockley well, south of airport	5-6	15.6	ND	ND	---
CITY-06	1/4 mile west of landfill at east end of Blair Avenue	5-6	26.9	ND	ND	---
HOP-01	100 feet west of burned down Hoppy Lines building	2.5-3.5	22.9	ND	ND	---

Table 2-4

ON-SITE SOIL HEADSPACE AND LABORATORY SOIL SAMPLE ANALYSES RESULTS
APRIL 4-7, 1995
NEOSHO WELLS SITE
T07-9411-510D/EMO1183SAA

Sample I.D. (Labs Sample #)	Location Description	Depth (feet)	Screening Sample Soil Weight (grams)	On-Site Soil Headspace TCE (ppbv)	Normalized On-Site Soil Headspace TCE (ppbv)	Laboratory Soil Samples TCE (µg/kg)
71-01 (DSX03-005)	Highway 71 median, 100 feet south of Honey House	5-6	23.5	ND	ND	ND
SG-01	25 feet south of Southgate Truck plaza	5-6	21.4	ND	ND	---
SG-02 (DSX03-006)	10 feet west of abandoned service station, just east of Shockley well	5-6	23.9	ND	ND	ND
SUN-01	South of Sunbeam facility on Highway D	6-7	23.7	ND	ND	---
LF-01 (DSX03-007)	South center perimeter of Newton-McDonald County Landfill	5-6	19.7	ND	ND	ND
LF-02	Northeast side of Newton-McDonald County Landfill	5-6	21.8	ND	ND	---
TS-01	10 feet east of MW-03 at former rocket test site	5-6	25.9	ND	ND	---
TS-02	50 feet south of MW-02 near collection basin at former rocket test site	5-6	25.5	9,985	9,789	---
TS-03	100 feet west of south test pad at former rocket test site	5-6	24.8	ND	ND	---
MOARK-01	25 feet west of railroad tracks on Blair Avenue, south of MOARK Industries office	5-6	26.6	ND	ND	---
MOARK-02	50 feet north of egg division of MOARK Industries on Blair Avenue	5-6	27.9	ND	ND	---
Background	Soil at analysis location	surface	24.4	ND	ND	---

Note: Laboratory samples collected and submitted for VOCs analysis were preserved with methanol and submitted to the Region VII EPA Laboratory. Concentrations report parts per billion by volume were normalized to a 25.0 gram sample of soil.

Key:

ND = non-detect.
--- = not analyzed by the Laboratory.
TCE = Trichloroethylene.
µg/kg = Micrograms per kilogram.
ppbv = Parts per billion by volume.

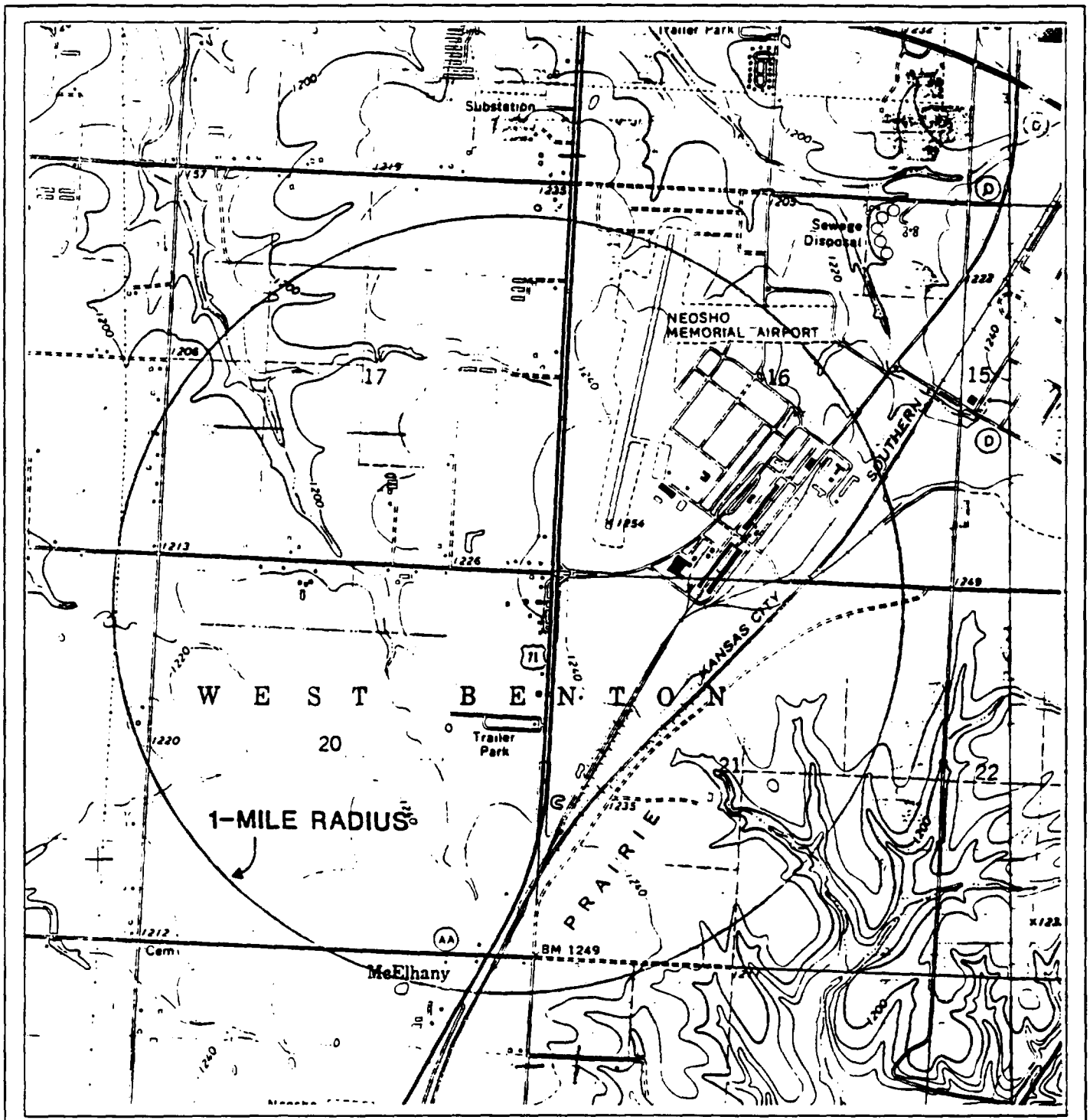

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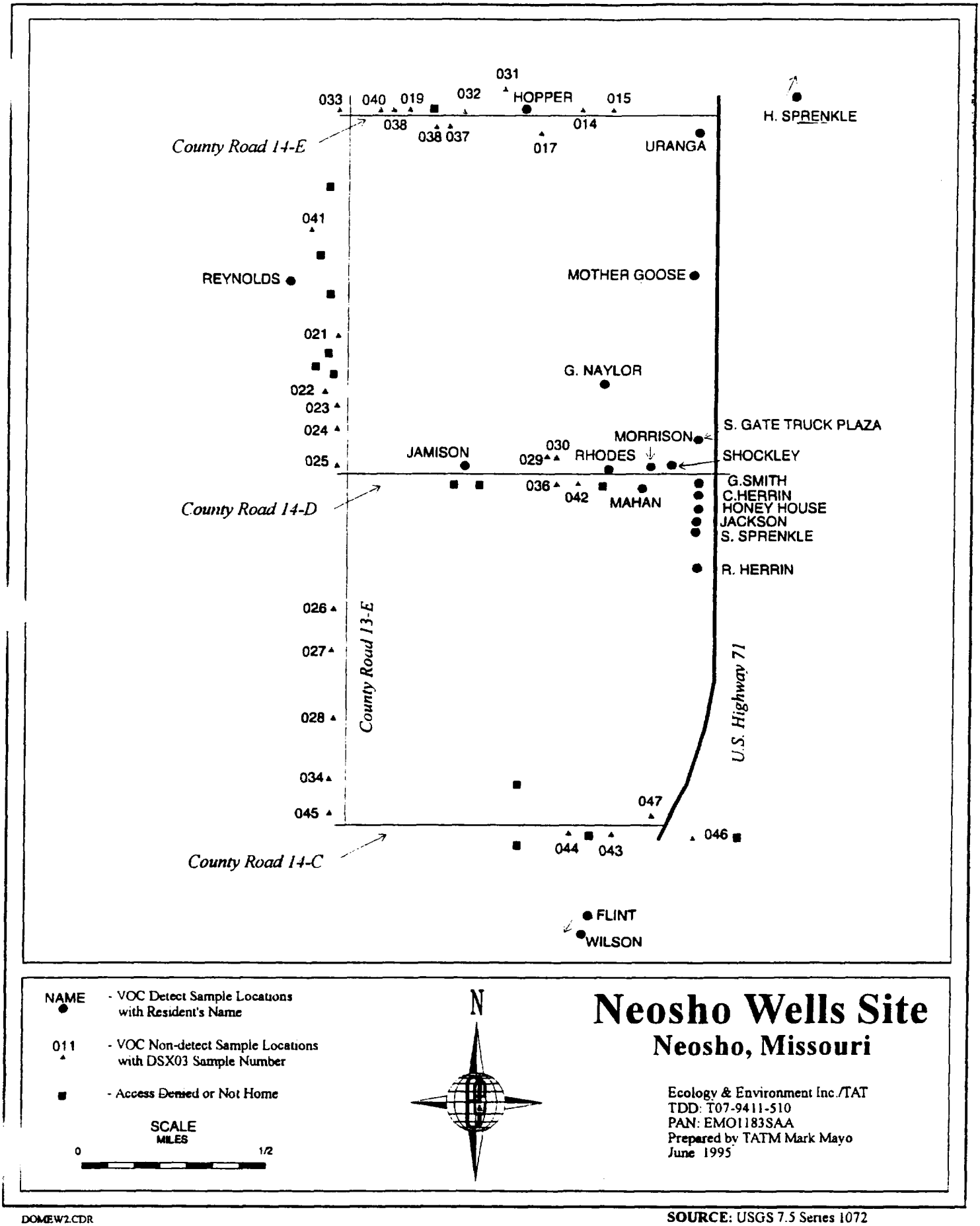
FIGURE 2-1: Site Location Map

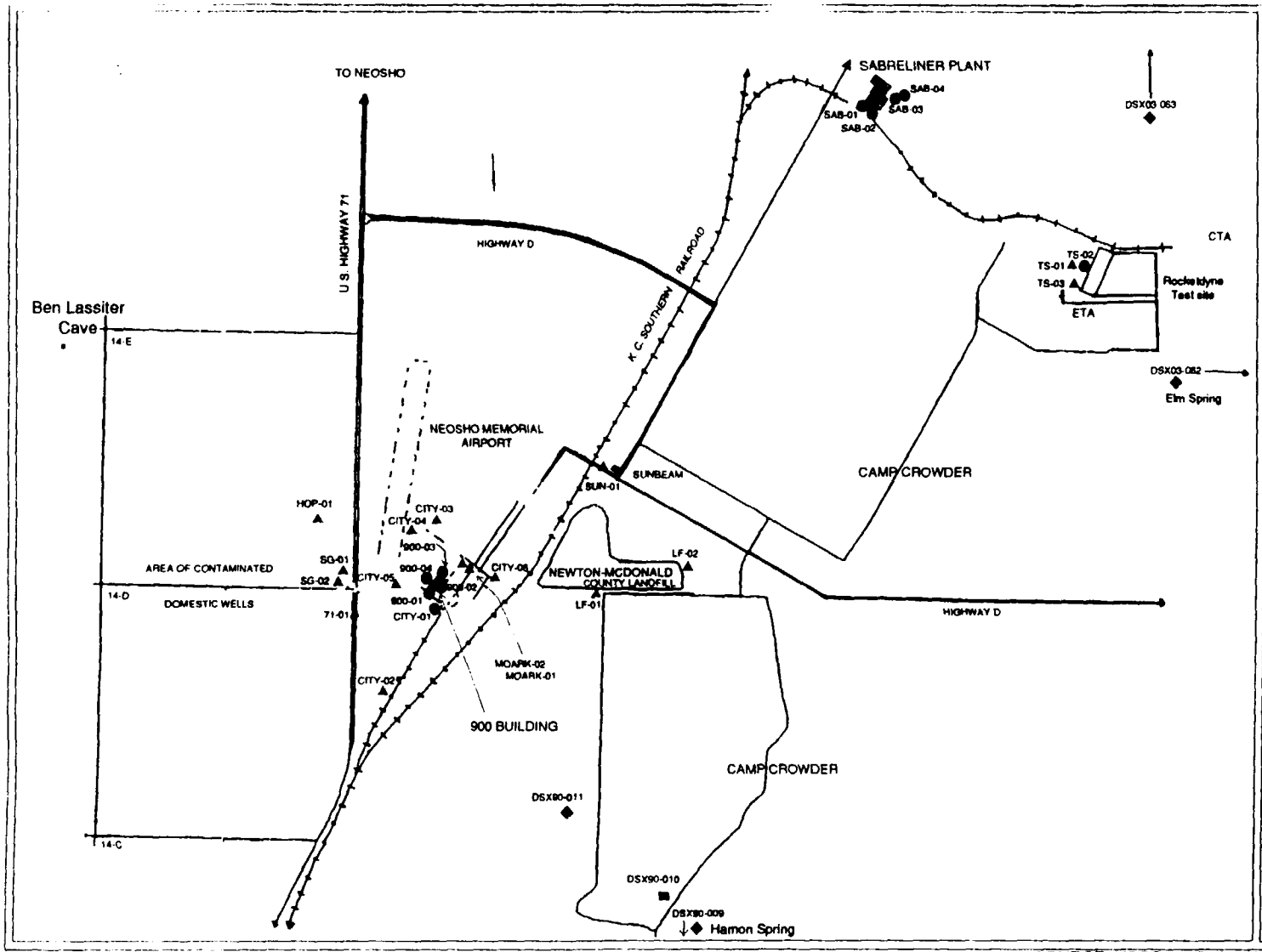
Source: USGS 7.5 minute series, 1972
Neosho East & Neosho West, MO Quads



DOMEW2.CDR
NEOSHO WELL SITE

SOURCE: USGS 7.5 Series 1072
Neosho West, MO Quads

Figure 2-2: Domestic Well Sample Locations



Neosho Wells Site

Neosho, Missouri

E&E/TAT
TDD: T07-9411-510D
PAN: EMO1183SAA
Prepared by: Mark Mayo
May 1995

DEF-1 — TCE Detect Subsurface Soil Screening Locations

DEF-1 — TCE Non-detect Subsurface Soil Screening Locations

ABC07-013 — VOC Detect Surface Water Sample Location

ABC07-013 — VOC Non-detect Surface Water Sample Location

N

SCALE
MILES
0 1/2 1

Figure 2-3: Site Map

NEOSHOS2 CDR
NEOSHO WELLS

SOURCE: USGS 7.5 Series Neosho East & Neosho West, MO Quads 1972

3. WASTE/SOURCE SAMPLING

On November 29, 1994, sample DSX90-022 was collected from a 5-gallon container holding liquid found on the abandoned service station property. The sample was submitted for VOCs analysis along with the water samples that were submitted under activity DSX90. Analysis indicated the presence of benzene at 240 µg/L, toluene at 10,000 µg/L, ethylbenzene at 4,600 µg/L, acetone at 360 µg/L, MEK at 320 µg/L, 2-hexanone at 56 µg/L, styrene at 160 µg/L, and total xylenes at 21,300 µg/L. Ethyl benzene up to 0.3 µg/L, MEK up to 14 µg/L, styrene up to 0.4 µg/L, and acetone up to 22 µg/L have been detected in domestic wells at the site.

No other waste/source sampling is known to have occurred, except for the subsurface soil sampling previously described in Section 2.4.4.

4. GROUND WATER PATHWAY

4.1 HYDROGEOLOGY

Little is known about the geologic conditions and direction of ground water flow in the area of the site (Figures 4-1 and 4-2). A general geologic/hydrogeologic column is provided in Figure 4-3. The area is characterized by karst topography and, therefore, various directions of ground water flow may exist. Also, aquifers may be interconnected due to the presence of karst topography and improper installation of wells in the past. General ground water flow in the area of the Neosho Wells site is to the west. One dye trace test performed by MDNR's Division of Geology indicated ground water flow to the northwest. The test was conducted in Sections 7, 17 and 18 of T24N, R32W and Sections 12 and 13 of T24N, R33W. These sections are approximately 1 mile west of U.S. Highway 71 (Reference 1). The test results also indicated that the streams in the area of the site are losing streams (streams that lose a significant portion of their flow into the subsurface). Ben Lassiter Cave is located approximately 2 miles west-northwest of the site and receives recharge from the streams in the site vicinity (Reference 19).

Malcom Moseby of the City of Neosho public works department stated to TAT during site activities on April 6, 1995, that a dye trace was performed at the city's water treatment plant located north of the Neosho Memorial Airport on the Crowder Industrial Park. Moseby stated that the dye was detected at Big Spring and a fish hatchery, both located in Neosho.

The following description is taken from draft Project Work Plan for the Remedial Investigation of the Former Air Force Plant No. 65 Rocketdyne Test site, Reference 9. The Rocketdyne Test site is located approximately 3.5 miles northeast of the Neosho Wells site and is assumed to have similar geologic conditions.

> "The area is underlain by Mississippian-aged limestone which is overlain by residual soils. The residual soils are derived from the weathering of the carbonate bedrock.
>
> The uppermost hydrostratigraphic unit at the Rocketdyne Test site is residual clay and clayey gravel. The residuum constitutes the vadose zone at the site and contains zones of perched water which occupy gravel layers or zones of weathered rock at the rock/soil interface.
>
> The hydraulic conductivity (K) values from rising head slug tests ranged from 2.1×10^{-7} to 7.0×10^{-6} centimeters/second (cm/sec) in wells screened primarily in residual clayey gravels. The hydraulic conductivity values at the Rocketdyne Test site are comparable to values for weathered limestone, 10^{-4} to 10^{-6} cm/sec, reported by Freeze and Cherry (1979) and Domenico and Schwartz (1990). The observed values are also consistent with reported ranges of K for clay, silt, and clayey sand which are found in the residuals soils, 10^{-4} to 10^{-9} cm/sec. The presence of clay within the clayey gravel mixture results in low hydraulic conductivities with little intrinsic variation. The underlying limestone bedrock is expected to have a higher hydraulic conductivity, especially near the top of the bedrock where it becomes increasingly weathered and fractured.

The cherty Mississippian limestone is the uppermost aquifer at the Rocketdyne Test site. The top of the saturated zone is estimated to be approximately 100 feet below the top of bedrock and the aquifer is unconfined. The most permeable zones in the shallow aquifer are expected to be solution features and breccia zones. The deep aquifer consists of Cambrian and Ordovician carbonate rock formations and is located approximately 300 feet below ground surface.

Perched ground water elevations were measured at existing monitoring wells at the Rocketdyne Test site. Three water elevations were obtained from the monitoring wells in the CTA and one from the ETA. At the ETA, the perched ground water table was measured at approximately 33 feet below ground surface." (Reference 9)."

4.2 GROUND WATER TARGETS

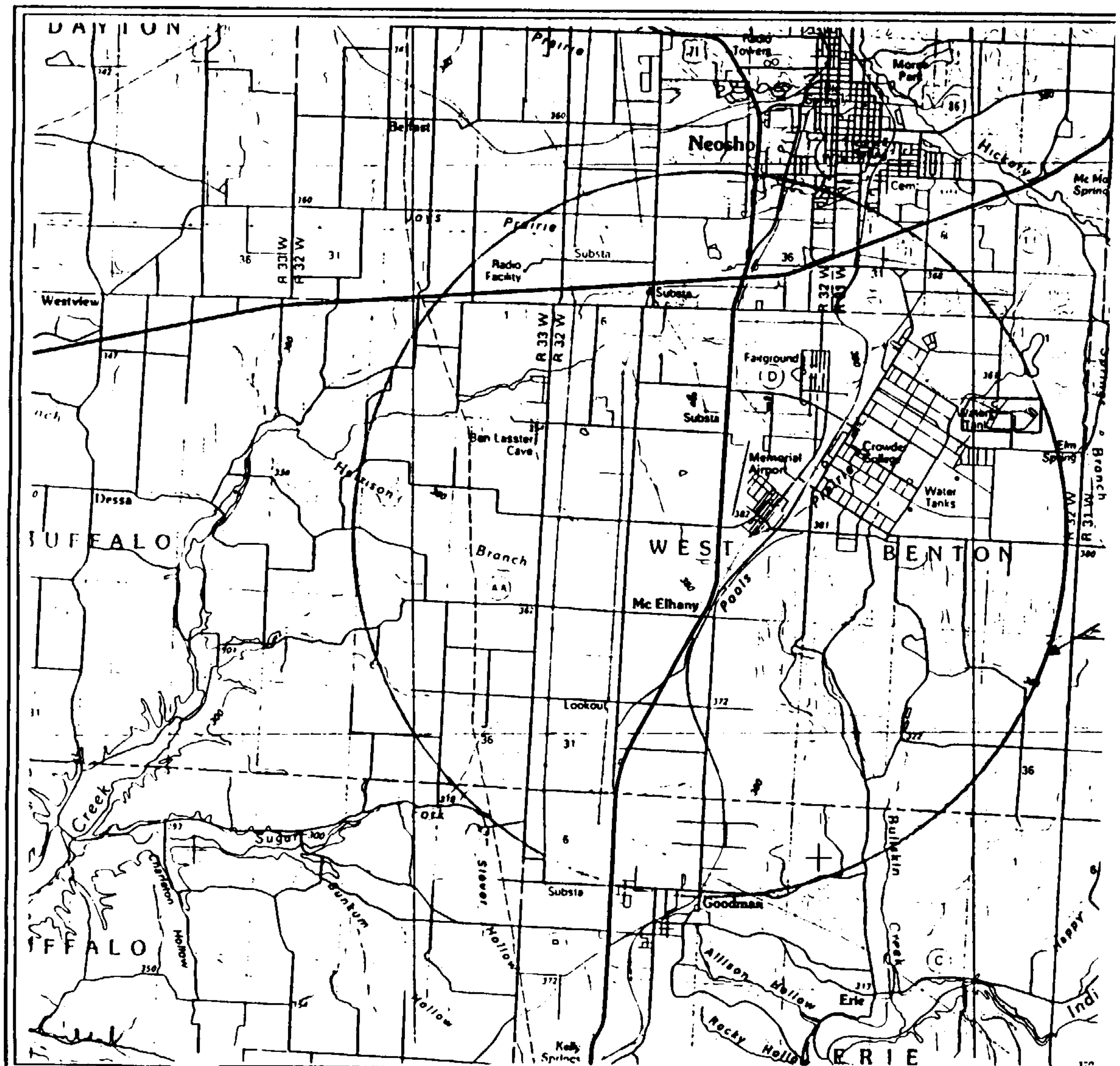
Drinking water for the City of Neosho is provided by a surface water intake on Shoal Creek. However, this source is supplemented by three ground water wells. The Dewey and Finney well is currently producing. The Wheeler Street well and the Pet and Milk well were scheduled to start producing in late July 1995. The city supplies water to a population of 9,254 (Reference 15), Crowder College, the Missouri National Guard Camp Crowder (Reference 16), and the Crowder Industrial Park. Residences outside the city limits of Neosho and Goodman are supplied by private wells (Reference 12). The City of Goodman, located approximately 4 miles south of the Neosho Wells site on U.S. Highway 71, is supplied by a ground water well and has a backup well in case of emergencies. Goodman has a population of 1,090 (Reference 17). Goodman is proposed as a wellhead protection area (Reference 13). There are 98 registered wells within a 4-mile radius of the site. Those represent wells drilled after September 30, 1986, and registered in accordance with the Water Well Drillers Act. They do not necessarily include wells drilled before September 30, 1986 (Reference 14).

Ben Lassiter Cave, located approximately 2 miles west-northwest of the site, is one of seven confirmed Ozark Cavefish (*Amblyopsis rosae*) sites in Missouri. The Ozark Cavefish is on the Missouri state endangered and federal threatened species lists. The Bristly cave crayfish (*Cambarus setosus*) also inhabits Ben Lassiter Cave and is on the state watch list (Reference 19). Ben Lassiter Cave receives recharge from the streams in the site vicinity.

4.3 GROUND WATER PATHWAY CONCLUSIONS

Contaminants have been detected in 20 domestic wells at the site since August of 1994. Five of these domestic wells have contamination above the MCL for TCE (one of these also exceeded the MCL for CCl_4). All other VOCs detected have been below MCLs. Levels of contamination have not changed significantly from August 1994 to April 1995. The site is being defined as the TCE plume delineated by the domestic wells and monitoring well where TCE has been detected because TCE has been found consistently in more drinking water wells over a wider area. The plume appears to be centered around U.S. Highway 71 and County Road 14-D, although the eastern edge facing the Crowder Industrial Park is delineated only by the detection of TCE in monitoring well #109 at the Newton-McDonald County Landfill (Figure 4-2). Potential sources identified to date include the Newton-

McDonald County Landfill, the Sabreliner plant and "900 Building", both formerly operated by Rocketdyne, and the Rocketdyne Test site. Other potential sources may exist at the site.



Neosho
Belfast
Westview
Dessa
Radio Towers
Radio Facility
Substa
Fairground
Ben Lassiter Cave
Memorial Airport
Crowder College
Water Tanks
Elm Spring
Cem
Prairie
Hickory
Harrison
Branch
Pools
WEST
BENTON
Mc Elhany
Lookout
Goodman
Erie
ERIE
Kelly Springs
Sugar
Creek
Bunkum
Stever Hollow
Allison Hollow
Rocky Hollow
Bullskin Creek
R 33 W
R 32 W
R 31 W

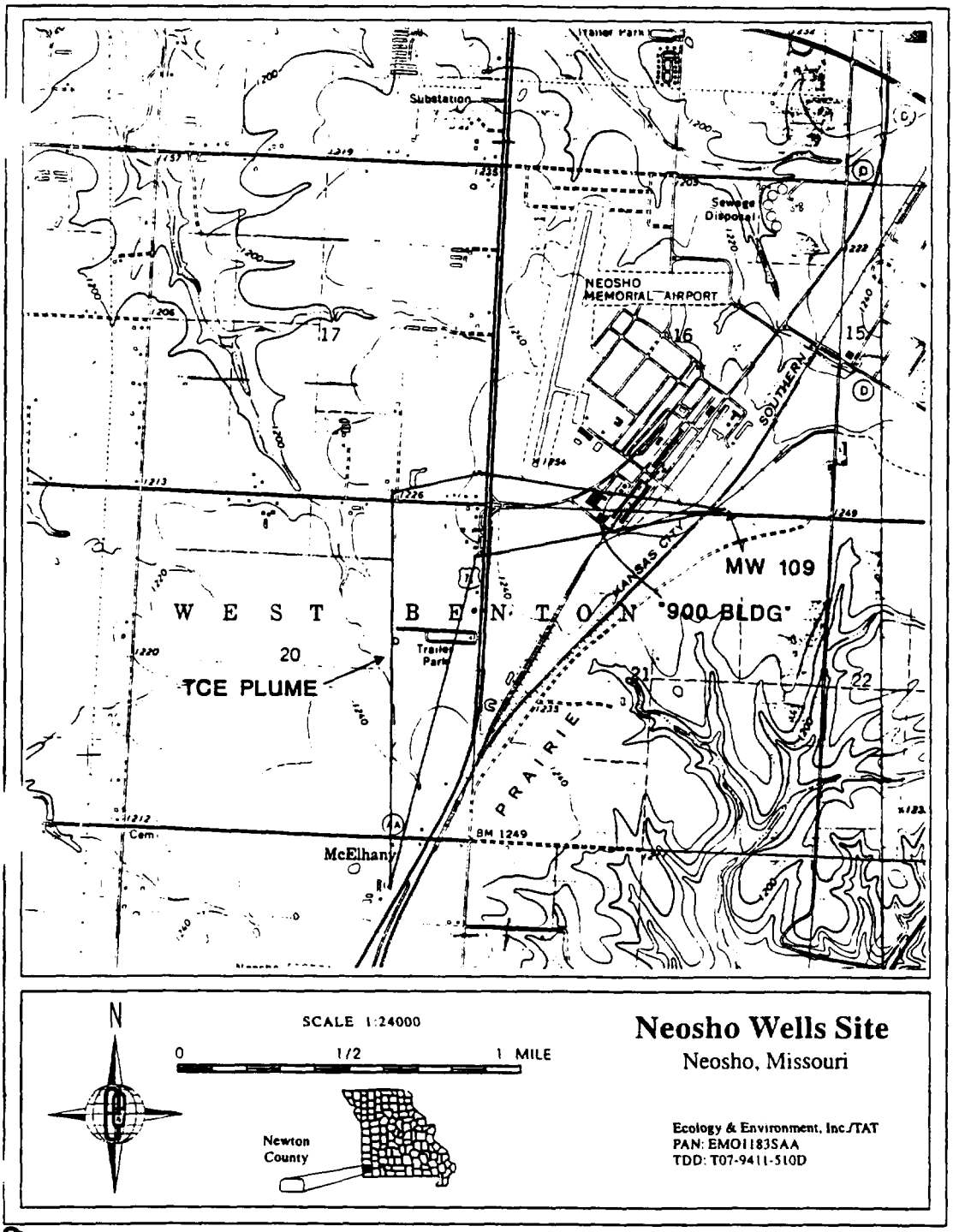


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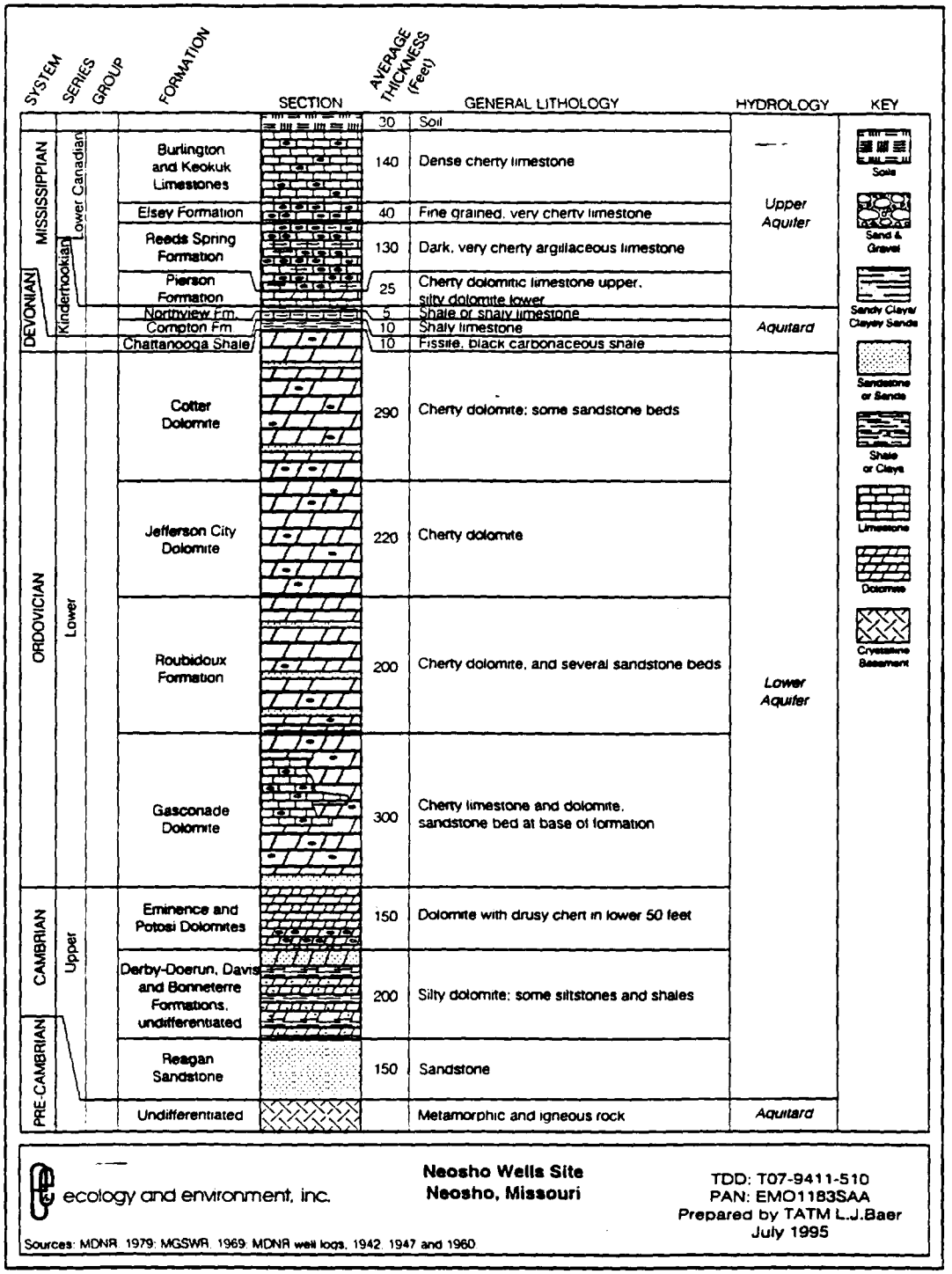
FIGURE 4-2: TCE Plume Delineation

Source: USGS 7.5 minute series, 1972
Neosho East & Neosho West, MO Quads



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Neosho Wells Site
Neosho, Missouri

TDD: T07-9411-510
PAN: EMO1183SAA
Prepared by TATM L.J.Baer
July 1995

Sources: MDNR 1979; MGSWR 1969; MDNR well logs, 1942, 1947 and 1960

NEOHYDRO.CDR

Figure 4-3: GENERAL GEOLOGIC/HYDROGEOLOGIC COLUMN

5. SURFACE WATER PATHWAY

5.1 HYDROLOGY

Several potential sources for ground water contamination have been identified in the area of the plume. These potential sources are located in different drainage basins of streams in the Neosho area. Therefore, more than one specific overland migration path exists that contaminants could take when entering site runoff.

Overland drainage from the site would generally flow in a northwesterly direction to an intermittent stream. The intermittent stream enters Buffalo Creek approximately 2.5 miles northwest of the site. Buffalo Creek drains southwest into Oklahoma and the Grand River system [(Reference 11)(Figure 5-1)]. These streams draining the area of the site are losing streams and recharge Ben Lassiter Cave (Reference 19).

The Rocketdyne Test site and Sabreliner plant lie in the Spring River Basin north of the surface drainage divide between the spring and Elk River Basins. Surface water from the ETA and CTA drain into tributaries of Hickory Creek. Hickory Creek then flows northwest into Shoal Creek. Shoal Creek is designated as a drinking water supply for the cities of Joplin and Neosho (Reference 9).

5.2 SURFACE WATER TARGETS

The City of Neosho has a surface water intake located on Shoal Creek. The pump station is run by four pumps and is located at the Shoal Creek Dam in Lime Kiln Park (Reference 12). The City of Joplin is supplied by a surface water intake on Shoal Creek located at the Low Water Bridge (Reference 18).

The Ozark Cavefish is known to inhabit streams and caves in Newton County. The Ozark Cave fish is on the federally threatened and endangered species list (Reference 10). The Bristly cave crayfish is known to inhabit Elm Spring (Reference 19).

The Rocketdyne Test site is situated within the 2,000-acre Neosho Wildlife Area. This deciduous, oak-hickory forest, consisting mainly of red oak, black walnut and eastern d cedar, is interspersed with an open tallgrass prairie, consisting of big and little bluestem, ndian grass and huckleberry. A large whitetail deer population and wild turkey reside within this area. The nearest surface water, the Elm Spring branch of Hickory Creek, is located one-half mile east of the CTA. The U.S. Fish Hatchery, located in Neosho, derives its water from Elm Spring (Reference 9).

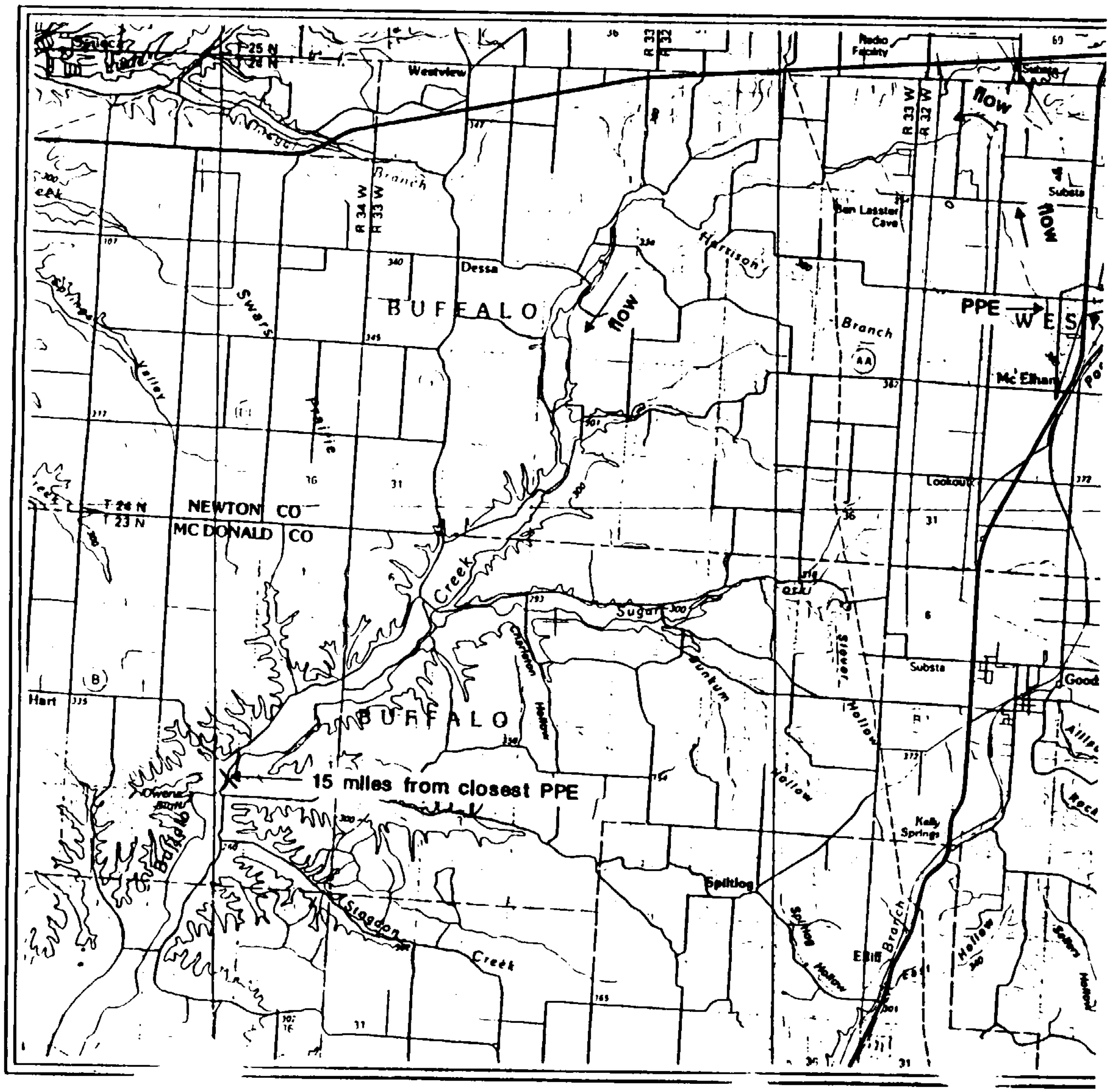
Other species or natural communities occurring in the vicinity of the Neosho Wells site and/or Rocketdyne Test site are listed in Appendix A.

5.3 SURFACE WATER PATHWAY CONCLUSIONS

The surface water pathway threat is of moderate concern at the Neosho Wells site. Although contamination identified to date is restricted to the subsurface and ground water, the area is characterized by karst topography, which may provide a conduit to the surface water bodies containing sensitive environments via natural springs. Factors which reduce the likelihood of contaminants reaching sensitive environment targets are: 1) that the contami-

nants are highly volatile, are not persistent, and would evaporate quickly and 2) the nearest surface water body is 2 to 2.5 miles away.

In surface water samples collected to date, only one sample (DSX90-010) collected from the spring north of Hamon Spring on the Missouri National Guard Camp Crowder detected any VOCs. This sample indicated PCE at 0.3 μg/L. However, this concentration of PCE also was detected in the field blank for that sample activity (DSX90). PCE was likewise detected in three domestic wells up to 0.4 μg/L. PCE was detected in one monitoring well at the Newton-McDonald County Landfill at 0.5 μg/L. PCE also has been detected in the soils at the Rocketdyne Test site. Therefore, there is the potential for PCE to migrate to nearby surface water bodies.


Westview
Radio Facility
R 33 W
R 32 W
R 34 W
flow
Branch
Dessa
BUFFALO
Harrison
Ben Lassiter Cave
Substa
PPE
WES
McElhany
Lookout
T 24 N
T 23 N
NEWTON CO
MC DONALD CO
Creek
Sugar
Buffalo
Hart
BUFFALO
15 miles from closest PPE
Kelly Springs
Splitlog
Siggdon
Creek
Hollow
Good
Elliff

6. SOIL EXPOSURE AND AIR PATHWAYS

6.1 PHYSICAL CONDITIONS AND TARGETS

The soils in the area of the Neosho Wells site are primarily of the Nixa-Tonti and Gerald-Creldon associations. The Nixa-Tonti association is characterized by gently sloping and moderately sloping, moderately well drained, cherty and silty soils on uplands. This association consists of soils on broad ridges of secondary divides. The soils have a fragipan, which is a subsurface horizon that is low in porosity. The Gerald-Creldon association is characterized by nearly level and very gently sloping, somewhat poorly drained and moderately well drained, silty soils on uplands. This association consists of soils on broad ridges of primary divides. The soils have a fragipan (Reference 11).

The nearest residents at the Neosho Wells site are the residents with contaminated wells. Due to the low levels (parts per billion) detected in the subsurface at the potential source locations and the volatile nature of the contaminants at the Neosho Wells site, no surface soils were sampled.

Although the American Burying Beetle has not been recorded in Newton County, there is suitable habitat in the area of the site and the county does fall within the beetle's range.

6.2 SOIL EXPOSURE AND AIR PATHWAY CONCLUSIONS

There is a minimal soil exposure or air pathway threat at the Neosho Wells site. Contamination identified to date is contained to the subsurface and ground water. Potential sources identified to date have low levels of contaminants in the subsurface and are believed to have been deposited before 1986. Contaminants are VOCs which would rapidly volatilize at the ground surface. Volatilization of contaminants from domestic well water poses a minimal threat due to the low levels of contaminants.

7. SUMMARY AND CONCLUSIONS

In August 1994, the Newton County Health Department discovered TCE, CCl_4, and other VOCs in domestic wells near the intersection of U.S. Highway 71 and County Road 14-D, approximately 2.5 miles south of Neosho, Missouri. On November 29 and 30, 1995, TAT and EPA conducted domestic well sampling at 15 residences in the area. TCE was detected in five wells above its MCL at concentrations up to 150 μg/L. CCl_4 was detected in one well at its MCL of 5 μg/L. No VOCs were detected above RALs. TAT and EPA also identified several businesses and facilities as potential sources of the contamination. TAT also sampled monitoring wells at the Newton-McDonald County Landfill in December 1994 and March 1995. TCE was detected in one of these monitoring wells at 12 μg/L, and several other VOCs were found in monitoring wells at the landfill, including vinyl chloride (a degradation product of TCE).

During the week of April 3, 1995, TAT expanded domestic well sampling to 45 residences to determine the extent of contamination. Neither TCE nor CCl_4 was detected in any wells where it had not been detected previously. Chloromethane was detected in four wells that had not been sampled previously at concentrations ranging from 2 to 3 μg/L. All other results were consistent with previous sampling events. Twenty domestic wells have exhibited VOC contamination during either NCHD, MDNR or EPA sampling events.

TAT also conducted on-site screening of subsurface soils from 26 locations to determine potential source locations. TCE was detected in screening samples from four properties, including the Sabreliner plant, the "900 Building" owned by Sabreliner, the former rocket test site on the Missouri National Guard's Camp Crowder, and a City of Neosho field just southeast of the "900" building. TAT collected eight samples for laboratory analysis to confirm screening results. Of the four samples collected from locations where on-site screening indicated the presence of TCE, only the sample from the west side of the "900 Building" was positive for TCE (4,600 μg/kg).

Based on these sampling events and other research conducted during the PA/SI, five domestic wells serving 20 people have been identified with TCE and/or CCl_4 contamination above their MCLs. These wells are all located west of U.S. Highway 71 near its intersection with County Road 14-D in Sections 17 and 20 of Township 24N, Range 32W. TCE was detected in six other domestic wells, though not above its MCL. TCE also was detected in a ground water sample collected with the Geoprobe at the "900 Building" and in one monitoring well at the Newton-McDonald County Landfill. These domestic wells and monitoring well were used to define the site area as the area of TCE contamination in the ground water.

Potential sources identified during the PA/SI include the Newton-McDonald County Landfill, the Sabreliner plant and "900 Building"; and the Rocketdyne Test site. The Sabreliner locations and Rocketdyne Test site exhibited subsurface soil contamination during on-site screening. However, the levels of TCE detected at these locations were significantly lower than levels detected during past investigations at the Rocketdyne Test site. Contamination is not believed to be originating from the west side of U.S. Highway 71. Potential sources located west of U.S. Highway 71 that were sampled for on-site screening did not exhibit TCE contamination during the PA/SI.

Of five surface water samples collected, only one indicated the presence of contamination. PCE was detected at 0.3 μg/L in the sample from a spring north of Hamon Spring on

Camp Crowder. However, this level of PCE also was detected in the field blank for that sampling event. No surface soil samples were collected during the PA/SI due to the volatile nature of the contaminants and the low levels (parts per billion) detected in the subsurface at the potential source locations.

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18. Qualls, Bill, Missouri American Water Co.-Joplin District, June 27, 1995, telephone conversation with Scott Hayes, E & E/TAT, Overland Park, Kansas.

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APPENDIX A

STATE AND FEDERAL THREATENED AND ENDANGERED SPECIES NEAR THE NEOSHO WELLS SITE.

MISSOURI DEPARTMENT OF CONSERVATION

2901 West Truman Boulevard
P.O. Box 180
Jefferson City Missouri 65102-0180

Telephone: 314/751-4115
Missouri Relay Center: 1-800-735-2966 (TDD)

JERRY J. PRESLEY, Director

March 24, 1995

Ms. Kristine Davidson, Chief
Department of Defense Unit
Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102-0176

Re: Hazardous Waste Investigation
Neosho, MO - Newton & McDonald Counties

Dear Ms. Davidson:

Thank you for your letter of March 14, 1995, regarding threatened and endangered species within the proposed project area.

Department staff examined map and computer files for federal and state rare, threatened and endangered species and determined that sensitive species or communities are known to occur on the immediate site or surrounding area. Please refer to the attached Heritage Database report for details.

In addition, please note:

1. Portions of Camp Crowder are within the recharge zones for both Ben Lassiter Cave and Hearell Spring, and possibly for Elm Spring. (See DNR reports: J.E. Vandike 1989, Jan 1992, and Feb. 1992.

2. Water from Elm Spring replenishes the Neosho Fish Hatchery water source and possibly Hearell Springs.

3. The Ozark cavefish (federal T, state E) is known from both Ben Lassiter Cave and Hearell Spring.

4. Bristly cave crayfish (state WL) occurs in Elm Spring, Hearell Spring, Neosho Fish Hatchery, and Ben Lassiter Cave.

5. A chemical spill in the NE corner of Camp Crowder may contaminate Elm Spring and thus Hearell Spring and Neosho Fish Hatchery; the recharge area of Ben Lassiter Cave may also be affected.

We have attached a copy of J.E. Vandike's January, 1992 report on the delineation of the recharge area of Ben Lassiter Cave, as requested. Other reports of this type are available from the MDNR Division of Geology and Land Survey.

This report reflects information we currently have in our database. We provide this information for planning purposes only; it should not be regarded as a definitive statement as to the presence or absence of rare/endangered species or high-quality natural communities. You may need to conduct additional on-site inspections to verify the presence or absence of such species or communities.

Thank you for the opportunity to review and comment.

Sincerely,

W. H. Dickneite

DAN F. DICKNEITE
PLANNING DIVISION CHIEF

Enclosures

Department of Natural Resources
Hazardous Waste Investigation
Neosho, MO - Newton and McDonald Counties

The following species and/or natural communities are known from the vicinity of the project site.

SCIENTIFIC NAME	COMMON NAME	FED STATUS	STATE STATUS	DATE	TOWN/RANGE	SEC	MANAGED AREA	
AMBLYOPSIS ROSAE RECHARGE AREA	OZARK CAVEFISH	LT	E	1992	024N033W	13	AND SECS 12, 24	
					024N032W	07	AND SECS 8, 16-21	
AMBLYOPSIS ROSAE	OZARK CAVEFISH	LT	E	1993	025N031W	30		
ARDEA HERODIAS	GREAT BLUE HERON ROOKERY		C	1990	026N032W	22		
ARDEA HERODIAS	GREAT BLUE HERON ROOKERY		C	1990	026N032W	05		
ETHEOSTOMA CRAGINI	ARKANSAS DARTER	C1	R	1991	026N032W	06		IN SHOAL CREEK
CAMBARUS SETOSUS	BRISTLY CAVE CRAYFISH		WL	1991	026N032W	25		
CAMBARUS SETOSUS	BRISTLY CAVE CRAYFISH		WL	1992	024N033W	13		
CAMBARUS SETOSUS	BRISTLY CAVE CRAYFISH		WL	1989	025N031W	30		
LAMPSILIS RAFINESQUEANA	NEOSHO MUCKET	C2	R	1979	026N032W	15		IN SHOAL CREEK
CASTANEA PUMILA VAR OZARKENSIS	OZARK CHINQUAPIN	C2	SU	1993	024N032W	22	CAMP CROWDER TRAINING SITE	
CAMBARUS SETOSUS	BRISTLY CAVE CRAYFISH		WL	1992	024N032W	12	NEOSHO FISH HATCHERY	
CAMBARUS SETOSUS	BRISTLY CAVE CRAYFISH		WL	1992	025N031W	30	NEOSHO FISH HATCHERY	

The following Managed Areas are located in the vicinity of the project site.

MANAGED AREA	OWNER	TOWN/RANGE	SEC
CAMP CROWDER TRAINING SITE	U.S. ARMY - MO NATIONAL GUARD	024N032W	01 AND SECS 2, 11-16, 21, 22, 27, 28, 33, 34
FORT CROWDER CONSERVATION AREA	MDC	024N031W	06 AND SECS 7, 8, 17, 18
		024N032W	21 AND SECS 28, 33
LIME KILN ACCESS	CITY OF NEOSHO	025N031W	07
NEOSHO DISTRICT MDOS	MDC	025N032W	36
NEOSHO FISH HATCHERY	USFWS	025N032W	19 AND SECS 20, 29, 30
TIPTON FORD ACCESS	MDC	026N032W	09 AND SEC 16

FEDERAL STATUS - The federal status is derived from the provisions of the federal Endangered Species Act, which is administered by the U.S. Fish and Wildlife Service. The Endangered Species Act provides federal protection for plants and animals listed as Endangered or Threatened. E = Endangered T = Threatened A,B,C = Candidate for Federal listing.

MISSOURI STATUS - The state status is determined by the Department of Conservation under Constitutional authority. Rule 3CSR10-4.111 of the Wildlife Code of Missouri and certain state statutes apply to state listed species. E = Endangered R = Rare SU = Status Undetermined WL = Watch List EXI = Extirpated XTN = Extinct.
Great blue heron rookeries, natural communities and geologic features may also occur on this printout. The status given these elements is provided for informational purposes only. C = Common, - = No status. These elements are not necessarily afforded protection through endangered species law or

Department of Natural Resources
Hazardous Waste Investigation
Neosho, MO - Newton and McDonald Counties

Additional information for planning purposes.

The proposed project occurs within state designated critical habitat for the Ozark cavefish. All activities that might impact groundwater quality should be avoided.

The project area occurs in a region of karst geology. These areas are characterized by subterranean water movement. Features like caves, springs, and sinkholes are common. Cave fauna are influenced by water pollution and other changes to water quality. Every effort should be made to protect groundwater in the project area.

Streams in the area should be protected from soil erosion, water pollution and instream activities that modify or diminish aquatic habitats.

FEDERAL STATUS - The federal status is derived from the provisions of the federal Endangered Species Act, which is administered by the U.S. Fish and Wildlife Service. The Endangered Species Act provides federal protection for plants and animals listed as Endangered or Threatened. E = Endangered T = Threatened A,B,C = Candidate for federal listing.

MISSOURI STATUS - The state status is determined by the Department of Conservation under Constitutional authority. Rule 3CSR10-4.111 of the Wildlife Code of Missouri and certain state statutes apply to state listed species. E = Endangered R = Rare SU = Status Undetermined WL = Watch List EXT = Extirpated XTH = Extinct.
Great blue heron rookeries, natural communities and geologic features may also occur on this printout. The status given these elements is provided for informational purposes only. C = Common, - = No status. These elements are not necessarily afforded protection through endangered species law or statute.

APPENDIX B

LATITUDE AND LONGITUDE CALCULATION WORKSHEETS

LATITUDE AND LONGITUDE CALCULATION WORKSHEET #2
LI USING ENGINEER'S SCALE (1/60)

SITE NAME: Neosho Wells Site CERCLIS #: MO0000956835

AKA: N4 SSID: —

ADDRESS: Intersection of U.S. Highway 71 and (Newton County Rd. 14-1)

CITY: Neosho STATE: MO ZIP CODE: 64850

SITE REFERENCE POINT: approx. 0.15 mi. SW of above intersection - approx. center of site

USGS QUAD MAP NAME: Neosho west MO TOWNSHIP: 24 (N)/S RANGE: 32 E/(W)

SCALE: 1:24,000 MAP DATE: 1922 SECTION: NE 1/4 of NE 1/4 ~~1/4~~

MAP DATUM: (1927) 1983 (CIRCLE ONE) MERIDIAN: 5th

COORDINATES FROM LOWER RIGHT (SOUTHEAST) CORNER OF 7.5' MAP (attach photocopy):

LONGITUDE: 94 ° 22 ' 30 " LATITUDE: 36 ° 45 ' 0 "

COORDINATES FROM LOWER RIGHT (SOUTHEAST) CORNER OF 2.5' GRID CELL:

LONGITUDE: 94 ° 22 ' 30 " LATITUDE: 36 ° 42 ' 30 "

CALCULATIONS: LATITUDE (7.5' QUADRANGLE MAP)

A) NUMBER OF RULER GRADUATIONS FROM LATITUDE GRID LINE TO SITE REF POINT: 98

B) MULTIPLY (A) BY 0.3304 TO CONVERT TO SECONDS:

A x 0.3304 = 32.3 "

C) EXPRESS IN MINUTES AND SECONDS (1' = 60"): 0 ' 32.3 "

D) ADD TO STARTING LATITUDE: 36 ° 42 30.0 " + 0 ' 32.3 " =

SITE LATITUDE: 36 ° 48 ' 02.3 "

CALCULATIONS: LONGITUDE (7.5' QUADRANGLE MAP)

A) NUMBER OF RULER GRADUATIONS FROM RIGHT LONGITUDE LINE TO SITE REF POINT: 200

B) MULTIPLY (A) BY 0.3304 TO CONVERT TO SECONDS:

0.411 A x ~~0.3304~~ = 82.2 "

C) EXPRESS IN MINUTES AND SECONDS (1' = 60"): 1 ' 22.2 "

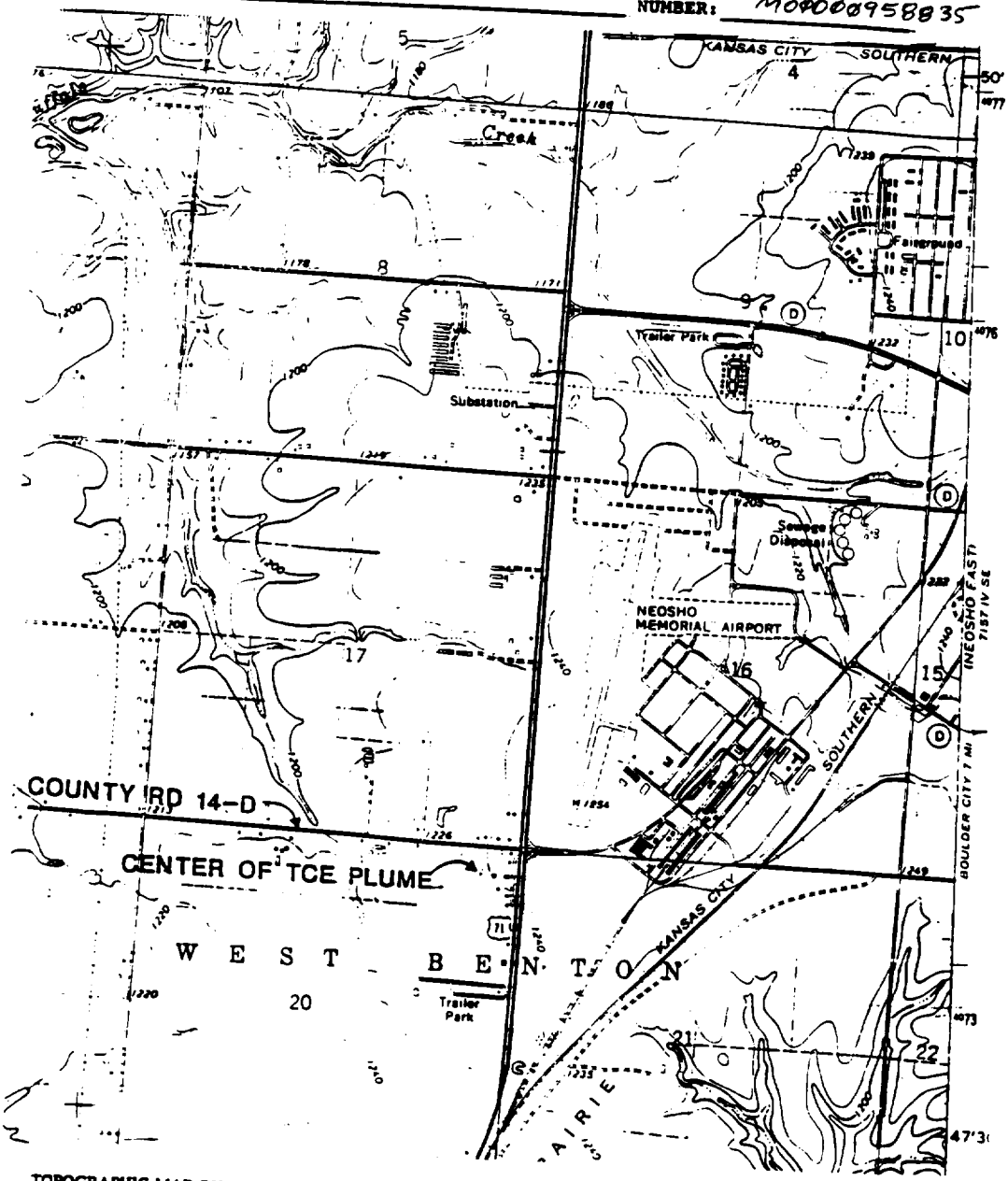
D) ADD TO STARTING LONGITUDE: 94 ° 22 ' 30.0 " + 1 ' 22.2 " =

SITE LONGITUDE: 94 ° 23 ' 52.2 "

INVESTIGATOR: [signature] DATE: 7/5/95

SITE NAME: Neosho Wells Site

CERCLIS NUMBER: MOD000958835



TOPOGRAPHIC MAP QUADRANGLE NAME: Neosho West MO

SCALE: 1:24,000

COORDINATES OF LOWER RIGHT-HAND CORNER OF 2.5-MINUTE GRID:

LATITUDE: 36° 42' 30" LONGITUDE: 94° 22' 30"

APPENDIX C

SUPPORTING CORRESPONDENCE

Reference 1

MISSOURI DEPARTMENT OF HEALTH

Mel Carnahan
Governor

Coleen Kivlahan, M.D., M.S.P.H.
Director

P.O. Box 570, Jefferson City, MO 65102-0570 • 314-751-6400 • FAX 314-751-6010

March 3, 1995

Mr. Paul Doherty, Chief
Site Assessment Section
U.S. Environmental Protection Agency
Region VII, Superfund
726 Minnesota Avenue
Kansas City, KS. 66101

Dear Mr. Doherty:

We have received and reviewed the Quality Assurance Sampling Plan (QASP) for an Integrated Site Assessment at the Neosho Wells site in Neosho, Missouri. Overall, we feel the plan is a good first step toward determining the source and extent of the contamination at the Neosho Well site. Sampling 40 private wells in the area should provide a good estimate of how many residents are being exposed to contaminants and where those residents live. Depending on the outcome of that well testing, the Missouri Department of Health (DOH) urges the Environmental Protection Agency (EPA) to further consider the option of providing an alternative source of drinking water to affected residents immediately and to the entire community in the future.

As mentioned in the QASP, the location of wells to be tested will be provided by the Newton County Health Department and DOH. As always, DOH will be glad to help in this and any other way we can to protect the health of Missourians in the Neosho area. Rebecca Heffren of the Newton County Health Department assured us during a recent telephone conversation that they would also be willing to help. As more data on this site becomes available, we will be glad to assist EPA in evaluating and making recommendations as to how to prevent further public exposure to the TCE contamination.

We have the following specific comments and/or questions regarding the QASP.

1. There is no starting point for the soil and soil gas sampling. Will sampling begin at one of the contaminated wells or somewhere else?

2. If groundwater contamination is confirmed and is expected to increase in concentration, will the EPA provide or assist the city of Neosho in providing an alternate source of drinking water to area residents? The Neosho City Manager has stated that there is a municipal water line just across Highway 71 which could be tapped into.

3. DOH recommends that the direction of groundwater flow be determined to establish how many residents could potentially be exposed. I have enclosed a map reflecting what the Missouri Department of Natural Resources, Division of Geology, knows about dye tracing in this region. Little more is known about groundwater flow in the area.

Again, I want to emphasize that DOH and the Newton County Health Department are willing to assist in whatever way we can. I hope that EPA will keep us informed about activities and progress at the Neosho Well site. I also hope we will continue to have a close working relationship with EPA and the county health department to alleviate the contamination problem at this site, and to prevent any miscommunication problems with the residents. If we can be of further assistance, please contact Arthur Busch of my staff at (314) 751-6404.

Sincerely

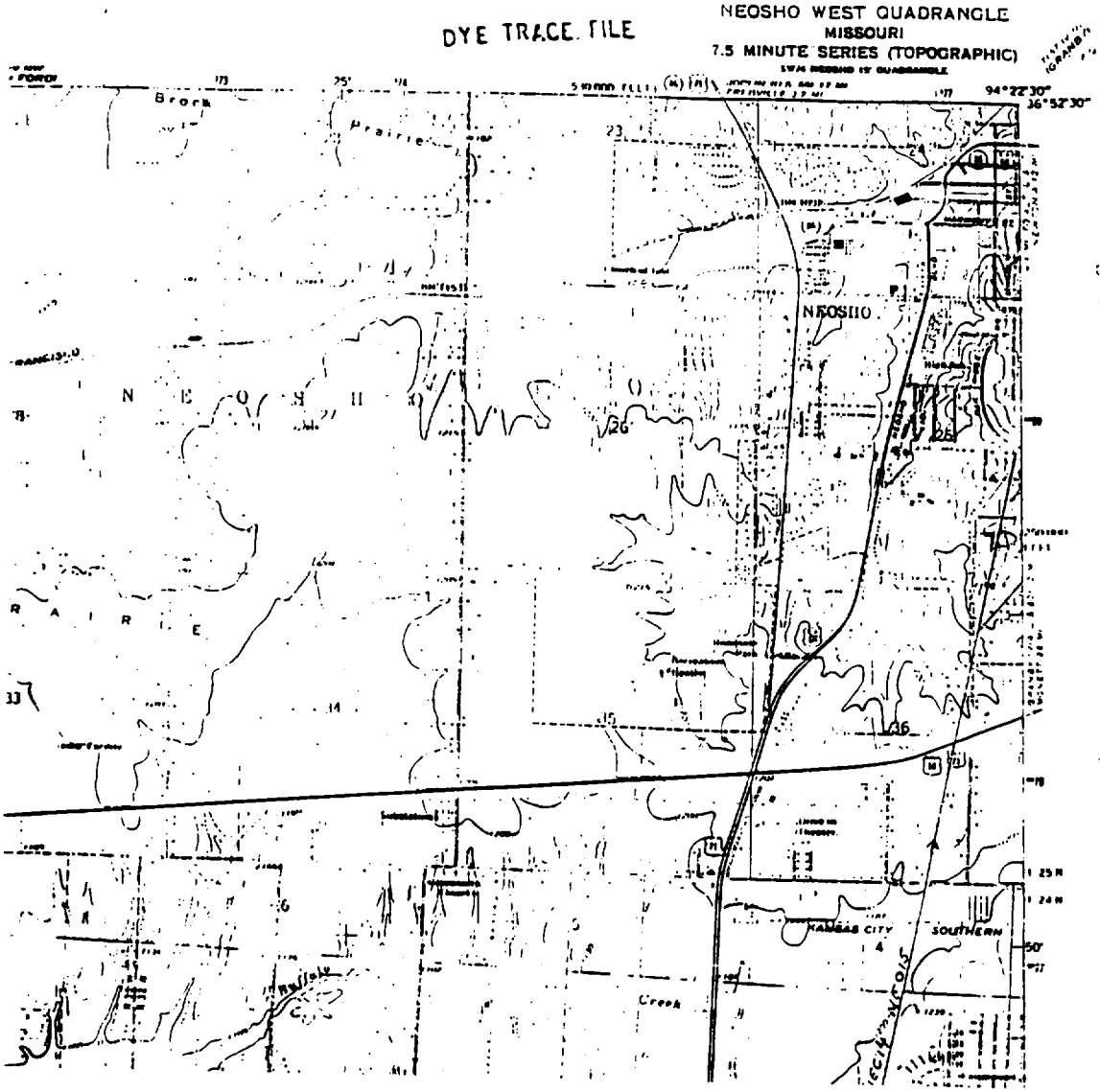
Daryl Roberts
Chief
Bureau of Environmental Epidemiology

DWR:ALB:bmq

enclosure

cc: Newton County Health Department
Phil Brunner, Local Health Services
Gail Godfrey, ATSDR
Bill Schmidt, DOH
Jim Kavanaugh, MDNR

DYE TRACE FILE



DYE TRACE FILE

Ref. 2

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
COMPLAINT INVESTIGATION INFORMATION

INTERVIEW INFORMATION

RECEIVED FROM: Newton County Health Dept. / Rebecca Heffner

ROUTING	INITIAL	DATE REC'D	Program Assigned
Interviewer			Complaint No.
Data Entry			File No.
Investigator			County Name Newton
Final Data Entry			Facility ID #

What is the Complaint About? Contaminated private well - TCE @ a high level

Directions: South 71 Hwy from Neosho to Airport. Southgate Trailer Plaza on West side of Rd. 1st Road South of Southgate - turn West. 1st house on the North side (white home).

___ 1/4, ___ 1/4, Sec 17, Twp 24, Rge 32, Co Newton, lat ___, long ___

Who or What Source is the Probable cause of the Complaint? abandoned auto repair & trucking facility - possibly gas

Name Fred Roney	HOME TELEPHONE NO. (417) 451-6062
Address Rt 6 Box 43	BUSINESS TELEPHONE NO.
City/State/Zip Neosho Mo 64850	

INVESTIGATION

Date of Investigation 7/20/94 - ongoing

Observation/Findings Complaint received concerning leaking gas tank / well contamination. DNR (Richard Bonner) contacted - Richard Bonner agreed to investigate UST or turn over to Water Pollution Control if it was an AST.

Follow up on 8/24/94 - no action taken by DNR. Contacted Div. of Weights/Measures - UST investigation showed no leak from Southgate tanks. Suspected possible UST east of Southgate at an abandoned site.

VOC water sample taken 8/30/94 - no gasoline present, but TCE level of 108 mg/L found

Conclusion/Recommendations

Find source of TCE & take whatever action necessary

Was There Environmental Impact On: (Check one or more)

☒ Human Health ☒ Water ☐ Air ☐ Land ☐ None

If Water Impact, Name Effected Waters if Available Unknown - Extent of contamination

COMPLAINANT INFORMATION

Complainant: Linda Shockley
Address: Rt. 6 Box 45
City/State/Zip: Neosho Mo. 64850

HOME TELEPHONE NO: (417) 451- 4020
BUSINESS PHONE NO.: —
(DENOTE DAYTIME NO. BY AN *)

FINAL ACTION SUMMARY

PROGRAM INVOLVED

APC
- ☐ Fugitive Dust
- ☐ Particulate
- ☐ Burning
- ☐ Other
- ☐ Abestos
- ☐ Odors
- ☐ Toxics

PDW
- ☐ Taste & Odors
- ☐ Bacteria
- ☐ Pressure
- ☐ Other
- ☐ Color
- ☐ Flow
- ☐ Toxics

SWM
- ☐ Open Dumps
- ☐ Littering
- ☐ Waste Tire Dump
- ☐ SLF
- ☐ Other

HWM
- ☐ Transportation
- ☐ Generators
- ☐ Sm. Qty. Gen
- ☐ TSD
- ☐ Waste Oil
- ☐ Other

WPC
- ☐ Animal Waste
- ☐ Bypassing
- ☐ Treatment Plant Oper.
- ☐ Sawdust
- ☐ Sludge
- ☐ Single Family
- ☒ Toxics/UST TCE
- ☐ Ground Water
- ☐ Other

FINAL ACTION TAKEN

DATE OF ACTION

TO RESPONSIBLE PARTY:
- ☐ Memo to File
- ☐ Phone
- ☐ Report
- ☐ Other:
- ☐ Letter

REFERRED TO: ☐ City ☐ DOH ☐ DOC ☐ DOA ☐ Other DNR Agency:

TO COMPLAINANT:
- ☐ Copy of Report
- ☐ Anonymous Complaint
- ☐ Phone
- ☐ Other:
- ☐ In Person

Was a Cease & Desist Order, Notice of Violation, or Notice of Excess Emissions Issued?
☐ Yes ☐ No

IF YES, NUMBER | DATE ISSUED

Follow-up Investigation Needed?
☐ Yes ☐ No

DATE PLANNED

Additional Comments, Conclusions, & Final Agency Actions

No UST's on property — Dwyers Machine shop

Close to L.F. ? — possible dumping of oil & such

Check with Kirk Ranke

[illegible] new well across the road - bad well — went deeper & got good water.

FRED ROSEY 451-6002

IF REFERRED TO ANOTHER AGENCY, COPY SENT TO: Rebecca Heffner

Agency: Newton County Health Dept.
500 W. McCord
Address: Box 1147

MISSOURI DEPARTMENT OF HEALTH
STATE PUBLIC HEALTH LABORATORY
PRIVATE WATER SUPPLY

Ref. 3

FOR DRINKING WATER ONL

SAMPLES SUBMITTED WITHOUT COLLECTION DATE WILL NOT BE TESTED

SAMPLE SUBMITTED BY: Becky Hefferen Trenton County Health Dept. | TELEPHONE NUMBER: (417) 451-3743

MAILING ADDRESS: Box 447 | CITY: [illegible] | STATE: | ZIP CODE:

COUNTY: Trenton | CITY: Mecosia | STATE: Mo | ZIP CODE: 64850

SAMPLE COLLECTED BY: Becky Hefferen | DATE COLLECTED: 8/30/94

LOCATION OF SAMPLE COLLECTION: TOWNSHIP | RANGE | SECTION | POINT OF SAMPLE COLLECTION: kitchen sink

NAME/LOCATION: Jim & Linda Stevens

ADDRESS: Rt. 6 Box 45 Mecosia 64850

SUPPLY TYPE
☑ PRIVATE ☐ NON COMM PUBLIC ☐ P BLIC SUPPLY ☐ OTHER

BRIEF DESCRIPTION OF PROBLEM/REASON TESTING BEING REQUESTED

Observed leaking gas tank at truck stop adjacent to property. Testing requested for possible gas contamination of shallow well supplying house.

TESTS REQUESTED: VOC: gasoline

ADDITIONAL COMMENTS: Sample # 94-0090

FOR LABORATORY USE ONLY

ATTN: Becky Hefferen
Newton County Health Dept
301 College Box 447
Neosho MO 64850

REC 8-31-94 BY JM REPT BY LOG NO

MO 580-0763 (4-92)

MISSOURI DEPARTMENT OF HEALTH LABORATORY
307 WEST MCCARTY
JEFFERSON CITY, MISSOURI 65101
DR. E. C. BLANK, DIRECTOR

E.P.A. METHOD 502.2
VOLATILE ORGANICS REPORT

BECKY HEFFREN, NEWTON CO LAB. LOG NO. 94-0090

JIM & LINDA SHOCKLEY RT 6 BOX 45 NEOSHO

TYPE SAMPLE SOURCE: GROUND WATER DATE COLLECTED: Aug. 30, 1994

DATE RECEIVED: Aug. 31, 1994 DATE ANALYZED: Aug. 31, 1994

DATE REPORTED: Sep. 6, 1994 APPROVED BY DM

CAS#		COMPOUND		RESULT	
75-71-8		Dichlorodifluoromethane	--->	3.4 UG/L	<---
74-87-3		Chloromethane	--->	0.4 UG/L	<---
75-01-4	*	Vinyl Chloride	<	0.4 UG/L	
74-83-9		Bromomethane	<	0.4 UG/L	
75-00-3		Chloroethane	<	0.4 UG/L	
75-69-4		Trichlorofluoromethane	<	0.4 UG/L	
75-35-4	*	1,1-Dichloroethene	<	0.4 UG/L	
75-09-2	*	Methylene Chloride	<	0.4 UG/L	
156-60-5	*	Trans-1,2-dichloroethene	<	0.4 UG/L	
75-34-3		1,1-Dichloroethane	--->	0.5 UG/L	<---
594-20-7		2,2-Dichloropropane	<	0.4 UG/L	
156-59-2	*	Cis-1,2-dichloroethene	--->	1.1 UG/L	<---
67-66-3		Chloroform	--->	1.2 UG/L	<---
74-97-5		Bromochloromethane	<	0.4 UG/L	
71-55-6	*	1,1,1-Trichloroethane	<	0.4 UG/L	
563-58-6		1,1-Dichloropropene	<	0.4 UG/L	
56-23-5	*	Carbon Tetrachloride	--->	5.2 UG/L	<---
71-43-2	*	Benzene	<	0.4 UG/L	
107-06-2	*	1,2-Dichloroethane	--->	0.7 UG/L	<---
79-01-6	*	Trichloroethene	--->	110 UG/L	<---
78-87-5	*	1,2-Dichloropropane	<	0.4 UG/L	
75-27-4		Bromodichloromethane	<	0.4 UG/L	
74-95-3		Dibromomethane	<	0.4 UG/L	
542-75-6		Cis-1,3-dichloropropene	<	0.4 UG/L	
108-88-3	*	Toluene	<	0.4 UG/L	
542-75-6		Trans-1,3-dichloropropene	<	0.4 UG/L	
79-00-5	*	1,1,2-Trichloroethane	<	0.4 UG/L	
127-18-4	*	Tetrachloroethene	<	0.4 UG/L	
142-28-9		1,3-Dichloropropane	<	0.4 UG/L	

* E.P.A. Regulated Compound
Results not valid according to E.P.A. Method criteria.

MISSOURI DEPARTMEN.
307 WEST MCCAR..
JEFFERSON CITY, MISSOURI
DR. E. C. BLANK, DIRECTOR

E.P.A. METHOD 502.2
VOLATILE ORGANICS REPORT (CONTD.)

BECKY HEFFREN, NEWTON CO

LAB. LOG NO. 94-009

JIM & LINDA SHOCKLEY RT 6 BOX 45 NEOSHO

TYPE SAMPLE SOURCE: GROUND WATER

DATE COLLECTED: Aug. 30, 199

DATE RECEIVED: Aug. 31, 1994

DATE ANALYZED: Aug. 31, 199

DATE REPORTED: Sep. 6, 1994

APPROVED BY DM

CAS#		COMPOUND	RESULT
124-48-1		Dibromochloromethane	< 0.4 UG/L
108-90-7	*	Chlorobenzene	< 0.4 UG/L
100-41-4	*	Ethylbenzene	< 0.4 UG/L
630-20-6		1,1,1,2-Tetrachloroethane	< 0.4 UG/L
108-38-3,106-42-3	*	Total Meta-xylene and Para-xylene	< 0.8 UG/L
95-47-6	*	Ortho-xylene	< 0.4 UG/L
100-42-5	*	Styrene	< 0.4 UG/L
98-82-8		Isopropylbenzene	< 0.4 UG/L
75-25-2		Bromoform	< 0.4 UG/L
79-34-5		1,1,2,2-Tetrachloroethane	< 0.4 UG/L
96-18-4		1,2,3-Trichloropropane	< 0.4 UG/L
108-86-1		Bromobenzene	< 0.4 UG/L
103-65-1		Normal-Propylbenzene	< 0.4 UG/L
108-67-8		1,3,5-Trimethylbenzene	< 0.4 UG/L
95-49-8		2-Chlorotoluene	< 0.4 UG/L
106-43-4		4-Chlorotoluene	< 0.4 UG/L
98-06-6		Tert-butylbenzene	< 0.4 UG/L
95-63-6		1,2,4-Trimethylbenzene	< 0.4 UG/L
135-98-8		Sec-butylbenzene	< 0.4 UG/L
99-87-6		Para-Isopropyltoluene	< 0.4 UG/L
541-73-1		1,3-Dichlorobenzene	< 0.4 UG/L
106-46-7	*	1,4-Dichlorobenzene	< 0.4 UG/L
104-51-8		Normal-Butylbenzene	< 0.4 UG/L
95-50-1	*	1,2-Dichlorobenzene	< 0.4 UG/L
120-82-1	*	1,2,4-Trichlorobenzene	< 0.4 UG/L
87-68-3		Hexachlorobutadiene	< 0.4 UG/I
91-20-3		Naphthalene	< 0.4 UG/
87-61-6		1,2,3-Trichlorobenzene	< 0.4 UG,

* E.P.A Regulated Compound
** Results are not valid according to E.P.A. Method criteria.

Ref. 4

NEWTON COUNTY HEALTH DEPARTMENT
P.O. BOX 447 - 500 WEST McCORD
NEOSHO, MISSOURI 64850
(417) 451-3743
FAX (417) 451-8282

1994

September 8, 1994

Mr. Charles Barnes
Department of Natural Resources
318 Park Central East
Suite 500
Springfield, MO 65806-2218

Re: Private Well Contamination

Dear Mr. Barnes:

Recent testing of the Linda/John Shockley well - South of the Neosho airport on 71 Hwy. showed no gasoline contamination, but TCE levels of 108 mc/L. There is an abandoned truck stop adjacent to the property with several underground tanks reported.

Please take whatever action is necessary and feel free to contact me for further assistance.

Sincerely,

Rebecca Heffren

Rebecca Heffren
Environmental Sanitarian II

RH:bb

cc: Daryl Roberts - Bureau of Environmental Epidemiology
Gary Boone
file

Ref. 5

RECEIVED
'94 OCT 12 AM 8 39
MISSOURI DEPT OF
NATURAL RESOURCES

MEMO
TO: GARY BOONE
FROM: REBECCA HEFFREN NEWTON COUNTY
DATE: 10/4/94

RE: TCE South and West of Neosho Airport

On September 30, 1994, the well of Jim & Linda Shockley was tested after suspicion of a gasoline leak into their shallow well by a neighboring truck stop. No gasoline was found, but TCE levels of 110 UG/L were detected. Requests came in from area neighbors once the word spread. Requests were analyzed for well depth and distance from the Shockley well. Wells were picked for testing at differing depths, ranging from 35' to 500' in a mile radius from the original TCE sampling.

The enclosed information shows sample results and map location of the two positive wells in conjunction with the Crowder Industrial Park. The Crowder Industrial Park contains several manufacturing firms, and the Newton/McDonald County Landfill is located nearby. The two positive wells showing TCE levels of 110 UG/L and 15UG/L respectively, with an allowable level of 5 UG/L. The well testing at 15 UG/L is a processor. The Honey House, which has ceased using the water from the well.

The DNR has been contacted by various departments as follows:

C. Barnes - Underground Storage Tanks
C. Kroeger - Hazardous Waste
M. Potter - Solid Waste, Landfills
J. Warren - Superfund Section

Copy to:

Gale Carlson of the Bureau of Epidemiology has also received a copy of this report.

Two more wells were sampled today, at depths of 35 ft. and 247 ft., results are pending.

Reference

NEWTON COUNTY HEALTH DEPARTMENT
P.O. BOX 447 - 300 WEST McCORD
NEOSHO, MISSOURI 64850
(417) 451-3743
FAX (417) 451-8282

November 17, 1994

Jim Hurst
Mother Goose Daycare
Rt. 5 Box 41-A
Neosho, MO 64850

Dear Mr. Hurst:

On November 1, 1994, a water sample was taken at the above location, as you requested. The sample was tested for several compounds, including TCE.

The level of TCE found in the sample was less than 0.4 UG/L. A level over 5 UG/L is considered unhealthy for drinking water standards, for TCE. The results of the testing show levels acceptable for drinking water standards. No further action is needed at this time.

If you have further questions, please contact me at the above location.

Sincerely,

Rebecca Heffren
Environmental Sanitarian

Under the direction of the Southwest Environmental Committee

RH:bb

cc: Southwest District Health Office
Julie Warren, DNR
Gale Carlson, BEE
file

MISSOURI DEPARTMENT OF HEALTH LABORATORY
307 WEST MCCARTY
JEFFERSON CITY, MISSOURI 65101
DR. E. C. SLANK, DIRECTOR

E.P.A. METHOD 624.2
VOLATILE ORGANICS REPORT

BECKY HEFFREN, NEWTON CO — LAB. LOG NO. 94-0103

MOTHER GOOSE DAYCARE, JIM HURST, HWY 71

TYPE SAMPLE SOURCE: GROUND WATER — DATE COLLECTED: Nov. 3, 1994

DATE RECEIVED: Nov. --, 1994 — DATE ANALYZED: Nov. --, 1994

DATE REPORTED: Nov. 8, 1994 — APPROVED BY DM

CAS#		COMPOUND	RESULT
75-71-8		Dichlorodifluoromethane	0.4 UG/L **
74-87-3		Chloromethane	0.5 UG/L <---
75-01-4	*	Vinyl Chloride	0.4 UG/L
74-83-9		Bromomethane	0.4 UG/L
75-00-3		Chloroethane	0.4 UG/L
75-69-4		Trichlorofluoromethane	0.4 UG/L
75-35-4	*	1,1-Dichloroethene	0.4 UG/L
75-09-2	*	Methylene Chloride	0.4 UG/L
156-60-5	*	Trans-1,2-dichloroethene	0.4 UG/L
75-34-3		1,1-Dichloroethane	0.4 UG/L
594-20-7		2,2-Dichloropropane	0.4 UG/L
156-59-2	*	Cis-1,2-dichloroethene	0.4 UG/L
67-66-3		Chloroform	0.4 UG/L
74-97-5		Bromochloromethane	0.4 UG/L
71-55-6	*	1,1,1-Trichloroethane	0.4 UG/L
563-58-6		1,1-Dichloropropene	0.4 UG/L
56-23-5	*	Carbon Tetrachloride	0.4 UG/L
71-43-2	*	Benzene	0.4 UG/L
107-06-2	*	1,2-Dichloroethane	0.4 UG/L
79-01-6	*	Trichloroethene	0.4 UG/L
78-87-5	*	1,2-Dichloropropane	0.4 UG/L
75-27-4		Bromodichloromethane	0.4 UG/L
74-95-3		Dibromomethane	0.4 UG/L
542-75-6		Cis-1,3-dichloropropene	0.4 UG/L
108-88-3	*	Toluene	0.4 UG/L
542-75-6		Trans-1,3-dichloropropene	0.4 UG/L
79-00-5	*	1,1,2-Trichloroethane	0.4 UG/L
127-18-4	*	Tetrachloroethene	0.4 UG/L
142-28-9		1,3-Dichloropropane	0.4 UG/L

* E.P.A. Regulated Compound
** Results not valid according to E.P.A. Method criteria.

NEWTON COUNTY HEALTH DEPARTMENT
P.O. BOX 447 - 500 WEST McCORD
NEOSHO, MISSOURI 64850
(417) 451-3743
FAX (417) 451-8282

November 17, 1994

Glennis Naylor
Rt. 6 Box 58
Neosho, MO 64850

Dear Mr. Naylor:

On November 2, 1994, a water sample was taken at the above location, as you requested. The sample was tested for several compounds, including TCE.

The level of TCE found in the sample was less than 0.4 UG/L. A level over 5 UG/L is considered unhealthy for drinking water standards, for TCE. The results of the testing show levels acceptable for drinking water standards. No further action is needed at this time.

If you have further questions, please contact me at the above location.

Sincerely,

Rebecca Heffren RH
Environmental Sanitarian

Under the direction of the Southwest Environmental Committee

RH:bb

cc: Southwest District Health Office
Julie Warren, DNR
Gale Carlson, BEE
file

MISSOURI DEPARTMENT OF HEALTH LABORATORY
307 WEST MCCARTY
JEFFERSON CITY, MISSOURI 65101
DR. E. C. BLANK, DIRECTOR

E.P.A. METHOD 502.2
VOLATILE ORGANICS REPORT

BECKY HEFFREN, NEWTON CO

LAB. LOG NO. 93-0083

GLENNIS NAYLOR, FT & NEOSHO

TYPE SAMPLE SOURCE: GROUND WATER

DATE COLLECTED: Nov. 3, 1994

DATE RECEIVED: Nov. 4, 1994

DATE ANALYZED: Nov. 4, 1994

DATE REPORTED: Nov. 8, 1994

APPROVED BY DM

CAS#		COMPOUND	RESULT
75-71-8		Dichlorodifluoromethane	0.4 UG/L **
74-87-3		Chloromethane	0.4 UG/L
75-01-4	*	Vinyl Chloride	0.4 UG/L
74-83-9		Bromomethane	0.4 UG/L
75-00-3		Chloroethane	0.4 UG/L
75-69-4		Trichlorofluoromethane	0.4 UG/L
75-35-4	*	1,1-Dichloroethene	0.4 UG/L
75-09-2	*	Methylene Chloride	0.4 UG/L
156-60-5	*	Trans-1,2-dichloroethene	0.4 UG/L
75-34-3		1,1-Dichloroethane	0.4 UG/L
594-20-7		2,2-Dichloropropane	0.4 UG/L
156-59-2	*	Cis-1,2-dichloroethene	0.4 UG/L
67-66-3		Chloroform	0.4 UG/L
74-97-5		Bromochloromethane	0.4 UG/L
71-55-6	*	1,1,1-Trichloroethane	0.4 UG/L
563-58-6		1,1-Dichloropropene	0.4 UG/L
56-23-5	*	Carbon Tetrachloride	0.4 UG/L
71-43-2	*	Benzene	0.4 UG/L
107-06-2	*	1,2-Dichloroethane	0.4 UG/L
79-01-6	*	Trichloroethene	0.4 UG/L
78-87-5	*	1,2-Dichloropropane	0.4 UG/L
75-27-4		Bromodichloromethane	0.4 UG/L
74-95-3		Dibromomethane	0.4 UG/L
542-75-6		Cis-1,3-dichloropropene	0.4 UG/L
108-88-3	*	Toluene	0.4 UG/L
542-75-6		Trans-1,3-dichloropropene	0.4 UG/L
79-00-5	*	1,1,2-Trichloroethane	0.4 UG/L
127-18-4	*	Tetrachloroethene	0.4 UG/L
142-28-9		1,3-Dichloropropane	0.4 UG/L

* E.P.A. Regulated Compound
** Results not valid according to E.P.A. Method criteria.

November 4, 1994

Brian Allen
Department of Natural Resources
Division of Environmental Quality
P.O. Box 176
Jefferson City, Missouri 65102-0176

NOV - 7 1994

Dear Sir:

October 27, 1994 you collected a sample of water at our resendence. At this time we showed you a system of Activated Charcoal and Ultraviloet light we had installed to remove chemicals from our water supply, namely TCE. That afternoon we delivered to QWAL Laboratories, Inc. Pittsburg, Kansas a sample of water taken down stream from the filter system. We are enclosing a copy of the test report for your information.

We are presently back flushing our system on a six day cycle. The company that sold us the system says that heavy concentrations of chemicals might need flushing more often.

Thought you might be interested to know the system works for us.

RECEIVED
7 1994
SITE BRANCH

Charles M. Herrin
Route 6 Box 111
Neosho, MIssouri 64850

RECEIVED
NOV 9 1994
HAZARDOUS WASTE PROGRAM
MISSOURI DEPARTMENT OF
NATURAL RESOURCES

QWAL LABORATORIES, INC.

2809 N BDWY, BLDG 4, SUITE C/P.O. BOX 562/PITTSBURG, KS 66762/(316) 232-1970

ORATORY REPORT: REFERENCE #: 9410544

ENT CHARLES HARRIN
TO: RT 6, BOX 111
NEOSHO, MO 64850
CHARLES HARRIN

DATE REPORTED: 10/31/94
DATE COLLECTED: 10/27/94
DATE RECEIVED: 10/27/94
P.O. #:

Sample ID: HARRIN WELL

Sample Matrix: WELL WATER

TEST	METHOD-CAS #	RESULT	UNITS	MDL	ANALYZED	EXTRACTE
TRICHLOROETHENE	EPA 524	ND	UG/L	1.0	10/28/94DN	

ND=NONE DETECTED
MDL=MINIMUM DETECTION LIMIT
SU=STANDARD UNITS
*BACKGROUND CONTAMINATION
SUR=SURROGATE

APPROVED BY: _____
TERRY KOESTER
LABORATORY DIRECTOR

Q.W.A.L. LABORATORIES, INC.

Established 1976

2809 N. Broadway • Pittsburg, Kansas 66762

TO ORDER: FAX 1-316-232-7730 OR PHONE 1-316-232-1970

Paid Check

Company Name: Charles Harrin

Phone #:

Address: [illegible] 66850

Fax #:

Project Name or Number

Purchase Order #:

Sampling Personnel Signature(s)

X [illegible]

TURNAROUND TIME REQUESTED (Additional Charges May Apply)

☒ Standard ☐ 72 Hours ☐ 48 Hours ☐ 24 Hours ☐ SameDay

• Note - Please contact lab for availability of priority service.

ANALYSIS REQUEST

Sample I.D.	Date	Time	Comp.	Grab	# of Containers	Method Preserved: H2SO4	HN03	NAOH	HCL	Ice	None	Sample Matrix: Water	Soil	Air	Sludge	Other	[illegible]	[illegible]												REMARKS (If special detection limits are required please note below.)
[illegible]	[illegible]	[illegible]		X	2				X			X					X													

SAMPLER (signature)

RELINQUISHED BY:

DATE

TIME 1:[illegible] P.M.

RECEIVED FOR LABORATORY BY: [illegible] 10-[illegible]

RELINQUISHED BY:

DATE

TIME

RECEIVED BY:

RELINQUISHED BY:

DATE

TIME

COMMENTS

Origin[illegible] [illegible]ratory Copy Yellow - Report Copy Pin[illegible] [illegible]ustomer Copy

NEWTON COUNTY HEALTH DEPARTMENT
P.O. BOX 447 - 500 WEST McCORD
NEOSHO, MISSOURI 64850
(417) 451-3743
FAX (417) 451-6282

November 8, 1994

Louise Naylor
Rt. 5 Box 24
Neosho, MO 64850

Dear Mr. & Mrs. Hill:

On October 19, 1994, a water sample was taken at the above location, as you requested. The sample was tested for several compounds, including TCE.

The level of TCE found in the sample was less than 0.4 UG/L. A level over 5 UG/L is considered unhealthy for drinking water standards, for TCE. The results of the testing show levels acceptable for drinking water standards. No further action is needed at this time.

If you have further questions, please contact me at the above location.

Sincerely

Rebecca Heffren RH
Environmental Sanitarian

Under the direction of the Southwest Environmental Committee

RH:bb

cc: Southwest District Health Office
Julie Warren, DNR
Gale Carlson, BEE
file

MISSOURI DEPARTMENT OF HEALTH
STATE PUBLIC HEALTH LABORATORY
PRIVATE WATER SUPPLY

FOR DRINKING WATER ONLY

SAMPLES SUBMITTED WITHOUT COLLECTION DATE WILL NOT BE TESTED

SAMPLE SUBMITTED BY: Becky Hoffman — Newton Co. Health Dept
TELEPHONE NUMBER: 417 451 3743
MAILING ADDRESS: Box 447 — 500 S McCord
CITY: Newton — CITY: Neosho
STATE: Mo — ZIP CODE: 64850
SAMPLE COLLECTED BY: Same
DATE COLLECTED: 10/19/94
LOCATION OF SAMPLE COLLECTION — TOWNSHIP: — RANGE: — SECTION:
POINT OF SAMPLE COLLECTION: Faucet behind house
NAME/LOCATION: Louise Naylor — 1/4 mi W of 71 on Hwy 160 turn on dirt road
ADDRESS: Rt. 6 Box 24 — Neosho — Mo — 64850
451-5149

SUPPLY TYPE
☒ PRIVATE ☐ NON COMM. PUBLIC ☐ PUBLIC SUPPLY ☐ OTHER

BRIEF DESCRIPTION OF PROBLEM/REASON TESTING BEING REQUESTED

Was testing for possible TCE Contamination

TESTS REQUESTED

VOC / TCE

ADDITIONAL COMMENTS

well drilled in 1953

≈ 30' deep — Sample # 94 0102

FOR LABORATORY USE ONLY

10-20-94 — BY — DEBT — BY — LOG NO

MO 580-0763 (4-92) — MB 66 (R4-92)

MISSOURI DEPARTMENT OF HEALTH LABORATORY
117 WEST MCCARTY
JEFFERSON CITY, MISSOURI 65101
P. E. J. FLAMM, DIRECTOR

E.P.A. METHOD 8240
VOLATILE ORGANICS REPORT

SECRY JEFFERSON, NEWTON CO. LAB. JOB NO. 94-0103

LOUISE MAYLOR, RT 2 BOX 21, NEOSHO

TYPE SAMPLE SOURCE: GROUND WATER DATE COLLECTED: Oct. 19, 1994

DATE RECEIVED: Oct. 20, 1994 DATE ANALYZED: Oct. 21, 1994

DATE REPORTED: Oct. 31, 1994 APPROVED BY: DM

CAS#	COMPOUND	RESULT
75-71-8	Dichlorodifluoromethane	ND UG/L **
74-87-3	Chloromethane	ND UG/L
75-01-4	* Vinyl Chloride	0.4 UG/L
74-83-9	Bromomethane	ND UG/L
75-00-3	Chloroethane	ND UG/L
75-69-4	Trichlorofluoromethane	ND UG/L
75-35-4	* 1,1-Dichloroethene	0.4 UG/L
75-09-2	* Methylene Chloride	ND UG/L
156-60-5	* Trans-1,2-dichloroethene	ND UG/L
75-34-3	1,1-Dichloroethane	ND UG/L
594-20-7	2,2-Dichloropropane	ND UG/L
156-59-2	* Cis-1,2-dichloroethene	0.5 UG/L
67-66-3	Chloroform	ND UG/L
74-97-5	Bromochloromethane	ND UG/L
71-55-6	* 1,1,1-Trichloroethane	ND UG/L
563-58-6	1,1-Dichloropropene	ND UG/L
56-23-5	* Carbon Tetrachloride	ND UG/L
71-43-2	* Benzene	ND UG/L
107-06-2	* 1,2-Dichloroethane	ND UG/L
79-01-6	* Trichloroethene	0.4 UG/L
78-87-5	* 1,2-Dichloropropane	ND UG/L
75-27-4	Bromodichloromethane	ND UG/L
74-95-3	Dibromomethane	ND UG/L
542-75-6	Cis-1,3-dichloropropene	0.4 UG/L
108-88-3	* Toluene	ND UG/L
542-75-6	Trans-1,3-dichloropropene	ND UG/L
79-00-5	* 1,1,2-Trichloroethane	ND UG/L
127-18-4	* Tetrachloroethene	ND UG/L
142-28-9	1,3-Dichloropropane	ND UG/L

* E.P.A. Regulated Compound
** Results not valid according to E.P.A. method criteria.

MISSOURI DEPARTMENT OF HEALTH LABORATORY
DIV. WEST MOCARTY
JEFFERSON CITY, MISSOURI 65101
DR. R. D. BLAND, DIRECTOR

E.P.A. METHOD 010.3
VOLATILE ORGANICS REPORT (CONTD.)

SECOY-HEFFREN, NEWTON CO. LAB. JOB NO. 84-V112

LOUISE NAYLOR, RT 6 BOX 84, NEOSHO

TYPE SAMPLE SOURCE: GROUND WATER DATE COLLECTED: Oct. 17, 1984

DATE RECEIVED: Oct. 30, 1984 DATE ANALYZED: Oct. 31, 1984

DATE REPORTED: Oct. 31, 1984 APPROVED BY: DM

CAS #	COMPOUND	RESULT
130-43-1	Dichlorobromomethane	< UG/L
108-90-7	* Chlorobenzene	< UG/L
100-41-4	* Ethylbenzene	< UG/L
630-20-6	1,1,1,2-Tetrachloroethane	< UG/L
108-38-3,106-42-3	* Total Meta-Xylene and Para-Xylene	< UG/L
95-47-6	* Ortho-Xylene	< UG/L
100-42-5	* Styrene	< UG/L
98-82-8	Isopropylbenzene	< UG/L
75-25-2	Bromoform	< UG/L
79-34-5	1,1,2,2-Tetrachloroethane	< UG/L
96-18-4	1,2,3-Trichloropropane	< UG/L
108-86-1	Bromobenzene	< UG/L
103-65-1	Normal-Propylbenzene	< UG/L
95-49-8	O-Chlorotoluene	< UG/L
108-67-8	1,3,5-Trimethylbenzene	< UG/L
106-43-4	P-Chlorotoluene	< UG/L
98-06-6	Tert-butylbenzene	< UG/L
95-63-6	1,2,4-Trimethylbenzene	< UG/L
135-98-8	Sec-butylbenzene	< UG/L
99-87-6	Para-Isopropyltoluene	< UG/L
541-73-1	1,3-Dichlorobenzene	< UG/L
106-46-7	* 1,4-Dichlorobenzene	< UG/L
104-51-8	Normal-Butylbenzene	< UG/L
95-50-1	* 1,2-Dichlorobenzene	< UG/L
120-82-1	* 1,2,4-Trichlorobenzene	< UG/L
87-68-3	Hexachlorobutadiene	< UG/L
91-20-3	Naphthalene	< UG/L
87-61-6	1,2,3-Trichlorobenzene	< UG/L

* E.P.A. Regulated Compound
** Results are not valid according to E.P.A. Method criteria.

MISSOURI DEPARTMENT OF HEALTH
STATE PUBLIC HEALTH LABORATORY
PRIVATE WATER SUPPLY

FOR DRINKING WATER ONLY

SAMPLES SUBMITTED WITHOUT COLLECTION DATE WILL NOT BE TESTED

SAMPLE SUBMITTED BY
Becky Heffner / Newton Co. Health Dept.

TELEPHONE NUMBER
(417) 451-3743

ADDRESS
Box 447 500 W. McCord

COUNTY
Newton

CITY
Neosho

STATE ZIP CODE
Mo 64850

SAMPLE COLLECTED BY
Same

DATE COLLECTED
10/19/94

LOCATION OF SAMPLE COLLECTION
TOWNSHIP: RANGE: SECTION:

POINT OF SAMPLE COLLECTION
Faucet - front E. side of house

NAME/LOCATION
Roy Lane + Bobbie Heil

ADDRESS
Rt. 3 Box 128 Neosho Mo 64850

1/4 mi W of 71 on 60 - S side brick home

SUPPLY TYPE
☒ PRIVATE ☐ NON COMM. PUBLIC ☐ PUBLIC SUPPLY ☐ OTHER

BRIEF DESCRIPTION OF PROBLEM/REASON TESTING BEING REQUESTED
Area testing for possible TCE Contamination

TESTS REQUESTED
VOC/TCE

451-4662 home
451 9642 work

ADDITIONAL COMMENTS
Well depth unknown approx. 300' deep Sample # 940101

LABORATORY USE ONLY

RD 10-20-94 BY DEPT BY LOG NO

(30-0763 (4-92))

(8 66 (R4-92))

NEWTON COUNTY HEALTH DEPARTMENT
P.O. BOX 447 - 500 WEST McCORD
NEOSHO, MISSOURI 64850
(417) 451-3743
FAX (417) 451-6282

November 3, 1994

Ray Gene & Bobbie Hill
Rt. 3 Box 129
Neosho, MO 64850

Dear Mr. & Mrs. Hill:

In October 19, 1994, a water sample was taken at the above location, as you requested. The sample was tested for several compounds, including TCE.

The level of TCE found in the sample was less than 0.4 UG/L. A level over 5 UG/L is considered unhealthy for drinking water standards, for TCE. The results of the testing show levels acceptable for drinking water standards. No further action is needed at this time.

If you have further questions, please contact me at the above location.

Sincerely,

Rebecca Heffren RH
Environmental Sanitarian

Under the direction of the Southwest Environmental Committee

RH:bb

cc: Southwest District Health Office
Julie Warren, DNR
Gale Carlson, BEE
file

MISSOURI DEPARTMENT OF HEALTH LABORATORY
307 WEST MCCARTY
JEFFERSON CITY, MISSOURI 65101
DR. E. D. BLANK, DIRECTOR

E.P.A. METHOD 502.2
VOLATILE ORGANICS REPORT

BECKY HEFFREN, NEWTON CO. LAB. LOG NO. 94-0101

RAY GENE & BOBBIE HILL, RT 2 BOX 188

TYPE SAMPLE SOURCE: GROUND WATER DATE COLLECTED: Oct. 19, 1994

DATE RECEIVED: Oct. 20, 1994 DATE ANALYZED: Oct. 21, 1994

DATE REPORTED: Oct. 26, 1994 APPROVED BY DM

CAS#		COMPOUND	RESULT
75-71-8		Dichlorodifluoromethane	0.4 UG/L **
74-87-3		Chloromethane	0.4 UG/L
75-01-4	*	Vinyl Chloride	0.4 UG/L
74-83-9		Bromomethane	0.4 UG/L
75-00-3		Chloroethane	0.4 UG/L
75-69-4		Trichlorofluoromethane	0.4 UG/L
75-35-4	*	1,1-Dichloroethene	0.4 UG/L
75-09-2	*	Methylene Chloride	0.4 UG/L
156-60-5	*	Trans-1,2-dichloroethene	0.4 UG/L
75-34-3		1,1-Dichloroethane	0.4 UG/L
594-20-7		2,2-Dichloropropane	0.4 UG/L
156-59-2	*	Cis-1,2-dichloroethene	0.4 UG/L
67-66-3		Chloroform	0.4 UG/L
74-97-5		Bromochloromethane	0.4 UG/L
71-55-6	*	1,1,1-Trichloroethane	0.4 UG/L
563-58-6		1,1-Dichloropropene	0.4 UG/L
56-23-5	*	Carbon Tetrachloride	0.4 UG/L
71-43-2	*	Benzene	0.4 UG/L
107-06-2	*	1,2-Dichloroethane	0.4 UG/L
79-01-6	*	Trichloroethene	0.4 UG/L
78-87-5	*	1,2-Dichloropropane	0.4 UG/L
75-27-4		Bromodichloromethane	0.4 UG/L
74-95-3		Dibromomethane	0.4 UG/L
542-75-6		Cis-1,3-dichloropropene	0.4 UG/L
108-88-3	*	Toluene	0.4 UG/L
542-75-6		Trans-1,3-dichloropropene	0.4 UG/L
79-00-5	*	1,1,2-Trichloroethane	0.4 UG/L
127-18-4	*	Tetrachloroethene	0.4 UG/L
142-28-9		1,3-Dichloropropane	0.4 UG/L

* E.P.A. Regulated Compound
** Results not valid according to E.P.A. Method criteria.

MISSOURI DEPARTMENT OF HEALTH LABORATORY
307 WEST MCCARTY
JEFFERSON CITY, MISSOURI 65101
DR. E. C. BLANK, DIRECTOR

E.P.A. METHOD 502.2
VOLATILE ORGANICS REPORT (CONTD.)

BECKY HEFFREN, NEWTON CO. LAB. LOG NO. 94-0101

RAY GENE & BOBBIE HILL, RT 3 BOX 139

TYPE SAMPLE SOURCE: GROUND WATER DATE COLLECTED: Oct. 19, 1994

DATE RECEIVED: Oct. 20, 1994 DATE ANALYZED: Oct. 31, 1994

DATE REPORTED: Oct. 31, 1994 APPROVED BY DM

CAS#		COMPOUND	RESULT
124-48-1		Dibromochloromethane	0.4 UG/L
108-90-7	*	Chlorobenzene	0.4 UG/L
100-41-4	*	Ethylbenzene	0.4 UG/L
630-20-6		1,1,1,2-Tetrachloroethane	0.4 UG/L
08-38-3,106-42-3	*	Total Meta-xylene and Para-xylene	0.8 UG/L
95-47-6	*	Ortho-xylene	0.4 UG/L
100-42-5	*	Styrene	0.4 UG/L
98-82-8		Isopropylbenzene	0.4 UG/L
75-25-2		Bromoform	0.4 UG/L
79-34-5		1,1,2,2-Tetrachloroethane	0.4 UG/L
96-18-4		1,2,3-Trichloropropane	0.4 UG/L
108-86-1		Bromobenzene	0.4 UG/L
103-65-1		Normal-Propylbenzene	0.4 UG/L
95-49-8		2-Chlorotoluene	0.4 UG/L
108-67-8		1,3,5-Trimethylbenzene	0.4 UG/L
106-43-4		4-Chlorotoluene	0.4 UG/L
98-06-6		Tert-butylbenzene	0.4 UG/L
95-63-6		1,2,4-Trimethylbenzene	0.4 UG/L
135-98-8		Sec-butylbenzene	0.4 UG/L
99-87-6		Para-Isopropyltoluene	0.4 UG/L
541-73-1		1,3-Dichlorobenzene	0.4 UG/L
106-46-7	*	1,4-Dichlorobenzene	0.4 UG/L
104-51-8		Normal-Butylbenzene	0.4 UG/L
95-50-1	*	1,2-Dichlorobenzene	0.4 UG/L
120-82-1	*	1,2,4-Trichlorobenzene	0.4 UG/L
87-68-3		Hexachlorobutadiene	0.4 UG/L
91-20-3		Naphthalene	0.4 UG/L
87-61-6		1,2,3-Trichlorobenzene	0.4 UG/L

* E.P.A Regulated Compound
** Results are not valid according to E.P.A. Method criteria.

NEWTON COUNTY HEALTH DEPARTMENT
P.O. BOX 447 - 500 WEST McCORD
NEOSHO, MISSOURI 64850
(417) 451-3743
FAX (417) 451-8282

November 3, 1994

James Wilson
Rt. 3 Box 142
Neosho, MO 64850

Dear Mr. Wilson:

On October 18, 1994, a water sample was taken at the above location, as you requested. The sample was tested for several compounds, including TCE.

The level of TCE found in the sample was less than .4 UG/L. A level over 5 UG/L is considered unhealthy for drinking water standards, for TCE. The results of the testing show levels acceptable for drinking water standards. No further action is needed at this time.

If you have further questions, please contact me at the above location.

Sincerely,

Rebecca Heffren

Rebecca Heffren
Environmental Sanitarian

Under the direction of the Southwest Environmental Committee

RH:bb

cc: Southwest District Health Office
Julie Warren, DNR
Gale Carlson, BEE
file

MISSOURI DEPARTMENT OF HEALTH
STATE PUBLIC HEALTH LABORATORY
PRIVATE WATER SUPPLY

FOR DRINKING WATER ONLY

SAMPLES SUBMITTED WITHOUT COLLECTION DATE WILL NOT BE TESTED

SAMPLE SUBMITTED BY: Becky Hellyer Newton County Health Dept. | TELEPHONE NUMBER: 417-451 3743

ADDRESS: Box 447 500 W McDonald

COUNTY: Newton | CITY: Neosho | STATE: Mo | ZIP CODE: 64850

SAMPLE COLLECTED BY: Same | DATE COLLECTED: 10/18/94

LOCATION OF SAMPLE COLLECTION — TOWNSHIP: RANGE: SECTION: | POINT OF SAMPLE COLLECTION: faucet - front of house (west)

NAME/LOCATION: Trevor Wilson 3 hours S. of AA on WEST side of 71

ADDRESS: Rt 6 Box 142 Neosho Mo 64850

SUPPLY TYPE
☒ PRIVATE ☐ NON COMM. PUBLIC ☐ PUBLIC SUPPLY ☐ OTHER _____

BRIEF DESCRIPTION OF PROBLEM/REASON TESTING BEING REQUESTED

VOC/TCE - 5 yr Routine August

TESTS REQUESTED

VOC/TCE

ADDITIONAL COMMENTS

Well 2 350' deep Sample # 940096 451-0202

Boy age 14 yrs. old or better.

LABORATORY USE ONLY

sample 1,2 clear .16

2nd samp 1,2 clear <.1

3rd samp 1,2 clear <.1

DATE [illegible] BY [illegible] BY LOG NO.

580-6763 (4-92) AB 66 (R4-92)

MISSOURI DEPARTMENT OF HEALTH LABORATORY
307 WEST MCCARTY
JEFFERSON CITY, MISSOURI 65101
DR. E. D. BLANK, DIRECTOR

E.P.A. METHOD 502.2
VOLATILE ORGANICS REPORT

BECKY HEFFREN, NEWTON CO. LAB. LOG NO. 94-0096

JAMES WILSON, RT 6 BOX 142, NEOSHO

TYPE SAMPLE SOURCE: GROUND WATER DATE COLLECTED: Oct. 18, 1994

DATE RECEIVED: Oct. 20, 1994 DATE ANALYZED: Oct. 21, 1994

DATE REPORTED: Oct. 26, 1994 APPROVED BY DM

CAS#		COMPOUND	RESULT
75-71-8		Dichlorodifluoromethane	0.4 UG/L **
74-87-3		Chloromethane	0.4 UG/L
75-01-4	*	Vinyl Chloride	0.4 UG/L
74-83-9		Bromomethane	0.4 UG/L
75-00-3		Chloroethane	0.4 UG/L
75-69-4		Trichlorofluoromethane	0.4 UG/L
75-35-4	*	1,1-Dichloroethene	0.4 UG/L
75-09-2	*	Methylene Chloride	0.4 UG/L
156-60-5	*	Trans-1,2-dichloroethene	0.4 UG/L
75-34-3		1,1-Dichloroethane	0.4 UG/L
594-20-7		2,2-Dichloropropane	0.4 UG/L
156-59-2	*	Cis-1,2-dichloroethene	0.4 UG/L
67-66-3		Chloroform	0.4 UG/L
74-97-5		Bromochloromethane	0.4 UG/L
71-55-6	*	1,1,1-Trichloroethane	0.4 UG/L
563-58-6		1,1-Dichloropropene	0.4 UG/L
56-23-5	*	Carbon Tetrachloride	0.4 UG/L
71-43-2	*	Benzene	0.4 UG/L
107-06-2	*	1,2-Dichloroethane	0.4 UG/L
79-01-6	*	Trichloroethene	0.4 UG/L
78-87-5	*	1,2-Dichloropropane	0.4 UG/L
75-27-4		Bromodichloromethane	0.4 UG/L
74-95-3		Dibromomethane	0.4 UG/L
542-75-6		Cis-1,3-dichloropropene	0.4 UG/L
108-88-3	*	Toluene	0.4 UG/L
542-75-6		Trans-1,3-dichloropropene	0.4 UG/L
79-00-5	*	1,1,2-Trichloroethane	0.4 UG/L
127-18-4	*	Tetrachloroethene	0.4 UG/L
142-28-9		1,3-Dichloropropane	0.4 UG/L

* E.P.A. Regulated Compound
** Results not valid according to E.P.A. Method criteria.

MISSOURI DEPARTMENT OF HEALTH LABORATORY
307 WEST MCCARTY
JEFFERSON CITY, MISSOURI 65101
DR. E. C. BLANK, DIRECTOR

E.P.A. METHOD 502.2
VOLATILE ORGANICS REPORT (CONTD.)

BECKY HEFFREN, NEWTON CO. LAB. LOG NO. 94-00951

JAMES WILSON, RT 6 BOX 142, NEOSHO

TYPE SAMPLE SOURCE: GROUND WATER DATE COLLECTED: Oct. 18, 1994

DATE RECEIVED: Oct. 31, 1994 DATE ANALYZED: Oct. 31, 1994

DATE REPORTED: Oct. 31, 1994 APPROVED BY: DM

CAS #		COMPOUND	RESULT
124-48-1		Dibromochloromethane	<0.4 UG/L
108-90-7	*	Chlorobenzene	<0.4 UG/L
100-41-4	*	Ethylbenzene	<0.4 UG/L
630-20-6		1,1,1,2-Tetrachloroethane	<0.4 UG/L
108-38-3,106-42-3	*	Total Meta-xylene and Para-xylene	<0.8 UG/L
95-47-6	*	Ortho-xylene	<0.4 UG/L
100-42-5	*	Styrene	<0.4 UG/L
98-82-8		Isopropylbenzene	<0.4 UG/L
75-25-2		Bromoform	<0.4 UG/L
79-34-5		1,1,2,2-Tetrachloroethane	<0.4 UG/L
96-18-4		1,2,3-Trichloropropane	<0.4 UG/L
103-65-1		Normal-Propylbenzene	<0.4 UG/L
95-49-8		2-Chlorotoluene	<0.4 UG/L
108-67-8		1,3,5-Trimethylbenzene	<0.4 UG/L
106-43-4		4-Chlorotoluene	<0.4 UG/L
98-06-6		Tert-butylbenzene	<0.4 UG/L
95-63-6		1,2,4-Trimethylbenzene	<0.4 UG/L
135-98-8		Sec-butylbenzene	<0.4 UG/L
99-87-6		Para-Isopropyltoluene	<0.4 UG/L
541-73-1		1,3-Dichlorobenzene	<0.4 UG/L
106-46-7	*	1,4-Dichlorobenzene	<0.4 UG/L
104-51-8		Normal-Butylbenzene	<0.4 UG/L
95-50-1	*	1,2-Dichlorobenzene	<0.4 UG/L
120-82-1	*	1,2,4-Trichlorobenzene	<0.4 UG/L
87-68-3		Hexachlorobutadiene	<1.2 UG/L
91-20-3		Naphthalene	<1.0 UG/L
87-61-6		1,2,3-Trichlorobenzene	<1.0 UG/L

* E.P.A Regulated Compound
** Results are not valid according to E.P.A. Method criteria.

NEWTON COUNTY HEALTH DEPARTMENT
P.O. BOX 447 - 500 WEST McCORD
NEOSHO, MISSOURI 64850
(417) 451-3743
FAX (417) 451-8282

November 3, 1994

Milton Flint
Rt. 6 Box 141
Neosho, MO 64850

Dear Mr. Flint:

On October 19, 1994, a water sample was taken at the above location, as you requested. The sample was tested for several compounds, including TCE.

The level of TCE found in the sample was 0.9 UG/L. A level over 5 UG/L is considered unhealthy for drinking water standards, for TCE. The results of the testing show levels acceptable for drinking water standards. No further action is needed at this time.

If you have further questions, please contact me at the above location.

Sincerely,

Rebecca Heffren RH
Environmental Sanitarian

Under the direction of the Southwest Environmental Committee

RH:bb

cc: Southwest District Health Office
Julie Warren, DNR
Gale Carlson, BEE
file

MISSOURI DEPARTMENT OF HEALTH
STATE PUBLIC HEALTH LABORATORY
PRIVATE WATER SUPPLY

FOR DRINKING WATER ONLY

SAMPLES SUBMITTED WITHOUT COLLECTION DATE WILL NOT BE TESTED

SAMPLE SUBMITTED BY: Becky Hoffman / Newton County Health Dept.
TELEPHONE NUMBER: 417 451 3743
ADDRESS: Box 447 500 W McCord
COUNTY: Newton
CITY: Neosho
STATE: Mo
ZIP CODE: 64850
SAMPLE COLLECTED BY: Same
DATE COLLECTED: 10/18/94
LOCATION OF SAMPLE COLLECTION
TOWNSHIP: RANGE: SECTION:
POINT OF SAMPLE COLLECTION: faucet South side of house
NAME/LOCATION: Milton Flint 2 houses S. of AA - west side of 71
ADDRESS: Rt 6 Box 141 Neosho Mo 64850 451 7755
SUPPLY TYPE
☑ PRIVATE ☐ NON COMM. PUBLIC ☐ PUBLIC SUPPLY ☐ OTHER
BRIEF DESCRIPTION OF PROBLEM/REASON TESTING BEING REQUESTED
VOC / TCE 5 yr Milton Flint
TESTS REQUESTED
VOC ITCE
ADDITIONAL COMMENTS
well = 555' deep
drilled approx. 1986 Sample # 9740100

LABORATORY USE ONLY

1st TCE 1.1
and .6

DM <=> BY 10-20-94 REPT BY LOG NO.

80-8763 (4-92)

AS 66 (R4-92)

MISSOURI DEPARTMENT OF HEALTH LABORATORY
307 WEST MCCARTY
JEFFERSON CITY, MISSOURI 65101
DR. E. C. BLANK, DIRECTOR

E.P.A. METHOD 502.2
VOLATILE ORGANICS REPORT

BECKY HEFFREN, NEWTON CO — LAB. LOG NO. 94-0100

MILTON FLINT, RT 6 BOX 141, NEOSHO

TYPE SAMPLE SOURCE: GROUND WATER — DATE COLLECTED: Oct. 18, 1994

DATE RECEIVED: Oct. 20, 1994 — DATE ANALYZED: Oct. 21, 1994

DATE REPORTED: Oct. 28, 1994 — APPROVED BY DM

CAS#		COMPOUND	RESULT
75-71-8		Dichlorodifluoromethane	0.4 UG/L **
74-87-3		Chloromethane	0.4 UG/L
75-01-4	*	Vinyl Chloride	0.4 UG/L
74-83-9		Bromomethane	0.4 UG/L
75-00-3		Chloroethane	0.4 UG/L
75-69-4		Trichlorofluoromethane	0.4 UG/L
75-35-4	*	1,1-Dichloroethene	0.4 UG/L
75-09-2	*	Methylene Chloride	0.4 UG/L
156-60-5	*	Trans-1,2-dichloroethene	0.4 UG/L
75-34-3		1,1-Dichloroethane	0.4 UG/L
594-20-7		2,2-Dichloropropane	0.4 UG/L
156-59-2	*	Cis-1,2-dichloroethene	0.4 UG/L
67-66-3		Chloroform	0.4 UG/L
74-97-5		Bromochloromethane	0.4 UG/L
71-55-6	*	1,1,1-Trichloroethane	0.4 UG/L
563-58-6		1,1-Dichloropropene	0.4 UG/L
56-23-5	*	Carbon Tetrachloride	0.4 UG/L
71-43-2	*	Benzene	0.4 UG/L
107-06-2	*	1,2-Dichloroethane	0.4 UG/L
79-01-6	*	Trichloroethene	0.9 UG/L
78-87-5	*	1,2-Dichloropropane	0.4 UG/L
75-27-4		Bromodichloromethane	0.4 UG/L
74-95-3		Dibromomethane	0.4 UG/L
542-75-6		Cis-1,3-dichloropropene	0.4 UG/L
108-88-3	*	Toluene	0.4 UG/L
542-75-6		Trans-1,3-dichloropropene	0.4 UG/L
79-00-5	*	1,1,2-Trichloroethane	0.4 UG/L
127-18-4	*	Tetrachloroethene	0.4 UG/L
142-28-9		1,3-Dichloropropane	0.4 UG/L

* E.P.A. Regulated Compound
** Results not valid according to E.P.A. Method criteria.

MISSOURI DEPARTMENT OF HEALTH LABORATORY
307 WEST MCCARTY
JEFFERSON CITY, MISSOURI 65101
DR. E. D. BLANK, DIRECTOR

E.P.A. METHOD 502.2
VOLATILE ORGANICS REPORT (CONTD.)

BECKY HEFFREN, NEWTON CO — LAB. LOG NO. 94-0100

MILTON FLINT, RT 2 BOX 141, NEOSHO

TYPE SAMPLE SOURCE: GROUND WATER — DATE COLLECTED: Oct. 18, 1994

DATE RECEIVED: Oct. 20, 1994 — DATE ANALYZED: Oct. 21, 1994

DATE REPORTED: Oct. 24, 1994 — APPROVED BY DM

CAS#		COMPOUND	RESULT
124-48-1		Dibromochloromethane	0.4 UG/L
108-90-7	*	Chlorobenzene	.4 UG/L
100-41-4	*	Ethylbenzene	0.4 UG/L
630-20-6		1,1,1,2-Tetrachloroethane	0.4 UG/L
108-38-3,106-42-3	*	Total Meta-xylene and Para-xylene	0.8 UG/L
95-47-6	*	Ortho-xylene	0.4 UG/L
100-42-5	*	Styrene	0.4 UG/L
98-82-8		Isopropylbenzene	0.4 UG/L
75-25-2		Bromoform	0.4 UG/L
79-34-5		1,1,2,2-Tetrachloroethane	0.4 UG/L
96-18-4		1,2,3-Trichloropropane	0.4 UG/L
108-86-1		Bromobenzene	0.4 UG/L
103-65-1		Normal-Propylbenzene	0.4 UG/L
95-49-8		2-Chlorotoluene	0.4 UG/L
108-67-8		1,3,5-Trimethylbenzene	0.4 UG/L
106-43-4		4-Chlorotoluene	0.4 UG/L
98-06-6		Tert-butylbenzene	0.4 UG/L
95-63-6		1,2,4-Trimethylbenzene	0.4 UG/L
135-98-8		Sec-butylbenzene	0.4 UG/L
99-87-6		Para-Isopropyltoluene	0.4 UG/L
541-73-1		1,3-Dichlorobenzene	0.4 UG/L
106-46-7	*	1,4-Dichlorobenzene	0.4 UG/L
104-51-8		Normal-Butylbenzene	0.4 UG/L
95-50-1	*	1,2-Dichlorobenzene	0.4 UG/L
120-82-1	*	1,2,4-Trichlorobenzene	0.4 UG/L
87-68-3		Hexachlorobutadiene	.4 UG/L
91-20-3		Naphthalene	0.4 UG/L
87-61-6		1,2,3-Trichlorobenzene	.4 UG/L

E.P.A Regulated Compound
** Results are not valid according to E.P.A. Method criteria.

Reference

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY

RECEIVED
DEC 7 1994
SPFD BRANCH
REGION VII

December 2, 1994

Mr. Daryl Roberts, Chief
Bureau of Environmental Epidemiology
Missouri Department of Health
210 El Mercado Plaza
Jefferson City, Missouri 65101

Re: Neosho Wells site

Dear Mr. Roberts:

The Hazardous Waste Program has received information regarding volatile organic compounds in the groundwater serving a residential population approximately three miles south of Neosho, Missouri. Nine wells have been found to contain detectable levels of chlorinated solvents. Samples collected from four of these wells exceed the Maximum Contaminant Level (MCL) of 5 ppb for TCE (trichloroethylene) in drinking water. Carbon tetrachloride was also found in excess of the Maximum Contaminant Level (MCL) of 5 ppb in one of these wells.

MDNR collected groundwater samples on October 26, 1994. The preliminary results of the volatile organic analyses are provided in the attached table. Also included are additional sampling data obtained from the Newton County Health Department and some associated material from our files.

Please review the enclosed materials and evaluate the potential for human exposure to hazardous substances at this site. We would appreciate your written comments in the form of a health consultation as soon as possible, as the groundwater is currently used as a drinking water supply by these residents. Mr. Arthur Busch, of your staff, is familiar with this site.

If you need additional information : ompiete this evaluation, please contact Ms. Julie Bloss, of my staff, or me at (314) 751-3176.

Sincerely,

HAZARDOUS WASTE PROGRAM

Gary T. Behrns, Chief
Superfund Section

GTB:JAB:dal

Enclosure

c: Ms. Gail Godfrey, ATSDR (w/enclosure)
Mr. Arthur Busch, MDOH (w/enclosure)
Mr. Paul Doherty, EPA (w/enclosure)
Mr. Brian Allen, ESP
Mr. Glenn Golson, Federal Facilities
Mr. Charles Kroeger, SWRO
Ms. Becky Heffrin, Newton County Health Department

[illegible] ecology and environment

SAMPLING RESULTS FOR THE NEOSHO WELLS SITE

Thirteen wells were sampled by MDNR on October 26, 1994. Methylene chloride was detected in a majority of the samples and is thought to be a laboratory contaminant. No volatile organic compounds were detected (with the exception of methylene chloride) in eight of the well samples. The following table is a listing of the volatile organic analyses for the MDNR samples (preliminary data) and a partial listing for the MDOH samples which have been collected to date.

Well owner	Well depth	Parameter	Preliminary Concentration found by MDNR	Concentration detected by MDOH
Shockley		Carbon tetrachloride	5.1 ppb	5.2 ppb (8/30/94)
		Chloromethane	ND (<2.5 ppb)	0.4 ppb
		Chloroform	1.1 ppb	1.2 ppb
		Dichlorodifluoromethane	3.7 ppb	3.4 ppb
		1,1-Dichloroethane	ND (<1.0 ppb)	0.5 ppb
		1,2-Dichloroethane	ND (<0.5 ppb)	0.7 ppb
		cis-1,2-Dichloroethene	1.2 ppb	1.1 ppb
		Trichloroethylene	115.0 ppb	110.0 ppb
The Honey House	50 feet	Bromoform	ND (<2.5 ppb)	0.6 ppb (9/20/94)
		Carbon tetrachloride	2.2 ppb	1.7 ppb
		Chloroethane	4.0 ppb	ND (<0.4 ppb)
		Chloroform	ND (<1.0 ppb)	0.5 ppb
		Dibromochloromethane	ND (<1.0 ppb)	0.5 ppb
		Trichloroethylene	47.0 ppb	25.0 ppb
Jackson	35 feet	Carbon tetrachloride	2.3 ppb	1.8 ppb (10/4/94)
		Chloromethane	ND (<2.5 ppb)	0.4 ppb
		Chloroform	ND (<1.0 ppb)	0.4 ppb
		Dichlorodifluoromethane	ND (<2.5 ppb)	1.5 ppb
		1,2-Dichloroethane	ND (<0.5 ppb)	0.6 ppb
		cis-1,2-Dichloroethene	0.6 ppb	ND (<0.4 ppb)
		Trichloroethylene	57.0 ppb	31.0 ppb
Sprenkle	247 feet	Carbon tetrachloride	0.5 ppb	0.6 ppb (10/4/94)
		Trichloroethylene	10.0 ppb	8.8 ppb
		1,2-Dichloroethane	ND (<0.5 ppb)	0.4 ppb
Mahan	500 feet	Chloromethane	ND (<2.5 ppb)	0.5 ppb (9/20/94)
		Trichloroethylene	1.1 ppb	1.8 ppb
M. Flint	555 feet	Chloromethane	Not sampled	0.4 ppb (10/18/94)
		Trichloroethylene		0.9 ppb
C. Herrin	230 feet	Trichloroethylene	ND (<0.5 ppb)	1.7 ppb (9/13/94)
R. Herrin	240 feet	Chloromethane	ND (<2.5 ppb)	0.5 ppb (9/20/94)
Wilson	350 feet	Chloromethane	ND (<2.5 ppb)	0.4 ppb (10/18/94)
L. Naylor	30 feet	All VOAs	ND	ND (10/19/94)

Well owner	Well depth	Parameter	Preliminary Concentration found by MDNR	Concentration detected by MDOH
G. Navior	32 feet	All VOAs*	Not sampled	ND (11/2/94)
Hill	300 feet	All VOAs*	ND	ND (10/19/94)
Mother Goose Day Care		Chloromethane	ND (<2.5 ppb)	0.5 ppb (11/2/94)
Griggs		All VOAs*	ND	Not sampled
Farlo Chihuahua World		All VOAs*	ND	Not sampled

All sampling results were reported in micrograms per liter, which is equivalent to parts per billion (ppb).

[redacted] [redacted]

Ref. 8

CHEMICAL, PHYSICAL, AND BIOLOGICAL PROPERTIES OF COMPOUNDS PRESENT AT HAZARDOUS WASTE SITES

Final Report

Prepared for:

U.S. Environmental Protection Agency

Prepared by:

Clement Associates, Inc.
1515 Wilson Boulevard
Arlington, Virginia 22209

Under Subcontract to:

GCA Corporation
Bedford, Massachusetts 01730

September 27, 1985

Ref. 9
Site: Ft Scandia
ID #: MO8750090013
Remedy: 3.2
Author: USArmy COE
7-11-94

DRAFT

PROJECT WORK PLAN
FOR
REMEDIAL INVESTIGATION OF
FORMER AIR FORCE PLANT NO. 65
ROCKETDYNE TEST SITE
NEOSHO, MISSOURI

CONTRACT NUMBER DACW 41-92-D-9003

Submitted To:

Department of the Army
Kansas City District, Corps of Engineers
700 Federal Building
Kansas City, Missouri 64106

February 1994

Submitted By:

Malcolm Pirnie, Inc.
102 Corporate Park Drive
P.O. Box 751
White Plains, New York 10602

and

Woodward-Clyde Federal Services
10975 El Monte, Suite 100
Overland Park, Kansas 66211

Project Number F93103

Ref. 10

ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF PESTICIDE PROGRAMS'

ENDANGERED SPECIES-BY-COUNTY LIST

DISCLAIMER

The following list identifies federally listed or proposed endangered and threatened species in the United States by state and county. It was updated (through October 1, 1992) by the U. S. Fish and Wildlife Service.

While the list provides a REASONABLY ACCURATE GUIDE, it should not be considered the final word in determining species locations. Although it presents our best information currently available, new species are regularly being listed. For those species already listed, compiling new species habitat information is a continuous process. Species populations are often dynamic, and, subsequent to listing, may be discovered in new locations. Moreover, true to their endangered or threatened status, they may be extirpated from previously occupied locations.

The Office of Pesticide Programs will monitor listing proposals and rule-making notices in the Federal Register and make other changes as new information becomes available. Hard copies will be reissued periodically.

...nrough: October 1, 1992
...ber: 32

STATE: MO

REGION 7
ENDANGERED SPECIES BY COUNTY LIST

STATE: MISSOURI

	CERTAINTY OF OCCURRENCE	GROUP	STATUS
COUNTY: MARIES			
BAT, GRAY	POSSIBLE	MAMMAL	L
COUNTY: MARION			
BAT, INDIANA	KNOWN	MAMMAL	L
MUSSEL, FAT POCKETBOOK	KNOWN	CLAM	L
PEARLY MUSSEL, HIGGINS' EYE	KNOWN	CLAM	L
COUNTY: MCDONALD			
BAT, GRAY	KNOWN	MAMMAL	L
COUNTY: MERCER			
BAT, INDIANA	KNOWN	MAMMAL	L
COUNTY: MILLER			
BAT, GRAY	KNOWN	MAMMAL	L
DARTER, NIANGUA	KNOWN	FISH	L
EAGLE, BALD	KNOWN	BIRD	L
PEARLY MUSSEL, PINK MUCKET	KNOWN	CLAM	L
COUNTY: MISSISSIPPI			
BEETLE, AMERICAN BURYING	POSSIBLE	INSECT	L
STURGEON, PALLID	KNOWN	FISH	L
TERN, INTERIOR (POPULATION) LEAST	KNOWN	BIRD	L
COUNTY: MONITEAU			
STURGEON, PALLID	POSSIBLE	FISH	L
...TY: MONROE			
BAT, INDIANA	KNOWN	MAMMAL	L
COUNTY: MONTGOMERY			
STURGEON, PALLID	POSSIBLE	FISH	L
COUNTY: MORGAN			
BAT, GRAY	KNOWN	MAMMAL	L
COUNTY: NEW MADRID			
EAGLE, BALD	KNOWN	BIRD	L
STURGEON, PALLID	POSSIBLE	FISH	L
TERN, INTERIOR (POPULATION) LEAST	KNOWN	BIRD	L
COUNTY: NEWTON			
BEETLE, AMERICAN BURYING	POSSIBLE	INSECT	L
CAVEFISH, OZARK	KNOWN	FISH	L

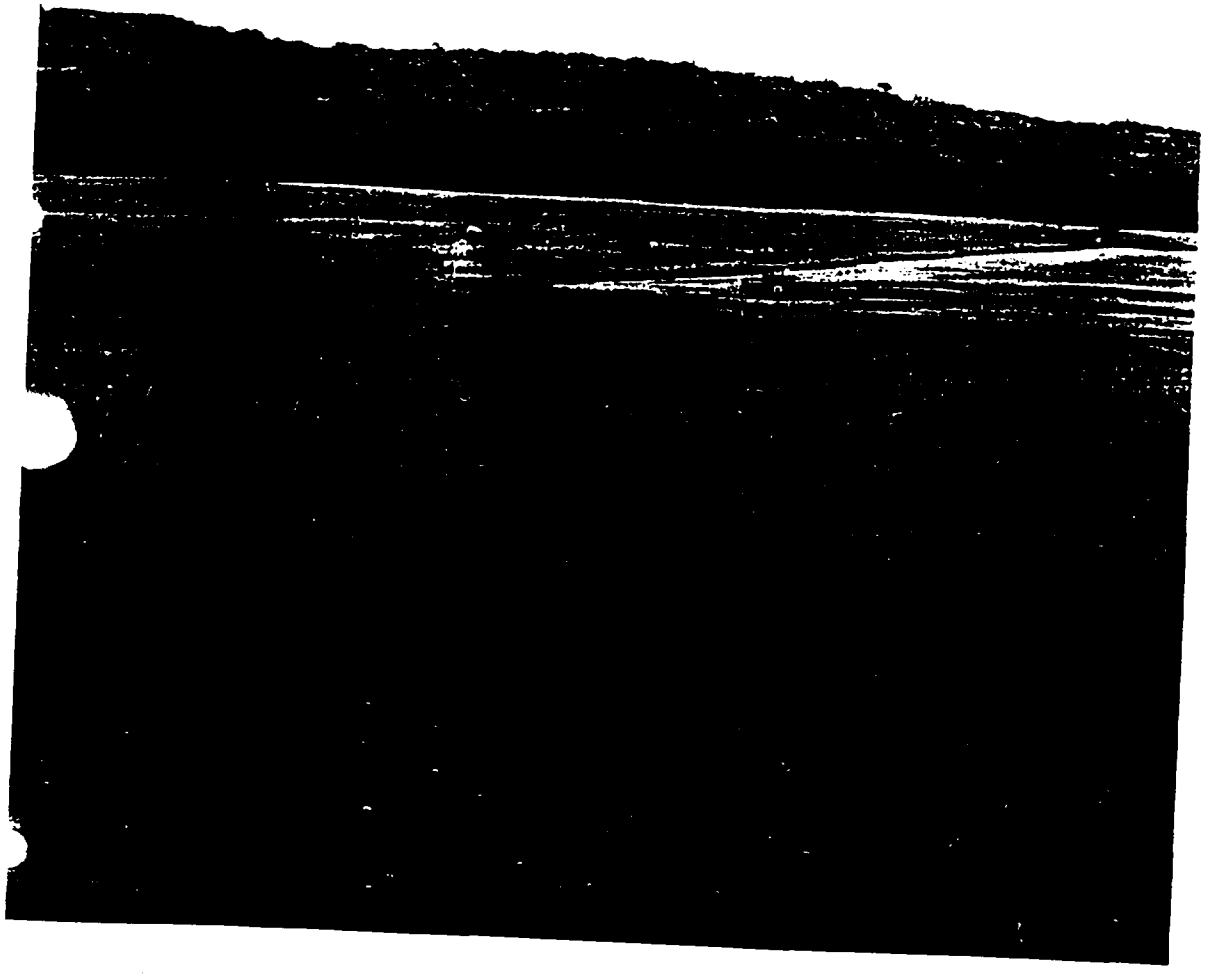
Ref. 11

United States Department of Agriculture

Soil Conservation Service

In cooperation with Missouri Agricultural Experiment Station

Soil Survey of Newton County, Missouri



Contents

Soil Series

Issued September 1989

Ref. 12

TELEPHONE CONVERSATION RECORD

DATE OF CALL: 6/26/95 TIME OF CALL: 1610

PERSONS INVOLVED:

1) Jeff Williams Needles Water Filtration Plant 417-451-8080 2) Scott Hayes TAT
3) (Paul Beck is Supervisor) 4)

PROJECT TITLE: Needles wells PROJECT NUMBER: [illegible]/EM01183SAA T07-9411-510D

CLIENT: EPA [illegible]

SUBJECT OF CALL: water supply

RESUME OF CONVERSATION:

1 - intake on Shoal Creek
4 river pumps @ pump station by Shoal Creek Dam - Lime Kiln Park
3 wells: all [illegible] to be up [illegible] end of July
- Newcut Finney Well - use all [illegible] two @ Newcut Finney Intersection
- Wheeler St Well - not activated yet but will be by Business [illegible] (College St.)
- Pet and Mill Well - not used but will be near Colon St by Newton Co. Sheriffs Dept
Water supplied to City of Needles and all of [illegible] area (incl. park + college)

Scott Hayes 6/26/95

CC:

Ref. 13

TELEPHONE CONVERSATION RECORD

DATE OF CALL: 11/9/94 TIME OF CALL: 1130

PERSONS INVOLVED:

1) Scott Hayes, EPE/TAT 2) Craig Cunningham, MDNR

3) _____ 4) _____

PROJECT TITLE: Neosho Wells PROJECT NUMBER: PT 3071 / EMO11 87 SAM

CLIENT: EPA R7 Mill 707-9411-510

SUBJECT OF CALL: Well head protection

RESUME OF CONVERSATION:

Cunningham stated there are no approved (by state) wellhead protection areas in the whole state of Missouri. There are numerous proposed though. The closest of which (to the Neosho site) is Cassville in Barry Co. or Branson in Taney Co. Month & Engineering Mo are both discussed the largest a wellhead protection area would go is 1-mile radius.

SH 11/9/94

CC: _____

Ref. 14

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MEMORANDUM

DATE: March 20, 1995

TO: Kristine Davidson, Chief, Department of Defense Unit
Federal Facilities Section, HWP, DEQ

FROM: Edith Starbuck, Geologist, Environmental Geology Section, GSP, DGLS

SUBJECT: Camp Crowder Former Air Force Plant # 65 and Neosho Wells Site
Newton County

The attachments are the result of the search that you requested of the Wellhead Protection Section database and the well log file here at DGLS. The well locations listed are within 4 miles of the Former Air Force Plant # 65 and within 4 miles of the Neosho Wells Site.

Our air photo file contains the following coverage of the Camp Crowder area:

USDA photography -

1966 - 4 photos covering part of the area

1953 - 1 photo covering part of the area

1974 - complete coverage, but at a much higher flying height

1980 - complete coverage, but at a much higher flying height

USGS photography -

1990 - complete coverage, and at the lower flying height

Please feel free to call me at (314) 368-2136 if you have any questions about this material, or if we can provide further information.

ES:kb

Attachments

Ref. 15

TELEPHONE CONVERSATION RECORD

DATE OF CALL: 11/9/94 TIME OF CALL: 1100

PERSONS INVOLVED:

1) South Howe CTE/THT 2) Data User Desk, US Census Bureau

3) _____ 4) _____

PROJECT TITLE: Neosho Wells (TCE) PROJECT NUMBER: 7T3071/FM011835AA

CLIENT: EPA R VII

SUBJECT OF CALL: Population in Newton Co.

RESUME OF CONVERSATION:

As of 1990 Census:

Pop. of Newton Co. = 44,445 people

" Neosho (City) = 9,754 "

people / household in Newton Co. = 2.59

11/9/94

Ref. 16

TELEPHONE CONVERSATION RECORD

DATE OF CALL: 6/14/95 TIME OF CALL: 0945

PERSONS INVOLVED:

1) Larry Johnson, Sergeant 2) Scott Haynes - E&E/FIT

3) Ft. Camp Crowder 4)

PROJECT TITLE: Neosho wells PROJECT NUMBER: ZT5071/EMO1153SAA

707-9411-51OD

CLIENT: EPA R.VII

SUBJECT OF CALL: Water supply for Neosho/Camp Crowder

RESUME OF CONVERSATION:

No wells in the Camp that he is aware of.
They get their (Camp Crowder) from City of
Neosho Water Department.

Scott Haynes

CC:

Ref. 17

TELEPHONE CONVERSATION RECORD

DATE OF CALL: 6/27/96 TIME OF CALL: 0955

PERSONS INVOLVED:

1) Betty Hobbs City of Goodman 2) Scott Hamas FTE/TAT

3) 417-364-7316 4)

PROJECT TITLE: Newton wells PROJECT NUMBER: 27 3071/EM01185AA
777-9411-510D

CLIENT: City of Goodman

SUBJECT OF CALL: water supply for Goodman

RESUME OF CONVERSATION:

1 well in production - by City Hall

1 backup well - on C Hwy by Main

population 1400

CC:

Ref. 18

TELEPHONE CONVERSATION RECORD

DATE OF CALL: 6/22/95 TIME OF CALL: 1050

PERSONS INVOLVED:

1) Bill Qualls Missouri American 2) Scott Hayes E&E/TAT

3) Water Co-Joplin District 4)

417-624-5361

PROJECT TITLE: Neosho wells PROJECT NUMBER: ZT3?71/EMO11855AA

727-9411-5100

CLIENT: EPA VII

SUBJECT OF CALL: Joplin Drinking Water Supply

RESUME OF CONVERSATION:

- 1 intake only on Shoal Creek @

Low Water Bridge - 1/2 downstream

? (Tucker St. maybe)

- Supplies City of Joplin only

CC: Scott Hayes

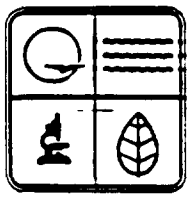
Ref. 19

DELINEATION OF RECHARGE AREAS FOR SEVEN OZARK CAVEFISH (AMBLYOPSIS ROSAE) SITES IN THE SPRINGFIELD PLATEAU OF SOUTHWESTERN MISSOURI

By James E. Vandike, Geologist

February, 1989

Water Resources Program



Missouri Department of Natural Resources
Division of Geology and Land Survey

James H. Williams, Director and State Geologist,
P.O. Box 250, Rolla, MO 65401

Ref. 20

TELEPHONE CONVERSATION RECORD

DATE OF CALL: 7/6/95 TIME OF CALL: 10:45

PERSONS INVOLVED:

1) Beth Harmon Schreiner 2) Scott Haves TAT

3) 417-451-1810 4)

PROJECT TITLE: Neosho wells PROJECT NUMBER: 3T3071/EM01183SAA

CLIENT: EPA R-VII 707-9411-5100

SUBJECT OF CALL: see below

RESUME OF CONVERSATION:

TAT called to confirm solvent used (from conversation during site visit)

Beth stated she has been at Schreiner's Neosho Plant almost since beginning of their operations which started September 1992

- To her knowledge they've never used TCE
- At one time they used TCA (111)
- They now use PCE
- She said Teledyne used TCE @ the plant 1973 to 1986

[illegible]

CC: [illegible signature]

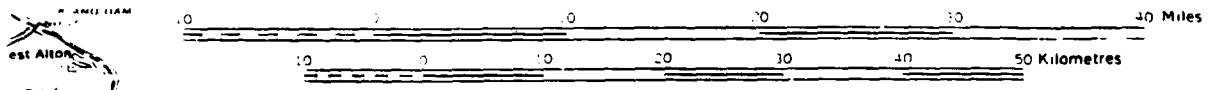
Ref. 34

MISSOURI GEOLOGICAL SURVEY
Larry D. Fellows, Program Director and Assistant State Geologist

GEOLOGIC MAP OF MISSOURI

1979

Scale 1:500,000
1 inch equals approximately 8 miles



GEOLOGIC MAPPING BY:

Kenneth H. Anderson, Coordinator of Field Mapping

Geological Survey Staff

Thomas J. Dean
Arthur W. Hebrank
Don E. Miller
Charles E. Robertson
Ardel Rueff
Ira R. Satterfield
Larry N. Stout
Joseph L. Thacker
Thomas L. Thompson
Jack S. Wells
John W. Whitfield

Correlation of the Precambrian by Eva B. Kisvarsanyi

Others
John Emerson, Central Missouri State University, Warrensburg
Walden P. Pratt, U.S. Geological Survey, Denver, Colorado
Kenneth C. Thomson, Southwest Missouri State University, Springfield

Editing and cartography under the direction of Jerry D. Vineyard; Gary P. Clark, Staff Artist III, and Billy G. Ross, Randal Rinehart, Susan C. Dunn and George Miller, artists. Printing by Williams & Heintz Map Corp., Washington, D.C.

The first Geologic Map of Missouri was published in 1872, the work of the first Missouri State Geologist, Dr. George C. Swallow. As knowledge of Missouri geology increased, the map was revised and republished in 1912, 1922, 1926, 1939, and 1961, each edition reflecting the refinements and additions contributed by numerous individual geologists.

The 1979 edition is an extensive refinement of the 1961 map, which was compiled by Marv H. McCracken and the staff of the Geological Survey. The contributions of the geologists credited above represent new mapping completed since 1961. In addition to the major contributors, this edition benefitted from mapping by graduate students as part of thesis and dissertation work, from contributions from numerous mining company geologists, and from other work done since 1961. However, the entire

WATER RESOURCES REPORT 24

WATER RESOURCES OF THE JOPLIN AREA, MO.

·G. L. Feder · John Skelton · H. G. Jeffery · E. J. Harvey ·

MISSOURI GEOLOGICAL SURVEY & WATER RESOURCES

WATER RESOURCES
of the
JOPLIN AREA, MISSOURI

By G. L. Feder, John Skelton
H. G. Jeffery, and E. J. Harvey

WATER RESOURCES DIVISION, U. S. G. S.
Anthony Homyk, District Chief

PREPARED IN COOPERATION WITH

MISSOURI GEOLOGICAL SURVEY AND WATER RESOURCES
W. C. Hayes, State Geologist & Director
March 1969 Rolla, Mo.

CONTENTS

CONTENTS (Continued)

APPENDIXES

Reference 23

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY
P.O. Box 250 111 Fairgrounds Rd. Rolla, MO 65401-0250

The Water Well Drillers' Act (256.600 - 256.640, RSMo) became effective on September 30, 1986. This law required that well drillers meet certain minimum construction requirements and report information on all wells drilled in the state of Missouri after this date. The enclosed data is the information we have on file for wells drilled in the area you requested after 1986. The information supplied to us is considered accurate, but has not been verified in every instance. We are providing the data we have been given and hope the following list will clarify any questions you might have regarding abbreviations used in the attachment.

ABBREVIATION	EXPLANATION
REFNUM	INTERNAL NUMBERING SYSTEM USED IN TRACKING THE WELL RECORDS SUBMITTED TO OUR OFFICE
SWL	STATIC WATER LEVEL - MEASURED IN FEET FROM THE LAND SURFACE DOWN
YIELD	MEASURED IN GALLONS PER MINUTE
USE	D - DOMESTIC WELL F - MULTI-FAMILY WELL H - HEAT PUMP WELL I - IRRIGATION WELL M - MONITORING WELL N - NON-COMMUNITY WELL O - OTHER P - PUBLIC WATER SUPPLY WELL
TOTAL_D	TOTAL DEPTH - MEASURED IN FEET

If you have any questions or need additional information, please feel free to call (314) 368-2318.

RECNUM	OWNER_LAST	OWNER_FRST	OWN_ADD_1	CITY	CASING_L	SWL	USE	Q_1	Q_2	Q_3	SEC	TWN	RNG	TOTAL_DPTH
0010149A	O'BRIEN	DONALD	STAR RT.	LANAGAN	29	0	D				03	24N	32W	605
0032149A	SOUTHWEST POWER		P O BOX 1619	TULSA	0	0					04	24N	32W	455
0002479A	KEELS	GEORGE	RT 6 BOX 240A	NEOSHO	83	180	D		SW	SW	05	24N	32W	405
0004247A	KEELS	GEORGE	RT. 6 BOX 240A	NEOSHO	0	0	D		SW	SW	05	24N	32W	0
0007610A	FAULLUS	JEFF	RT 6 BOX 245A	NEOSHO	84	180	D		SW	SW	05	24N	32W	425
0052319A	JOHN STARRETT	SHACK ATT	RT 6 BOX 29B	NEOSHO	26	0					05	24N	32W	0
0091638A	BEAVERS	LAVERNE	PO BOX 217	GOODMAN	100	0					05	24N	32W	485
0064569A	EADS	DAVID	RT 8 BOX 56E	NEOSHO	0	0			SW	NE	07	24N	32W	406
0090484A	BUCHANAN	HARRY	RT 3	NEOSHO	80	0					07	24N	32W	430
0000782A	AUTO SALES	CREDIT WORLD	BOX 209	NEOSHO	105	80	D		NE	NE	08	24N	32W	445
0005884A	WILLIAMSON	PAUL	RT. 6 BOX 33A	NEOSHO	84	100	D		SE	SE	08	24N	32W	405
0006353A	WILLIAMSON	PAUL	1506 GREENWOOD BLVD.	NEOSHO	0	80	F		SE	NE	08	24N	32W	0
0044568A	HOPPER	HERMAN	RT 6 BOX 104	NEOSHO	84	120			SE	SE	08	24N	32W	466
0018227A	BRADFORD	ROY L	R 6	NEOSHO	250	0	N				08	24N	32W	555
0058600A	TELEDYNE NEOSHO		3551 DONIPHAN DRIVE	NEOSHO	84	100			NE	NE	10	24N	32W	306
0064523A	OZARK EGG PROD.		RT 6 BOX 291	NEOSHO	84	395					13	24N	32W	680
0010617A	FELKER	DOUGLAS	ROUTE 8, BOX 80	NEOSHO	0	0	D		NW	NW	15	24N	32W	481
0104037A	FARBER	RUDOLPH	RT 3 BOX 230B	NEOSHO	0	0		NE	NE	NE	15	24N	32W	0
0120178A	TELFORD	ADAM T.	438 SOUTH VALLEY	NEOSHO	0	0	D				16	24N	32W	655
0032135A	WILLIAMS	LONNIE	ROUTE 6	NEOSHO	84	340					17	24N	32W	455
0094467A	BARNHILL POULTRY		PO BOX 611	NEOSHO	100	180	D				17	24N	32W	605
0119306A	COSU	GARY	RT 6 BOX 41C	NEOSHO	84	200	D	SW	SE	SE	17	24N	32W	507
0119307A	COSU	GARY	RT 6 BOX 41C	NEOSHO	84	250	D	SW	SE	SE	17	24N	32W	487
0119316A	COSU	GARY	RT 6 BOX 41C	NEOSHO	84	250	D	SE	SE	SW	17	24N	32W	650
0010660A	BRADFORD	ROY L.	RT. 6	NEOSHO	85	0	D				18	24N	32W	680
0007983A	MERRIMAN	JOHN	RT. 4, BOX 643	JOPLIN,	0	350	D		SW	SE	18	24N	32W	556
0065777A	RICHARDSON	PAUL & LINDA	RT 6 BOX 69	NEOSHO	84	140	O		SW	NW	18	24N	32W	610
0096355A	BILL	ROY	RT 3	NEOSHO	80	0					18	24N	32W	455
0028541A	SIMMIONS	ROY	ROUTE 3 BOX 132	NEOSHO	0	0					19	24N	32W	705
0092022A	POWELL	SLADE	RT 6	NEOSHO	84	200	D		NE	SE	19	24N	32W	466
0096362A	GILL	ERVIN & WILMA	PO BOX 262	NEOSHO	80	0		SE	SW	SW	19	24N	32W	455
0088414A	JESPERSON	DAVID	RT 6	NEOSHO	80	0					20	24N	32W	555
0068064A	LANKFORD	RONALD A	RT 3 BOX 196B	NEOSHO	85	180	D				22	24N	32W	505
0002563A	FARM	OZARK PULLET	RR 6	NEOSHO	138	0	I				23	24N	32W	280
0007814A	LYNN	MARGARET	ROUTE 3	NEOSHO	87	280	D	SE	SE	SE	23	24N	32W	406
0032134A	BROWN	ROLLAND	ROUTE 3	NEOSHO	0	0					25	24N	32W	455
0078967A	BUSSEY	RICH	RTE 4	NEOSHO	80	0	D				25	24N	32W	605
0078152A	FREUND	JOE	RT 4 BOX 314A	NEOSHO	84	250	D	SE	NW	SW	26	24N	32W	446
0094439A	BUSSEY	ERWIN	RT 4	NEOSHO	80	140	D				26	24N	32W	525
0012255A	PERKINS	BILL	RT 1 BOX 85	GOODMAN	80	0	D				27	24N	32W	530
0001200A	BRESSIE	STEVEN	925 N. COLLEGE	NEOSHO	42	0	D			NW	28	24N	32W	455
0018160A	POGUE	TOMMY	R 1	GOODMAN	48	0					28	24N	32W	455
0010661A	REED	FREST	R.#3	NEOSHO	0	[illegible]					30	24N	32W	488
00[illegible]2A	BOWYER	JACK	R#1	GOODMAN	84	0	[illegible]				30	24N	32W	0

0012448A WOOD	ADRAIN	423 DODGE STREET	DELTA	84	180	D			SE	SW	33	25N	32W	446
0069610A CASEY	DOROTHY E	RT 3 BOX 407E	NEOSHO	84	300	D			SE	SW	33	25N	32W	446
0084528A RIOS	PONCY	329 VETA ST	NEOSHO	84	250	D	SW	SW	SE	SE	33	25N	32W	466
0096361A MORGAN	JIM	RT 2 BOX 55	GOODMAN	80	0		SW	SW	SW	SW	33	25N	32W	655
0099570A BISHOP	ED	RT 1 BOX 195A	SENECA	84	240	D			SW	SE	33	25N	32W	687
0012636A VALDOIS	JERRY	1501 PINEVILLE	NEOSHO	86	150	D			SE	SW	34	25N	32W	451
0001544A BRIDGES	GARY	RT 8 BOX 370	NEOSHO	63	150	D			SE	SW	34	25N	32W	446
0052338A FORBES	AL	RT 6 BOX 29	NEOSHO	3	0				NW	NW	34	25N	32W	0
0091886A GRAY	ROBERT	PO BOX 363	NEOSHO	84	200	D			SW	SW	34	25N	32W	446
0080945A BOND	LES	707 PETERSON RD	NEOSHO	85	32						35	25N	32W	750
0096370A WILLIAMS	JERRY	RT 6	NEOSHO	80	0		NE	NW	SE		35	25N	32W	480
0011346A WYLIE	EARL G.	RT 6 BOX 290B	NEOSHO	126	240	D					36	25N	32W	505
0014291A BAPTIST CHURCH	CLAVARY	903 W. SOUTH	NEOSHO	0	0	D			NW	SE	36	25N	32W	460
0002061A DALTON	DAVID	RT 7 BOX 198	NEOSHO	147	220	D			SW	SE	36	25N	32W	446
0007155A CUPPS	GENE	RT. 7, BOX 18	NEOSHO,	141	120	D			SE	NE	36	25N	32W	445
0010136A CUPPS	GENE	ROUTE 7, OBX 18	NEOSHO	0	0	D			SE	NE	36	25N	32W	0
0041684A HAUGHT	TREVA	RT 7 BOX 160	NEOSHO	105	120		SW	SW			36	25N	32W	446
0061987A MYERS	R M	RT 3 BOX 313D	NEOSHO	85	40	D					36	25N	33W	445
0086640A LILE	RICHARD	RT 2 BOX 240	NEOSHO	81	80	D					36	25N	33W	280
0048759A BELL	MARY	RT. 3, BOX 360	NEOSHO	84	80	D			NW	SW	36	25N	33W	241
0040293A LARSON	MIKE	RT 3 BOX 355	NEOSHO	103	60	D					36	25N	33W	320
0094462A GREEN JR.	STANLEY	RT 2 BOX 183 AH	NEOSHO	98	40	D					36	25N	33W	196
0094460A HUFFMAN	EVERETT & FAYE	RT. 3, BOX 375	NEOSHO	100	180	D					36	25N	33W	565
0011666A GELLER	G.W. & CHERYL	RT. 3 BOX 391	NEOSHO	0	0	D			SW	SE	02	24N	33W	466
0011349A CRANFORD	JOHN	RT3 BOX 111	NEOSHO	84	160	D					12	24N	33W	405
0001768A BOOYER	TIM	RT 2 BOX 284A	NEOSHO	42	200	D			SE	SE	12	24N	33W	395
0004276A BOOYER	TIM	RT. 2, BOX 284A	NEOSHO	0	200				SE	SE	12	24N	33W	0
0015650A LOVE	RANDY	RT 6 BOX 73A	NEOSHO	84	150	D			SW	SE	12	24N	33W	405
0034394A SHIRLEY	GERALD	ROUTE 6 BOX 116	NEOSHO	85	157	D					12	24N	33W	432
0053125A ADAMS	BOB	RT 6	NEOSHO	84	200	D			SE	NE	12	24N	33W	405
0069653A NOWAK	CLARENCE	RT 3 BOX 108D	NEOSHO	84	120	D	SE	SE	SE	NE	12	24N	33W	364
0018135A PEARMAN	LARRY	R 3	NEOSHO	80	0	O					12	24N	33W	630
0083250A HIGGINBOTHAM	RICK	RT 1 BOX 1121	NEOSHO	84	180	D			SE	NW	12	24N	33W	446
0092007A RAMSEY	KEITH	RR 3 BOX 397	NEOSHO	84	125	D			NW	SW	12	24N	33W	405
0100362A HAYES	RALPH E.	RR 3 BOX 107B	NEOSHO	81	0	D					12	24N	33W	525
0053107A PHILLIPS	CHARLES & SUSAN	P.O. BOX 386	NEOSHO	84	120	D			NE	NE	13	24N	33W	405
0065798A COLE	MIKE	914 SOUTH HWY 71	NEOSHO	84	140	D			NE	NE	13	24N	33W	446
0120172A HEMBREE	DAN	RT 8 BOX 87E	NEOSHO	0	0	D					14	24N	33W	430
0120171A SHULER	KALA BOWTER&DR.	RT 3 BOX 22A	NEOSHO	0	0	D					14	24N	33W	605
0044583A WOOD	ADRIAN	423 DODGE ST	DELTA	84	150		NE	SE			15	24N	33W	405
0087615A COSU	GARY	RT 6 BOX 41C	NEOSHO	105	100	D			NW	SE	15	24N	33W	507
0064596A FARNSWORTH	DR KENT	RT 6 BOX 228	NEOSHO	80	200				NW	SE	15	24N	33W	456
0064542A MARBLES	GERALD	RT 3	NEOSHO	84	300						22	24N	33W	455
00F6643A JONES	CHARLES	RT. 3	NEOSHO	80	0	P					22	24N	33W	445
0078131A WINBERRY	DROTHY	RT 3 BOX 192	NEOSHO	84	120				NW	NW	22	24N	33W	425
0078137A JEFFRIES	ORDON	RT 3 BOX 193F	NEOSHO	84	180				NE	NE	22	24N	33W	405
0015280A COPE	NOLAN	RT 3 BOX 215	NEOSHO	85	240	D					24	24N	33W	460

0100380A	BOOVER	JERRY	RT 1 BOX 61A	GOODMAN	0	0	D				04	23N	32W	0
0032193A	LEWIS	TERRY	RT. 1	GOODMAN	83	0					05	23N	32W	725
0032152A	LAUDERDALE	CARL W.	RT. 1	GOODMAN	80	0					05	23N	32W	655
0017764A	OSBORN	JERRY	C/O GENE CANTRELL DRLG	GOODMAN	80	260	D				05	23N	32W	405
0099689A	RIGGS	JIMMY & RAJENA	RT 5 BOX 52 #50	NEOSHO	80	0	D	SE	SE	SE	05	23N	32W	705
0042027A	GARREN	RANDY	RT 2 BOX 87	NEOSHO	83	285			SW	SW	06	23N	32W	557
0064529A	COE	ROGER	P O BOX 374	GOODMAN	0	0					06	23N	32W	505
0064517A	DRAKE	CAROL	RT 1	GOODMAN	81	400					06	23N	32W	705
0018167A	RAYBURN	SCOTT	PO BOX 62	GOODMAN	0	0	D				06	23N	32W	430
0058838A	CALL	RICK	RT 1	GOODMAN	121	0					07	23N	32W	730
0094437A	MARVIN	JOANNNE	RT 1 BOX 511A	GOODMAN	101	370	D				07	23N	32W	605
0099699A	HALL	R.J.	RT 1	GOODMAN	0	0	D				07	23N	32W	530
0120183A	HALL	R.J.	RT 1	GOODMAN	0	0	D				07	23N	32W	530
0036735A	NEOSHO R-5	SCHOOL DISTRICT	511 NEOSHO BLVD	NEOSHO	0	0		NW	NE		08	23N	32W	0
0012253A	WASSON	DALE	RT 2	GOODMAN	82	0	D				09	23N	32W	580
0040274A	EARNSHAW	J.D.	RT 1 BOX 4	GOODMAN	84	280	D				09	23N	32W	585
0078950A	EARNAHAW	MARK	RTE 2 BOX 73A	GOODMAN	100	280					09	23N	32W	605
0091653A	HOFFS	BETTY	RT 1 BOX 78	GOODMAN	0	0	D				09	23N	32W	755
0099688A	COULTER	ANITA	RT 1 BOX 16	GOODMAN	80	0	D				09	23N	32W	430
0099511A	FARRIS	BONNIE	136 N. OZARK TRAIL	GOODMAN	84	250	D	NW	NE	NW	09	23N	32W	466
0078974A	WELCH	SHERYL	RTE 2 BOX 77	GOODMAN	0	280	D				10	23N	32W	785
0003759A	HINES	KENNETH	R. # 1	GOODMAN	63	0	D				11	23N	32W	405
0058841A	KELLY	MICKEY	RT 2 BOX 68	GOODMAN	80	0					11	23N	32W	430
0064512A	SINK	RICHARD	RT 1	GOODMAN	80	400					12	23N	32W	730

STATE OF MISSOURI
[illegible]
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY
P.O. Box 250 111 Fairgrounds Rd. Rolla, MO 65401-0250
[illegible]

Prior to the passing of the Water Well Drillers' Act in 1986, wells were reported mainly on a voluntary basis. The well driller would submit drilling samples and a geologist would evaluate the samples and the compose a log based on this evaluation. These logs have just recently been automated. We are in the process of inspecting the file for accuracy and consistency. The following counties have been completed: Adair, Andrew, Barry, Buchanan, Carter, Cedar, Christian, Clark, Dade, Dallas, Douglas, Gasconade, Greene, Hickory, Howard, Howell, Laclede, Lawrence, Lewis, McDonald, Maries, Newton, Oregon, Osage, Ozark, Pulaski, Ripley, St. Clair, Stone, Taney, Vernon, Webster and Wright.

If you have any questions or need additional information, please feel free to call (314) 368-2318.

Header Data

Log # 001921 Owner:RICHARDS, HENRY St:MO Cnty:NEWTON
C SW NE TRS: S31 T25N R32W
Alias:
Lat.:
Well:Private Well
Long.:
Quad:UNKNOWN
Log: D
Drl. C:BUSHNER, GEORGE Date:12/1914
Driller Liscense #: Confidential:N Release Dt. /
Logger: Date: /

Elev.:1164 Elev.S Yield: SWL:(a) H20 @:
T.D.: 330 base: DrDwn: SWL:(b) T

Bedrock at: 80 Samples saved:N Int. cored: 0 to 0
Top Fm.:OSAGEAN SERIES
Bot Fm.:KINDERHOOKIAN SERIES
Problems:
Remarks:DRY HOLE TO 333'; SULPHUR WATER AT 325'

Construction Data

Log #:001921 Date Completed:12/1914

CASING:	Dpth:	Diam:	I/O:	Sz. Hole:	Sz. Below:
	84	6.25	O	0.00	0.00
	0	0.00			
	0	0.00			
	0	0.00			

GROUT:	Type	Rig	Methd	Dt Abnd	Plug Date	Top	Bottom
				/	/	0	0

PUMP:	Cap	Type	Set at	TDH	Scrn Typ	Size	Lgth	Slot
	0		0	0		0	0	0

Well Treat	Type Dev	Typ Compl	Perf. Interval	Tube Pres.	Oil	Gas
			Top: 0 Bot: 0			

Open Top:OSAGEAN SERIES
Perforations Bot:KINDERHOOKIAN SERIES
Core data sources:
Remarks:

Stratigraphy Data

Log #:001921

Top	Base	Name	Lith Pr	Lith Sc	Lith Mn	Pri Mineral	Pri Oc	Sec Mineral	Sec Oc	Mnr Mineral	Mnr Oc
80	330	MISSISSIPPIAN SYSTEM					0		0		0
80	315	OSAGEAN SERIES	CL	CH			0		0		0
315	330	KINDERHOOKIAN SERIES					0		0		0
315	319	NORTHVIEW SHALE	SH				0		0		0
319	330	COMPTON LIMESTONE	LS	CH			0		0		0
330	0	TOTAL DEPTH					0		0		0

Printed on 12/12/94 at 14:06:52.

Header Data

Log # 19206 — Owner:LANE, RAY E. — St:MO Cnty:NEWTON
Alias: — NW NW NW TRS: S35 T25N R32W
Well:Private Well — Lat.:36,51, 2.927N
Type: S — Long.:94,24,27.715W
Driller:CANTRELL, EUGENE — Date: /1960 — Quad:36094G4
Driller Liscense #: — Confidential:N Release Dt. /
Logger:C.E. ROBERTSON — Date:01/1960

Elev.:1206 Elev.S Yield: 1 SWL:(a)185 H20 @:100'
T.D.: 230 base: DrDwn: SWL:(b) T

Bedrock at: 50 Samples saved:Y Int. cored: 0 to 0
Top Fm.:KEOKUK-BURLINGTON LS. UNDIFF
Bot Fm.:ELSEY FORMATION
Problems:
Remarks:2 MI W OF NEOSHO ON HWY 60

Construction Data

Log #:019206 Date Completed: /1960

CASING: Dpth: 34 Diam: 0.00 I/O:O Sz. Hole: 0.00 Sz. Below: 0.00
0 0.00
0 0.00
0 0.00

GROUT: Type Rig Methd Dt Abnd Plug Date Top Bottom
/ / 0 0

PUMP: Cap Type Set at TDH Scrn Typ Size Lgth Slot
0 0 0 0 0 0

Well Treat Type Dev Typ Compl Perf. Interval Tube Pres. Oil Gas
Top: 0 Bot: 0

Open Top:KEOKUK-BURLINGTON LS. UNDIFF
Perforations Bot:ELSEY FORMATION
Other data sources:
Remarks:

Stratigraphy Data

Log #:019206			--Lith--		---------Minerals---------			
Top	Base	Name	Pr Sc Mn	Pri	Oc	Sec	Oc	Mnr Oc
50	230	MISSISSIPPIAN SYSTEM			0		0	0
50	230	OSAGEAN SERIES			0		0	0
50	185	KEOKUK-BURLINGTON LS. UNDIFF	LS CH	ZnS	1	FeS2	1	0
185	230	ELSEY FORMATION	CH LS		0		0	0
230	0	TOTAL DEPTH			0		0	0

Printed on 12/12/94 at 14:08:19.

Header Data

Log # Owner:HUDSON, BUD St:MO Cnty:NEWTON
021354 SW SE SE TRS: S35 T25N R32W
Alias: Lat.:36,50,11.978N
Well:Private Well Long.:94,23,40.057W
Typ : S Quad:36094G4
Mill JACKSON, CARL Date:06/1962
Driller Liscense #: Confidential:N Release Dt. /
Logger:H.M. GROVES Date:03/1963

Elev.:1202 Elev.S Yield: SWL:(a)225 H20 @:
T.D.: 815 base: DrDwn: SWL:(b) T

Bedrock at: 40 Samples saved:N Int. cored: 0 to 0
Top Fm.:WARSAW FORMATION
Bot Fm.:JEFFERSON CITY DOLOMITE
Problems:
Remarks:EVERY OTHER SAMPLE BELOW 405'

Construction Data

Log #:021354 Date Completed:06/1962

CASING: Dpth: 41 Diam: 6.25 I/O:O Sz. Hole: 0.00 Sz. Below: 6.25
0 0.00
0 0.00
0 0.00

GROUT: Type Rig Methd Dt Abnd Plug Date Top Bottom
/ / 0 0

PUMP: Cap Type Set at TDH Scrn Typ Size Lgth Slot
0 0 0 0 0 0

Well Treat Type Dev Typ Compl Perf. Interval Tube Pres. Oil Gas
Top: 0 Bot: 0

Open Top:WARSAW FORMATION
Cor ms Bot:JEFFERSON CITY DOLOMITE
Stl. ata sources:
Remarks:

Stratigraphy Data

Log #:021354			Lith		Minerals			
Top	Base	Name	Pr Sc Mn Pri		Oc	Sec	Oc	Mnr Oc
40	395	MISSISSIPPIAN SYSTEM			0		0	0
40	70	MERAMECIAN SERIES			0		0	0
40	70	WARSAW FORMATION	CH	LS	0		0	0
70	225	KEOKUK-BURLINGTON LS. UNDIFF	LS	CH	0		0	0
70	85	SHORT CREEK MEMBER	LS	CH	0		0	0
225	280	ELSEY FORMATION	CH	LS	0		0	0
280	355	REEDS SPRING FORMATION	CH	LS	0		0	0
355	395	PIERSON-NORTHVIEW-COMPTON	LS	CH SH NiS	2		0	0
395	407	DEVONIAN SYSTEM			0		0	0
[illegible]	407	UPPER DEVONIAN SERIES			0		0	0
	405	CHATTANOOGA SHALE	SH		0		0	0
405	407	SYLAMORE SANDSTONE	SS		0		0	0
407	815	ORDOVICIAN SYSTEM			0		0	0
407	815	CANADIAN SERIES			0		0	0
407	690	COTTER DOLOMITE	DL	CH SS ZnS	11		0	0

Header Data

Log # 005570 Owner:FAIN, NANCY
Alias:
Well:Private Well
Log: S
Driller:BAIN, S.T. Date:08/1939
Driller Liscense #:
Logger:GROHSKOPF Date: /

St:MO Cnty:NEWTON
SE SE SW TRS: S36 T25N R32W
Lat.:36,50,16.
Long.:94,23,00.
Quad:36094G4
Confidential:N Release Dt. /

Elev.:1203 Elev.S Yield: SWL:(a) H20 @:
T.D.: 185 base: DrDwn: SWL:(b) T

Bedrock at: 25 Samples saved:Y Int. cored: 0 to 0
Top Fm.:WARSAW FORMATION
Bot Fm.:KEOKUK-BURLINGTON LS. UNDIFF
Problems:
Remarks:NO PRODUCTION OR CONSTRUCTION DATA; 3 MI S OF NEOSHO, 0.5 MI E OF 71

Stratigraphy Data

Log #:005570

Top	Base	Name	--Lith-- Pr	Sc	Mn	Pri	Minerals Oc	Sec	Oc	Mnr	Oc
0	25	RESIDUUM & TOP SOIL	CH				0		0		0
25	185	MISSISSIPPIAN SYSTEM					0		0		0
25	80	MERAMECIAN SERIES					0		0		0
25	80	WARSAW FORMATION	CH	LS			0		0		0
80	185	OSAGEAN SERIES					0		0		0
0	185	KEOKUK-BURLINGTON LS. UNDIFF	LS	CH			0		0		0
50	100	SHORT CREEK MEMBER	CH	LS			0		0		0
185	0	TOTAL DEPTH					0		0		0

Printed on 12/12/94 at 14:09:14.

Header Data

Log # 007314 Owner:SKELLEY SERVICE STA. #1 St:MO Cnty:NEWTON
SW SW SW TRS: S36 T25N R32W
Alias:
Lat.:36,50,16.
Long.:94,23,24.
Quad:36094G4
Driller:HARDERBROOK, J. Date:08/1941
Driller Liscense #:
Confidential:N Release Dt. /
Logger:GROHSKOPF Date: /

Elev.:1208 Elev.S Yield: 2 SWL:(a) H20 @:215', 485'
T.D.: 607 base: DrDwn: SWL:(b) T

Bedrock at: 25 Samples saved:Y Int. cored: 0 to 0
Top Fm.:KEOKUK-BURLINGTON LS. UNDIFF
Bot Fm.:COTTER-JEFFERSON CITY DOLOMITE
Problems:
Remarks:VERY LITTLE DATA; DRILLERS LOG TO 555'

Construction Data

Log #:007314 Date Completed:08/1941

CASING: Dpth: 31 Diam: 6.25 I/O:O Sz. Hole: 0.00 Sz. Below: 0.00
0 0.00
0 0.00
0 0.00

TROUT: Type Rig Methd Dt Abnd Plug Date Top Bottom
/ / 0 0

PUMP: Cap Type Set at TDH Scrn Typ Size Lgth Slot
0 0 0 0 0 0

Well Treat Type Dev Typ Compl Perf. Interval Tube Pres. Oil Gas
Top: 0 Bot: 0

Open Top:KEOKUK-BURLINGTON LS. UNDIFF
Bot:COTTER-JEFFERSON CITY DOLOMITE
Data sources:
Remarks:

Stratigraphy Data

Log #:007314			--Lith--		Minerals			
Top	Base	Name	Pr Sc Mn Pri		Oc Sec	Oc Mnr	Oc	
25	395	MISSISSIPPIAN SYSTEM			0	0	0	
25	215	KEOKUK-BURLINGTON LS. UNDIFF	LS	CH	0	0	0	
215	345	ELSEY-REEDS SPRING UNDIFF.	CH	LS	0	0	0	
345	395	PIERSON-NORTHVIEW-COMPTON	LS	SH CH	0	0	0	
395	405	DEVONIAN SYSTEM			0	0	0	
395	405	UPPER DEVONIAN SERIES			0	0	0	
395	405	CHATTANOOGA SHALE	SH		0	0	0	
405	607	ORDOVICIAN SYSTEM			0	0	0	
405	607	CANADIAN SERIES			0	0	0	
405	607	COTTER-JEFFERSON CITY DOLOMITE	DL	CH SS	0	0	0	
607	0	TOTAL DEPTH			0	0	0	

Printed on 12/12/94 at 14:09:37.

Header Data

Log # 019259 — Owner:LINDE CORP — St:MO Cnty:NEWTON
NW NW NW TRS: S04 T24N R32W
Alias:
well:Industrial High Capacity Well — Lat.:36,50, 9.168N
Log: S — Long.:94,23,30.191W
Driller:SILL, GERALD — Date:09/1960 — Quad:36094G4
Driller Liscense #: — Confidential:N Release Dt. /
Logger:K. ANDERSON — Date:09/1960

Elev.:1202 Elev.S Yield: 692 SWL:(a)190 H20 @:
T.D.: 1450 base: DrDwn: 188 SWL:(b) 45 T

Bedrock at: 30 Samples saved:Y Int. cored: 0 to 0
Top Fm.:KEOKUK-BURLINGTON LS. UNDIFF
Bot Fm.:EMINENCE DOLOMITE
Problems:
Remarks:

Construction Data

Log #:019259 Date Completed:09/1960

CASING:	Dpth:	Diam:	I/O:	Sz. Hole:	Sz. Below:
	479	12.00	I	0.00	0.00
	0	0.00			
	0	0.00			
	0	0.00			

GROUT:	Type	Rig	Methd	Dt Abnd	Plug Date	Top	Bottom
	G			/	/	0	0

PUMP:	Cap	Type	Set at	TDH	Scrn Typ	Size	Lgth	Slot
	0		390	0		0	0	0

Well Treat	Type Dev	Typ Compl	Perf. Interval	Tube Pres.	Oil	Gas
			Top: 0 Bot: 0			

Open Top:COTTER DOLOMITE
ntions Bot:EMINENCE DOLOMITE
r data sources:
Remarks:

Stratigraphy Data

Log #:019259

Top	Base	Name	Lith Pr	Lith Sc	Lith Mn	Minerals Pri	Oc	Sec	Oc	Mnr	Oc
30	390	MISSISSIPPIAN SYSTEM					0		0		0
30	375	OSAGEAN SERIES					0		0		0
30	170	KEOKUK-BURLINGTON LS. UNDIFF	LS	CH			0		0		0
170	220	ELSEY FORMATION	CH	LS			0		0		0
220	350	REEDS SPRING FORMATION	LS	CH			0		0		0
350	375	PIERSON LIMESTONE	LS	CH			0		0		0
375	390	KINDERHOOKIAN SERIES					0		0		0
375	380	NORTHVIEW SHALE	LS	SH			0		0		0
380	390	COMPTON LIMESTONE	LS				0		0		0
390	400	DEVONIAN SYSTEM					0		0		0
390	400	UPPER DEVONIAN SERIES					0		0		0
390	400	CHATTANOOGA SHALE	SH				0		0		0
400	1370	ORDOVICIAN SYSTEM					0		0		0
400	1370	CANADIAN SERIES					0		0		0
400	685	COTTER DOLOMITE	DL	CH	SS	ZnS	1		0		0

060	1105	UPPER GASCONADE DOLOMITE	DL SS	0	0	0
105	1355	LOWER GASCONADE DOLOMITE	DL CH	0	0	0
355	1370	GUNTER SANDSTONE MEMBER	DL CH SS	0	0	0
370	1450	CAMBRIAN SYSTEM		0	0	0
370	1450	UPPER CAMBRIAN SERIES		0	0	0
370	1450	EMINENCE DOLOMITE	DL SS	0	0	0
	0	TOTAL DEPTH		0	0	0

on 12/12/94 at 14:10:20.

Header Data

Log # 011083 Owner:BUILTA, JOHN H. St:MO Cnty:NEWTON
Alias: NE SW SE TRS: S07 T24N R32W
Well:Private Well Lat.:36,49,15.
Yield: S Long.:94,25,04.
Driller:JACKSON, CARL Date:09/1947 Quad:36094G4
Driller Liscense #: Confidential:N Release Dt. /
Logger:MCNEAL Date:11/1949

Elev.:1189 Elev.S Yield: 1 SWL:(a) H20 @:150', 200'
T.D.: 206 base: DrDwn: SWL:(b) T

Bedrock at: 55 Samples saved:Y Int. cored: 0 to 0
Top Fm.:KEOKUK-BURLINGTON LS. UNDIFF
Bot Fm.:ELSEY FORMATION
Problems:
Remarks:2 MI S & 1.25 MI W OF NEOSHO

Construction Data

Log #:011083 Date Completed:09/1947

CASING: Dpth: 55 Diam: 6.25 I/O:O Sz. Hole: 0.00 Sz. Below: 0.00
0 0.00
0 0.00
0 0.00

GROUT:	Type	Rig	Methd	Dt Abnd	Plug Date	Top	Bottom
				/	/	0	0

PUMP:	Cap	Type	Set at	TDH	Scrn Typ	Size	Lgth	Slot
	0		0	0		0	0	0

Well Treat	Type Dev	Typ Compl	Perf. Interval	Tube Pres.	Oil	Gas
			Top: 0 Bot: 0			

Open Top:KEOKUK-BURLINGTON LS. UNDIFF
Perforations Bot:ELSEY FORMATION
Other data sources:
Remarks:

Stratigraphy Data

Log #:011083

Top	Base	Name	Lith Pr	Lith Sc	Lith Mn	Pri Minerals	Pri Oc	Sec Minerals	Sec Oc	Mnr Minerals	Mnr Oc
55	206	MISSISSIPPIAN SYSTEM					0		0		0
55	206	OSAGEAN SERIES					0		0		0
55	165	KEOKUK-BURLINGTON LS. UNDIFF	LS	CH			0		0		0
165	206	ELSEY FORMATION	CH	LS			0		0		0
206	0	TOTAL DEPTH					0		0		0

Printed on 12/12/94 at 14:10:43.

Header Data

Log # 007796 — Owner: EVANS, F.W. #1 — St: MO Cnty: NEWTON
SE SE SE TRS: S08 T24N R32W
Alias:
Lat.: 36,49,04.
Well: Private Well
Long.: 94,23,40.
Type: S
Quad: 36094G4
Driller: Date: 04/1942
Driller Liscense #:
Confidential: N Release Dt. /
Logger: GROHSKOPF Date: /

Elev.: 1238 Elev.S Yield: SWL: (a) 225 H20 @:
T.D.: 1118 base: DrDwn: SWL: (b) T

Bedrock at: 200 Samples saved: Y Int. cored: 0 to 0
Top Fm.: ELSEY FORMATION
Bot Fm.: ROUBIDOUX FORMATION
Problems:
Remarks: 4 MI S OF NEOSHO, OPPOSITE CAMP CROWDER

Stratigraphy Data

Log #: 007796

Top	Base	Name	--Lith-- Pr	Sc	Mn	Prl	Oc	Sec	Oc	Mnr	Oc
200	405	MISSISSIPPIAN SYSTEM					0		0		0
200	230	ELSEY FORMATION	CH	LS			0		0		0
230	370	REEDS SPRING FORMATION	CH	LS			0		0		0
370	405	PIERSON-NORTHVIEW-COMPTON	LS	SH		FeS2	1		0		0
405	410	DEVONIAN SYSTEM					0		0		0
5	410	UPPER DEVONIAN SERIES					0		0		0
405	410	CHATTANOOGA SHALE	SH				0		0		0
410	1116	ORDOVICIAN SYSTEM					0		0		0
410	1116	CANADIAN SERIES					0		0		0
410	700	COTTER DOLOMITE	DL	CH	SS		0		0		0
590	610	"SWAN CREEK SANDSTONE"	DL	SS			0		0		0
700	920	JEFFERSON CITY DOLOMITE	DL	CH	SS		0		0		0
920	1118	ROUBIDOUX FORMATION	DL	CH	SS		0		0		0
1116	0	TOTAL DEPTH					0		0		0

... on 12/12/94 at 14:11:08.

- - - - - - - - - - - - - - H e a d e r D a t a - - - - - - - - - - - - - -

og # Owner:GIDDINGS, FRANK St:MO Cnty:NEWTON
[illegible]20 C SE SW TRS: S11 T24N R32W
Alias: Lat.:36 48 46.351N
[illegible]l:Private Well Long.:94 38 42.964W
D Quad:36094G6
[illegible] SHNER, GEORGE Date: /1914
iller Liscense #: Confidential:N Release Dt. /
ger: Date: /

[illegible].: 0 Elev.S Yield: 1 SWL:(a) H20 @:
.: 301 base: DrDwn: SWL:(b) T

[illegible]oek at: 30 Samples saved:N Int. cored: 0 to 0
Fm.:OSAGEAN SERIES
Fm.:OSAGEAN SERIES
blems:
arks:

- - - - - - - - - - - - C o n s t r u c t i o n D a t a - - - - - - - - - -
g #:001920 Date Completed: /1914

SING: Dpth: 36 Diam: 5.60 I/O:O Sz. Hole: 0.00 Sz. Below: 0.00
0 0.00
0 0.00
0 0.00

UT: Type Rig Methd Dt Abnd Plug Date Top Bottom
/ / 0 0

P: Cap Type Set at TDH Scrn Typ Size Lgth Slot
0 0 0 0 0 0

l Treat Type Dev Typ Compl Perf. Interval Tube Pres. Oil Gas
Top: 0 Bot: 0

n Top:OSAGEAN SERIES
r s Bot:OSAGEAN SERIES
e 1 sources:
[illegible].
- - - - - - - - - - - - S t r a t i g r a p h y D a t a - - - - - - - - - -

#:001920 --Lith-- --------Minerals--------
Base Name Pr Sc Mn Pri Oc Sec Oc Mnr Oc
301 MISSISSIPPIAN SYSTEM 0 0 0
301 OSAGEAN SERIES CH LS 0 0 0
0 TOTAL DEPTH 0 0 0

ted on 12/12/94 at 14:13:00.

- - - - - - - - - - - - - - - - Header Data - - - - - - - - - - - - - - - -

Log # 003385 Owner:KNAPPER St:MO Cnty:NEWTON
SW NW SW TRS: S32 T24N R32W
Alias: Lat.:
Type well:Private Well Long.:
log: S Quad:UNKNOWN
Driller:THAIN, J.E. Date:06/1935
Driller Liscense #: Confidential:N Release Dt. /
Logger:GLEASON Date: /

Elev.:1192 Elev.S Yield: SWL:(a) H20 @:
T.D.: 170 base: DrDwn: SWL:(b) T

Bedrock at: 155 Samples saved:N Int. cored: 0 to 0
Top Fm.:ELSEY FORMATION
Bot Fm.:ELSEY FORMATION
Problems:
Remarks:NO PRODUCTION OR CONSTRUCTION DATA; NO SAMPLES 0-155'

- - - - - - - - - - - - - Stratigraphy Data - - - - - - - - - - -

Log #:003385

Top	Base	Name	--Lith-- Pr	Sc	Mn	Pri	Oc	Sec	Oc	Mnr	Oc
155	170	ELSEY FORMATION	CH	LS			0		0		0

Printed on 12/12/94 at 14:13:19.

Header Data

Log # 06997
Owner:MEYERS, MAX E.
Alias:
St:MO Cnty:NEWTON
S2 SE SW TRS: S25 T24N R33W
Lat.:36,46,34.
Long.:94,26,36.
Quad:36094G4
Type Well:Private Well
Dr: S
Driller:CAYWOOD, W. (FOR BROWN) Date:05/1941
Driller Liscense #:
Confidential:N Release Dt. /
Logger:MCCRACKEN Date: /

Elev.:1206 Elev.S Yield: SWL:(a) H20 @:
T.D.: 400 base: DrDwn: SWL:(b) T

Bedrock at: 20 Samples saved:Y Int. cored: 0 to 0
Top Fm.:WARSAW FORMATION
Bot Fm.:COTTER DOLOMITE
Problems:
Remarks:NO PRODUCTION OR CONSTRUCTION DATA

Stratigraphy Data

Log #:006997

Top	Base	Name	--Lith-- Pr	Sc	Mn	Pri	Minerals Oc	Sec	Oc	Mnr	Oc
0	20	RESIDUUM & TOP SOIL	CL	CH			0		0		0
20	355	MISSISSIPPIAN SYSTEM					0		0		0
20	35	MERAMECIAN SERIES					0		0		0
20	35	WARSAW FORMATION	CH	LS			0		0		0
35	340	OSAGEAN SERIES					0		0		0
5	180	KEOKUK-BURLINGTON LS. UNDIFF	LS	CH			0		0		0
35	45	SHORT CREEK MEMBER	LS	CH			0		0		0
180	315	ELSEY-REEDS SPRING UNDIFF.	CH	LS			0		0		0
315	340	PIERSON LIMESTONE	LS	CH		NiS	10		0		0
340	355	KINDERHOOKIAN SERIES					0		0		0
340	355	NORTHVIEW-COMPTON UNDIFF.	LS	SH			0		0		0
355	370	DEVONIAN SYSTEM					0		0		0
355	370	UPPER DEVONIAN SERIES					0		0		0
355	370	CHATTANOOGA SHALE	SH				0		0		0
[illegible]	400	ORDOVICIAN SYSTEM					0		0		0
[illegible]	400	CANADIAN SERIES					0		0		0
370	400	COTTER DOLOMITE	DL	CH	SS		0		0		0
400	0	TOTAL DEPTH					0		0		0

Printed on 12/12/94 at 14:14:39.

Header Data

Log # 024387 Owner:BENNETT, DICK St:MO Cnty:MCDONALD
C SE NW TRS: S01 T23N R33W
Alias:
Lat.:36,45,18.096N
Well:Private Well
Long.:94,26,40.069W
Log: S
Quad:36094G4
Driller:NORRIS, HOLLIS Date:05/1966
Driller Liscense #: Confidential:N Release Dt. /
Logger:H.M. GROVES Date:03/1967

Elev.:1048 Elev.S Yield: 18 SWL:(a)155 H20 @:467'
T.D.: 465 base: DrDwn: SWL:(b) T

Bedrock at: 270 Samples saved:N Int. cored: 0 to 0
Top Fm.:COTTER DOLOMITE
Bot Fm.:COTTER DOLOMITE
Problems:
Remarks:POOR SAMPLES TO 380'; 1.5 MI N OF GOODMAN, 8 MI S OF NEOSHO
More:

Construction Data

Log #:024387 Date Completed:05/1966

CASING:	Dpth:	Diam:	I/O:	Sz. Hole:	Sz. Below:
	21	8.25	O	0.00	0.00
	143	4.80			
	0	0.00			
	0	0.00			

TROUT:	Type	Rig	Methd	Dt Abnd	Plug Date	Top	Bottom
				/	/	0	0

PUMP:	Cap	Type	Set at	TDH	Scrn Typ	Size	Lgth	Slot
	0		0	0		0	0	0

Well Treat	Type Dev	Typ Compl	Perf. Interval	Tube Pres.	Oil	Gas
			Top: 0 Bot: 0			

Open Top:COTTER DOLOMITE
ions Bot:COTTER DOLOMITE
data sources:
Remarks:

Stratigraphy Data

Log #:024387			--Lith--		Minerals		
Top	Base	Name	Pr Sc Mn	Pri	Oc Sec	Oc Mnr	Oc
270	465	ORDOVICIAN SYSTEM			0	0	0
270	465	CANADIAN SERIES			0	0	0
270	465	COTTER DOLOMITE		DL SS CH	0	0	0
465	0	TOTAL DEPTH			0	0	0

Printed on 12/12/94 at 14:15:15.

Header Data

Log # 007373 Owner:BARNES, BUD
Alias:
Type well:Private Well
log: S
Driller:CRODDY, FLOYD Date: /1941
Driller Liscense #:
Logger:GARLAND GOTT Date:12/1947

St:MO Cnty:MCDONALD
C NW TRS: S10 T23N R33W
Lat.:36,44,40.
Long.:94,29,03.
Quad:36094F4
Confidential:N Release Dt. /

Elev.:1140 Elev.S Yield: SWL:(a) H20 @:65'
T.D.: 180 base: DrDwn: SWL:(b) T

Bedrock at: 45 Samples saved:N Int. cored: 0 to 0
Top Fm.:ELSEY-REEDS SPRING UNDIFF.
Bot Fm.:PIERSON LIMESTONE
Problems:
Remarks:NO PRODUCTION OR CONSTRUCTION DATA

Construction Data

Log #:007373 Date Completed: /1941

CASING: Dpth: 0 Diam: 0.00 I/O:O Sz. Hole: 0.00 Sz. Below: 0.00
0 0.00
0 0.00
0 0.00

GROUT:	Type	Rig	Methd	Dt Abnd	Plug Date	Top	Bottom
				/	/	0	0

PUMP:	Cap	Type	Set at	TDH	Scrn Typ	Size	Lgth	Slot
	0		0	0		0	0	0

Well Treat	Type Dev	Typ Compl	Perf. Interval	Tube Pres.	Oil	Gas
			Top: 0 Bot: 0			

Open Top:ELSEY-REEDS SPRING UNDIFF.
stions Bot:PIERSON LIMESTONE
data sources:
Remarks:

Stratigraphy Data

Log #:007373

Top	Base	Name	Lith Pr	Lith Sc	Lith Mn	Minerals Pri	Oc	Sec	Oc	Mnr	Oc
45	180	MISSISSIPPIAN SYSTEM					0		0		0
45	180	OSAGEAN SERIES					0		0		0
45	115	ELSEY-REEDS SPRING UNDIFF.	CH	LS		Fe2O3	1		0		0
115	180	PIERSON LIMESTONE	LS	CH			0		0		0
180	0	TOTAL DEPTH					0		0		0

Printed on 12/12/94 at 14:15:51.

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MEMORANDUM

DATE: March 20, 1995

TO: Kristine Davidson, Chief, Department of Defense Unit
Federal Facilities Section, HWP, DEQ

FROM: Edith Starbuck, Geologist, Environmental Geology Section, GSP, DGLS

SUBJECT: Camp Crowder Former Air Force Plant # 65 and Neosho Wells Site
Newton County

The attachments are the result of the search that you requested of the Wellhead Protection Section database and the well log file here at DGLS. The well locations listed are within 4 miles of the Former Air Force Plant # 65 and within 4 miles of the Neosho Wells Site.

Our air photo file contains the following coverage of the Camp Crowder area:

USDA photography -

1966 - 4 photos covering part of the area

1953 - 1 photo covering part of the area

1974 - complete coverage, but at a much higher flying height

1980 - complete coverage, but at a much higher flying height

USGS photography -

1990 - complete coverage, and at the lower flying height

Please feel free to call me at (314) 368-2136 if you have any questions about this material, or if we can provide further information.

ES:kb

Attachments

Wells Within 4 Miles of Neosho Wells Site (initial discovery location)				
Legal Location	Name of Well	I.D. No.	Total Depth	Date Well Drilled
T. 25 N., R. 32 W.				
Sec. 25, NE 1/4, NE 1/4, NE 1/4	City of Neosho #2	004078	1,247	1936
Sec. 26, E 1/2, SW 1/4, SE 1/4	Dr. Anderson	019824	385	1961
Sec. 27, NW 1/4, SW 1/4, SW 1/4	Howard Wilson	011055	195	1949
Sec. 27, SW 1/4, SW 1/4, SW 1/4	James Johnson	010988	215	1949
Sec. 27, SE 1/4, SE 1/4, NE 1/4	Lary Hoberock	010288	805	1948
Sec. 27, NE 1/4, SE 1/4, SW 1/4	Al Busnmeyer	016602	950	1957
Sec. 28, Center, NW 1/4, SW 1/4	Prospect Hole	026654	345	1968
Sec. 35, NW 1/4, NW 1/4, NW 1/4	Ray Lane	019206	230	1960
Sec. 35, SW 1/4, SE 1/4, SE 1/4	Bud Hudson	021354	815	1962
Sec. 36, SE 1/4, SE 1/4, SW 1/4	Nancy Fain	005570	185	1939
Sec. 36, SW 1/4, SW 1/4, SW 1/4	Skelly Service Station #1 (non-community)	007314	607	1941
T. 25 N., R. 31 W.				
Sec. 30, NE 1/4, SE 1/4	J.H. Trent (Propsect Hole)	006183	257	1940
Sec. 32, SE 1/4, SW 1/4, NE 1/4	Don Brown	011060	365	1947
T. 24 N., R. 32 W.				
Sec. 4, NW 1/4, NW 1/4, NW 1/4	Linde Corp (high capcity well)	019259	1,450	1960
Sec. 7, NE 1/4, SW 1/4, SE 1/4	John Builta	011083	206	1947
Sec. 8, SE 1/4, SE 1/4, SE 1/4	F.W. Evans	007796	1,118	1942
Sec. 11, Center, SE 1/4, SW 1/4	Frank Giddings	001920	301	1914
Sec. 32, SW 1/4, NW 1/4, SW 1/4	Knapper	003385	170	1935
T. 23 N., R. 32 W.				
Sec. 4, SW 1/4, SW 1/4, SW 1/4	Danzil Thrasher	011164	175	1947
Sec. 4, S 1/2, SE 1/4, SW 1/4	Raymond Paschall	009616	182	1947
Sec. 5, NW 1/4, SW 1/4, NW 1/4	J.R. Minanck	003207	190	No date

Wells Within 4 Miles of Former Air Force Plant No. 65 at Camp Crowder				
Legal Location	Name of Well	I.D. No.	Total Depth	Date Well Drilled
T. 25 N., R. 31 W.				
Sec. 19. S 1/2. SE 1/4. SW 1/4	City of Neosho #1	002917	1,012	No date
Sec. 19. NE 1/4. SW 1/4. NW 1/4	City of Neosho #5	008477	1,195	1943
Sec. 19. SE 1/4. SW 1/4. NW 1/4	Pet Milk Company	008527	1,210	1944
Sec. 19. SW 1/4. NE 1/4. SW 1/4	City of Neosho #1	001627	1,201	1910
Sec. 22. NW 1/4. NE 1/4. SW 1/4	Virgil Roberts	008977	335	1959
Sec. 22. SW 1/4. NE 1/4. NW 1/4	County Farm #1	003437	1,075	1935
Sec. 28. NE 1/4. NE 1/4. NE 1/4	Mrs. Emory Cupps	018978	450	1959
Sec. 30. NE 1/4. SE 1/4	Prospect Hole	006183	257	1940
Sec. 32. SE 1/4. SW 1/4. NE 1/4	Don Brow	011060	385	1947
Sec. 34. NW 1/4. NW 1/4. NE 1/4	W.H. Wright	019630	250	1960
T. 25 N., R. 32 W.				
Sec. 25. NE 1/4. NE 1/4. NE 1/4	City of Neosho #2	004078	1,247	1936
Sec. 26. E 1/2. SW 1/4. SE 1/4	Dr. Anderson	019824	385	19617
Sec. 35. NW 1/4. NW 1/4. NW 1/4	Ray Lane	019206	230	1960
Sec. 35. SW 1/4. SE 1/4. SE 1/4	Bud Hudson	021354	815	1962
Sec. 36. SE 1/4. SE 1/4. SW 1/4	Nancy Fain	005570	185	1939
Sec. 36. SW 1/4. SW 1/4. SW 1/4	Skelley Service Station (Non-community)	007314	607	1941
T. 24 N., R. 31 W.				
No wells in this Township & Range are in this 4 mile radius				
T. 24 N., R. 32 W.				
Sec. 4. NW 1/4. NW 1/4. NW 1/4	Linde Corp (High capacity)	019259	1,450	1960
Sec. 8. SE 1/4. SE 1/4. SE 1/4	F.W. Evans	007796	1,118	1942
Sec. 11. Center. SE 1/4. SW 1/4	Frank Giddings	001920	301	1914
Sec. 32. SW 1/4. NW 1/4. SW 1/4	Knapper	003385	170	1935

REFNUM	BUSINESS_N	OWNER_LAST	OWNER_FRST	OWN ADD_1	CITY	CASING L	SWL	USE	Q 2	Q 1	SEC	TWN	RNG	TOTAL DPTH
0000782A		AUTO SALES	CREDIT WORLD	BOX 209	NEOSHO	0	0	D						0
0001200A		BRESSIE	STEVEN	925 N. COLLEGE	NEOSHO	0	0	D						0
0001546A		STARK	PATTI	RT 8	NEOSHO	0	0	D						0
0002061A		DALTON	DAVID	RT 7 BOX 198	NEOSHO	0	0	D						0
0002273A		EGG PRODUCTION	MOARK	RT 6	NEOSHO	0	0	D						0
0002479A		KEELS	GEORGE	RT 6 BOX 240A	NEOSHO	0	0	D						0
0002563A		FARM	MOARK PULLET	RR 6	NEOSHO	0	0	I						0
0003065A		BRIDGES	MARK	(CONTRACTOR)	NEOSHO	0	0	D	SW	NE	20	25N	31W	384
0003066A		BRIDGES	MARK	(CONTRACTOR)	NEOSHO	0	0	D	SW	NE	20	25N	31W	302
0003325A		BRIDGES	MARK	P.O. BOX 97	NEOSHO	0	0	D	SW	NE	20	25N	31W	0
0004144A	SHENANDOAH RESTAURANT	KINSCH	JIMMIE R.	R.R. 1	GOODMAN	0	0	P						0
0004247A		KEELS	GEORGE	RT. 6 BOX 240A	NEOSHO	0	0	D						0
0005447A		MILLER	JOE	RR 4 BOX 2638	NEOSHO	0	0	D						0
0005884A		WILLIAMSON	PAUL	RT. 6 BOX 33A	NEOSHO	0	0	D						0
0006010A		BRIDGES	MARK	P.O. BOX 97	NEOSHO	0	0	D	SW	NE	20	25N	31W	405
0006353A		WILLIAMSON	PAUL	1506 GREENWOOD BLVD.	NEOSHO	0	0	F						0
0006778A		NINE	MIKE	RT. 7 BOX 311	NEOSHO	0	0	D						0
0007155A		CUPPS	GENE	RT. 7, BOX 18	NEOSHO,	0	0	D						0
0007518A		NINE	MIKE	ROUTE 7 BOX 311	NEOSHO	0	0	D						0
0007814A		LYNN	MARGARET	ROUTE 3	NEOSHO	0	0	D						0
0007930A		JEHOVAH'S	WITNESS CHURCH	RT. 7, BOX 314	NEOSHO,	0	0	O						0
0008579A		BRYANT	CHESTER	RT. 4, BOX 379	NEOSHO	0	0	D						0
0009037A		BAIRD	BRAD & LESLIE	RT. 1	STELLA,	0	0	D						0
0009052A		THOMPSON	GARRY AND ROY P.	RT. 5, BOX 29A	HUNTSVILLE	0	0	D	NW	SW	22	25N	31W	405
0010032A		BAIRD	BRAD			0	0	D						0
0010054A		GROH	DON	BOX 135	NEOSHO	0	0	D						0
0010060A		BRYANT	CHESTER	ROUTE 4	NEOSHO	0	0	D						0
0010106A		BRIDGES	MARK	P.O. BOX 97	NEOSHO	0	0	D			20	25N	31W	0
0010120A		CHURCH	JOHOVAHAS WITNES	ROUTE 7, BOX 314	NEOSHO	0	0	D						0
0010136A		CUPPS	GENE	ROUTE 7, OBX 18	NEOSHO	0	0	D						0
0010170A		GROH	DON	BOX 135	NEOSHO	0	0	D						0
0010617A		FELKER	DOUGLAS	ROUTE 8, BOX 80	NEOSHO	0	0	D						0
0011346A		WYLIE	EARL G.	RT 6 BOX 290B	NEOSHO	0	0	D						0
0011350A		BETZ	RICHARD	RT4	NEOSHO	0	0	D						0
0012254A		LAMPO	DON	RT 2	NEOSHO	0	0	D						0
0012255A		PERKINS	BILL	RT 1 BOX 85	GOODMAN	0	0	D						0
0014291A	CALVARY BAPT C	BAPTIST CHURCH	CLAVARY	903 W. SOUTH	NEOSHO	0	0	D						0
0014999A		SMITH	JAMES	RT.7	NEOSHO	0	0	D			20	25N	31W	365
0016252A		BUSHNELL	DAWN	RT 8	NEOSHO	0	0	D						0
0018149A		O'BRIEN	DONALD	STAR RT.	LANAGAN	0	0	D						0
0018160A		POGUE	TOMMY	R 1	GOODMAN	0	0	D						0
0018227A		BRADFORD	ROY L	R 6	NEOSHO	0	0	N						0
0018452A	LEGGETT & PLATT			ATTN: ROBERT ANDERSON	CARTHAGE	0	0	N						0
0018453A	LEGGETT & PLATT			ATTN: ROBERT ANDERSON	CARTHAGE	0	0	N						0

0053097A												
0053139A												
0058600A TELEDYNE NEOSHO												
0058607A												
0060111A												
0061910A												
0061931A												
0061939A												
0064523A MOARK EGG PRODUCTION												
0065790A												
0068064A												
0069602A												
0069640A												
0069641A												
0069658A												
0078091A												
0078122A												
0078132A												
0078152A												
0078967A												
0080945A												
0083240A												
0083248A												
0084054A												
0084056A												
0084504A												
0084512A												
0087610A												
0087683A												
0088414A												
0091638A												
0091862A												
0091874A												
0091886A												
0091981A												
0092049A												
0094439A												
0094440A												
0094456A												
0094465A												
0094467A BARNHILL POULTRY												
0096359A												
0096370A												
0099510A												
0099529A												
0104037A												
0111300A NEWTON-MCDONALD CO.LANDFL												
0111111A NEWTON MCDONALD CO.LANDFL												

ROBERSON	M /	RT. 2, BOX 265.	GRANBY	0	0 D							0
LEDBETTER	C/	(DOLENCE)	NEOSHO	0	0 D							0
		3551 DONIPHAN DRIVE	NEOSHO	0	0							0
BARNES	LARRY	RT 2 BOX 323	NEOSHO	0	0							0
BRODIE	JOHN H	RT 4 BOX 352	NEOSHO	0	0 D							0
JARRETT	MORRIS	P O BOX 28	NEOSHO	0	0 D	NW	SE	20	25N	31W		343
MATTHEWS	FREDRICK	RT 7 BOX 323AA	NEOSHO	0	0 D							0
LOWE	DALE	R R 5 BOX 30	NEOSHO	0	0 D	SE	NW	21	25N	31W		507
		RT 6 BOX 291	NEOSHO	0	0							0
BOSWELL	CARL	P O BOX 516	NEOSHO	0	0 D	SE	SE	21	25N	31W		466
LANKFORD	RONALD A	RT 3 BOX 196B	NEOSHO	0	0 D							0
BROCK	CHARLES	RT 5 BOX 132A	NEOSHO	0	0 D	NW	NW	22	25N	31W		507
FREUND	SCOTT	RT 4 BOX 308E	NEOSHO	0	0 O							0
KELLEY	J R	RT 2 BOX 2272	STELLA	0	0 O							0
BRIDGES	MARK	P O BOX 97	NEOSHO	0	0 D	NW	SW	20	25N	31W		302
TOMLINSON	CARL	RT. 7, BOX 408A	NEOSHO	0	0 D							0
LUPINI	LEO	RT 4	NEOSHO	0	0 D	NE	SW	20	25N	31W		405
SCHLAGEL	STAN	RT 7 BOX 430-D	NEOSHO	0	0 D	NW	NW	22	25N	31W		446
FREUND	JOE	RT 4 BOX 314A	NEOSHO	0	0 D							0
BUSSEY	RICH	RTE 4	NEOSHO	0	0 D							0
BOND	LES	707 PETERSON RD	NEOSHO	0	0							0
BRIDGES	MARK	PO BOX 1732	BRANSON	0	0 D	NW	SW	20	25N	31W		425
CASADY	CRAIG	RT 7 BOX 433B	NEOSHO	0	0 D	SE	NW	22	25N	31W		405
SPEARS	EDWARD L	RT 7 BOX 309	NEOSHO	0	0 D							0
SPEARS	EDWARD L	RT 7 BOX 309	NEOSHO	0	0 D							0
DILBECK	ROBERT L	817 HAWTHORNE DR	NEOSHO	0	0 D							0
BAILEY	PAUL	RR 7 BOX 381D	NEOSHO	0	0 D							0
FAULLUS	JEFF	RT 6 BOX 245A	NEOSHO	0	0 D							0
SCHMIDT	M. SEANN & JILLS	RT. 4 BOX 379C	NEOSHO	0	0 D							0
JESPERSON	DAVID	RT 6	NEOSHO	0	0							0
BEAVERS	LAVERNE	PO BOX 217	GOODMAN	0	0							0
ALLEN	KENT	RT 7	NEOSHO	0	0 D	NE	NW	22	25N	31W		487
JOHNSON	B. JOE & ANNA	RT 1 BOX 3090	DIAMOND	0	0 D	SW	SW	21	25N	31W		261
COURTNEY	JOHN	4033 DEER RIDGE RD.	NEOSHO	0	0 D							0
CHASE	ROBERT & LORETTA	RT 5 BOX 278	NEOSHO	0	0 D	NW	SW	21	25N	31W		569
TUBBS	JULIAN	RT 7 BOX 362	NEOSHO	0	0 D							0
BUSSEY	ERWIN	RT 4	NEOSHO	0	0 D							0
GRIFFITH	PAT	RT 7	NEOSHO	0	0 D							0
WALTERS	ROBERT	RT 5 BOX 36C	NEOSHO	0	0 D			21	25N	31W		585
TAYLOR/MOORE	ANN/MYLI	115 CEDAR RIDGE RD	NEOSHO	0	0 D	SE	SE	22	25N	31W		505
		PO BOX 611	NEOSHO	0	0 D							0
COLLINS	ALLEN	230 NEOSHO BLVD	NEOSHO	0	0							0
WILLIAMS	JERRY	RT 6	NEOSHO	0	0							0
PATTERSON	JERRY	RT 4 BOX 423-A	NEOSHO	0	0 D	NW	NW	22	25N			0
DURBIN	TERRY	RT 8 PORT 8 BOX 333	NEOSHO	0	0 D							0
FARBER	RUDOLPH	RT 3 BOX 230B	NEOSHO	0	0							0
		525 AUSTIN AVE.	NEOSHO	0	0 M							0
		525 AUSTIN AVE.	NEOSHO	0	0 M							0

0120178A							
0120191A	TELFORD	ADAM	430 SOUTH VALI	NEOSHO	0	0 D	0
0120201A	MANION	CH	RT 8	NEOSHO	0	0 D	0
0134008A	GRIFFIN	VA	RT 1	GOODMAN	0	0 D	0
0134023A	SHOWALTER	ED	8 COVENTRY DR.	BELLA VISTA	0	0 D	0
	STAFFORD	CLINT & MARY	RT 2 BOX 2368	GRANBY	0	0 D	0

Wells [illegible]

REFNUM	BUSINESS_N	OWNER_LAST	OWNER_FRST	OWN_ADD_1	CITY	CASING_L	SWL	USE	Q_2	Q_1	SEC	TWN	RNG	TOTAL_DPTH
0007145A		BEASLEY	CHARLES	ROUTE 2, BOX 275A	NEOSHO	80	100	D	NE		32	25N	32W	455
0052357A		FRIEND	RONNIE	RT 7 BOX 313A	NEOSHO	0	0		NE	NE	32	25N	32W	0
0006834A		THEAS	CHARLIE	ROUTE 8	NEOSHO	0	0	D	NE	NE	33	25N	32W	0
0012448A		WOOD	ADRAIN	423 DODGE STREET	DELTA	84	160	D	SE	SW	33	25N	32W	446
0069610A		CASEY	DOROTHY E	RT 3 BOX 407E	NEOSHO	84	300	D	SE	SW	33	25N	32W	446
0084528A		RIOS	PONCY	329 VETA ST	NEOSHO	84	250	D	SW	SE	33	25N	32W	466
0096361A		MORGAN	JIM	RT 2 BOX 55	GOODMAN	80	0		SW	SW	33	25N	32W	655
0099570A		BISHOP	ED	RT 1 BOX 195A	SENECA	84	240	D	SW	SE	33	25N	32W	487
0012636A		VALDOIS	JERRY	1501 PINEVILLE	NEOSHO	86	150	D	SE	SW	34	25N	32W	451
0001544A		BRIDGES	GARY	RT 8 BOX 370	NEOSHO	63	150	D	NE	SW	34	25N	32W	446
0052338A		FORBES	AL	RT 6 BOX 29	NEOSHO	1	0		NW	NW	34	25N	32W	0
0091888A		GRAY	ROBERT	PO BOX 363	NEOSHO	84	200	D	SW	SW	34	25N	32W	446
0080945A		BOND	LES	707 PETERSON RD	NEOSHO	85	32				35	25N	32W	750
0096370A		WILLIAMS	JERRY	RT 6	NEOSHO	80	0		NW	SE	35	25N	32W	480
0011346A		WYLIE	EARL G.	RT 6 BOX 290B	NEOSHO	126	240	D			36	25N	32W	505
0014291A	CALVARY BAPT C	BAPTIST CHURCH	CLAVARY	901 W. SOUTH	NEOSHO	0	0	D	NW	SE	36	25N	32W	460
0002063A		DALTON	DAVID	RT 7 BOX 198	NEOSHO	147	220	D	SW	SE	36	25N	32W	446
0007155A		CUPPS	GENE	RT. 7, BOX 18	NEOSHO,	141	120	D	SE	NE	36	25N	32W	445
0010136A		CUPPS	GENE	ROUTE 7, OBX 18	NEOSHO	0	0	D	SE	NE	36	25N	32W	0
0041684A		HAUGHT	TREVA	RT 7 BOX 160	NEOSHO	105	120		SW		36	25N	32W	446
0012254A		LAMPO	DON	RT 2	NEOSHO	100	0	D			26	25N	32W	630
0058607A		BARNES	LARRY	RT 2 BOX 323	NEOSHO	0	0		SE	NW	26	25N	32W	497
0053139A		LEDBETTER	CARL	(DOLENCE)	NEOSHO	84	280	D	SW	NE	26	25N	32W	625
0091884A		COURTNEY	JOHN	4033 DEER RIDGE RD.	NEOSHO	84	150	D	SW	NE	26	25N	32W	446
0096359A		COLLINS	ALLEN	238 NEOSHO BLVD	NEOSHO	120	0				26	25N	32W	480
0119318A		DAUGHERTY	MARK	4071 DEER RIDGE	NEOSHO	84	120	D	NW	NE	26	25N	32W	363
0134008A		SNOWALTER	ED	8 COVENTRY DR.	BELLA VISTA	84	200	D	NE	NE	26	25N	32W	405
0003074A		LAUDERDALE	JIM	409 BENHAM	NEOSHO	84	160	D	NW	NE	27	25N	32W	466
0004258A		LAUDERDALE	JIM	RT. 8	NEOSHO	0	0	D	NE	SE	27	25N	32W	0
0069651A		BARRETT	JEF	RT 2 BOX 306AA	NEOSHO	84	280	D	SE	SW	27	25N	32W	528
0080994A	RAGLAND MILLING CO			RT 8	NEOSHO	85	100				27	25N	32W	725
0018262A		BRAMAN	WES	1739 WORNALL DR	NEOSHO	80	0	D			27	25N	32W	505
0099674A		ALLISON	WAYNE	RT 8	NEOSHO	80	0				27	25N	32W	505
0003074A		LAUDERDALE	JIM	409 BENHAM	NEOSHO	84	160	D	NW	NE	27	25N	32W	466
0069651A		BARRETT	JEF	RT 2 BOX 306AA	NEOSHO	84	280	D	SE	SW	27	25N	32W	528
0080994A	RAGLAND MILLING CO			RT 8	NEOSHO	85	100				27	25N	32W	725
0018262A		BRAMAN	WES	1739 WORNALL DR	NEOSHO	80	0	D			27	25N	32W	505
0099674A		ALLISON	WAYNE	RT 8	NEOSHO	80	0				27	25N	32W	505
0001645A		KETCHAM	JOHN	705 RIPLEY	NEOSHO	42	40	D	SW	SW	28	25N	32W	140
0004246A		KETCHAM	GREG	705 RIPLEY	NEOSHO	0	0	D	SW	SW	28	25N	32W	0
0064612A		EADS	CHRIS	328 ROCKHILL RD	NEOSHO	0	0		NW	SE	28	25N	32W	519
0064546A		KENNEDY	JERRY	RT 8	NEOSHO	84	290				28	25N	32W	450
0078151A		BAKER	MIKE	RT 2 BOX 63	NEOSHO	84	160	D	NW	NW	28	25N	32W	405
0118134A		MURPHY	MIKE	RT 7 BOX 321	NEOSHO	84	0	D	NE	SE	29	25N	32W	200

0064517A														
0018167A														
0018149A														
0032149A	U.S. DEPT. OF ENERGY													
0002479A														
0004247A														
0087610A														
0052319A	JOHN STARRETT SNACK ATT													
0091638A														
0064569A														
0090484A														
0000782A														
0005884A														
0006353A														
0044568A														
0018227A														
0058600A	TELEDYNE NEOSHO													
0064523A	MOARK EGG PRODUCTION													
0010617A														
0104037A														
0111300A	NEWTON-MCDONALD CO.LANDFL													
0111337A	NEWTON-MCDONALD CO.LANDFL													
0111342A	NEWTON-MCDONALD CO.LANDFL													
0111343A	NEWTON-MCDONALD CO.LANDFL													
0111344A	NEWTON-MCDONALD CO.LANDFL													
0111345A	NEWTON-MCDONALD CO.LANDFL													
0111346A	NEWTON-MCDONALD CO.LANDFL													
0111348A	NEWTON-MCDONALD CO.LANDFL													
0120178A														
0018452A	LEGGETT & PLATT													
0111338A	NEWTON-MCDONALD CO.LANDFL													
0111339A	NEWTON-MCDONALD CO.LANDFL													
0111340A	NEWTON-MCDONALD CO.LANDFL													
0111341A	NEWTON-MCDONALD CO.LANDFL													
0032135A														
0094467A	BARNHILL POULTRY													
0119306A														
0119307A														
0119316A														
0010660A														
0007983A														
0065777A														
0096355A														
0120206A														
0028541A														
0092022A														
0096362A														
0088414A														

DRAKE	CAR	RT 1	GOODMAN	81	400					23N 32W	705
RAYBURN	SCOT	PO BOX 62	GOODMAN	0	0	D				23N 32W	430
O'BRIEN	DONALD	STAR RT.	LANAGAN	29	0	D			03	24N 32W	605
SOUTHWEST POWER		P O BOX 1619	TULSA	0	0				04	24N 32W	455
KEELS	GEORGE	RT 6 BOX 240A	NEOSHO	83	180	D	SW	SW	05	24N 32W	405
KEELS	GEORGE	RT. 6 BOX 240A	NEOSHO	0	0	D	SW	SW	05	24N 32W	0
FAULLUS	JEFF	RT 6 BOX 245A	NEOSHO	84	180	D	SW	SW	05	24N 32W	425
		RT 6 BOX 298	NEOSHO	26	0				05	24N 32W	0
BEAVERS	LAVERNE	PO BOX 217	GOODMAN	100	0				05	24N 32W	485
BADS	DAVID	RT 8 BOX 56E	NEOSHO	0	0		SW	NE	07	24N 32W	406
BUCHANAN	HARRY	RT 3	NEOSHO	80	0				07	24N 32W	430
AUTO SALES	CREDIT WORLD	BOX 209	NEOSHO	105	80	D	NE	NE	08	24N 32W	445
WILLIAMSON	PAUL	RT. 6 BOX 33A	NEOSHO	84	100	D	SE	NE	08	24N 32W	405
WILLIAMSON	PAUL	3506 GREENWOOD BLVD.	NEOSHO	0	80	F	SE	NE	08	24N 32W	0
HOPPER	HERMAN	RT 6 BOX 104	NEOSHO	84	120		SE	SE	08	24N 32W	466
BRADFORD	ROY L	R 6	NEOSHO	250	0	N			08	24N 32W	555
		3551 DONIPHAN DRIVE	NEOSHO	84	100		NE	NE	10	24N 32W	306
		RT 6 BOX 291	NEOSHO	84	395				13	24N 32W	680
FELKER	DOUGLAS	ROUTE 8, BOX 80	NEOSHO	0	0	D	NW	NW	15	24N 32W	481
FARBER	RUDOLPH	RT 3 BOX 230B	NEOSHO	0	0		NE	NE	15	24N 32W	0
		525 AUSTIN AVE.	NEOSHO	0	0	M	SW	SW	15	24N 32W	20
		525 AUSTIN AVE.	NEOSHO	0	0	M	SW	SW	15	24N 32W	20
		525 AUSTIN AVE.	NEOSHO	0	0	M	SE	SW	15	24N 32W	9
		525 AUSTIN AVE.	NEOSHO	0	0	M	SE	SW	15	24N 32W	9
		525 AUSTIN AVE.	NEOSHO	0	0	M	SW	SW	15	24N 32W	18
		525 AUSTIN AVE.	NEOSHO	0	0	M	SW	SW	15	24N 32W	33
		525 AUSTIN AVE.	NEOSHO	0	0	M	SW	SW	15	24N 32W	38
TELFORD	ADAM T.	438 SOUTH VALLEY	NEOSHO	0	0	M	SW	SW	15	24N 32W	36
		ATTN: ROBERT ANDERSON	CARTHAGE	80	0	D			16	24N 32W	655
		525 AUSTIN AVE.	NEOSHO	0	0	M	SW	SE	16	24N 32W	17
		525 AUSTIN AVE.	NEOSHO	0	0	M	SW	SE	16	24N 32W	8
		525 AUSTIN AVE.	NEOSHO	0	0	M	SE	SE	16	24N 32W	18
		525 AUSTIN AVE.	NEOSHO	0	0	M	NW	SE	16	24N 32W	9
WILLIAMS	LONNIE	ROUTE 6	NEOSHO	0	0	M	NE	SE	16	24N 32W	30
		PO BOX 611	NEOSHO	84	340				17	24N 32W	455
COHU	GARY	RT 6 BOX 41C	NEOSHO	100	180	D			17	24N 32W	605
COHU	GARY	RT 6 BOX 41C	NEOSHO	84	200	D	SE	NE	17	24N 32W	507
COHU	GARY	RT 6 BOX 41C	NEOSHO	84	250	D	SE	NE	17	24N 32W	487
BRADFORD	ROY L.	RT. 6	NEOSHO	84	250	D	SE	SW	17	24N 32W	650
MERRIMAN	JOHN	RT. 4, BOX 643	NEOSHO	85	0	D			18	24N 32W	680
RICHARDSON	PAUL & LINDA	RT 6 BOX 69	JOPLIN,	0	350	D	SW	SE	18	24N 32W	556
BILL	ROY	RT 3	NEOSHO	84	140	D	SW	SW	18	24N 32W	610
BONNABEND	GARY	RT 6	NEOSHO	80	0				18	24N 32W	455
SIMMIONS	ROY	ROUTE 3 BOX 132	NEOSHO	0	0	D			18	24N 32W	480
POWELL	SLADE	RT 6	NEOSHO	0	0				19	24N 32W	705
BILL	ERVIN & WILMA	PO BOX 262	NEOSHO	84	200	D	NE	SE	19	24N 32W	466
			NEOSHO	80	0		SW	SW	19	24N 32W	455

0120174A		WOODS	TOMMY	RT 3 BOX 1615	NEOSHO	80	0	D			33	24N	32W	655
0004144A	SHENANDOAH RESTAURANT	KINSCH	JIMMIE R.	R.R. 1	GOODMAN	0	0	P			34	24N	32W	505
0032147A		NEWTON	JERRY & JANICE	RT. 6	NEOSHO	0	0				34	24N	32W	645
0120175A		BRYANT	CLAYTON	RT 1	GOODMAN	0	0	D			34	24N	32W	630
0120201A		GRIFFIN	VAUGHN	RT 1	GOODMAN	0	0	D			34	24N	32W	0
0040271A		SARRATT	JOHN	BOX 187	GOODMAN	85	80	D			35	24N	32W	505
0084504A		DILBECK	ROBERT L	817 HAWTHORNE DR	NEOSHO	84	200	D	NE	SE	35	24N	32W	630
0069640A		FREUND	SCOTT	RT 4 BOX 308E	NEOSHO	84	300	O	NW	NW	36	24N	32W	528

Reference 24

ecology and environment, inc.
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MEMORANDUM

TO: Paul Doherty, EPA/SPFD/SARS

FROM: Scott Hayes, E & E/TATM

THRU: Joe Chandler, E & E/TATL

DATE: June 9, 1995

SUBJECT: Site Inspection Trip Report: Neosho Wells Site, Neosho, Missouri
CERCLIS ID: MO0000958835
TDD: T07-9411-510C
PAN: EMO1183SAA
EPA/SAM: Paul Doherty

CC: Roy Crossland, EPA/DPO

INTRODUCTION

The Ecology and Environment, Inc. (E & E), Technical Assistance Team (TAT) was tasked by the U.S. Environmental Protection Agency (EPA) Site Assessment and Response Support (SARS) Section under Technical Direction Document (TDD) T07-9411-510C to conduct a preliminary assessment (PA) and site inspection (SI) at the Neosho Wells site in Neosho, Missouri (Attachment 1: Site Location Map). The objectives of the investigation were to determine the source(s) of volatile organic compounds (VOCs) contamination of ground water at the site and to characterize the overall extent of VOC contamination in domestic ground water wells in the site's vicinity. In order to achieve these objectives, TAT was tasked to conduct a soil gas investigation to determine the source(s) of contamination and conduct domestic well sampling to learn the areal extent and the degree of contamination in domestic wells. Paul Doherty was assigned as the EPA Site Assessment Manager (SAM). TAT member (TATM) Scott Hayes was assigned as the TAT Project Manager.

BACKGROUND

Site Location and Description

The site is located in Newton County, approximately 2.5 miles south of Neosho, Missouri. The contaminated residential wells identified to date are located in Sections 17 and 20, T24N, R32W. The

well that has exhibited the most extensive contamination from past sampling events (Shockley) is located just west of the intersection of County Road 14-D and U.S. Highway 71.

The area's land use is characterized as mixed rural/industrial. The Crowder Industrial Park extends south to within a half mile (east) of the Shockley well, which is located directly across Highway 71. Also located within a mile of the Shockley well are the Neosho Memorial Airport, the Newton-McDonald County Landfill, the Missouri National Guard's Camp Crowder, and several businesses along Highway 71 (Figure 3).

Little is known about the geologic conditions and direction of ground water flow in the area of the site. The area is characterized by karst topography and, therefore, various directions of ground water flow may exist. General ground water flow in the area is to the west. One dye trace test performed by MDNR's Division of Geology indicated ground water flow to the northwest. The test was conducted in Sections 7, 17 and 18 of T24N, R32W and Sections 12 and 13 of T24N, R33W. These sections are approximately 1 mile west of U.S. Highway 71 (Reference 1).

Site History

On July 20, 1994, the Newton County Health Department (NCHD) received a citizen's complaint of a leaking gas tank at the Southgate Truck Plaza located immediately north of the intersection of County Road 14-D and U.S. Highway 71. The complainant alleged that their family's well, located at the first house west of Highway 71 on County Road 14-D, had been contaminated by the leaking tank. NCHD notified the Missouri Department of Natural Resources (MDNR) of the complaint. MDNR agreed to investigate the possibility of a leaking underground or aboveground storage tank (UST or AST, respectively). By August 24, 1994, NCHD had not received a response from MDNR. NCHD contacted MDNR, which stated that its AST investigation had not determined any leak from the Southgate Truck Plaza. However, MDNR suspected a possible leaking UST from an abandoned service station located immediately south of the Southgate Truck Plaza on the northwest corner of the intersection of County Road 14-D and Highway 71 (Reference 2).

On August 30, 1994, NCHD sampled the well of the complainant. NCHD stated that results of the analysis reported no gasoline, but eight other VOCs (including some chlorinated ones), were detected. Most notably, trichloroethylene (TCE) and carbon tetrachloride (CCl_4) were detected at 110 micrograms/liter (μg/L) and 5.2 μg/L, respectively (Reference 3). On September 8, 1994, MDNR was notified of the results (Reference 4). The maximum contaminant level (MCL) for both TCE and CCl_4 is 5 μg/L. MCLs are the maximum permissible level of specific contaminants in water that is delivered to any user of a public water system, as established by the Safe Drinking Water Act. Because the Neosho wells are not a public water system, MCLs would not strictly apply.

In September 1994, NCHD received requests for sampling from residents neighboring the Shockley residence. NCHD selected four wells for sampling based on well depth and distance from the Shockley well. TCE was detected in three of the four wells, although two of these were below the MCL. TCE was detected above the MCL in the third well at 25 μg/L (Reference 5).

Additional followup sampling was conducted by NCHD in October and November 1994, when six additional private wells, including the Mother Goose Day-Care facility were sampled. No VOCs were detected in the well at the day-care facility. Chloromethane was detected in two wells at 0.4 μg/L. TCE was detected in one well at 0.9 μg/L (Reference 6).

On October 26, 1994, MDNR conducted sampling at 13 residential wells. VOCs were detected in five of these wells. TCE was detected in five of these wells at concentrations ranging from 1.1 µg/L to 115 µg/L (Shockley well). Four of these wells had TCE concentrations above the MCL. CCl_4 was detected in four wells at concentrations ranging from 0.5 µg/L to 5.1 µg/L (Shockley well). Only the Shockley well had a CCl_4 concentration above the respective MCL (Reference 7). MDNR and NCHD sample results are summarized in Table 1 (Attachments).

On October 21, 1994, MDNR referred the site to EPA for a possible removal action. On November 14, 1994, EPA contacted TAT and initially requested sampling of residential wells to determine if an alternative water supply could be warranted as part of a removal action. As of November 14, 1994, no contaminant's concentration had exceeded their respective removal action levels (RALs), although contaminants had been detected in 10 domestic wells. RALs are drinking water concentrations of contaminants that are considered, along with other factors, in determining whether to provide alternate water supplies under Superfund removal authority. EPA also requested TAT to conduct a soil gas study at a later date to potentially determine the source(s) of contamination and aid in the completion of a Preliminary Assessment (PA) and Site Inspection (SI).

SITE ACTIVITIES

November 28-December 1, 1994:

A two-member TAT team of Hayes and Buck Brooks and EPA SAM Doherty mobilized to the site on November 28, 1994, to collect domestic well samples and conduct background research to determine potential sources of VOCs contamination in the area of the contaminated wells. TAT and EPA conducted a reconnaissance of the area, including the Crowder Industrial Park (CIP), and identified businesses and industries in the area.

On November 29, 1994, TAT and Doherty met with NCHD Environmental Sanitarians Rebecca Heffren and Rayna Broadway to discuss EPA's activities. NCHD provided a list of domestic wells that had been previously sampled. NCHD's representatives also indicated that their primary potential sources were industries in the CIP that use or have used TCE, UST's at the Southgate Truck Plaza and an adjacent abandoned service station, and other businesses along U.S. Highway 71.

Also on November 29, 1994, TAT met with the Local Emergency Planning Committee (LEPC) Director and Neosho Assistant Fire Chief Mike Goldsworthy. The Neosho Fire Chief was also present for part of the meeting. Goldsworthy had compiled Tier II reports submitted to him, as required under Title III of the Superfund Amendment and Reauthorization Act of 1986, for facilities south of U.S. Highway 60. TAT and EPA reviewed the reports and noted facilities that use or used solvents in their operations. The Neosho Fire Chief informed TAT that the "900 Building" at the CIP, now owned by Sabreliner Corporation, was Camp Crowder's laundry facility until the Korean War. The Neosho Fire Chief also informed TAT of two incidents that occurred within the past year in the site's vicinity that might have been solvent-related. He said there was an incident of leaking drums at the old Camp Crowder jail involving Dwyer Enterprises. He said local authorities conducted excavation and disposal of the contaminated soil. The City of Neosho owns the property where the incident occurred. In a second incident, a building on Highway 71 approximately 0.5 miles north of the Shockley well burned down. The fire chief said that solvents may have been present in the fire. He said the building was owned and operated by Hoppy Lines Trucking Company.

While sampling the domestic well at the Shockley residence on November 29, 1994, TAT interviewed Lyle Fisher of Goodman, Missouri. Fisher said he was employed at the former service station (referenced in the Site History section) from approximately 1965 to until 1979, when it was abandoned. He said the owner of the service station was Kenneth Plumley, whom he believed currently resides in Bentonville, Arkansas. . Fisher claimed that there had been USTs at the service station since the 1930s. He stated that no dumping of solvents occurred at the service station during his employment there. The only cleaning agent he recalled being used at the service station was a product he referred to as "Mr. Clean". Fisher also claimed he witnessed the leak at the Southgate Truck Plaza that was referred to in the original complaint that led to TAT's inspection. He described the leak as saturating the ground with gasoline. He said the soil was dug up and buried, though he did not specify the burial location.

Water Sampling

On November 29 and 30, 1994, TAT collected 23 water samples, including two duplicates and one field blank. All TAT, MDNR, and MCHD domestic well sample locations are indicated on Figure 2 of Attachment 1. Three surface water samples were collected on the Missouri National Guard's Camp Crowder from springs located south of the Newton-McDonald County Landfill (Attachment 1; Figure 3). Surface water samples were collected directly into four 40-milliliter (ml) volatile organic analysis (VOA) vials. Seventeen samples were collected from 15 domestic wells, including nine that had been previously sampled by NCHD or MDNR. Domestic well samples were collected from a hydrant or spigot located as near as possible to the well, before any filter or treatment system. The only exception was a postfilter sample collected at the Honey House to compare to the prefilter sample. Wells were purged for approximately 5 minutes and field parameters (pH, temperature, and conductivity) were measured for stability to insure that all lines were purged. All well and surface water samples were preserved with hydrochloric acid (HCL) and were placed on ice. New surgical gloves were worn for each sample to avoid cross-contamination. Samples were submitted on December 1, 1994, to the EPA Region VII Laboratory under activity DSX90 for lower detection limit (LDL) VOCs analysis.

Results of the analyses are summarized in Table 2. Thirteen VOCs were detected during the sampling event. TCE was detected in nine wells at concentrations ranging from 0.6 to 150 µg/L (Shockley). Five of the wells detected TCE concentrations above the MCL of 5 µg/L. CCl_4 was detected in four wells at concentrations ranging from 1 to 5 µg/L (Shockley). The Shockley well had CCl_4 at its MCL of 5 µg/L. None of the 11 other VOCs were detected above their respective MCLs. No contaminants were detected above their respective RALs.

Table 2

DOMESTIC WELLS AND SPRINGS SAMPLES WHERE VOCs WERE DETECTED
NOVEMBER 29-30, 1994 (DSX90) and March 4-7, 1995 (DSX03)
NEOSHO WELLS SITE
NEOSHO, MISSOURI
TO7-9411-510/EMO1183SAA

Sample Number	Owner/ Description	Well Depth (feet)	Contaminants (µg/L)							
			Chloroform	CCl_4	TCE	PCE	Ethyl-benzene	CS_2	1,2-(cis)-DCE	Other VOCs Detected
DSX90-001	Shockley (kitchen)	60-65	1	4	150	0.3	0.3	U	2	
DSX90-002	Shockley (at well)	60-65	1	5	150	0.3	U	7	1	Chloromethane = 2 (no MCL)
DSX03-068	Shockley (at well)	60-65	1	5	130	U	U	U	2	1,1 Dichloroethane = 0.6 (no MCL)
DSX90-003	Morrison, P. (Rosev. owner)	Unknown	0.7	4	48	U	U	5	0.7	
DSX03-066	Morrison, P. (Rosev. owner)	Unknown	0.5	5	40	U	U	U	U	
DSX90-004(*)	Naylor, G.	23.5	U	U	U	U	0.3	U	U	
DSX90-005	Honey House-Johnson, B. (prefilter)	~50	U	U	U	U	0.3	U	U	
DSX90-006	Honey House-Johnson, B. (postfilter)	~50	U	U	U	U	0.3	U	U	
DSX03-065	Honey House-Johnson, B. (postfilter)	~50	0.7	U	3	U	U	U	U	
DSX03-065D	Honey House-Johnson, B. (postfilter)	~50	0.6	U	U	U	U	U	U	
DSX90-007	Jackson, E.	35	0.8	3	60	0.3	0.3	U	0.9	
DSX03-049	Jackson, E.	35	U	0.8	15	U	U	U	U	
DSX90-008(*)	Herrin, R.	240-247	U	U	U	U	U	U	U	
DSX90-012	Southgate Truck Plaza (Rosey, Owner)	280	U	U	1	U	U	U	U	
DSX90-013	Rhodes, N.	Unknown	0.5	1	8	U	U	U	U	
DSX90-013D	Rhodes, N. (Duplicate)	Unknown	0.4	1	8	U	U	U	U	
DSX03-067	Rhodes, N.	Unknown	0.5	4	38	U	U	U	U	
DSX90-014	Herrin, C. (prefilter)	230	U	U	1	U	U	U	U	1,3-(meta) Dichlorobenzene = 0.4 1,2-(ortho) Dichlorobenzene = 0.4 (MCL for both = 600)

Table 2

DOMESTIC WELLS AND SPRINGS SAMPLES WHERE VOCs WERE DETECTED
NOVEMBER 29-30, 1994 (DSX90) and March 4-7, 1995 (DSX03)
NEOSHO WELLS SITE
NEOSHO, MISSOURI
TO7-9411-510/EMO1183SAA

Sample Number	Owner Description	Well Depth (feet)	Contaminants (µg/L)							
			Chloroform	CCl_4	TCE	PCE	Ethyl-benzene	CS_2	1,2-(cis)-DCE	Other VOCs Detected
DSX03-052	Herron, C. (prefilter)	230	U	U	1	U	U	U	U	
DSX90-015(a) (Not sampled under DSX03)	Mahan, L.	500-550	U	U	2	U	U	U	U	
DSX90-016(a)	Flint, M.	555	U	U	U	U	U	U	U	
DSX90-018(a)	Sprenkle, H., Sr.	505	0.4	U	U	U	U	U	U	
DSX90-019	Sprenkle, S.	247	0.5	U	12	U	U	U	U	
DSX03-048	Sprenkle, S.	247	U	0.7	10	U	U	U	U	
DSX90-020(a)	Smith, G. (Bradford, owner)	605	U	U	0.6	0.4	U	U	U	methyl ethyl ketone = 12 (no MCL)
DSX90-020D		605	U	U	0.6	U	U	U	U	methyl ethyl ketone = 14 styrene = 0.4 (MCL = 100)
3-013(b)	Urrutia, E.	600-660	U	U	U	U	U	U	U	chloromethane = 2
DSX03-013D	Urrutia, E.	600-660	U	U	U	U	U	U	U	chloromethane = 3
DSX03-018(b)	Hopper, H.	440	U	U	U	U	U	U	U	chloromethane = 2
DSX03-020(b)	Reynolds, R.	Unknown	U	U	U	U	U	U	U	chloromethane = 2
DSX03-035(b)	Jamison, J.	40	U	U	U	U	U	U	U	chloromethane = 2
DSX90	Spring north of Hammon Spring	NA	U	U	U	0.3	U	U	U	
DSX03-069(b)	Mother Goose Day-Care	Unknown	12	U	U	U	U	U	U	
DSX90-021F	Field Blank	NA	0.5	U	U	0.3	0.3	U	U	acetone = 22 (no MCL) 1,2-(ortho) Dichlorobenzene = 0.5
NA	MCL RAL	NA NA	80 100	5 30	5 300	5 70	700 1,000	no MCL no RAL	70 400	

Key:

NA = Not applicable.
U = Actual value of sample is < the measurement detection limit.
* = All non-detect in March 1995.
a = Not sampled in March 1995.
b = Not sampled in November 1995.

On November 29, 1994, sample DSX90-022 was collected from a 5-gallon container holding liquid found on the abandoned service station property. The sample was submitted for VOC analysis along with the water samples. Analysis indicated the presence of benzene (240 µg/L), toluene (10,000 µg/L), ethyl benzene (4,600 µg/L), acetone (360 µg/L), methyl ethyl ketone ([MEK][320 µg/L]), 2-hexanone (56 µg/L), styrene (160 µg/L), and total xylenes (21,300 µg/L).

On December 1, 1994, Goldsworthy contacted Hayes and informed him that Neosho City Manager Jim Cole had information on the alleged disposal of 6 to 12 drums, potentially containing TCE, at the Newton-McDonald County Landfill. On December 16, 1994, Hayes interviewed Cole concerning the alleged disposal of drums at the landfill. A summary of the interview was submitted in a memorandum to EPA SAM Doherty.

As a result of interviews and research, TAT and EPA determined the following businesses and facilities to be the primary potential sources to be targeted for sampling during a soil gas investigation at a later date:

1) Sabreliner Corporation (formerly Teledyne Neosho and Rocketdyne),

2) "900 Building" (owned by Sabreliner),

3) Newton-McDonald County Landfill,

4) Neosho Memorial Airport,

5) former Camp Crowder jail building (owned by the City of Neosho),

6) Kansas City Southern Railroad rights-of-way,

7) Southgate Truck Plaza and adjacent abandoned service station,

8) Hoppy Lines Trucking Company.

December 12-15, 1994:

On December 12, 1994, EPA requested TAT sample the monitoring wells at the Newton-McDonald County Landfill, while TAT was in the Neosho area on unrelated site work. Ten monitoring wells were located around the perimeter of the site. Eight wells were sampled, one was dry, and one well was not sampled due to limited time and resources allowed in preparation for the sampling event. The monitoring wells were purged of 3-times the volume of standing water in each well utilizing disposable polyethylene bailers. Field parameters were measured for stability and then samples were collected. New surgical gloves were donned before each sample was collected to avoid cross contamination. Samples were collected in four 40-ml VOA vials, preserved with HCL, and placed on ice. Samples were submitted for LDL VOCs analysis to the Region VII EPA Laboratory on December 15, 1994, under activity DSX94.

No VOCs were detected in seven of the wells sampled. Eight VOCs were detected in monitoring well (MW) 109, which was located at the southwest corner of the landfill. The depth of the well was approximately 38 feet. VOCs detected that had been previously detected by EPA in domestic wells at

the site included 1,2-DCE (45 μg/L), TCE (12 μg/L), ethyl benzene (27 μg/L), and total xylenes (33 μg/L). Chloroethane (23 μg/L) and 1,1-dichloroethane (29 μg/L) were detected in MW 109 and previously by MDNR and/or NCHD in at least one domestic well at the site. Vinyl chloride (26 μg/L) and toluene (15 μg/L) were also detected in MW 109, though not previously detected in domestic wells at the site. Results for sample number DSX94-007 (MW 109) are summarized in Table 3.

Table 3

SELECTED ANALYTICAL RESULTS FOR NEWTON-MCDONALD COUNTY LANDFILL MONITORING WELLS
DECEMBER 13-14, 1994 (DSX94) AND MARCH 8-9, 1995 (DSX04)
NEOSHO WELLS SITE
NEOSHO, MISSOURI
T07-9411-510A/EMO1183SAA

Sample Number	Well Number	Well Depth (feet)	Static Water Level (feet)	Contaminants(µg/L)													
				Vinyl Chloride	Chloro-ethene	1,1-DCA	1,2-DCE (total)	1,2-DCE (cis)	Benzene	TCE	PCE	Toluene	Chloro-benzene	Ethyl-benzene	Methyl 2 Pentanone	Xylenes (total)	1,4-Dichloro-benzene
DSX94-007	109	38	32	26	23	29	45	--	K	12	K	15	K	27	K	33	--
DSX04-002	109	38	30	57	14	16	--	15	6	3	0.5	3	0.3	12	U	8	2
DSX04-001	116	29	6.5	U	U	0.5	U	U	0.3	U	U	U	1	U	U	U	0.7
DSX04-003D	110	50	29	U	U	U	U	U	U	U	U	U	U	U	0.9	U	U
DSX04-009	113	133	56	Di-N-Butyl-, Phthalate = 12													

Key:

-- = Not reported.
K = Actual value was < 10 µg/L.
U = Actual value has < measurement detection limit.

Samples collected on December 13-14, 1994, under DSX94 were submitted to the Region VII EPA Laboratory for LDL VOCs analysis. Samples collected under DSX04 on March 8-9, 1995, were submitted to the same laboratory for LDL VOCs and semivolatiles analysis. Samples not reported above were non-detect for all analyses.

March 6-10, 1995:

On March 6, 1995, EPA requested that TAT, on short notice, resample the 10 monitoring wells at the Newton-McDonald County Landfill. The EPA had just learned that the wells were scheduled to be decommissioned and replaced with new wells on orders from MDNR. EPA requested that MDNR allow a delay in the decommissioning of the wells until TAT could sample them.

A three-member TAT team of Hayes, John Davis, and Sam Mudumala mobilized to the site on March 7, 1995. TAT began sampling on March 8, 1995. Sampling was conducted in the same manner as described for the sampling conducted on December 12, 1995. The only exception was that a Waterra inertial pump and disposable polyethylene tubing were used to purge the deeper wells. These four monitoring wells were purged dry and allowed to recharge overnight. All monitoring wells were sampled with disposable polyethylene bailers. MW 114 was dry and could not be sampled. Each sample consisted of one 1-liter amber jar and two 40-ml VOA vials. Samples were submitted for semivolatiles (BNAs) and VOCs analyses to the Region VII EPA Laboratory on March 10, 1995, under activity DSX04.

Results of the analyses indicated the presence of at least one contaminant in MW 109, MW 110, MW 113, and MW 116 (Table 3). The five other sampled wells were non-detect for all analyses.

April 3-7, 1995:

On April 3, 1995, a five-member TAT team consisting of Hayes, Davis, Lynn Parman, Andrea Bond, and Chris Williams mobilized to the site to conduct domestic well sampling and on-site screening of subsurface soil or soil gas. Also, domestic well sampling was to be expanded in an effort to fully delineate the extent of domestic well contamination. Soil screening was to be conducted in the areas identified in November 1994, to assist with determining potential sources of contamination. Kansas City Southern Railroad properties were not sampled because access had not been granted.

Water Sampling

On April 3 through 6, 1995, TAT conducted domestic well sampling at the site. Environmental sanitarians from NCHD accompanied TAT during the sampling. TAT targeted all residences in an approximate 1-mile radius of the Shockley well located near Highway 71 and County Road 14-D. TAT completed well survey forms, with resident and well information for each domestic well. Samples were collected in the same manner described for sampling conducted on November 29 and 30, 1994. TAT and EPA collected 54 water samples, including 46 samples from 45 domestic wells, two surface water samples, one ground water sample (collected with the Geoprobe and discussed in the following section), and five quality control (QC) samples. Each sample was collected in four 40-ml VOA vials and submitted to the Region VII EPA Laboratory for LDL VOCs analysis on April 7, 1995.

VOCs were detected in 12 of the 45 domestic wells sampled. The remaining 33 wells were non-detect for VOCs. TCE was detected in seven wells at concentrations ranging from 1 to 130 μg/L (Shockley). All of these wells had previously indicated TCE contamination. Only one well (Rhodes) showed an increased level of TCE, from 8 to 38 μg/L. The Rhodes well is located on County Road 14-D and is the furthest well west with TCE contamination. No TCE was present in any wells where it had not been detected previously. CCl_4 was detected in five wells at concentrations ranging from 0.7 to 5 μg/L. Only the S. Sprenkle well (0.7 μg/L) contained CCl_4 where it had previously not been detected.

Chloroform was detected in five wells at concentrations ranging from 0.5 to 12 μg/L, including the Mother Goose Day-Care (12 μg/L), where it had not been detected previously. The only other VOCs detected during this sampling event were chloromethane; 1,1-dichloroethane; and 1,2-(cis)-dichloroethylene at concentrations ranging from 0.6 to 3 μg/L. The only wells not sampled previously that had contamination were four wells where chloromethane was detected ranging from 2 to 3 μg/L. No other VOCs were detected in these wells. Results of this sample event are included on Table 4 (under sample Numbers DSX03-) and Figure 2. The surface water sample collected from the stream north of the former rocket test site and the sample from Elm Spring located east of the former rocket test site were non-detect for all VOCs.

Subsurface Soil Sampling and On-site Screening

Beginning on April 4, 1994, TAT utilized a Geoprobe Systems hydraulic subsurface sampler (commonly referred to as the Geoprobe) to collect soil samples for on-site headspace screening at locations where contaminants might have been deposited on the ground surface. These locations were selected at the facilities mentioned previously, based on locations of facility's structures and the operations that did or could have occurred at the facilities.

TAT compared a soil gas and soil sample (for headspace analysis) at the first sample location and determined, based on soil type and results of the screening, that soil head-space screening would be used. Soil samples for on-site analysis were collected, according to draft EPA Standard Operating Procedure #2230.5A "Soil Gas Investigations", by advancing a 2-foot sample tube lined with an acetate sleeve to the desired sampling depth with 1-inch hollow steel pipe sections. Sample depths at each location ranged from 4 to 9 feet, depending on depth to bedrock. Steel rods were then inserted through the hollow pipe string to activate a piston in the sample tube. The sample tube was then advanced 1 to 2 feet to fill the sample tube with soil from the selected depth. The sample was then retrieved to the surface and placed in 40-ml VOA vials for delivery to the screening location. The acetate sleeve was discarded and the piston tip and cutting shoe on the sample tube were decontaminated between samples. Decontamination consisted of wiping and brushing soil from the components and then heating them to drive off any residual volatile contaminants.

Field screening consisted of on-site analysis using a Photovac 10S70 portable gas chromatograph (GC) using TCE and CCl_4 as indicator compounds. The detection limits estimated for TCE and CCl_4 were 10 parts per billion by volume (ppbv) and 500 ppbv, respectively.

TAT collected and screened 31 soil samples from 27 locations, including a background sample. Although CCl_4 was detected in two samples at 1,430 ppbv and 144,269 ppbv, the TAT field chemist determined that the compound may have actually been another VOC. This was based on a slight difference in the retention times between the CCl_4 standard and the peaks in the two samples. TCE was detected in 14 samples from 10 locations at "normalized" concentrations ranging from 63 to 2,325,158 ppbv. Of the 10 locations where TCE was detected, four were at the "900 Building", four were at the Sabreliner plant, one was at the former rocket test site, and one was in an open field just southeast of the "900 Building". Screening results are summarized on Table 4 and Figure 3 (Attachment D). Screening results are reported by concentration for the actual sample and "normalized" concentration calculated for a 25.0 gram (g) weight of each sample. The actual weight of each sample varied from 15.6 grams to 28.8 grams. The head-space concentrations for the on-site screening were "normalized" to 25 grams solely for ease of comparison.

Table 4

ON-SITE SOIL HEADSPACE AND LABORATORY SOIL SAMPLE ANALYSES RESULTS
APRIL 4-7, 1995
NEOSHO WELLS SITE
T07-9411-510A/EMO1183SAA

Sample I.D. (Lab: Sample #)	Location Description	Depth (feet)	Screening Sample Soil Weight (grams)	On-Site Soil Headspace TCE (ppbv)	Normalized On-Site Soil Headspace TCE (ppbv)	Laboratory Soil Samples TCE (µg/kg)
900-01	Near southeast corner of "900 Building"	4-5	25.2	1,140	1,131	—
900-02 (DSX03-001)	In northwest corner of "horseshoe" on east side of "900 Building"	6-7	24.6	249.8	254	ND
900-03	North side of "900 Building"	6-7	26.5	17,792	16,785	—
900-03 (DSX03-002)	Collocated sample	6-7	22.9	3,232	3,528	ND
900-04	West side of "900 Building"	4-5	23.7	2,204,250	2,325,158	—
900-04 (DSX03-003)	Collocated sample	4-5	20.1	1,545,500	1,922,264	4,600
SAB-01	Southwest end of Sabreliner plant along loading dock	6-7	25.3	86,450	85,425	—
SAB-02	Southeast end of Sabreliner plant along loading dock	6-7	28.8	1,754	1,523	—
SAB-03A	Middle of former lagoon of Sabreliner plant (clay)	8-9	24.3	293,000	301,440	—
SAB-03B	Middle of former lagoon at Sabreliner plant (limestone)	8-9	28.5	202,800	177,895	—
SAB-03 (DSX03-004)	Collocated sample	7.5-9	27.9	136,550	122,357	ND
SAB-04	Northeast of former lagoon at Sabreliner plant	8-9	24.1	61.01	63	—
CITY-01	Southeast of "900 Building" in northeast corner of open field	4-5	20.4	96.7	119	—

Table 4

ON-SITE SOIL HEADSPACE AND LABORATORY SOIL SAMPLE ANALYSES RESULTS
APRIL 4-7, 1995
NEOSHO WELLS SITE
T07-9411-510A/EMO1183SAA

Sample I.D. (Lab: Sample #)	Location Description	Depth (feet)	Screening Sample Soil Weight (grams)	On-Site Soil Headspace TCE (ppbv)	Normalized On-Site Soil Headspace TCE (ppbv)	Laboratory Soil Samples TCE (µg/kg)
CITY-02	Southeast end of open field south of "900 Building	5-6	28.0	ND	ND	—
CITY-03	Loading dock at old jailhouse near airport	5-6	17.7	ND	ND	—
CITY-04	Near shop at Neosho airport	5-6	17.3	ND	ND	—
CITY-05	Roadside, halfway between "900 Building" and Shockley well, south of airport	5-6	15.6	ND	ND	—
CITY-06	1/4 mile west of landfill at east end of Blair Avenue	5-6	26.9	ND	ND	—
HOP-01	100 feet west of burned down Hoppy Lines building	2.5-3.5	22.9	ND	ND	—
71-01 (DSX03-005)	Highway 71 median, 100 feet south of Honey House	5-6	23.5	ND	ND	ND
SG-01	25 feet south of Southgate Truck plaza	5-6	21.4	ND	ND	—
SG-02 (DSX03-006)	10 feet west of abandoned service station, just east of Shockley well	5-6	23.9	ND	ND	ND
SUN-01	South of Sunbeam facility on Highway D	6-7	23.7	ND	ND	—
LF-01 (DSX03-007)	South center perimeter of Newton-McDonald County Landfill	5-6	19.7	ND	ND	ND
LF-02	Northeast side of Newton-McDonald County Landfill	5-6	21.8	ND	ND	—

Table 4

ON-SITE SOIL HEADSPACE AND LABORATORY SOIL SAMPLE ANALYSES RESULTS
APRIL 4-7, 1995
NEOSHO WELLS SITE
T07-9411-510A/EMO1183SAA

Sample I.D. (Lab: Sample #)	Location Description	Depth (feet)	Screening Sample Soil Weight (grams)	On-Site Soil Headspace TCE (ppbv)	Normalized On-Site Soil Headspace TCE (ppbv)	Laboratory Soil Samples TCE (µg/kg)
TS-01	10 feet east of MW-03 at former rocket test site	5-6	25.9	ND	ND	—
TS-02	30 feet south of MW-02 near collection basin at former rocket test site	5-6	25.5	9,985	9,789	—
TS-03	100 feet west of south test pad at former rocket test site	5-6	24.8	ND	ND	—
MOARK-01	25 feet west of railroad tracks on Blair Avenue, south of MOARK Industries office	5-6	26.6	ND	ND	—
MOARK-02	50 feet north of egg division of MOARK Industries on Blair Avenue	5-6	27.9	ND	ND	—
Background	Soil at analysis location	surface	24.4	ND	ND	—

Note: Laboratory sample collected and submitted for VOCs analysis were preserved with methanol and submitted to the Region VII EPA Laboratory. Concentrations reported in parts per billion by volume were normalized to a 25.0 gram sample of soil.

Key:

ND = non-detect.
— = not analyzed by the Laboratory.

TAT collected and submitted eight soil samples, including a field blank, to the Region VII EPA Laboratory on April 10, 1995, for VOCs analysis. Samples were collected at four locations where TCE had been detected and three locations where it had not, in order to confirm screening results. Laboratory samples were collected, in several cases, after the original screening sample was collected and analyzed. These laboratory samples were collected from locations collocated with the original screening sample locations. A second and separate screening sample was also collected when these laboratory samples were collected. Samples were collected in the same manner as described earlier for screening samples, with the exception of preservation methods. For each laboratory sample, two 40-ml VOA vials were preweighed and prepreserved with 10 ml of methanol. Approximately 20 grams of soil were placed in

each vial and the vials weighed to determine the actual soil weight. For each sample, a third VOA vial of soil was collected for percent solids analysis.

Laboratory soil sample analysis indicated the presence of TCE in one sample (DSX03-003) which was collected from the west side of the "900 Building" at 4,600 micrograms/kilogram (µg/kg). No other VOCs were present in this sample. This sample location yielded the highest concentration of TCE during on-site screening. The three other samples collected from locations where on-site screening indicated the presence of TCE were non-detect for all VOCs in the laboratory analysis. A comparison of the on-site screening sample result and the laboratory result for DSX03-003 yielded a ratio of 418. If this ratio were applied to the on-site screening results from the three other locations where TCE was detected and sampled for laboratory analysis, the resulting values would be below the laboratory's measurement detection limit. This may explain why the laboratory did not report TCE for those samples. No VOCs were detected in the three samples collected from locations where no TCE was found during on-site screening. No VOCs were found in the field blank. Results are summarized on Table 4.

A ground water sample (DSX03-064) was collected from the east side of the "900 Building" at screening location 900-02. The sample was collected by advancing polyethylene tubing down the hollow Geoprobe pipe string and then pumping the ground water to the surface with a portable peristaltic pump directly into the sample containers. The sample was preserved in the same manner as the domestic well samples and was submitted for LDL VOCs analysis to the Region VII EPA Laboratory. Analytical results indicated the presence of TCE (2 µg/L); 1,4-dichlorobenzene (8 µg/L); 1,3-dichlorobenzene (0.8 µg/L); 1,2-dichlorobenzene (20 µg/L); and 1,2-(cis)-DCE (2 µg/L).

SUMMARY

In August 1994, the Newton County Health Department discovered trichloroethylene and other volatile organic contamination in domestic wells near the intersection of U.S. Highway 71 and County Road 14-D approximately 2.5 miles south of Neosho, Missouri. On November 29 and 30, 1995, TAT and EPA conducted domestic well sampling at 15 residences in the area. TCE was detected in five wells above its MCL at concentrations up to 150 µg/L. CCl_4 was detected in one well at its MCL of 5 µg/L. No VOCs were detected above removal action levels. TAT and EPA also identified several businesses and facilities as potential sources of the contamination. TAT also sampled monitoring wells at the Newton-McDonald County Landfill in December 1994 and March 1995. TCE was detected in one of these monitoring wells at 12 µg/L.

During the week of April 3, 1995, TAT expanded domestic well sampling to 45 residences to determine the extent of contamination. Neither TCE nor CCl_4 was detected in any wells where it had not been detected previously. Chloromethane was detected in four wells that had not been sampled previously at concentrations ranging from 2 to 3 µg/L. All other results were consistent with previous sampling events. Twenty domestic wells have exhibited VOCs contamination during either NCHD, MDNR or EPA sampling events.

TAT also conducted on-site screening of subsurface soils from 26 locations to determine potential source locations. TCE was detected in screening samples from four properties, including the Sabreliner plant, the "900 Building" owned by Sabreliner, the former rocket test site on the Missouri National Guard's Camp Crowder, and a City of Neosho field just southeast of the "900" building. TAT collected eight samples for laboratory analysis to confirm screening results. Of the four samples collected from

locations where on-site screening indicated the presence of TCE, only the sample from the west side of the "900 Building" was positive for TCE (4,600 µg/kg).

TAT is currently preparing a full PA/SI report for the Neosho Wells site.

ATTACHMENTS

1. Figure 1: Site Location Map
   Figure 2: Domestic Well Sample Locations
   Figure 3: Site Map (with soil and surface water sample locations)

2. Table 1: NCHD and MDNR Domestic Well Sample Results

3. GC Strip Charts for On-Site Analysis
   a) Standards
   b) Blanks
   c) Soil Samples

4. Analysis Request Reports for:
   a) DSX90
   b) DSX94
   c) DSX04
   d) DSX03

REFERENCES

1. Roberts, Daryl, Chief, Bureau of Environmental Epidemiology, March 3, 1995, letter to Paul Doherty, EPA, Jefferson City, Missouri.

2. Heffren, Rebecca, Environmental Sanitarian, Newton County Health Department, July 20, 1994, Complaint Investigation Information, Neosho, Missouri.

3. Heffren, Rebecca, Environmental Sanitarian, Newton County Health Department, August 30, 1994, Field Sheet and Analytical Results for Shockley Domestic Well, Neosho, Missouri.

4. Heffren, Rebecca, Environmental Sanitarian, Newton County Health Department, September 8, 1994, letter to Charles Barnes, Missouri Department of Natural Resources, Neosho, Missouri.

5. Heffren, Rebecca, Environmental Sanitarian, Newton County Health Department, October 4, 1994, Memorandum to Gary Boone, Neosho, Missouri.

6. Heffren, Rebecca, Environmental Sanitarian, Newton County Health Department, October 18 through November 2, 1994, Field Sheets and Analytical Results for Domestic Wells, Neosho, Missouri.

7. Behrns, Gary T., Chief, Superfund Section, Missouri Department of Natural Resources, December 2, letter to Daryl Roberts, Chief, Bureau of Environmental Epidemiology, Missouri Department of Health, Jefferson City, Missouri.

Reference 2E

12/94

EPA REGION VII SCREENING TABLE

KEY FOR DEFINITIONS, UNITS OF MEASUREMENT AND ACRONYMS

INTRODUCTION

EPA Region VII prepared this table for screening and interpreting analytical data on the analysis of environmental samples and as a benchmark to which preliminary remedial goals (e.g. environmental cleanup levels) could be compared. Values from this table are not intended to be used as final cleanup levels without a site-specific or independent verification.

DATA SOURCES

We will update this table as necessary, probably semiannually. Original sources of the data found are as follows:

- The U.S. EPA Region III Risk-Based Concentration Table (data in the five columns on the right end of each page).
- The State of Missouri "Any Use Soil Levels", above which that state considers placing a site on its Registry, 3rd column.
- Superfund Chemical Data Matrix (SCDMs) with data in columns 4, 5, 6, and 7. (this is a data base developed by EPA head quarter (HQ). Values shown represent 1E-6 carcinogenic risk for drinking groundwater, a hazard index of 1.0 from drinking ground water, a carcinogenic risk of 1E-6 for soil, and a hazard index of 1.0 for soil.)
- The eighth column are EPA's Removal Action Limits for Alternate Water Supplies, OSWER Directive 9360.1-02.

Although we have tried to eliminate any errors, if particular values from this table seem questionable, the original data sources should be consulted.

UNITS OF MEASUREMENT AND SCIENTIFIC NOTATION

mg/kg - milligram per kilogram, a part per million in a solid
ug/L - microgram per liter, a part per billion in a liquid
g/m^3 - microgram per cubic meter in air or gas

Very large or small numbers represented in scientific notation, using exponents. Numbers with positive exponents are converted as follows. The Missouri ASL for acetone in 5.6E+03 mg/kg, which is 5.6×10^{3} mg/kg or 5600 mg/kg. Numbers with negative exponents are converted as follows. The SCDM carcinogenic risk value for dibromochloromethane is 4.2E-01 ug/L, which is 4.2×10^{-1} ug/L or 0.42 ug/L.

EPA Region VII prepared this table for reviewing data and comparing preliminary remedial goals at Superfund Sites Table values should not be used without site specific verification

Referenced original sources should be checked if errors are suspected

Table Acronyms CAS=chemical abstract number ASL=Any Use Soil Level GW=groundwater RAL=removal action level DW=drinking water c=carcinogenic effects n=noncarcinogenic effects

Contaminant	CAS	Superfund Chemical Data Matrix					EPA RAL DW	U.S. EPA Region III Table				
		ASL	GW c	GW n	Soil c	Soil n		Tap Water	Ambient Air	Fish	Industrial soil	Residential soil
		mg/kg	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/m3	mg/kg	mg/kg	mg/kg
Acephate	30560191	-	-	-	-	-	-	7.7 c	0.72 c	0.36 c	330 c	73 c
Acetaldehyde	75070	-	-	-	-	-	-	94 n	0.81 c	-	-	-
Acetochlor	34256821	-	-	-	-	-	-	730 n	73 n	27 n	20,000 n	1,600 n
Acetone	67641	5.60E+03	-	3.50E+03	-	5.80E+04	3.50E+03	3,700 n	370 n	140 n	100,000 n	7,800 n
Acetone cyanohydrin	75865	-	-		-	-	-	210 n	10 n	95 n	72,000 n	5,500 n
Acetonitrile	75078	-	-	2.10E+02	-	3.50E+03		210 n	52 n	8.1 n	6,100 n	470 n
Acetophenone	98862	-	-	3.50E+03	-	5.80E+04		0.042 n	0.021 n	140 n	100,000 n	7,800 n
Acifluorfen	62476599	4.90E+02	-		-	-	1.00E+02	470 n	47 n	18 n	13,000 n	1000 n
Acrolein	107028	-	-	7.00E+02	-	1.20E+04		7.40 n	0.021 n	27 n	20,000 n	1600 n
Acrylamide	79061	1.10E+00	7.80E-03	7.00E+00	1.30E-01	1.20E+02	1.00E+00	0.015 c	0.0014 c	0.0007 c	0.84 n	0.14 c
Acrylic acid	79107	-	-	2.80E+03	-	4.70E+04		18,000 n	37 n	680 n	510,000 n	39,000 n
Acrylonitrile	107131	-	6.50E-02	-	1.10E+00	-	6.00E+00	0.12 c	0.026 c	0.0058 c	5.3 c	1.2 c
Adipates	103231	-	-	-	-	-	4.00E+03		-	-	-	-
Alachlor	15972608	3.80E+02	-	-	-	-	4.00E+01	0.84 c	0.078 c	0.039 c	36 c	8 c
Alar	1596845	-	-	-	-	-	-	5,100 n	550 n	200 n	150,000 n	12,000 n
Aldicarb	116063	7.30E+01	-	3.50E+01	-	5.83E+02	3.50E+01	37 n	3.7 n	1.4 n	1,000 n	78 n
Aldicarb sulfone	1646884	3.40E+02	-	-	-	-	3.50E+01	37 n	3.7 n	1.4 n	1,000 n	78 n
Aldrin	309002	2.90E-01	2.10E-03	1.10E+00	3.40E-02	1.70E+01	2.00E-01	0.004 c	0.00037 c	0.00019 c	0.17 c	0.038 c
Ally	7429906	-	-	-	-	-	-	9,100 n	910 n	340 n	260,000 n	20,000 n
Allyl alcohol	107186	-	-	1.80E+02	-	2.60E+03	-	180 n	18 n	6.8 n	5,100 n	390 n
Allyl chloride	107051	-	-	-	-	-	-	1800 n	1 n	68 n	51,000 n	3900 n
Aluminum	7429905	-	-	-	-	-	-	110,000 n	11,000 n	3,900 n	1000000 n	230000 n
Aluminum phosphide	20859738	-	-	1.40E+01	-	2.30E+02		15 n	1.5 n	0.54 n	410 n	31 n
Amdro	67485294	-	-	-	-	-	-	11 n	1.1 n	0.41 n	310 n	23 n
Ametryn	834128	5.10E+02	-	-	-	-	3.00E+02	330 n	33 n	12 n	9200 n	700 n
m-Aminophenol	591275	-	-	-	-	-	-	2600 n	260 n	95 n	72000 n	5500 n
4-Aminopyridine	504245		-	-	-	-		0.73 n	0.073 n	0.027 n	20 n	1.6 n
Amitraz	33089611	-	-	-	-	-	-	91 n	9.1 n	3.4 n	2600 n	200 n
Ammonia	7664417	-		1.20E+06	-	2.00E+07	3.40E+04	1000 n	100 n	-	-	-
Ammonium sulfamate	7773060	1.40E+04	-	7.00E+03	-	1.20E+05	8.00E+03	7300 n	730 n	270 n	200000 n	16000 n
Aniline	62533	-	6.30E+00	-	1.00E+02	-	-	10 n	1 n	0.55 c	500 c	110 c
Antimony and compounds	7440360	2.30E+01	-	1.40E+01	-	2.30E+02	1.00E+01	15 n	1.5 n	0.54 n	410 n	31 n
Antimony pentoxide	1314609	-	-	-	-	-	-	18 n	1.8 n	0.68 n	510 n	39 n
Antimony potassium tartrate	304610	-	-	-	-	-	-	33 n	3.3 n	1.2 n	920 n	70 n
Antimony tetroxide	1332316	-	-	-	-	-	-	15 n	1.5 n	0.54 n	410 n	31 n
Antimony trioxide	1309644	-	-	-	-	-	-	15 n	1.5 n	0.54 n	410 n	31 n
Apollo	74115245	-	-	-	-	-	-	470 n	47 n	18 n	13000 n	1000 n
Aramite	140578	-	-	-	-	-	-	2.7 c	0.25 c	0.13 c	110 c	26 c

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Contaminant	CAS	ASL	Superfund Chemical Data Matrix				EPA RAI DW	U.S. EPA Region III Table				
			GW c	GW n	Soil c	Soil n		Tap Water	Ambient Air	Fish	Industrial soil	Residential soil
		mg/kg	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/m3	mg/kg	mg/kg	mg/kg
Arsenic	7440382	1 10E+01	2 00E-02	1 10E+01	3 30E-01	1 70E+02	5 00E+01	11 n	1 1 n	0 41 n	310 n	23 n
Arsenic (as carcinogen)	7440382	-	-	-	-	-	-	0 038 c	0 000041 c	0 0018 c	1 6 c	0 37 c
Arsine	7784421	-	-	-	-	-	-	0 52 n	0 052 n	-	-	-
Assure	76578148	-	-	-	-	-	-	330 n	33 n	12 n	9200 n	700 n
Asulam	3337711	-	-	-	-	-	-	1800 n	180 n	68 n	51000 n	3900 n
Atrazine	1912249	1 40E+02	1 60E-01	1 23E+03	2 60E+00	2 00E+04	3 00E+01	0 1 c	0 028 c	0 014 c	13 c	2 9 c
Avermectin B1	65195553	-	-	-	-	-	-	1 5 n	1 5 n	0 54 n	410 n	31 n
Azobenzene	103333	-	-	-	-	-	-	0 61 c	0 058 c	0 029 c	26 c	5 8 c
Barium and compounds	7440393	3 90E+03	-	2 50E+03	-	4 10E+04	2 00E+03	2600 n	0 52 n	95 n	72000 n	5500 n
Baygon (Propoxur)	114261	1 10E+02	-	-	-	-	4 00E+01	150 n	15 n	5 4 n	4100 n	310 n
Bayleton	43121433	-	-	-	-	-	-	1100 n	110 n	41 n	31000 n	2300 n
Baythroid	68359375	-	-	-	-	-	-	910 n	91 n	34 n	26000 n	2000 n
Benefin	1861401	-	-	-	-	-	-	11000 n	1100 n	410 n	310000 n	23000 n
Benomyl	17804352	-	-	-	-	-	-	1800 n	180 n	68 n	51000 n	3900 n
Bentazon	25057890	1 40E+02	-	-	-	-	9 00E+01	91 n	9 1 n	3 4 n	2600 n	200 n
Benzaldehyde	100527	5 60E+03	-	-	-	-	-	610 n	370 n	140 n	100000 n	7800 n
Benzene	71432	1 70E+02	1 20E+00	-	2 00E+01	-	1 00E+02	0 36 c	0 22 c	0 11 c	99 c	22 c
Benzenethiol	108985	-	-	-	-	-	-	0 37 n	0 037 n	0 014 n	10 n	0 78 n
Benzidine	92875	-	1 50E-04	1 10E+02	2 50E-03	1 70E+03		0 000029 c	0 0000027 c	0 000014	0 012 c	0 00028 c
Benzoic acid	65850	-	-	1 40E+05	-	2 30E+06	-	150000 n	15000 n	5400 n	1000000 n	310000 n
Benzotrichloride	98077	-	-	-	-	-	-	0 0052 c	0 00048 c	0 00024 c	0 22 c	0 049 c
Benzyl alcohol	100516	-	-	-	-	-	-	11000 n	1100 n	410 n	310000 n	23000 n
Benzyl chloride	100447	-	2 10E-01	-	3 40E+00	-	-	0 062 c	0 037 c	0 019 c	17 c	3 8 c
Beryllium and compounds	7440417	1 20E+00	8 10E-03	1 80E+02	1 40E-01	2 90E+03	1 00E+00	0 016 c	0 00075 c	0 00073 c	0 67 c	0 15 c
Bidrin	141662	-	-	-	-	-	-	3 7 n	0 37 n	0 14 n	100 n	7 8 n
Biphenthrin (Talstar)	82657043	-	-	-	-	-	-	550 n	55 n	20 n	15000 n	1200 n
1,1-Biphenyl	92524	-	-	1 80E+03	-	2 90E+04	-	1800 n	180 n	68 n	51000 n	3900 n
Bis(2-chloroisopropyl)ether	39638329	-	-	-	-	-	1 00E+03	0 26 c	0 18 c	0 045 c	41 c	9 1 c
Bis(chloromethyl)ether	542881	-	1 60E-04	-	2 70E-03	-	-	0 000049 c	0 000029 c	0 000014	0 013 c	0 0029 c
Bis(2-chloro-1-methylethyl)ether	-	-	-	-	-	-	-	0 98 c	0 089 c	0 045 c	41 c	9 1 c
Bis(2-ethylhexyl)phthalate (DEHP)	117817	3 60E+02	2 50E+00	7 00E+02	4 20E+01	1 20E+04	-	4 8 c	0 45 c	0 23 c	200 c	46 c
Bis(2-chloroethyl)ether	111444	-	3 20E-02	-	5 30E-01	-	-	0 0092 c	0 0054 c	0 0029 c	2 6 c	0 58 c
Bisphenol A	80057	-	-	-	-	-	-	1800 n	180 n	68 n	51000 n	3900 n
Boron (and borates)	7440428	-	-	3 20E+03	-	5 20E+04	9 00E+02	3300 n	21 n	120 n	92000 n	7000 n
Boron trifluoride	7637072	-	-	-	-	-	-	7 3 n	0 73 n	-	-	-
Bromacil	314409	3 70E+03	-	-	-	-	3 00E+03	-	-	-	-	-
Bromate	15541454	-	-	-	-	-	1 00E+01	-	-	-	-	-
Bromochloromethane	74975											

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Contaminant	CAS	ASL	Superfund Chemical Data Matrix				EPA RAL DW	U.S. EPA Region III Table				
			GW c	GW n	Soil c	Soil n		Tap Water	Ambient Air	Fish	Industrial soil	Residential soil
		mg/kg	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/m3	mg/kg	mg/kg	mg/kg
Bromodichloromethane	75274	3.90E+01	5.60E-01	7.00E+02	9.40E+00	1.20E+04	1.00E+02	0.17 c	0.1 c	0.051 c	46 c	10 c
Bromoethene	593602	-	-	-	-	-	-	0.098 c	0.057 c	-	-	-
Bromoform (tribromomethane)	75252	6.30E+02	-	-	-	-	4.00E+02	2.4 c	1.6 c	0.4 c	360 c	81 c
Bromomethane	74839	-	-	4.90E+01	-	8.20E+02	4.00E+01	8.7 n	5.2 n	1.9 n	1400 n	110 n
4-Bromophenyl phenyl ether	101553	-	-	-	-	-	-	2100 n	210 n	78 n	59000 n	4500 n
Bromophos	2104963	-	-	-	-	-	-	180 n	18 n	6.8 n	5100 n	390 n
Bromoxynil	1689845	-	-	7.00E+02	-	1.20E+04	-	730 n	73 n	27 n	20000 n	1600 n
Bromoxynil octanoate	1689692	-	-	-	-	-	-	730 n	73 n	27 n	20000 n	1600 n
1,3-Butadiene	106990	-	-	-	-	-	-	0.011 c	0.0064 c	-	-	-
1-Butanol	71363	-	-	3.50E+03	-	5.80E+04	-	3700 n	370 n	140 n	100000 n	7800 n
Butyl benzyl phthalate	85687	5.60E+03	-	7.00E+03	-	1.20E+05	6.00E+03	7300 n	730 n	270 n	200000 n	16000 n
Butylate	2008415	2.80E+03	-	-	-	-	1.00E+03	1800 n	180 n	68 n	51000 n	3900 n
sec-Butylbenzene	135988	-	-	-	-	-	-	61 n	37 n	14 n	10000 n	780 n
tert-Butylbenzene	104518	-	-	-	-	-	-	61 n	37 n	14 n	10000 n	780 n
Butylphthalyl butylglycolate	85701	-	-	-	-	-	-	37000 n	3700 n	1400 n	1000000 n	78000 n
Cacodylic acid	75605	-	-	-	-	-	-	110 n	11 n	4.1 n	3100 n	230 n
Cadmium and compounds	7440439	2.80E+01	-	1.80E+01	-	2.90E+02	5.00E+00	18 n	0.00099 c	0.68 n	510 n	39 n
Caprolactam	105602	-	-	-	-	-	-	18000 n	1800 n	680 n	510000 n	39000 n
Captafol	2425061	-	-	-	-	-	-	7.1 c	0.73 c	0.37 c	330 c	74 c
Captan	133062	-	1.00E+01	4.80E+03	1.70E+02	7.60E+04	-	19 c	1.8 c	0.9 c	820 c	180 c
Carbaryl	63252	5.60E+03	-	3.50E+03	-	5.80E+04	1.00E+03	3700 n	370 n	140 n	100000 n	7800 n
Carbazole	86748	-	-	-	-	-	-	3.4 c	0.31 c	0.16 c	140 c	32 c
Carbofuran	1563662	2.80E+02	-	1.80E+02	-	2.90E+03	5.00E+01	180 n	18 n	6.8 n	5100 n	390 n
Carbon disulfide	75150	-	-	3.50E+03	-	5.80E+04	-	21 n	10 n	140 n	100000 n	7800 n
Carbon tetrachloride	56235	3.90E+01	2.70E-01	2.50E+01	4.50E+00	4.10E+02	3.00E+01	0.16 c	0.12 c	0.024 c	22 c	4.9 c
Carbosulfan	55285148	-	-	-	-	-	-	370 n	37 n	14 n	10000 n	780 n
Carboxin	5234684	5.60E+03	-	-	-	-	1.00E+03	3700 n	370 n	140 n	100000 n	7800 n
Chloral	75878	-	-	7.00E+01	-	1.20E+03	-	73 n	7.3 n	2.7 n	2000 n	160 n
Chloral Hydrate	302170	-	-	-	-	-	7.00E+01	-	-	-	-	-
Chloramben	133904	8.40E+02	-	-	-	-	2.00E+02	550 n	55 n	20 n	15000 n	1200 n
Chloranil	118752	-	-	-	-	-	-	0.17 c	0.016 c	0.0078 c	7.1 c	1.6 c
Chlordane	57749	3.90E+00	2.70E-02	2.10E+00	4.50E-01	3.50E+01	2.00E+00	0.052 c	0.0049 c	0.0024 c	2.2 c	0.49 c
Chlorimuron-ethyl	90982324	-	-	-	-	-	-	730 n	73 n	27 n	20000 n	1600 n
Chlorine	7782505	-	-	-	-	-	4.00E+03	3700 n	370 n	140 n	100000 n	7800 n
Chlorine cyanide	506774	-	-	1.80E+03	-	2.90E+04	-	-	-	-	-	-
Chlorine dioxide	10049044	-	-	-	-	-	8.00E+02	2.1 n	0.21 n	-	-	-
Chlorite	7758192	-	-	-	-	-	1.00E+03	-	-	-	-	-
Chloroacetaldehyde	107200	-	-	-	-	-	-	250 n	25 n	9.3 n	7100 n	540 n

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			GW c	GW n	Soil c	Soil n		Tap Water	Ambient Air	Fish	Industrial soil	Residential soil
		mg/kg	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/m3	mg/kg	mg/kg	mg/kg
Chloroacetic acid	79118	-	-	-	-	-	7.00E+01	73 n	7.3 n	2.7 n	2000 n	160 n
2-Chloroacetophenone	532274	-	-	-	-	-	-	0.31 n	0.031 n	-	-	-
Chloramines	-	-	-	-	-	-	1.00E+03	-	-	-	-	-
p-Chloroaniline	106478	-	-	1.40E+01	-	2.30E+03	-	150 n	15 n	5.4 n	4100 n	310 n
Chlorobenzene (Monochlorobenzene)	108907	5.10E+01	-	7.00E+02	-	1.20E+04	7.00E+02	39 n	21 n	27 n	20000 n	1600 n
Chlorobenzilate	510156	-	-	-	-	-	-	0.25 c	0.023 c	0.012 c	11 c	2.4 c
p-Chlorobenzoic acid	74113	-	-	-	-	-	-	7300 n	730 n	270 n	200000 n	16000 n
4-Chlorobenzotrifluoride	98566	-	-	-	-	-	-	730 n	73 n	27 n	20000 n	1600 n
2-Chloro-1,3-butadiene	126998	-	-	-	-	-	-	1.4 n	7.3 n	2.7 n	20000 n	1600 n
1-Chlorobutane	109693	-	-	-	-	-	-	2400 n	1500n	540 n	410000 n	31000 n
Chlorodibromomethane	124481	6.00E+01	-	-	-	-	6.00E+02	-	-	-	-	-
Chlorodifluoromethane	75456	-	-	-	-	-	-	87000 n	52000 n	-	-	-
Chloroethane	75003	-	-	-	-	-	-	9600 n	10000 n	540 n	410000 n	31000 n
2-Chloroethyl vinyl ether	110758	-	-	-	-	-	-	150 n	91 n	34 n	26000 n	2000 n
Chloroform	67663	8.20E+02	5.70E+00	3.50E+02	9.60E+01	5.80E+03	1.00E+02	0.15 c	0.078 c	0.52 c	470 c	100 c
Chloromethane	74873	-	2.70E+00	-	4.50E+01	-	1.00E+02	1.4 c	0.99 c	0.24 c	220 c	49 c
Chloro-3-methylphenol, 4-	59507	-	-	7.00E+04	-	1.20E+06	-	-	-	-	-	-
4-Chloro-2,2-methylaniline hydrochloride	3165933	-	-	-	-	-	-	0.15 c	0.014 c	0.0080 c	6.2 c	1.4 c
4-Chloro-2-methylaniline	95692	-	-	-	-	-	-	0.12 c	0.011 c	0.0054 c	4.9 c	1.1 c
4-Chloro-2-methylphenoxy acetic acid	-	-	-	-	-	-	5.00E+01	-	-	-	-	-
2-Chloromethyloxirane	106898	-	3.50E+00	7.00E+01	5.90E+01	1.20E+03	-	-	-	-	-	-
beta-Chloronaphthalene	91587	-	-	2.80E+03	-	4.70E+04	-	2900 n	290 n	110 n	82000 n	6300 n
o-Chloronitrobenzene	88733	-	-	-	-	-	-	0.42 c	0.25 c	0.13 c	110 c	26 c
p-Chloronitrobenzene	121733	-	-	-	-	-	-	0.59 c	0.35 c	0.18 c	160 c	35 c
2-Chlorophenol	95578	2.80E+02	-	1.80E+02	-	2.90E+03	5.00E+01	180 n	18 n	6.8 n	5100 n	390 n
2-Chloropropane	75296	-	-	-	-	-	-	170 n	100 n	-	-	-
Chlorothalonil	1897456	5.60E+02	-	-	-	-	1.50E+02	6.1 c	0.57 c	0.29 c	260 c	58 c
o-Chlorotoluene	95498	1.10E+03	-	-	-	-	7.00E+02	120 n	73 n	27 n	20000 n	1600 n
Chlorpropham	101213	-	-	-	-	-	-	7300 n	730 n	270 n	200000 n	16000 n
Chlorpyrifos	2921882	1.70E+02	-	1.10E+02	-	1.70E+03	3.00E+01	110 n	11 n	4.1 n	3100 n	230 n
Chlorpyrifos-methyl	5598130	-	-	-	-	-	-	370 n	37 n	14 n	10000 n	780 n
Chlorsulfuron	64902723	-	-	-	-	-	-	1800 n	180 n	68 n	51000 n	3900 n
Chlorthiophos	60238564	-	-	-	-	-	-	29 n	2.9 n	1.1 n	820 n	63 n
Chromium III and compounds	16065831	5.00E+04	-	3.50E+04	-	5.80E+05	-	37000 n	0.0021 n	1400 n	1000000 n	78000 n
Chromium VI and compounds	18540299	2.80E+02	-	1.80E+02	-	2.90E+03	-	180 n	0.00015 c	6.8 n	5100 n	390 n
Chromium (totals)	7440473	-	-	1.80E+02	-	2.90E+03	2.00E+02	-	-	-	-	-
Coal tar	8001589	-	-	-	-	-	-	-	0.0028 c	-	-	-
Cobalt	7440484	-	-	-	-	-	-	2200 n	220 n	81 n	61000 n	4700 n

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			GW c	GW n	Soil c	Soil n		Tap Water	Ambient Air	Fish	Industrial soil	Residential soil
		mg/kg	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/m3	mg/kg	mg/kg	mg/kg
Coke Oven Emissions	8007452	-	-	-	-	-	-	-	0.0029 c	-	-	-
Copper and compounds	7440508	-	-	-	-	-	1.30E+03	140 n	140 n	50 n	38000 n	2900 n
m-cresol	108394	-	-	1.80E+03	-	2.90E+04	-	-	-	-	-	-
p-cresol	106445	-	-	1.80E+02	-	2.90E+03	-	-	-	-	-	-
Crotonaldehyde	123739	-	-	-	-	-	-	0.035 c	0.0033 c	0.0017 c	1.5 c	0.34 c
Cumene	98828	-	-	1.80E+03	-	2.30E+04	1.40E+04	1500 n	9.4 n	54 n	41000 n	3100 n
Cyanides		1.10E+03		-	-		2.00E+02		-		-	-
Barium cyanide	542621	-	-	3.50E+03	-		-	370 n	370 n	140 n	100000 n	7800 n
Calcium cyanide	592018	-	-	-	-		-	150 n	150 n	54 n	41000 n	3100 n
Copper cyanide	544923	-	-	1.80E+02	-	2.90E+03	-	180 n	18 n	6.8 n	5100 n	390 n
Cyanazine	21725462	1.10E+02	4.20E-02	7.00E+01	6.50E-01	1.20E+03	-	0.08 c	0.0075 c	0.0038 c	3.4 c	0.76 c
Cyanogen	460195	-	-	1.40E+03	-	2.30E+04	-	1500 n	150 n	54 n	41000 n	3100 n
Cyanogen bromide	506683	-	-	3.20E+03	-	5.20E+04	-	3300 n	330 n	120 n	92000 n	7000 n
Cyanogen chloride	506774	-	-	-	-	-	-	1800 n	180 n	68 n	51000 n	3900 n
Free cyanide	57125	-	-	7.00E+02	-	1.20E+04	-	730 n	73 n	27 n	20000 n	1600 n
Hydrogen cyanide	74908	-	-	7.00E+02	-	1.20E+04	-	730 n	73 n	27 n	20000 n	1600 n
Potassium cyanide	151508	-	-	-	-		-	1800 n	180 n	68 n	51000 n	3900 n
Potassium silver cyanide	506616	-	-	7.00E+03	-	1.20E+05	-	7300 n	730 n	270 n	200000 n	16000 n
Silver cyanide	506649	-	-	3.50E+03	-	5.80E+04	-	3700 n	370 n	140 n	100000 n	7800 n
Sodium cyanide	143339	-	-	-	-	-	-	1500 n	150 n	54 n	41000 n	3100 n
Zinc cyanide	557211	-	-	1.80E+03	-	2.90E+04	-	1800 n	180 n	68 n	51000 n	3900 n
Cyclohexanone	108941	-	-	1.80E+05	-	2.90E+06	-	300000 n	18000 n	6800 n	1000000 n	390000 n
Cyclohexlamine	108918	-	-	-	-	-	-	7300 n	730 n	270 n	200000 n	16000 n
Cyclotrimethylenetrinitramine	121824	-	3.20E-01	1.10E+02	5.30E+01	1.70E+03	-	-	-	-	-	-
Cyhalothrin/Karate	68085858	-	-	-	-	-	-	180 n	18 n	6.8 n	5100 n	390 n
Cypermethrin	52315078	-	-	-	-	-	-	370 n	37 n	14 n	10000 n	780 n
Cyromazine	66215278	-	-	-	-	-	-	270 n	27 n	10 n	7700 n	590 n
Dacthal	1861321	2.80E+04	-	-	-	-	5.00E+03	18000 n	1800 n	680 n	510000 n	39000 n
Dalapon	75990	1.70E+03	-	-	-	-	3.00E+02	1100 n	110 n	41 n	31000 n	2300 n
Danitol	39515418	-	-	-	-	-	-	18 n	1.8 n	0.68 n	510 n	39 n
DDD	72548	2.10E+01	1.50E-01	-	2.40E+00	-	-	0.28 c	0.026 c	0.013 c	12 c	2.7 c
DDE	72559	1.50E+01	1.00E+00	-	1.70E+00	-	-	0.2 c	0.018 c	0.0093 c	8.4 c	1.9 c
DDT	50293	1.50E+01	1.00E-01	1.80E+01	1.70E+00	2.90E+02	-	0.2 c	0.018 c	0.0093 c	8.4 c	1.9 c
Decabromodiphenyl ether	1163195	-	-	-	-	-	-	61 n	37 n	14 n	10000 n	780 n
DEF	78488	-	-	1.10E+01	-	1.70E+02	-	-	-	-	-	-
Demeton	8065483	-	-	-	-	-	-	1.5 n	0.15 n	0.054 n	41 n	3.1 n
Diallate	2303164	-	-	-	-	-	-	0.17 c	0.1 c	0.052 c	47 c	10 c
Diazinon	333415	5.10E+00	-	3.20E+01	-	5.20E+02	3.00E+00	33 n	3.3 n	1.2 n	920 n	70 n

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			GW c	GW n	Soil c	Soil n		Tap Water	Ambient Air	Fish	Industrial soil	Residential soil
		mg/kg	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/m3	mg/kg	mg/kg	mg/kg
Dibromoacetonitrile	3252435	-	-	-	-	-	8 00E+02	-	-	-	-	-
1,4-Dibromobenzene	106376	-	-	-	-	-	-	0 1 n	37 n	14 n	10000 n	780 n
Dibromochloromethane	124481	-	4 20E-01	7 00E+02	6 90E+00	1 20E+04	-	0 13 c	0 075 c	0 038 c	34 c	7 6 c
1,2-Dibromo-3-chloropropane (DBCP)	96128	3 60E+00	2 50E-02	-	4 20E-01	-	3 00E+00	0 048 c	0 21 n	0 0023 c	2 c	0 46 c
1,2-Dibromoethane	106934	-	4 10E-04	-	6 90E-03	-	-	0 00075 c	0 0081 c	0 000037	0 034 c	0 0075 c
Dibutyl phthalate (DBP)	84742	5 60E+03	-	3 50E+03	-	5 80E+04	4 00E+01	3700 n	370 n	140 n	100000 n	7800 n
Dicamba	1918009	1 70E+03		1 10E+03	-	1 70E+04	3 00E+02	1100 n	110 n	41 n	31000 n	2300 n
Dichloroacetic Acid	79436	-	-	-	-	-	1 00E+02	-	-	-	-	-
Dichloroacetonitrile	3018120	2 30E+02		-	-		3 00E+02				-	-
1,2-Dichlorobenzene	95501	5 10E+03	-	3 20E+03	-	5 20E+04	3 00E+03	370 n	210 n	120 n	92000 n	7000 n
1,3-Dichlorobenzene	541731	-	-	-	-	-	3 00E+03	540 n	330 n	120 n	91000 n	7000 n
1,4-Dichlorobenzene	106467	2 80E+03	1 50E+00	-	2 40E+01	-	7 50E+02	0 14 c	0 26 c	0 13 c	120 c	27 c
3,3'-Dichlorobenzidine	91941	-	7 80E-02	-	1 30E+00	-		0 15 c	0 014 c	0 007 c	6 4 c	1 4 c
1,4-Dichloro-2-butene	764410	-	-	-	-	-	-	0 0011 c	0 00087 c	-	-	-
Dichlorodifluoromethane	75718	1 10E+04	-	7 00E+03	-	1 20E+05	5 00E+03	390 n	210 n	270 n	200000 n	16000 n
1,1-Dichloroethane	75343	-	-	3 50E+03	-	5 80E+04	3 50E+03	810 n	520 n	140 n	100000 n	7800 n
1,2-Dichloroethane (EDC)	107062	5 50E+01	3 80E-01	-	6 40E+00	-	4 00E+01	0 12 c	0 069 c	0 035 c	31 c	7 c
1,1-Dichloroethylene	75354	8 30E+00	5 80E-02	3 20E+02	9 70E-01	5 20E+03	7 00E+01	0 044 c	0 038 c	0 0051 c	4 8 c	1 1 c
1,2-Dichloroethylene (cis)	156592	5 60E+02	-	3 50E+02	-	5 80E+03	4 00E+02	61 n	37 n	14 n	10000 n	780 n
1,2-Dichloroethylene (trans)	156605	1 10E+03	-	7 00E+02	-	1 20E+04	6 00E+02	120 n	73 n	27 n	20000 n	1600 n
1,2-Dichloroethylene (mixture)	540590	-	-	-	-	-	-	55 n	33 n	12 n	9200 n	700 n
2,4-Dichlorophenol	120832	1 70E+02	-	1 10E+02	-	1 70E+03	3 00E+01	110 n	11 n	4 1 n	3100 n	230 n
2,4-Dichlorophenoxyacetic Acid (2,4-D)	94757	5 60E+02	-	3 50E+02	-	5 80E+03	1 00E+02	61 n	37 n	14 n	10000 n	780 n
4-(2,4-Dichlorophenoxy)butyric Acid	94826	-	-	2 80E+02	-	4 70E+03	-	250 n	29 n	11 n	8200 n	630 n
1,2-Dichloropropane	78875	7 90E+01	5 10E-01	-	8 60E+00	-	5 00E+00	0 16 c	0 092 c	0 046 c	42 c	9 4 c
2,3-Dichloropropanol	616239	-	-	-	-	-	-	110 n	11n	4 1 n	3100 n	230 n
1,3-Dichloropropene	542756	1 70E+01	1 90E-01	1 10E+01	3 20E+00	1 70E+02	1 00E+01	0 077 c	0 048 c	0 018 c	16 c	3 7 c
Dichlorvos	62737	-	1 20E-01	1 80E+01	2 00E+00	2 90E+02	-	0 23 c	0 022 c	0 011 c	9 9 c	2 2 c
Dicofol	115322	-	-	-	-	-	-	0 15 c	0 014 c	0 0072 c	6 5 c	1 5 c
Dicyclopentadiene	77736	-	-	-	-	-	-	0 42 n	0 21 n	41 n	31000 n	2300 n
Dieldrin	60571	3 10E-01	2 20E-03	1 80E+00	3 60E-02	2 90E+01	2 00E-01	0 0042 c	0 00039 c	0 0002 c	0 18 c	0 04 c
Diesel emissions	-	-	-	-	-	-	-	52 n	5 2 n	-	-	-
Diethylhexyl phthalate	117817	-	-	-	-	-	3 00E+02	-	-	-	-	-
Diethyl phthalate	84662	4 50E+04	-	2 80E+04	-	4 70E+05	3 00E+04	29000 n	2900 n	1100 n	820000 n	63000 n
Diethylene glycol, monobutyl ether	112345	-	-	-	-	-	-	210 n	21 n			
Diethylene glycol, monoethyl ether	111900	-	-	-	-	-	-	73000 n	7300 n	2700 n	1800000 n	160000 n
Diethylformamide	617845	-	-	-	-	-	-	400 n	40 n	15 n	11000 n	860 n
Di(2-ethylhexyl)adipate	103231	-	-	-	-	-	1 00E+02	-	-	-	-	-

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Diethylstilbestrol	56531	-	-	-	-	-	-	0 000014 c	1 30E-06 c	6 70E-07	6 10E-04 c	1 40E-04 c
Difenzoquat (Avenge)	43222486	-	-	-	-	-	-	2600 n	290 n	110 n	82000 n	6300 n
Diflubenzuron	35367385	-	-	-	-	-	-	730 n	73 n	27 n	20000 n	1600 n
Diisopropyl methylphosphonate (DIMP)	1445756	4 50E+03	-	2 80E+03	-	4 70E+04	3 00E+03	2600 n	290 n	110 n	82000 n	6300 n
Dimethipin	55290647	-	-	-	-	-	-	730 n	73 n	27 n	20000 n	1600 n
Dimethoate	60515	-	-	7 00E+00	-	1 20E+02	-	7 3 n	0 73 n	0 27 n	200 n	16 n
3,3-Dimethoxybenzidine	119904	-	2 50E+00	-	4 20E+01	-	-	4 8 c	0 45 c	0 23 c	200 c	46 c
Dimethrin	70382	1 70E+04	-	-	-	-	1 00E+01	-	-	-	-	-
Dimethyl methylphosphonate	756796	-	-	-	-	-	2 00E+03	-	-	-	-	-
Dimethyl phthalate	131113	-	-	3 50E+05	-	5 60E+06	3 50E+05	370000 n	37000 n	14000 n	10000000 n	780000 n
Dimethyl terephthalate	120616	-	-	-	-	-	-	3700 n	370 n	140 n	100000 n	7800 n
Dimethylamine	124403	-	-	-	-	-	-	0 21 n	0 021 n	-	-	-
2,4-Dimethylaniline hydrochloride	21436964	-	-	-	-	-	-	0 12 c	0 011 c	0 0054 c	4 9 c	1 1 c
2,4-Dimethylaniline	95681	-	-	-	-	-	-	0 09 c	0 0083 c	0 0042 c	3 8 c	0 85 c
N-N-Dimethylaniline	121697	-	-	-	-	-	-	73 n	7 3 n	2 7 n	2000 n	160 n
3,3'-Dimethylbenzidine	119937	-	-	-	-	-	-	0 0173 c	0 00088 c	0 00034 c	0 31 c	0 069 c
N,N-Dimethylformamide	68122	-	-	-	-	-	-	3700 n	31 n	140 n	100000 n	7800 n
1,1-Dimethylhydrazine	57147	-	-	-	-	-	-	0 028 c	0 0018 c	0 0012 c	1 1 c	0 25 c
1,2-Dimethylhydrazine	540738	-	-	-	-	-	-	0 00118 c	0 00017 c	0 000085	0 077 c	0 017 c
2,4-Dimethylphenol	105679	-	-	7 00E+02	-	1 20E+04	-	730 n	73 n	27 n	20000 n	1600 n
2,6-Dimethylphenol	576261	-	-	-	-	-	-	22 n	2 2 n	0 81 n	610 n	47 n
3,4-Dimethylphenol	95658	-	-	-	-	-	-	37 n	3 7 n	1 4 n	1000 n	78 n
1,2-Dinitrobenzene	528290	-	-	-	-	-	-	15 n	1 5 n	0 54 n	410 n	31 n
1,3-Dinitrobenzene	99650	5 60E+00	-	3 50E+00	-	5 80E+01	5 00E+00	3 7 n	0 37 n	0 14 n	100 n	7 8 n
1,4-Dinitrobenzene	100254	-	-	-	-	-	-	15 n	1 5 n	0 54 n	410 n	31 n
4,6-Dinitro-o-cyclohexyl phenol	131895	-	-	-	-	-	-	73 n	7 3 n	2 7 n	2000 n	160 n
2,4-Dinitrophenol	51285	-	-	7 00E+01	-	1 20E+03	-	7 3 n	7 3 n	2 7 n	2000 n	160 n
Dinitrotoluene mixture	-	-	-	-	-	-	-	0 038 c	0 0092 c	0 0048 c	4 2 c	0 94 c
2,4-Dinitrotoluene	121142	7 40E+00	-	7 00E+01	-	1 20E+03	-	7 3 n	7 3n	2 7 n	2000 n	160 n
2,6-Dinitrotoluene	606202	7 40E+00	-	3 50E+01	-	5 80E+02	-	3 7 n	3 7 n	1 4 n	1000 n	78 n
Dinoseb	88857	5 60E+01	-	3 50E+01	-	5 80E+02	1 00E+01	3 7 n	3 7 n	1 4 n	1000 n	78 n
di-n-Octyl phthalate	117840	-	-	7 00E+02	-	1 20E+04	-	730 n	73 n	27 n	20000 n	1600 n
1,4-Dioxane	123911	-	3 20E+00	-	5 30E+01	-	7 00E+02	6 1c	0 57 c	0 29 c	260 c	58 c
Diphenamid	957517	1 70E+03	-	-	-	-	3 00E+02	1100 n	110 n	41 n	31000 n	2300 n
Diphenylamine	122394	-	-	-	-	-	3 00E+02	910 n	91 n	34 n	26000 n	2000 n
1,2-Diphenylhydrazine	122667	-	4 40E-02	-	7 30E-01	-	-	0 084 c	0 0081 c	0 0039 c	3 6 c	0 8 c
Diquat	85007	1 20E+02	-	7 70E+01	-	1 30E+03	8 00E+01	80 n	8 n	3 n	2200 n	170 n
Direct black 38	1937377	-	-	-	-	-	-	-	-	-	-	-

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Contaminant	CAS	ASL	Superfund Chemical Data Matrix				EPA RAL DW	U.S. EPA Region III Table				
			GW c	GW n	Soil c	Soil n		Tap Water	Ambient Air	Fish	Industrial soil	Residential soil
		mg/kg	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/m3	mg/kg	mg/kg	mg/kg
Direct blue 6	2602462	-	-	-	-	-	-	0.0083 c	0.00077 c	0.00039 c	0.35 c	0.079 c
Direct brown 95	16071866	-	-	-	-	-	-	0.0072 c	0.00067 c	0.00034 c	0.31 c	0.069 c
Disulfoton	298044	2.30E+00	-	1.40E+00	-	2.30E+01	1.00E+00	1.5 n	0.15 n	0.054 n	41 n	3.1 n
1,4-Dithiane	505293	-	-	-	-	-	4.00E+02	370 n	37 n	14 n	10000 n	780 n
Diuron	330541	-	-	7.00E+01	-	1.20E+03	7.00E+01	73 n	7.3 n	2.7 n	2000 n	160 n
Dodine	2439103	-	-	-	-	-	-	150 n	15 n	5.4 n	4100 n	310 n
Endosulfan	115297	-	-	2.10E+02	-	3.50E+03	-	220 n	22 n	8.1 n	6100 n	470 n
Endothall	145733	1.10E+03	-	7.00E+02	-	1.20E+04	2.00E+02	730 n	73 n	27 n	20000 n	1600 n
Endrin	72208	1.70E+01	-	1.10E+01	-	1.70E+02	3.00E+00	11 n	1.1 n	0.41 n	310 n	23 n
Epichlorohydrin	106898	5.10E+02	-	-	-	-	7.00E+01	6.8 c	1 n	0.32 c	290 c	65 c
1,2-Epoxybutane	106887	-	-	-	-	-	-	210 n	21 n	-	-	-
Ethephon (2-chloroethyl phosphonic acid)	16672870	-	-	-	-	-	-	180 n	18 n	6.8 n	5100 n	390 n
Ethion	563122	-	-	1.80E+01	-	2.90E+02	-	18 n	1.8 n	0.68 n	510 n	39 n
2-Ethoxyethanol acetate	111159	-	-	-	-	-	-	11000 n	1100 n	410 n	310000 n	23000 n
2-Ethoxyethanol	110805	-	-	-	-	-	-	15000 n	210 n	540 n	410000 n	31000 n
Ethyl acrylate	140885	-	-	-	-	-	-	1.4 c	0.13 c	0.068 c	60 c	13 c
EPTC (S-Ethyl dipropylthiocarbamate)	759944	-	-	8.80E+02	-	1.50E+04	-	910 n	91 n	34 n	26000 n	2000 n
Ethyl ether	60297	-	-	7.00E+03	-	1.20E+05	7.00E+03	1200 n	730n	270 n	200000 n	16000 n
Ethyl methacrylate	97632	-	-	-	-	-	-	3300 n	330 n	120 n	92000 n	7000 n
Ethyl acetate	141786	-	-	3.20E+04	-	5.20E+05	-	33000 n	3300 n	1200 n	920000 n	70000 n
Ethylbenzene	100414	5.60E+03	-	3.50E+03	-	5.80E+04	1.00E+03	1300 n	1000 n	140 n	100000 n	7800 n
Ethylene cyanohydrin	109784	-	-	-	-	-	-	11000 n	1100 n	410 n	310000 n	23000 n
Ethylene diamine	107153	-	-	-	-	-	-	730 n	73 n	27 n	20000 n	1600 n
Ethylene dibromide(1,2)	10893	5.90E+00	-	-	-	-	5.00E-02	-	-	-	-	-
Ethylene glycol	107211	1.10E+05	-	7.00E+04	-	1.20E+06	6.00E+03	7.3000 n	7300 n	2700 n	1000000 n	160000 n
Ethylene glycol, monobutyl ether	111762	-	-	-	-	-	-	210 n	21 n	-	-	-
Ethylene oxide	75218	-	-	-	-	-	-	0.066 c	0.018 c	0.0031 c	2.8 c	0.63 c
Ethylene thiourea (ETU)	96457	4.50E+00	-	-	-	-	3.00E+00	0.57 c	0.053 c	0.027 c	24 c	5.4 c
Ethyl p-nitrophenyl phenylphosphorothioate	2104645	-	-	-	-	-	-	0.37 n	0.037 n	0.014 n	10 n	0.78 n
Ethylnitrosourea	759739	-	-	-	-	-	-	0.00048 c	0.000045 c	0.000023	0.02 c	0.0046 c
Ethylphthalyl ethyl glycolate	84720	-	-	-	-	-	-	110000 n	11000 n	4100 n	1000000 n	230000 n
Express	10120	-	-	-	-	-	-	290 n	29 n	11 n	8200 n	630 n
Fenamiphos	22224926	1.40E+01	-	-	-	-	5.00E+00	9.1 n	0.91 n	0.34 n	260 n	20 n
Flourine	7782414	-	-	2.10E+03	-	3.50E+04	-	-	-	-	-	-
Fluometuron	2164172	7.30E+02	-	-	-	-	4.00E+02	470 n	47 n	18 n	13000 n	1000 n
Fluoride	7782414	-	-	-	-	-	5.00E+03	2200 n	220 n	81n	61000 n	4700 n
Fluoridone	59756604	-	-	-	-	-	-	2900 n	290 n	110 n	82000 n	6300 n
Flurprimidol	56425913	-	-	-	-	-	-	730 n	73 n	27 n	20000 n	1600 n

EPA Region ... Screening Table

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Contaminant	CAS	ASL	Superfund Chemical Data Matrix				EPA RAL DW	U.S. EPA Region III Table				
			GW c	GW n	Soil c	Soil n		Tap Water	Ambient Air	Fish	Industrial soil	Residential soil
		mg/kg	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/m3	mg/kg	mg/kg	mg/kg
Flutolanil	66332965	-	-	-	-	-	-	2200 n	220 n	81 n	61000 n	4700 n
Fluvalinate	69409045	-	-	-	-	-	-	370 n	37 n	14 n	10000 n	780 n
Folpet	133073	-	-	-	-	-	-	19 c	1 8 c	0 9 c	820 c	180 c
Fomesafen	72178020	-	-	-	-	-	-	0 15 c	0 033 c	0 017 c	15 c	3 4 c
Fonofos	944229	1 10E+02	-	-	-	-	2 00E+01	73 n	7 3 n	2 7 n	2000 n	160 n
Formaldehyde	50000	-	-	7 00E+03	-	1 20E+05	5 00E+01	7300 n	0 14 c	270 n	200000 n	16000 n
Formic Acid	64186	-	-	7 00E+04	-	1 20E+06	-	73000 n	7300 n	2700 n	1000000 n	160000 n
Fosetyl-al	39148248	-	-	-	-	-	-	110000 n	11000 n	4100 n	1000000 n	230000 n
Furan	110009	-	-	3 50E+01	-	5 80E+02	-	37 n	3 7 n	1 4 n	1000 n	78 n
Furazolidone	67458	-	-	-	-	-	-	0 018 c	0 0018 c	0 00009 c	0 75 c	0 17 c
Furfural	98011	-	-	1 10E+02	-	1 70E+03	-	110 n	52 n	4 1 n	3100 n	230 n
Furium	531828	-	-	-	-	-	-	0 0013 c	0 00013 c	0 000003	0 057 c	0 013 c
Furmecyclox	60568050	-	-	-	-	-	-	2 2 c	0 21 c	0 11 c	95 c	21 c
Glufosinate-ammonium	77182822	-	-	-	-	-	-	15 n	1 5 n	0 54 n	410 n	31 n
Glycidaldehyde	765344	-	-	1 40E+01	-	2 30E+02	-	15 n	1 n	0 54 n	410 n	31 n
Glyphosate	1071836	5 60E+03	-	-	-	-	1 00E+03	3700 n	370 n	140 n	100000 n	7800 n
Haloxyfop-methyl	69806402	-	-	-	-	-	-	1 8 n	0 18 n	0 068 n	51 n	3 9 n
Harmony	79277273	-	-	-	-	-	-	470 n	47 n	18 n	13000 n	1000 n
HCH (alpha)	319846	-	5 60E-03	-	9 30E-02	-	-	0 011 c	0 00099 c	0 0005 c	0 45 c	0 1 c
HCH (beta)	319857	-	1 90E-02	-	3 20E-01	-	-	0 037 c	0 0035 c	0 0018 c	1 6 c	0 35 c
HCH (gamma) Lindane	58899	8 40E+00	2 70E-02	1 10E+01	4 50E-01	1 70E+02	2 00E+00	0 052 c	0 0048 c	0 0024 c	2 2 c	0 49 c
HCH-technical	608731	-	-	-	-	-	-	0 037 c	0 0035 c	0 0018 c	1 6 c	0 35 c
Heptachlor	76448	1 10E+00	1 80E-03	1 80E+01	1 30E-01	2 90E+02	8 00E-01	0 0023 c	0 0014 c	0 0007 c	0 64 c	0 14 c
Heptachlor epoxide	1024573	5 50E-01	3 60E-03	4 60E-01	8 40E-02	1 60E+00	4 00E-01	0 0112 c	0 00089 c	0 00035 c	0 31 c	0 07 c
Hexabromobenzene	87821	-	-	7 00E+01	-	1 20E+03	-	12 n	7 3 n	2 7 n	2000 n	160 n
Hexachlorinated dibenzofuran 1,2,3,4,7,8	70648269	-	2 30E-05	-	3 90E-04	-	-	-	-	-	-	-
Hexachlorobenzene	118741	3 10E+00	2 20E-02	2 80E+01	3 60E-01	4 70E+02	2 00E+00	0 0066 c	0 0039 c	0 002 c	1 8 c	0 4 c
Hexachlorobutadiene	87683	5 60E+01	4 50E-01	7 00E+00	7 50E+00	1 20E+02	7 00E+01	0 14 c	0 081 c	0 04 c	37 c	8 2 c
Hexachlorocyclopentadiene	77474	3 90E+02	-	2 50E+02	-	4 10E+03	2 00E+02	0 15 n	0 073 n	9 5 n	7200 n	550 n
Hexachlorodibenzo-p-dioxin mixture	19408743	-	5 70E-06	-	9 40E-05	-	-	0 000011 c	0 0000014 c	0 00000051	0 00046 c	0 0001 c
Hexachloroethane	67721	-	2 50E+00	3 50E+01	4 20E+01	5 80E+02	4 00E+01	0 75 c	0 45 c	0 23 c	200 c	46 c
Hexachlorophene	70304	-	-	1 10E+01	-	1 70E+02	-	11 n	1 1 n	0 41 n	310 n	23 n
Hexahydro-1,3,5-trinitro-1,3,5-triazine	121824	-	-	-	-	-	1 00E+02	0 61 c	0 057 c	0 029 c	26 c	5 8 c
n-Hexane	110543	-	-	2 10E+03	-	3 50E+04	4 00E+03	350 n	210 n	81 n	61000 n	4700 n
Hexazinone	51235042	1 90E+03	-	-	-	-	1 00E+03	1200 n	120 n	45 n	34000 n	2600 n
Hydrazine, hydrazine sulfate	302012	-	1 20E-02	-	1 90E-01	-	-	0 022 c	0 00037 c	0 0011 c	0 95 c	0 21 c
Hydrogen chloride	7647010	-	-	-	-	-	-	73 n	7 3 n	-	-	-
Hydrogen bromide	[illegible]											

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Contaminant	CAS	ASL	Superfund Chemical Data Matrix				EPA RAL DW	U.S. EPA Region III Table				
			GW c	GW n	Soil c	Soil n		Tap Water	Ambient Air	Fish	Industrial soil	Residential soil
		mg/kg	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/m3	mg/kg	mg/kg	mg/kg
Hydroquinone	123319	-	-	-	-	-	-	1500 n	150 n	54 n	41000 n	3100 n
Imazalil	35554440	-	-	-	-	-	-	470 n	47 n	18 n	13000 n	1000 n
Imazaquin	81335377	-	-	-	-	-	-	9100 n	910 n	340 n	260000 n	20000 n
Iprodione	36734197	-	-	-	-	-	-	1500 n	150 n	54 n	41000 n	3100 n
Isobutanol	78831	-	-	1 10E+04	-	1 70E+05	-	1800 n	1100 n	410 n	310000 n	23000 n
Isophorone	78591	1 20E+03	3 70E+01	7 00E+03	6 10E+02	1 20E+05	7 00E+03	71 c	8 4 c	3 3 c	3000 c	670 c
Isopropalin	33820530	-	-	-	-	-	-	550 n	55 n	20 n	15000 n	1200 n
Isopropyl methylphosphonate	6838933	-	-	-	-	-	4 00E+03	-	-	-	-	-
Isopropyl methyl phosphonic acid	1832548	-	-	-	-	-	-	3700 n	370 n	140 n	100000 n	7800 n
Isoxaben	82558507	-	-	-	-	-	-	1800 n	180 n	68 n	51000 n	3900 n
Kepone	143500	-	-	-	-	-	-	0 0037 c	0 00035 c	0 00018 c	0 16 c	0 035 c
Lactofen	77501634	-	-	-	-	-	-	73 n	7 3 n	2 7 n	2000 n	160 n
Lead (tetraethyl)	78002	-	-	3 60E-03	-	5 80E-02	3 00E+01	0 00037 n	0 00037 n	0 00014 n	0 1 n	0 0078 n
Linuron	330552	-	-	-	-	-	-	73 n	7 3 n	2 7 n	2000 n	160 n
Lithium	7439932	-	-	-	-	-	-	730 n	73 n	27 n	20000 n	1600 n
Londax	83055099	-	-	-	-	-	-	7300 n	730 n	270 n	200000 n	16000 n
Malathion	121755	-	-	7 00E+02	-	1 20E+04	2 00E+02	730 n	73 n	27 n	20000 n	1600 n
Maleic anhydride	108316	-	-	3 50E+03	-	5 80E+04	-	3700 n	370 n	140 n	100000 n	7800 n
Maleic hydrazide	123331	2 80E+04	-	1 80E+04	-	2 90E+05	5 00E+03	18000 n	1800 n	680 n	510000 n	39000 n
Malononitrile	109773	-	-	-	-	-	-	0 73 n	0 073 n	0 027 n	20 n	1 6 n
Mancozeb	8018017	-	-	-	-	-	-	1100 n	110 n	41 n	31000 n	2400 n
Maneb	12427382	-	-	-	-	-	-	180 n	18 n	6 8 n	5100 n	390 n
Manganese and compounds	7439965	5 60E+03	-	1 80E+02	-	2 90E+03	2 00E+02	180 n	0 052 n	6 8 n	5100 n	390 n
Mephosfolan	950107	-	-	-	-	-	-	3 3 n	0 33 n	0 12 n	82 n	7 n
Mepiquat chloride	24307264	-	-	-	-	-	-	1100 n	110 n	41 n	31000 n	2300 n
Mercury (inorganic)	7439976	1 70E+01	-	1 10E+01	-	1 70E+02	1 00E+01	11 n	0 31 n	0 41 n	310 n	23 n
Mercury (methyl)	22967926	1 70E+01	-	-	-	-	1 00E+01	11 n	1 1 n	0 41 n	310 n	23 n
Merphos	150505	-	-	-	-	-	-	1 1 n	0 11 n	0 041 n	31 n	2 3 n
Merphos oxide	78488	-	-	-	-	-	-	1 1 n	0 11 n	0 041 n	31 n	2 3 n
Metalaxyl	57837191	-	-	-	-	-	-	2200 n	220 n	81 n	61000 n	4700 n
Methacrylonitrile	126987	-	-	3 50E+00	-	5 80E+01	-	3 7 n	0 73 n	0 14 n	100 n	7 8 n
Methamidophos	10265926	-	-	-	-	-	-	1 8 n	0 18 n	0 068 n	51 n	3 9 n
Methanol	67561	-	-	1 80E+04	-	2 90E+05	-	18000 n	1800 n	680 n	510000 n	39000 n
Methidathion	950378	-	-	-	-	-	-	37 n	3 7 n	1 4 n	1000 n	78 n
Methomyl	16752775	1 40E+03	-	8 80E+02	-	1 50E+04	3 00E+02	910 n	91 n	34 n	26000 n	2000 n
Methoxychlor	72435	2 80E+02	-	1 80E+02	-	2 90E+03	5 00E+01	180 n	18 n	6 8 n	5100 n	390 n
2-Methoxyethanol acetate	110496	-	-	-	-	-	-	73 n	7 3 n	2 7 n	2000 n	160 n
2-Methoxyethanol	109864	-	-	-	-	-	-	37 n	21 n	1 4 n	1000 n	78 n

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Contaminant	CAS	ASL	Superfund Chemical Data Matrix				EPA RAL	U.S. EPA Region III Table				
			GW c	GW n	Soil c	Soil n	DW	Tap Water	Ambient Air	Fish	Industrial soil	Residential soil
		mg/kg	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/m3	mg/kg	mg/kg	mg/kg
2-Methoxy-5-nitroaniline	99592	-	-	-	-	-	-	1.5 c	0.14 c	0.069 c	62 c	14 c
Methyl acetate	79209	-	-	-	-	-	-	37000 n	3700 n	1400 n	100000 n	78000 n
Methyl acrylate	96333	-	-	-	-	-	-	1100 n	110 n	41 n	31000 n	2300 n
2-Methylaniline hydrochloride	636215	-	-	-	-	-	-	0.37 c	0.035 c	0.018 c	16 c	3.5 c
2-Methylaniline	95534	-	-	-	-	-	-	0.28 c	0.026 c	0.013 c	12 c	2.7 c
Methyl chlorocarbonate	79221	-	-	-	-	-	-	37000 n	3700 n	1400 n	100000 n	78000 n
4-(2-Methyl-4-chlorophenoxy) butyric acid	94815	-	-	-	-	-	-	370 n	37 n	14 n	10000 n	780 n
2-Methyl-4-chlorophenoxyacetic acid	94746	2.80E+01	-	-	-	-	-	18 n	1.8 n	0.68 n	510 n	39 n
2-(2-Methyl-14-chlorophenoxy)propionic acid	93652	-	-	-	-	-	-	37 n	3.7 n	1.4 n	1000 n	78 n
Methylcyclohexane	108872	-	-	-	-	-	-	31000 n	3100 n	-	-	-
Methylene bromide	74953	-	-	-	-	-	-	61 n	37 n	14 n	10000 n	780 n
Methylene chloride	75092	6.70E+02	4.70E+00	2.10E+03	7.80E+01	3.50E+04	5.00E+02	4.1 c	3.8 c	0.42 c	380 c	85 c
4,4'-Methylene bis(2-chloroaniline)	101144	-	2.70E-01	2.50E+01	4.50E+00	4.10E+02	-	0.52 c	0.048 c	0.024 c	22 c	4.9 c
4,4'-Methylenebisbenzeneamine	101779	-	-	-	-	-	-	0.27 c	0.025 c	0.013 c	11 c	2.6 c
4,4'-Methylene bis(N,N'-dimethyl)aniline	101611	-	-	-	-	-	-	1.5 c	0.14 c	0.069 c	62 c	14 c
4,4'-Methylenediphenyl isocyanate	101688	-	-	-	-	-	-	0.015 n	0.021 n	-	-	-
Methyl ethyl ketone(2-butanone)	78933	1.40E+03	-	2.10E+04	-	3.50E+05	2.10E+04	22000 n	1000 n	810 n	610000 n	47000 n
Methyl hydrazine	60344	-	-	-	-	-	-	0.061 c	0.0057 c	0.0029 c	2.6 c	0.58 c
Methyl isobutyl ketone	108101	-	-	1.80E+03	-	2.90E+04	-	2900 n	84 n	110 n	82000 n	6300 n
Methyl methacrylate	80626	-	-	2.80E+03	-	4.70E+04	-	2900 n	290 n	110 n	82000 n	6300 n
2-Methyl-5-nitroaniline	99558	-	-	-	-	-	-	2 c	0.19 c	0.096 c	87 c	19 c
Methyl parathion	298000	1.40E+01	-	8.80E+00	-	1.50E+02	9.00E+00	9.1 n	0.91 n	0.34 n	260 n	20 n
2-Methylphenol (o-cresol)	95487	2.80E+03	-	-	-	-	-	1800 n	180 n	68 n	51000 n	3900 n
3-Methylphenol (m-cresol)	108394	-	-	-	-	-	-	1800 n	180 n	68 n	51000 n	3900 n
4-Methylphenol (p-cresol)	106445	-	-	-	-	-	-	180 n	18 n	6.8 n	5100 n	390 n
Methyl styrene (mixture)	25013154	-	-	-	-	-	-	60 n	42 n	8.1 n	8100 n	470 n
Methyl styrene (alpha)	98839	-	-	-	-	-	-	430 n	260 n	95 n	72000 n	5500 n
Methyl tertbutyl ether (MTBE)	1634044	-	-	-	-	-	2.00E+02	180 n	3100 n	6.8 n	5100 n	390 n
Metolachlor (Dual)	51218452	4.20E+03	-	-	-	-	2.00E+03	5500 n	550 n	200 n	150000n	12000 n
Metribuzin	21087649	1.40E+03	-	8.80E+02	-	1.50E+04	3.00E+02	910 n	91 n	34 n	26000 n	2000 n
Mirex	2385855	-	1.90E-02	7.00E+00	3.20E-01	1.20E+02	-	0.037 c	0.0035 c	0.0018 c	1.6 c	0.35 c
Molinate	2212671	-	-	-	-	-	-	73 n	7.3 n	2.7 n	2000 n	160 n
Molybdenum	7439987	5.60E+01	-	-	-	-	1.00E+01	180 n	18 n	6.8 n	5100 n	390 n
Monochloramine	10599903	-	-	-	-	-	-	3700 n	370 n	140 n	100000 n	7800 n
Naled	300765	-	-	-	-	-	-	73 n	7.3 n	2.7 n	2000 n	160 n
2-Naphthylamine	91598	-	-	-	-	-	-	0.00052 c	0.000048 c	0.000024 c	0.022 c	0.0049 c
Napropamide	15299997	-	-	-	-	-	-	3700 n	370 n	140 n	100000 n	7800 n
Nickel refinery dust		-	-	-	-	-	-					

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			GW c	GW n	Soil c	Soil n		Tap Water	Ambient Air	Fish	Industrial soil	Residential soil
		mg/kg	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/m3	mg/kg	mg/kg	mg/kg
Nickel (soluble salts)	7440020	1.10E+01	-	7.00E+02	-	1.20E+04	5.00E+02	730 n	73 n	27 n	20000 n	1600 n
Nickel subsulfide	12035722	-	-	-	-	-	-	-	0.0037 c	-	-	-
Nitrapyrin	1929824	-	-	-	-	-	-	55 n	5.5 n	2 n	1500 n	120 n
Nitrate	14797558	-	-	-	-	-	1.00E+04	58000 n	5600 n	2200 n	1000000 n	130000 n
Nitric Oxide	10102439	-		3.50E+03	-	5.80E+04	-	3700 n	370 n	140 n	100000 n	7800 n
Nitrite	14797650	-	-	-	-	-	1.00E+03	3700 n	370 n	140 n	100000 n	7800 n
2-Nitroaniline	88744	-	-	-	-	-	-	2.2 n	0.21 n	0.081 n	61 n	4.7 n
3-Nitroaniline	99092	-	-	-	-	-	-	110 n	11 n	4.1 n	3100 n	230 n
4-Nitroaniline (p-Nitroaniline)	100016	-	-	-	-	-	-	110 n	11 n	4.1 n	3100 n	230 n
Nitrobenzene	98953	2.80E+01	-	1.80E+01	-	2.90E+02	-	3.4 n	2.1 n	0.68 n	510 n	39 n
Nitrofurantoin	67209	-	-	-	-	-	-	2600 n	260 n	95 n	72000 n	5500 n
Nitrofurazone	59870	-	-	-	-	-	-	0.045 c	0.00067 c	0.0021 c	1.9 c	0.43 c
Nitrogen dioxide	10102440	-	-	3.50E+04	-	5.80E+05	-	37000 n	3700 n	1400 n	1000000 n	78000 n
Nitroguanidine	556887	-	-	-	-	-	4.00E+03	3700 n	370 n	140 n	100000 n	7800 n
4-Nitrophenol	100027	-	-	-	-	-	-	2300 n	230 n	84 n	63000 n	4800 n
p-nitrophenol	251545	-	-	-	-	-	3.00E+02		-	-	-	-
2-Nitropropane	79469	-	-	-	-	-	-	210 n	0.00067 c		-	
N-Nitrosodi-n-butylamine	924163	-	6.50E-03	-	1.10E-01	-	-	0.012 c	0.0011 c	0.00058 c	0.53 c	0.12 c
N-Nitrosodiethanolamine	1116547	-	1.30E-02	-	2.10E-01	-	-	0.034 c	0.0022 c	0.0011 c	1 c	0.23 c
N-Nitrosodiethylamine	55185	-	2.30E-04	-	3.60E-03	-	-	0.00045 c	0.000041 c	0.000021	0.018 c	0.0043 c
N-Nitrosodimethylamine	62759	-	6.90E-04	-	1.10E-02	-	-	0.0013 c	0.00013 c	0.000062	0.056 c	0.013 c
N-Nitrosodiphenylamine	86306	-	7.10E+00	-	1.20E+02	-	-	14 c	1.3 c	0.64 c	580 c	130 c
N-Nitroso di-n-propylamine	621647	-	-	-	-	-	-	0.0096 c	0.00089 c	0.00045 c	0.41 c	0.091 c
N-Nitroso-N-methylethylamine	10595956	-	-	-	-	-	-	0.0031 c	0.00028 c	0.00014 c	0.13 c	0.029 c
N-Nitrosopyrrolidine	930552	-	1.70E-02	-	2.80E-01	-	-	0.032 c	0.0029 c	0.0015 c	1.4 c	0.3 c
m-Nitrotoluene	99081	-	-	-	-	-	-	61 n	37 n	14 n	10000 n	780 n
o-Nitrotoluene	88722	-		-	-	-		61 n	37 n	14 n	10000 n	780 n
p-Nitrotoluene (4-Nitrotoluene)	99990	-	-	3.50E+02	-	5.80E+03	-	61 n	37 n	14 n	10000 n	780 n
Norflurazon	27314132	-	-	-	-	-	-	1500 n	150 n	54 n	41000 n	3100 n
NuStar	85509199	-	-	-	-	-	-	26 n	2.8 n	0.95 n	720 n	55 n
Octabromodiphenyl ether	32536520	-	-	-	-	-	-	110 n	11 n	4.1 n	3100 n	230 n
Octahydro-1357-tetranitro-1357-tetrazocine	2691410	-	-	-	-	-	2.00E+03	1800 n	180 n	68 n	51000 n	3900 n
Octamethylpyrophosphoramide	152169	-	-	-	-	-	-	73 n	7.3 n	2.7 n	2000 n	160 n
Oryzalin	19044883	-	-	-	-	-	-	1800 n	180 n	68 n	51000 n	3900 n
Oxadiazon	19666309	-	-	-	-	-	-	180 n	18 n	6.8 n	5100 n	390 n
Oxamyl	23135220	1.40E+03	-	-	-	-	2.00E+02	910 n	91 n	34 n	26000 n	2000 n
Oxyfluorfen	42874033	-	-	-	-	-	-	110 n	11 n	4.1 n	3100 n	230 n
Paclobutrazol	76738620	-	-	-	-	-	-	470 n	47 n	18 n	13000 n	1000 n

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Contaminant	CAS	ASL	Superfund Chemical Data Matrix				EPA RAL DW	U.S. EPA Region III Table				
			GW c	GW n	Soil c	Soil n		Tap Water	Ambient Air	Fish	Industrial soil	Residential soil
		mg/kg	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/m3	mg/kg	mg/kg	mg/kg
Paraquat	1910425	2.50E+01	-	-	-	-	5.00E+01	160 n	16 n	6.1 n	4600 n	350 n
Parathion	56382	-	-	2.10E+02	-	3.50E+03	-	220 n	22 n	8.1 n	6100 n	470 n
Pebulate	1114712	-	-	-	-	-	-	1800 n	180 n	68 n	51000 n	3900 n
Pendimethalin	40487421	-	-	-	-	-	-	1500 n	150 n	54 n	41000 n	3100 n
Pentabromo-6-chloro cyclohexane	87843	-	-	-	-	-	-	2.9 c	0.27 c	0.14 c	120 c	28 c
Pentabromodiphenyl ether	32534819	-	-	-	-	-	-	73 n	7.3 n	2.7 n	2000 n	160 n
Pentachlorinated Dibenzo-p-dioxin 1,2,3,7,8	40321764	-	4.70E-07	-	7.80E-06	-	-					
Pentachlorinated Dibenzofuran 1,2,3,7,8	109719779	-	2.30E-06	-	3.90E-05	-	-					
Pentachlorobenzene	608935	-	-	2.80E+01	-	4.70E+02	-	4.9 n	2.9 n	1.1 n	830 n	63 n
Pentachloronitrobenzene	82688	-	1.30E-01	1.10E+02	2.20E+00	1.70E+03	1.00E+02	0.041 c	0.024 c	0.012 c	11 c	2.5 c
Pentachlorophenol	87865	4.20E+01	2.90E-01	1.10E+03	4.90E+00	1.70E+04	3.00E+01	0.56 c	0.052 c	0.026 c	24 c	5.3 c
Permethrin	52645531	-	-	-	-	-	-	1800 n	180 n	68 n	51000 n	3900 n
Phenmedipham	13684634	-	-	-	-	-	-	9100 n	910 n	340 n	260000 n	20000 n
Phenol	108952	3.40E+04	-	2.10E+04	-	3.50E+05	6.00E+03	22000 n	2200 n	810 n	610000 n	47000 n
m-Phenylenediamine	108452	-	-	-	-	-	-	220 n	22 n	8.1 n	6100 n	470 n
o-Phenylenediamine	95545	-	-	-	-	-	-	220 n	22 n	8.1 n	6100 n	470 n
p-Phenylenediamine	106503	-	-	-	-	-	-	6900 n	690 n	260 n	190000 n	15000 n
Phenylmercuric acetate	62384	4.50E+00	-	2.80E+00	-	4.70E+01	-	2.0 n	0.29 n	0.11 n	82 n	6.3 n
2-Phenylphenol	90437	-	-	-	-	-	-	35 n	3.2 c	1.6 c	1500 c	330 c
Phorate	298022	-	-	7.00E+00	-	1.20E+02	-	7.3 n	0.73 n	0.27 n	200 n	16 n
Phosmet	732116	-	-	-	-	-	-	730 n	73 n	27 n	20000 n	1600 n
Phosphine	7803512	-	-	1.10E+01	-	1.70E+02	-	11 n	0.031 n	0.41 n	310 n	23 n
Phosphorodithioic acid,phenyl-o-ethyl-o-(4nitroph	2104645	-	-	3.50E-01	-	5.80E+00	-	-	-	-	-	-
Phosphorus (white)	7723140	-	-	-	-	-	5.00E-01	0.73 n	0.073 n	0.027 n	20 n	1.6 n
p-Phthalic acid	100210	-	-	-	-	-	-	37000 n	3700 n	1400 n	1000000 n	78000 n
Phthalic anhydride	85449	-	-	7.00E+04	-	1.20E+06	-	73000 n	1300 n	2700 n	1000000 n	160000 n
Picloram	1918021	3.90E+01	-	-	-	-	7.00E+02	2600 n	260 n	95 n	72000 n	5500 n
Pirimiphos-methyl	29232937	-	-	-	-	-	-	370 n	37 n	14 n	10000 n	780 n
Polybrominated biphenyls		-	-	-	-	-	-	0.0076 c	0.0007 c	0.00035 c	0.32 c	0.072 c
Polychlorinated biphenyls (PCBs)	1336363	6.50E-01	4.50E-03	-	7.60E-02	-	5.00E-01	0.0087 c	0.00081 c	0.00041 c	0.37 c	0.083 c
Aroclor 1016	12674112	-	-	-	-	-	-	2.6 n	0.26 n	0.095 n	72 n	5.5 n
Polychlorinated terphenyls (PCT's)	-	-	-	-	-	-	-	0.015 c	0.0014 c	0.0007 c	0.64 c	0.14 c
Polynuclear aromatic hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	83329	-	-	2.10E+03	-	3.50E+04	2.10E+03	2200 n	220 n	81 n	61000 n	4700 n
Anthracene	120127	1.70E+04	-	1.10E+04	-	1.70E+05	1.10E+04	11000 n	1100 n	410 n	310000 n	23000 n
Benzo[a]pyrene	50328	4.40E-01	4.80E-03	-	8.00E-02	-	2.00E-01	0.0092 c	0.001 c	0.00043 c	0.39 c	0.088 c
Benzo[b]fluoranthene	205992	4.40E+00	-	-	-	-	2.00E-01	0.092 c	0.01 c	0.0043 c	3.9 c	0.88 c
Benzo[k]fluoranthene	207089	4.40E+01	-	-	-	-	2.00E-01	0.92 c	0.1 c	0.043 c	39 c	8.8 c

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			GW c	GW n	Soil c	Soil n		Tap Water	Ambient Air	Fish	Industrial soil	Residential soil
		mg/kg	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/m3	mg/kg	mg/kg	mg/kg
Benz[a]anthracene	56553	4 40E+00	-	-	-	-	1 00E-01	0 092 c	0 01 c	0 0043 c	3 9 c	0 88 c
Chrysene	218019	4 40E+01	-	-	-	-	2 00E-01	9 2 c	1 c	0 43 c	390 c	88 c
Dibenz[ah]anthracene	53703	4 40E+00	-	-	-	-	1 00E-01	0 0092 c	0 001 c	0 00043 c	0 39 c	0 088 c
Fluoranthene	206440	2 30E+03	-	-	-	-	-	1500 n	150 n	54 n	41000 n	3100 n
Fluorene	86737	2 30E+03		1 40E+03		2 30E+04	1 40E+03	1500 n	150 n	54 n	41000 n	3100 n
Indeno[1,2,3-cd]pyrene	193395	4 40E-01	-	-	-	-	4 00E-01	0 092 c	0 01 c	0 0043 c	3 9 c	0 88 c
Naphthalene	91203	2 30E+02	-	-	-	-	1 00E+02	1500 n	150 n	54 n	41000 n	3100 n
Pyrene	129000	1 70E+03	-	1 10E+03	-	1 70E+04	1 10E+03	1100 n	110 n	41 n	31000 n	2300 n
Prochloraz	67747095	-	-	-	-	-	-	0 45 c	0 042 c	0 021 c	19 c	4 3 c
Profluralin	26399360	-	-	-	-	-	-	220 n	22 n	8 1 n	6100 n	470 n
Prometon	1610180	8 40E+02	-	-	-	-	2 00E+02	550 n	55 n	20 n	15000 n	1200 n
Prometryn	7287196	-	-	-	-	-	-	150 n	15 n	5 4 n	4100 n	310 n
Pronamide	23950585	2 10E+01	-	2 60E+03	-	4 40E+04	8 00E+02	2700 n	270 n	100 n	77000 n	5900 n
Propachlor	1918167	7 30E+02	-	-	-	-	1 00E+02	470 n	47 n	18 n	13000 n	1000 n
Propanil	709988	-	-	-	-	-	-	180 n	18 n	6 8 n	5100 n	390 n
Propargite	2312358	-	-	-	-	-	-	730 n	73 n	27 n	20000 n	1600 n
Propargyl alcohol	107197	-	-	-	-	-	-	73 n	7 3 n	2 7 n	2000 n	160 n
Propazine	139402	5 60E+02	-	-	-	-	5 00E+02	730 n	73 n	27 n	20000 n	1600 n
Propham	122429	1 10E+03	-	-	-	-	6 00E+02	730 n	73 n	27 n	20000 n	1600 n
Propiconazole	60207901	-	-	-	-	-	-	470 n	47 n	18 n	13000 n	1000 n
Propylene glycol	57556	-	-	-	-	-	-	730000 n	73000 n	27000 n	1000000 n	1000000 n
Propylene glycol, monoethyl ether	52125538	-	-	-	-	-	-	26000 n	2600 n	950 n	720000 n	55000 n
Propylene glycol, monomethyl ether	107982	-	-	-	-	-	-	26000 n	2100 n	950 n	720000 n	55000 n
Propylene oxide	75569	-	-	-	-	-	-	0 28 c	0 49 c	0 013 c	12 c	2 7 c
Pursuit	81335775	-	-	-	-	-	-	9100 n	910 n	340 n	260000 n	20000 n
Pydrin	51630581	-	-	-	-	-	-	910 n	91 n	34 n	26000 n	2000 n
Pyridine	110861	-		3 50E+01	-	5 80E+02	-	37 n	3 7 n	1 4 n	1000 n	78 n
Quinalphos	13593038	-	-	-	-	-	-	18 n	1 8 n	0 68 n	510 n	39 n
Quinoline	91225	-	2 90E-03	-	4 90E-02	-	-	0 0056 c	0 00052 c	0 00026 c	0 24 c	0 053 c
Resmethrin	10453868	-	-	-	-	-	-	1100 n	110 n	41 n	31000 n	2300 n
Ronnel	299843	-	-	1 80E+03	-	2 90E+04	-	1800 n	180 n	68 n	51000 n	3900 n
Rotenone	83794	-	-	-	-	-	-	150 n	15 n	5 4 n	4100 n	310 n
Savey	78587050	-	-	-	-	-	-	910 n	91 n	34 n	26000 n	2000 n
Selenious Acid	7783008	-	-	-	-	-	-	180 n	18 n	6 8 n	5100 n	390 n
Selenium	7782492	2 80E+02	-	1 80E+02	-	2 90E+03	2 00E+02	180 n	18 n	6 8 n	5100 n	390 n
Selenourea	630104	-	-	1 80E+02	-	2 90E+03	-	180 n	18 n	6 8 n	5100 n	390 n
Sethoxydim	74051802	-	-	-	-	-	-	3300 n	330 n	120 n	92000 n	7000 n
Silver and compounds	7440224	2 80E+02	-	1 80E+02	-	2 90E+03	1 00E+02	180 n	18 n	6 8 n	5100 n	390 n

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			GW c	GW n	Soil c	Soil n		Tap Water	Ambient Air	Fish	Industrial soil	Residential soil
		mg/kg	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/m3	mg/kg	mg/kg	mg/kg
Simazine	122349	5 60E+01	-	-	-	-	4 00E+01	0 56 c	0 052 c	0 026 c	24 c	5 3 c
Sodium azide	26628228	-	-	-	-	-	-	150 n	15 n	5 4 n	4100 n	310 n
Sodium diethyldithiocarbamate	148185	-	-	-	-	-	-	0 25 c	0 023 c	0 012 c	11 c	2 4 c
Sodium fluoroacetate	62748	-	-	-	-	-	-	0 73 n	0 073 n	0 027 n	20 n	1 6 n
Sodium metavanadate	13718268	-	-	-	-	-	-	37 n	3 7 n	1 4 n	1000 n	78 n
Strontium, stable	7440246	-	-	2 10E+04	-	3 50E+05	2 50E+04	22000 n	2 200	810 n	810000 n	47000 n
Strychnine	57249	-	-	1 10E+01	-	1 70E+02	-	11 n	1 1 n	0 41 n	310 n	23 n
Styrene	100425	5 60E+03	-	7 00E+03	-	1 20E+05	1 00E+03	1600 n	1600 n	270 n	200000 n	16000 n
Systhane	88671890	-	-	-	-	-	-	910 n	91 n	34 n	26000 n	2000 n
2,3,7,8-TCDD (dioxin)	1746016	-	2 30E-07	-	3 60E-00	-	3 00E-05	4 30E-07 c	5 4E-08 c	2 00E-08	1 8E-05 c	4 1E-06 c
Tebuthiuron	34014181	3 90E+01	-	-	-	-	7 00E+02	2600 n	260 n	95 n	72000 n	5500 n
Temephos	3383968	-	-	-	-	-	-	730 n	73 n	27 n	20000 n	1600 n
Terbacil	5902512	7 30E+01	-	-	-	-	3 00E+02	470 n	47 n	18 n	13000 n	1000 n
Terbufos	13071799	7 30E+00	-	-	-	-	1 00E+00	0 91 n	0 091 n	0 034 n	26 n	2 n
Terbutryn	886500	-	-	-	-	-	-	37 n	3 7 n	1 4 n	1000 n	78 n
1,2,4,5-Tetrachlorobenzene	95943	-	-	1 10E+01	-	1 70E+02	-	1 8 n	1 1 n	0 41 n	310 n	23 n
2,3,7,8-Tetrachlorodibenzofuran	125322329	-	2 30E-06	-	-	3 90E-05	-	-	-	-	-	-
1,1,1,2-Tetrachloroethane	630206	-	1 30E+00	1 10E+03	2 20E+01	1 70E+04	9 00E+02	0 41 c	0 24 c	0 12 c	110 c	25 c
1,1,2,2-Tetrachloroethane	79345	1 90E+02	1 80E 01	-	2 90E+00	-	2 00E+00	0 052 c	0 031 c	0 016 c	14 c	3 2 c
Tetrachloroethylene (PCE)	127184	3 60E+02	6 70E 01	3 50E+02	1 10E+01	5 80E+03	7 00E+01	1 1 c	3 1 c	0 081 c	55 c	12 c
2,3,4,6-Tetrachlorophenol	58902	-	-	1 10E+03	-	1 70E+04	-	1100 n	110 n	41 n	31000 n	2300 n
p,a,a,a-Tetrachlorotoluene	5216251	-	-	-	-	-	-	0 00053 c	0 00031 c	0 00018 c	0 14 c	0 032 c
Tetrachlorovinphos	961115	-	-	-	-	-	-	2 8 c	0 26 c	0 13 c	120 c	27 c
Tetraethyldithiopyrophosphate	3689245	-	-	1 80E+01	-	2 90E+02	-	18 n	1 8 n	0 68 n	510 n	39 n
Thallic oxide	1314325	-	-	-	-	-	-	2 6 n	0 26 n	0 095 n	72 n	5 5 n
Thallium	7440280	3 90E+00	-	-	-	-	2 00E+00	-	-	-	-	-
Thallium acetate	563688	-	-	-	-	-	-	3 3 n	0 33 n	0 12 n	92 n	7 n
Thallium carbonate	6533739	-	-	-	-	-	-	2 9 n	0 29 n	0 11 n	82 n	6 3 n
Thallium chloride	7791120	-	-	-	-	-	-	2 9 n	0 29 n	0 11 n	82 n	6 3 n
Thallium nitrate	10102451	-	-	-	-	-	-	3 3 n	0 33 n	0 12 n	92 n	7 n
Thallium selenite	12039520	-	-	-	-	-	-	3 3 n	0 33 n	0 12 n	92 n	7 n
Thallium sulfate	7446186	-	-	-	-	-	-	2 9 n	0 29 n	0 11 n	82 n	6 3 n
Thiobencarb	28249776	-	-	-	-	-	-	370 n	37 n	14 n	10000 n	780 n
2-(Thiocyanomethylthio)-benzothiazole	21564170	-	-	-	-	-	-	1100 n	110 n	41 n	31000 n	2300 n
Thiofanox	39196184	-	-	-	-	-	-	11 n	1 1 n	0 41 n	310 n	23 n
Thiophanate-methyl	23564058	-	-	-	-	-	-	2900 n	290 n	110 n	82000 n	6300 n
Thiram	137268	-	-	1 80E+02	-	2 90E+03	-	180 n	18 n	6 8 n	5100 n	390 n
Tin and compounds	[illegible]	-	-	[illegible]	-	[illegible]	-	22000 n	2200 n	810 n	610000 n	47000 n

EPA Region VII prepared this table for reviewing data and comparing preliminary remedial goals at Superfund Sites. Table values should not be used without site-specific verification.

Referenced original sources should be checked if errors are suspected.

Table Acronyms: CAS=chemical abstract number; ASL=Any Use Soil Level; GW=groundwater; RAL=removal action level; DW=drinking water; c=carcinogenic effects; n=noncarcinogenic effects

Contaminant	CAS	ASL	Superfund Chemical Data Matrix				EPA RAL DW	U.S. EPA Region III Table				
			GW c	GW n	Soil c	Soil n		Tap Water	Ambient Air	Fish	Industrial soil	Residential soil
		mg/kg	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/m3	mg/kg	mg/kg	mg/kg
Toluene	108883	1.10E+04	-	7.00E+03	-	1.20E+05	2.00E+03	750 n	420 n	270 n	200000 n	16000 n
Toluene-2,4-diamine	95807	-	-	-	-	-	-	0.021 c	0.002 c	0.00009 c	0.88 c	0.2 c
Toluene-2,5-diamine	95705	-	-	-	-	-	-	22000 n	2200 n	810 n	610000 n	47000 n
Toluene-2,6-diamine	823405	-	-	-	-	-	-	7300 n	730 n	270 n	200000 n	16000 n
p-Toluidine	106490	-	-	-	-	-	-	0.35 c	0.033 c	0.017 c	15 c	3.4 c
Toxaphene	8001352	4.50E+00	3.20E-02	-	5.30E-01	-	3.00E+00	0.061 c	0.0056 c	0.0029 c	2.6 c	0.58 c
Tralomethrin	66841256	-	-	-	-		-	270 n	27 n	10 n	77000 n	5900 n
Triallate	2303175	-	-	-	-		-	470 n	47 n	18 n	13000 n	1000 n
Triasulfuron	82097505	-	-	-	-		-	370 n	37 n	14 n	10000 n	780 n
1,2,4-Tribromobenzene	615543	-	-	-	-	-	-	30 n	18 n	6.8 n	5100 n	390 n
Tribromomethane	75252	-	4.40E+00	7.00E+02	7.40E+01	1.20E+04	-	-	-	-	-	-
Tributyltin oxide (TBTO)	56359	-	-	-	-	-	-	1.1 n	0.11 n	0.041 n	31 n	2.3 n
Trichloroacetic acid	76039	8.40E+03	-	-	-		3.00E+03	-	-	-	-	-
2,4,6-Trichloroaniline hydrochloride	33663502	-	-	-	-	-	-	2.3 c	0.22 c	0.11 c	99 c	22 c
2,4,6-Trichloroaniline	634935	-	-	-	-	-	-	2 c	0.18 c	0.093 c	84 c	19 c
1,2,4-Trichlorobenzene	120821	5.60E+01	-	3.50E+02	-	5.80E+03	1.00E+02	190 n	210 n	14 n	10000 n	780 n
1,3,5-Trichlorobenzene	108703	-	-	-	-	-	2.00E+02	-	-	-	-	-
1,1,1-Trichloroethane	71556	2.00E+03	-	-	-	-	1.00E+03	1300 n	1000 n	120 n	92000 n	7000 n
1,1,2-Trichloroethane	79005	8.80E+01	6.10E-01	1.40E+02	1.00E+01	2.30E+03	3.00E+01	0.19 c	0.11 c	0.055 c	50 c	11 c
Trichloroethylene (TCE)	79016	2.60E+02	3.20E+00	-	5.30E+01	-	3.00E+02	1.6 c	1 c	0.29 c	260 c	58 c
Trichlorofluoromethane	75694	1.70E+03	-	1.10E+04	-	1.70E+05	3.00E+03	1300 n	730 n	410 n	310000 n	23000 n
2,4,5-Trichlorophenol	95954		-	3.50E+03	-	5.80E+04	3.50E+02	3700 n	370 n	140 n	100000 n	7800 n
2,4,6-Trichlorophenol	88062	-	3.20E+00	-	5.30E+01	-	3.00E+02	6.1 c	0.57 c	0.29 c	260 c	58 c
2,4,5-Trichlorophenoxyacetic acid	93765	5.60E+02	-	3.50E+02	-	5.80E+03	5.80E+04	370 n	37 n	14 n	10000 n	780 n
2-(2,4,5-Trichlorophenoxy)propionic acid	93721	4.50E+02	-	2.80E+02	-	4.70E+03	7.00E+01	290 n	29 n	11 n	8200 n	630 n
1,1,2-Trichloropropane	598776	-	-	-	-	-	-	30 n	18 n	6.8 n	5100 n	390 n
1,2,3-Trichloropropane	96184	3.40E+02	-	2.10E+02	-	3.50E+03	-	0.0015 c	0.00089 c	0.00045 c	0.41 c	0.091 c
1,2,3-TPC as carcinogen(Trichloropropane)	96184	-	-	-	-	-	2.00E+02	-	-	-	-	-
1,2,3-Trichloropropene	96195	-	-	-	-	-	-	30 n	18 n	6.8 n	5100 n	390 n
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	-	-	1.10E+06	-	1.70E+07	1.10E+06	59000 n	31000 n	41000 n	1000000 n	1000000 n
Tridiphane	58138082	-	-	-	-	-	-	110 n	11 n	4.1 n	3100 n	230 n
Triethylamine	121448	-	-	-	-	-	-	73 n	7.3 n	-	-	-
Trifluralin	1582098	2.10E+02	4.50E+00	2.60E+02	7.60E+01	4.40E+03	8.00E+01	8.7 c	0.81 c	0.41 c	370 c	83 c
1,2,4-Trimethylbenzene	95636	-	-	-	-	-	-	3 n	1.8 n	0.66 n	510 n	39 n
1,3,5-Trimethylbenzene	108678	-	-	-	-	-	-	2.4 n	1.5 n	0.54 n	410 n	31 n
Trimethyl phosphate	512561	-	-	-	-	-	-	1.8 c	0.17 c	0.085 c	77 c	17 c
1,3,5-Trinitrobenzene	99354	-	-	1.80E+00	-	2.90E+01	-	1.8 n	0.18 n	0.068 n	51 n	3.9 n
Trinitroglycerol	55630	-	-	-	-	-	5.00E+00	-	-	-	-	-

EPA ...n VII prepared this table for reviewing data and comparing preliminary remedial goals at S... ...fund Sites. Table values should not be used without site-specific verification

Reference original sources should be checked if errors are suspected.

Table Acronyms: CAS=chemical abstract number; ASL=Any Use Soil Level; GW=groundwater; RAL=removal action level; DW=drinking water; c=carcinogenic effects; n=noncarcinogenic effects

Contaminant	CAS	ASL	Superfund Chemical Data Matrix				EPA RAL DW	U.S. EPA Region III Table				
			GW c	GW n	Soil c	Soil n		Tap Water	Ambient Air	Fish	Industrial soil	Residential soil
		mg/kg	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/m3	mg/kg	mg/kg	mg/kg
Trinitrophenylmethylnitramine	479458	-	-	-	-	-	-	370 n	37 n	14 n	10000 n	780 n
2,4,6-Trinitrotoluene	118967	1.40E+01	1.20E+00	1.80E+01	1.90E+01	2.90E+02	2.00E+01	2.2 c	0.21 c	0.11 c	95 c	21 c
Uranium (soluble salts)	7440611	-	-	-	-	-	-	110 n	11 n	4.1 n	3100 n	230 n
Vanadium	7440622	1.70E+02	-	2.50E+02	-	4.10E+03	3.00E+01	260 n	26 n	9.5 n	7200 n	550 n
Vanadium pentoxide	1314621	-	-	3.20E+02	-	5.20E+03	-	330 n	33 n	12 n	9200 n	700 n
Vanadium sulfate	36907423	-	-	-	-	-	-	730 n	73 n	27 n	20000 n	1600 n
Vernam	1929777	-	-	-	-	-	-	37 n	3.7 n	1.4 n	1000 n	78 n
Vinclozolin	50471448	-	-	-	-	-	-	910 n	91 n	34 n	26000 n	2000 n
Vinyl acetate	108054	-	-	3.50E+04	-	5.80E+05	-	37000 n	210 n	1400 n	1000000 n	78000 n
Vinyl bromide	593602	-	-	-	-	-	-	5.2 n	3.1 n	-	-	-
Vinyl chloride	75014	-	1.80E-02	-	3.10E-01	-	2.00E+00	0.019 c	0.021 c	0.0017 c	1.5 c	0.34 c
Warfarin	81812	-	-	1.10E+01	-	1.70E+02	-	11 n	1.1 n	0.41 n	310 n	23 n
m-Xylene	108323	1.10E+05	-	7.00E+04	-	1.20E+06		1400 n	730 n	2700 n	1000000 n	160000 n
o-Xylene	95476	1.10E+05	-	7.00E+04	-	1.20E+06		1400 n	730 n	2700 n	1000000 n	160000 n
p-Xylene	106423	-	-	-	-	-		520 n	310 n	-	-	-
Xylene (mixed)	1330207	-	-	-	-	-	4.00E+04	12000 n	7300 n	2700 n	1000000 n	160000 n
Zinc	7440666	5.60E+03	-	1.10E+04	-	1.70E+05	3.00E+03	11000 n	1100 n	410 n	310000 n	23000 n
Zinc phosphide	1314847	-	-	1.10E+01	-	1.70E+02	-	11 n	1.1 n	0.41 n	310 n	23 n
Zineb	12122677	-	-	-	-	-	-	1800 n	180 n	68 n	51000 n	3900 n

Ref. 36

A copy of reference 36 is no longer present in the ETE, Inc. Library. It was present and used under the ETE/Field Investigation Team (FIT) contract, until 1990, to produce the documents in Appendix F of this report.

APPENDIX D

PHOTOGRAPHIC RECORD

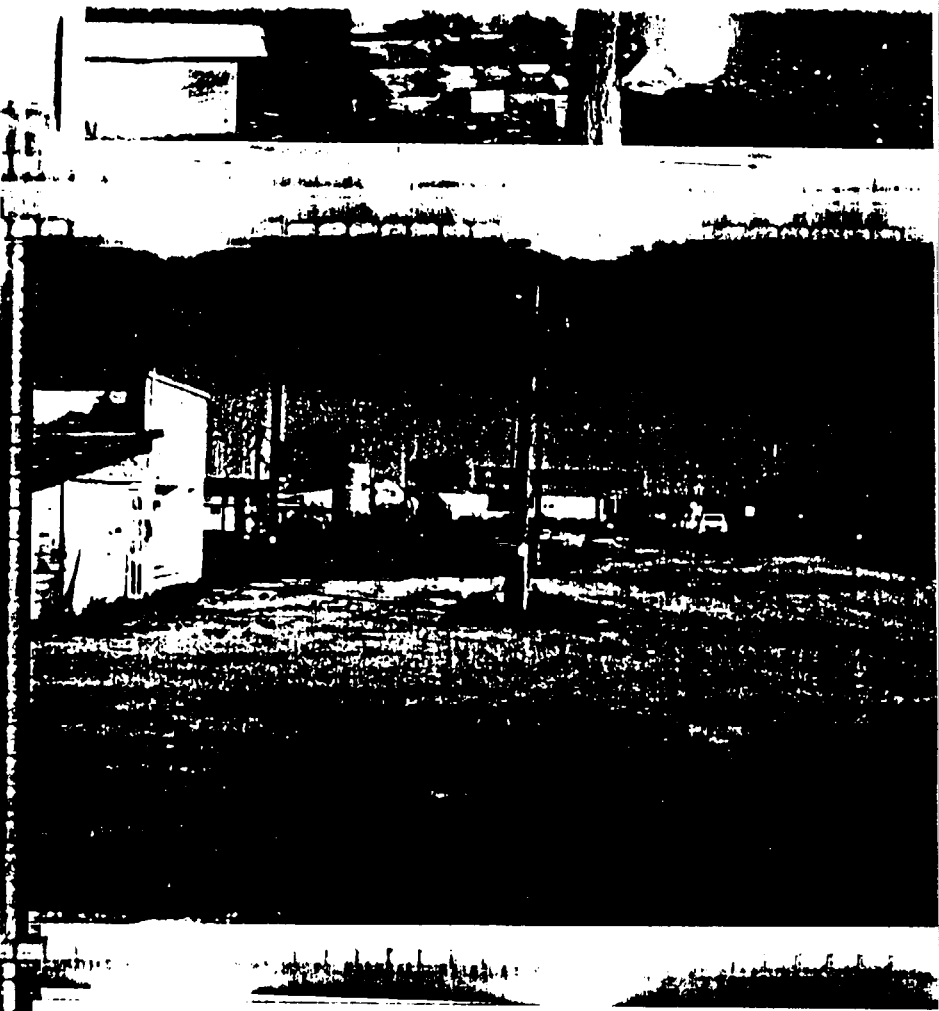
Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 1
Frame Number: 1
Photographer: Paul Doherty
Time: 0940
Direction: E
Subject: Behind abondoned service station, east of Shockley residence

Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 1
Frame Number: 2
Photographer: Paul Doherty
Time:0941
Direction: E
Subject: Behind abondoned service station, east of Shockley residence

Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 1
Frame Number: 4
Photographer: Paul Doherty
Time: 0945
Direction: NE
Subject: From behind service station to Southgate truck plaze

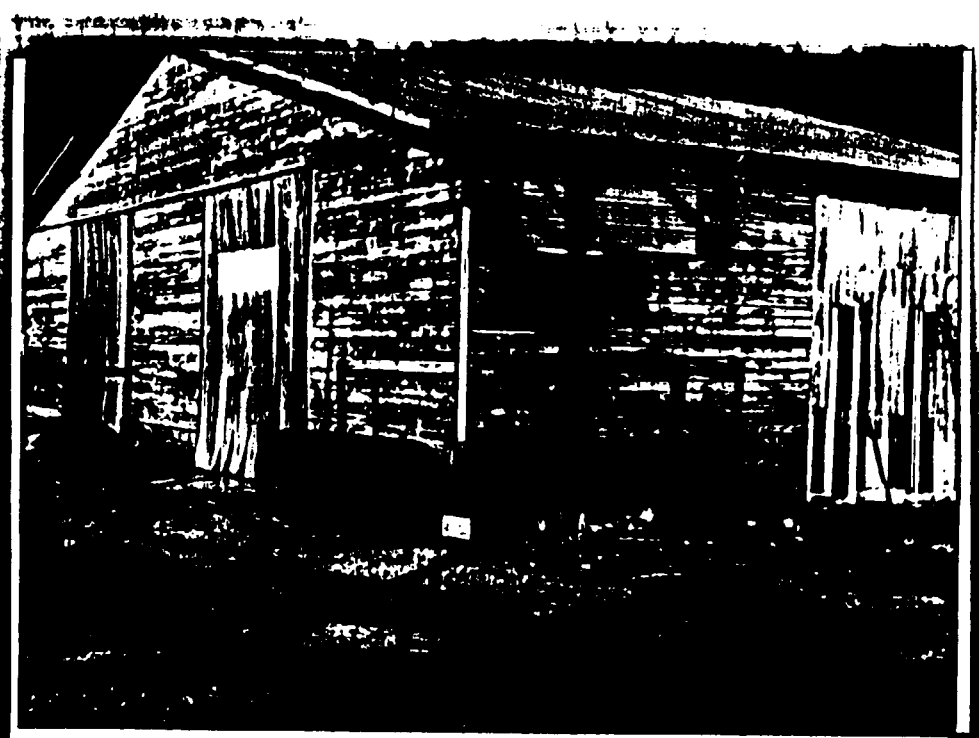
Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 1
Frame Number: 5
Photographer: Paul Doherty
Time: 0946
Direction: N
Subject: From behind service station: ~~Smith Camp residence~~ Southgate Truck Plaza

Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 1
Frame Number: 8
Photographer: Paul Doherty
Time: 0951
Direction: NA
Subject: Old pipe coming out of grounc on service station property



Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 1
Frame Number: 9
Photographer: Paul Doherty
Time: 0952
Direction: N
Subject: Front of service station towards Southgate truck plaza

Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 1
Frame Number: 11
Photographer: Paul Doherty
Time: 0954
Direction: WNW
Subject: Front of old service station burned/stained area



Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 1
Frame Number: 10
Photographer: Paul Doherty
Time: 0953
Direction: NW
Subject: Front of old service station burned/stained area

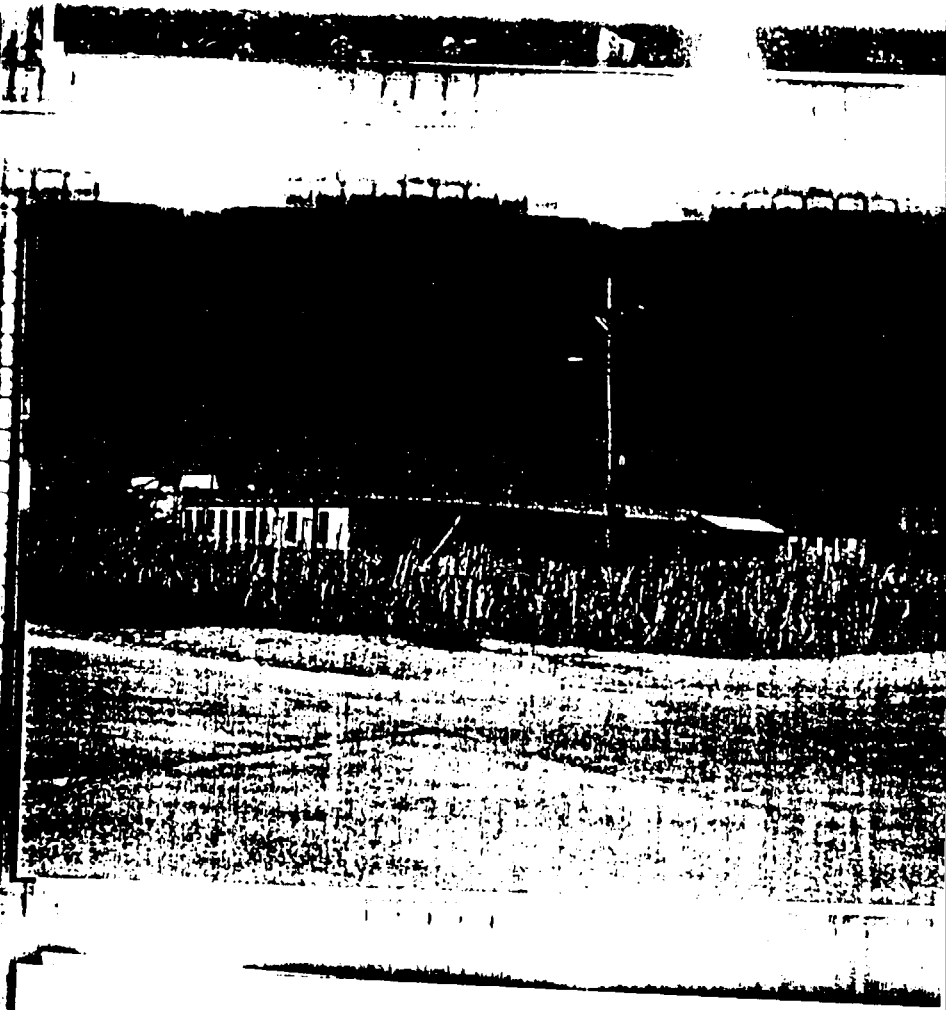
Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 1
Frame Number: 12
Photographer: Paul Doherty
Time: 0955
Direction: W
Subject: S. side of old service station - Shockley residence in back

Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 1
Frame Number: 13
Photographer: Paul Doherty
Time: 0957
Direction: E
Subject:across Hwy 71 from road to Shockley's to Crowder Park

Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 1
Frame Number: 14
Photographer: Paul Doherty
Time:1000
Direction: NE
Subject: Shockley's residence

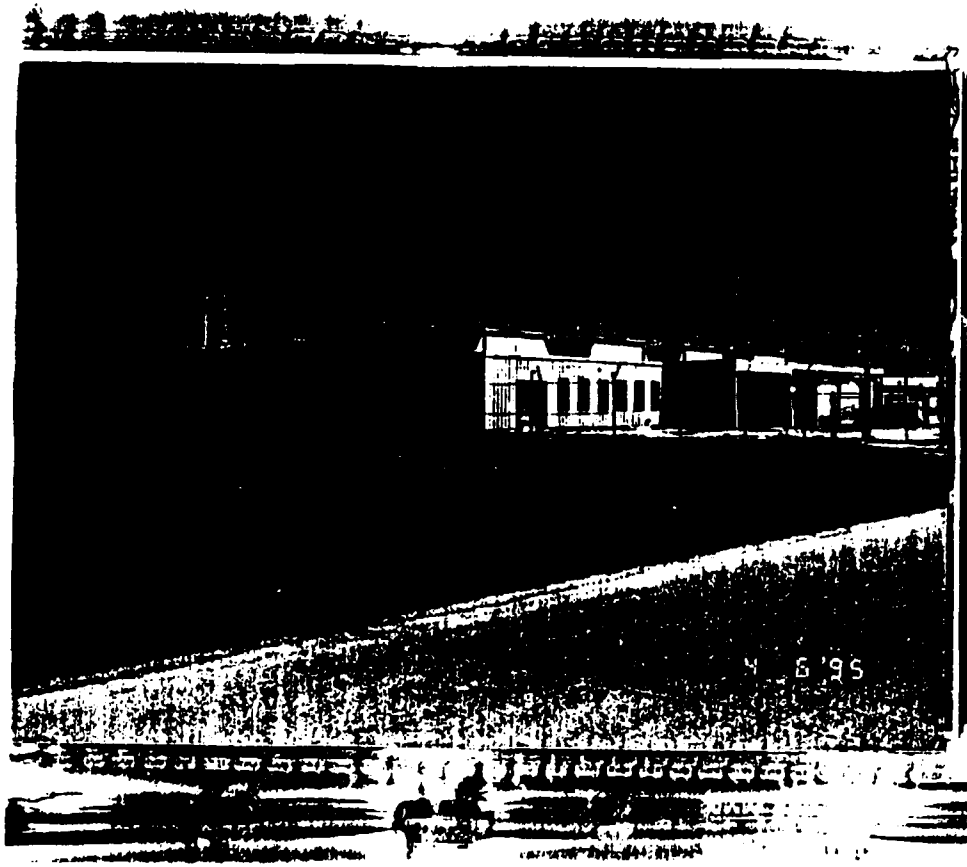
Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 2
Frame Number: 11
Photographer: Scott Hayes
Date: 4/6/95
Time: 1440
Direction: NE
Subject: Screening location SG-01 @ Southgate Truck Plaza

Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 2
Frame Number: 12
Photographer: Scott Hayes
Date: 4/6/95
Time: 1515
Direction: NW
Subject: Screening location SG-02 @ Southgate Truck Plaza-actually west side of abandoned service station with Shockley residence on left side of photograph

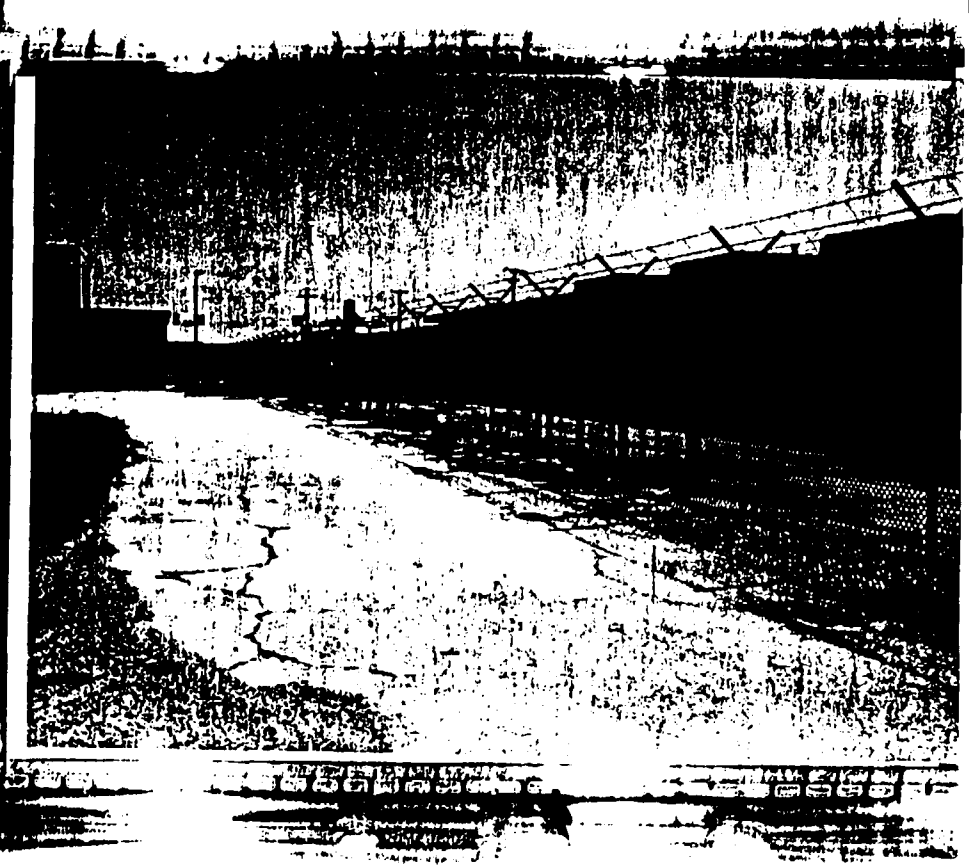


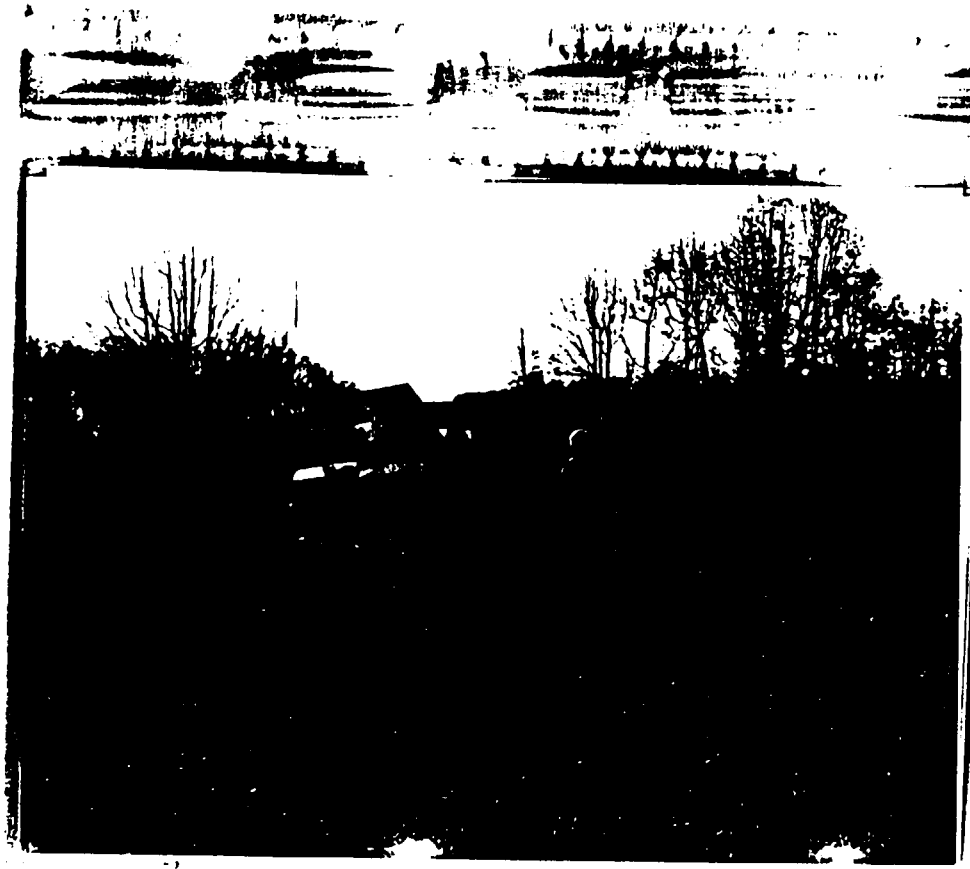
Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 2
Frame Number: 8
Photographer: Scott Hayes
Date: 4/6/95
Time: 1420
Direction: N
Subject: Southeast side of "900" building

Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 2
Frame Number: 9
Photographer: Scott Hayes
Date: 4/6/95
Time: 1421
Direction: E
Subject: Southwest side of "900" building

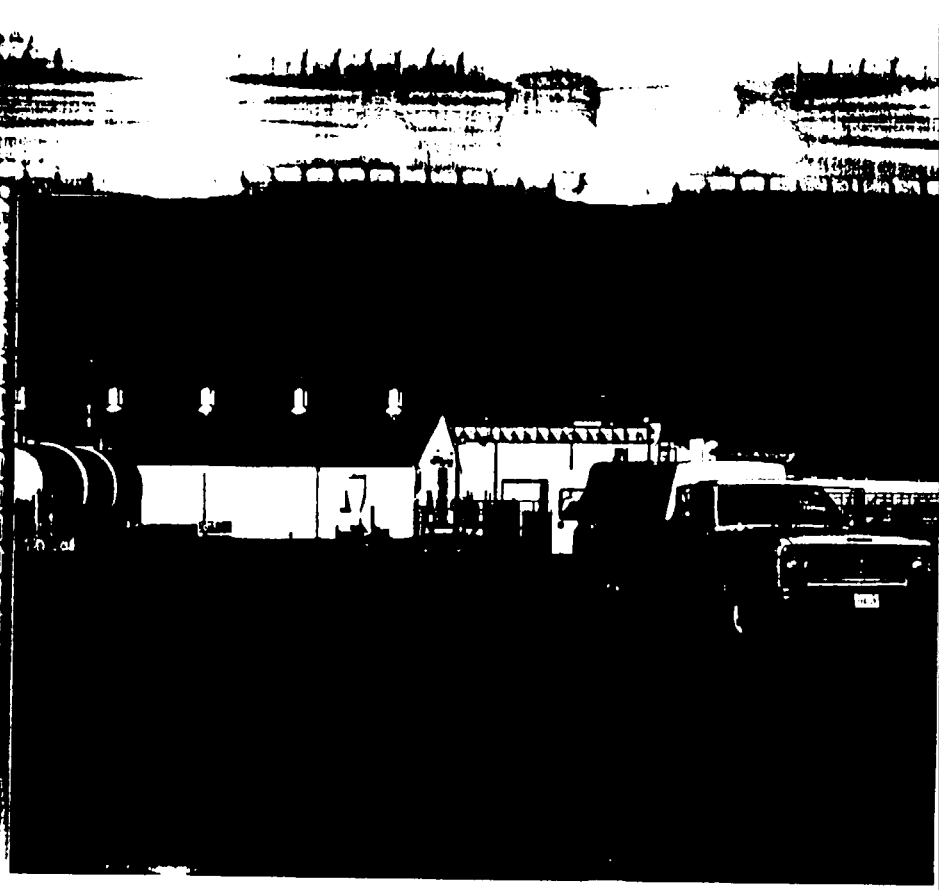


Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 2
Frame Number: 10
Photographer: Scott Hayes
Date: 4/6/95
Time: 1422
Direction: NE
Subject: North side of "900" building





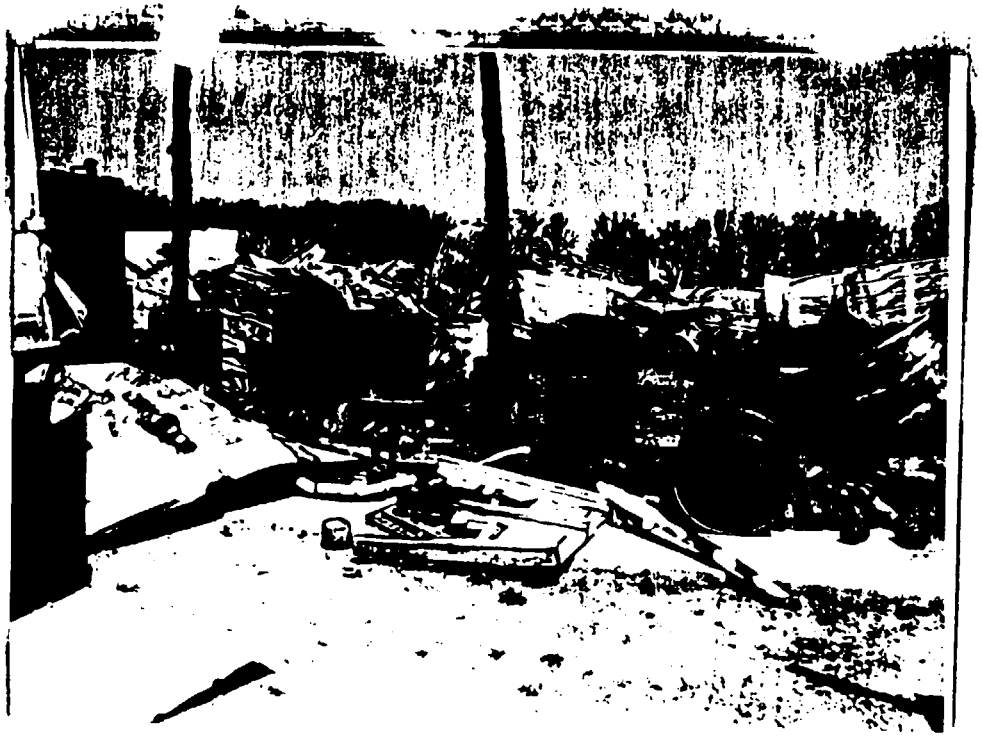
Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 2
Frame Number: 1
Photographer: Scott Hayes
Time: 0935
Date: 4/6/95
Direction: E
Subject: Screening location SAB-03 in middle of former lagoon @ Sabreliner plant



Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 2
Frame Number: 2
Photographer: Scott Hayes
Date: 4/6/95
Time: 0935
Direction: West
Subject: Same as frame #1 facing west towards plant (in background)

Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 2
Frame Number: 3
Photographer: Scott Hayes
Time: 1000
Direction: W
Subject: South side of Sabreliner plant with rail spur; where screening locations SAB-01 and 02 were located

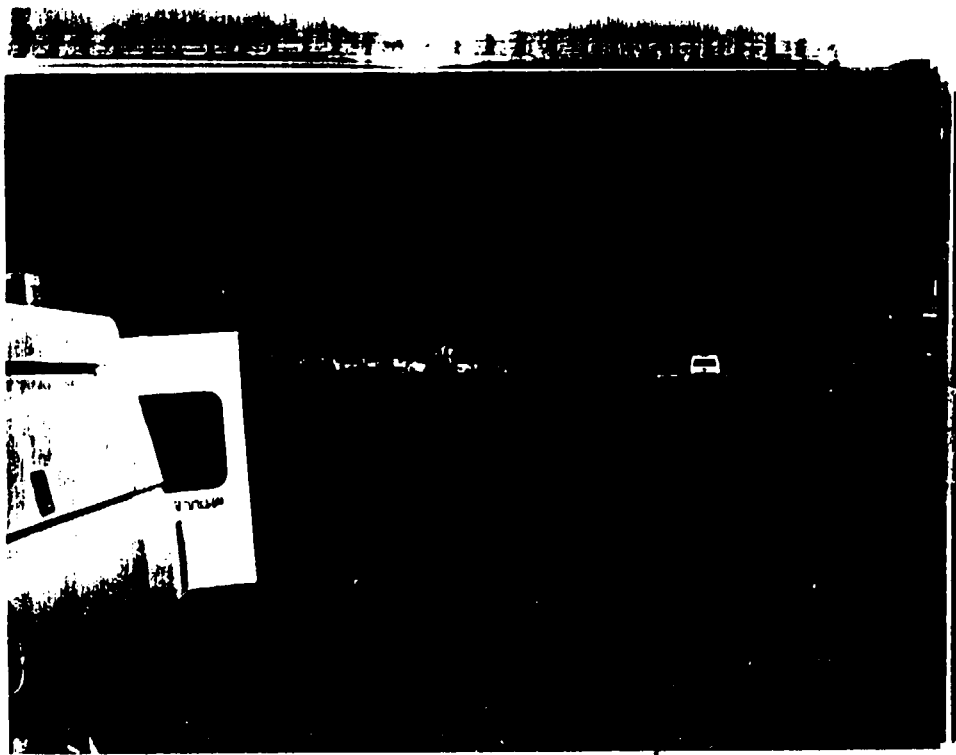
Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 2
Frame Number: 4
Photographer: Scott Hayes
Date: 4/6/95
Time: 1000
Direction: E
Subject: Screening location HOP-01 @ Hoppy Lines Trucking Co. with burned down building in background



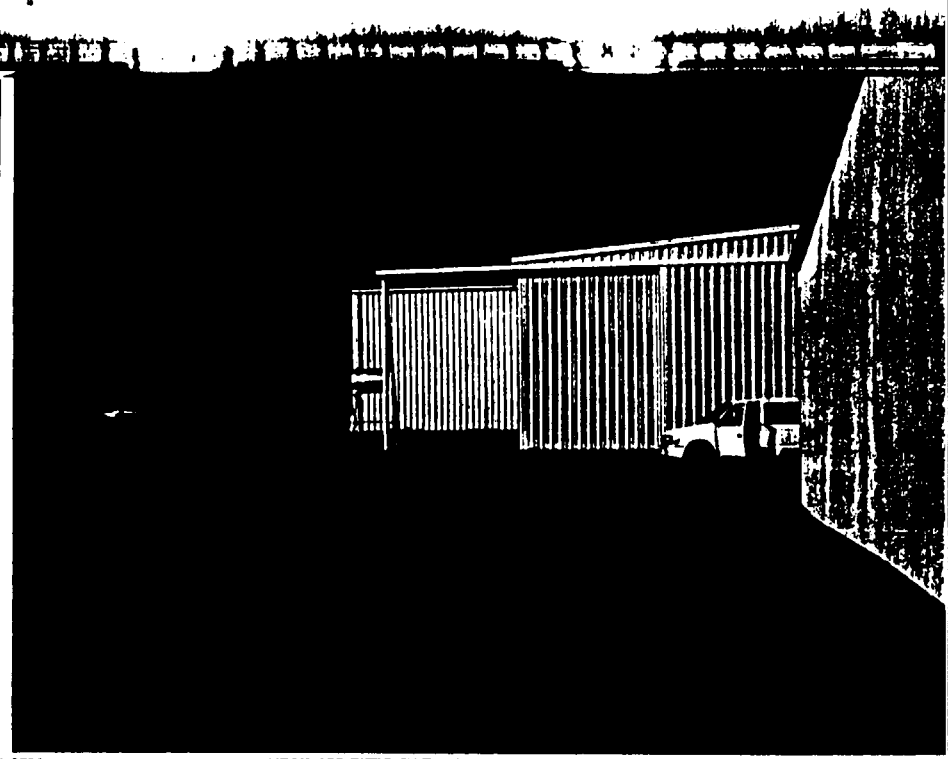
Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 2
Frame Number: 5
Photographer: Scott Hayes
Date: 4/6/95
Time: 1225
Direction: N
Subject: Burned drums in Hoppy Lines Trucking Co. burned building

Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 2
Frame Number: 6
Photographer: Scott Hayes
Date: 4/6/95
Time: 1225
Direction: NW
Subject: Screening location 71-01 in Hwy 71 median just south of Honey House (in background)

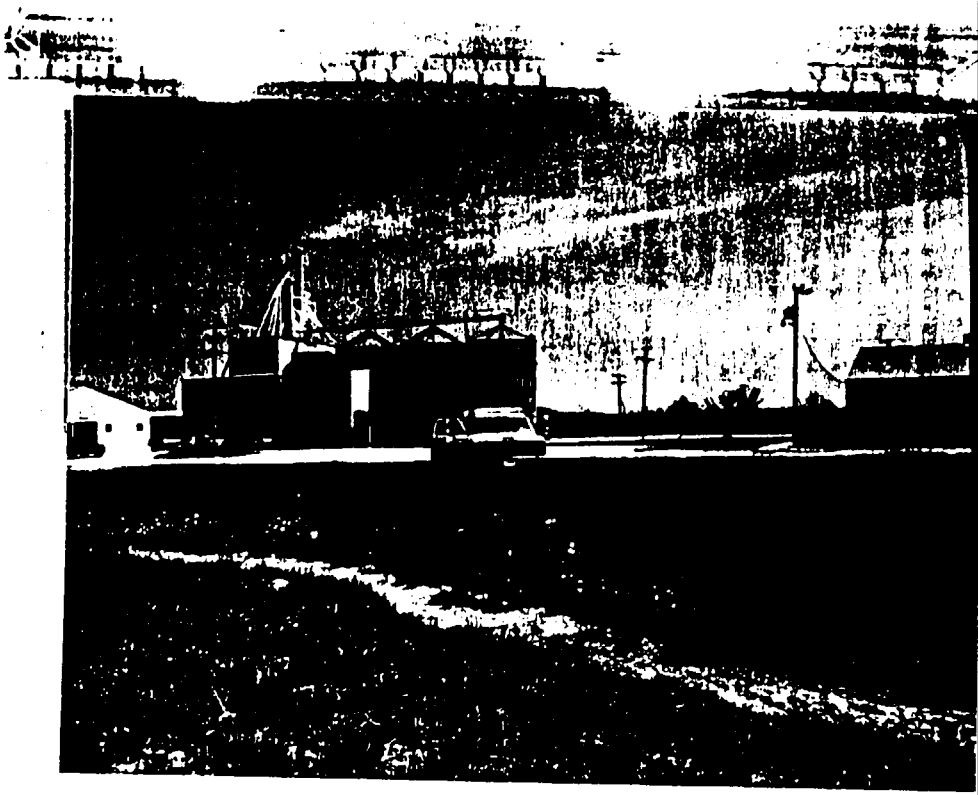
Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 1
Frame Number: 7
Photographer: Paul Doherty
Time: 0950
Direction: NA
Subject: Same as frame #6



Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 3
Frame Number: 1
Photographer: Scott Hayes
Date: 4/6/95
Time: 1700
Direction: N
Subject: Screening location CITY-4 @ shops/hangars @ Neosho Memorial Airport



Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 3
Frame Number: 2
Photographer: Scott Hayes
Date: 4/6/95
Time: 1540
Direction: NE
Subject: Screening location SUN-01 on Hwy D just south of Sunbeam Leisure products facility (in background behind tree line)



Site Name: Neosho Wells Site
Site Location: Neosho, Missouri
TDD/PAN: T07-9411-510/EMO1183SAA
Roll Number: 3
Frame Number: 4
Photographer: Scott Hayes
Date: 4/7/95
Time: 1340
Direction: E
Subject: Screening location MOARK-02 @ Moark Industries properties just south of Blair Ave. @ approx. 1/2 block north of "900" building

APPENDIX E

ANALYSIS REQUEST REPORTS FOR: DSX90, DSX04, AND DSX03

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL SERVICES DIVISION
REGION 7
25 FUNSTON ROAD
KANSAS CITY, KANSAS 66115

DEC 21 19

DATE: _____

MEMORANDUM

SUBJECT: Data Transmittal for Activity #: DSX90
Site Description: Nearka-Hawks Site

FROM: Andrea Jirka
Chief, Laboratory Branch, ENSV

TO: Robert Morby
Chief, SPFD-WSTM

ATTN: Paul Doherty

Attached is the data transmittal for the above referenced site. The data contained in this transmittal have been approved by the Laboratory Branch. This should be considered a ____ Partial or X Complete data transmittal (completes transmittal of _____). The Project Leader should notify the Laboratory Branch within 14 days of any changes in the LAST analytical database. If you have any questions, comments, or data changes, please contact Dee Simmons at 551-5129.

Attachment

cc: Analytical Data File

ANALYSIS REQUEST REPORT

VALIDATED DATA

FOR ACTIVITY: DSX90

MORBY, ROBERT SPFD

12/21/94 17:15:47

ALL REAL SAMPLES AND FIELD Q.C.

* FINAL REPORT

FY: 95 ACTIVITY: DSX90 DESCRIPTION: NEOSHO LOCATION: NEOSHO MISSOURI

STATUS: ACTIVE TYPE: SAMPLING - IN HOUSE ANALYSIS PROJECT: L34

LABO DUE DATE IS 1/15/95. REPORT DUE DATE IS 1/14/95.

INSPECTION DATE: 11/30/94 ALL SAMPLES RECEIVED DATE: 12/01/94

ALL DATA APPROVED BY LABO DATE: 12/21/94 FINAL REPORT TRANSMITTED DATE: 12/21/94

EXPECTED LABO TURNAROUND TIME IS 45 DAYS EXPECTED REPORT TURNAROUND TIME IS 45 DAYS

ACTUAL LABO TURNAROUND TIME IS 20 DAYS ACTUAL REPORT TURNAROUND TIME IS 21 DAYS

SITE CODE: ZZ SITE: MISC

SAMP. NO.	QCC	M	DESCRIPTION	SAMPLE STATUS	#	CITY	STATE	AIRS/ STORET LOC	NO	SECT	LAY-ER	BEG. DATE	BEG. TIME	END. DATE	END. TIME
001		W	SHOCKLEY WELL	1		NEOSHO	MISSOURI					11/29/94	09:45	/ /	:
002		W	SHOCKLEY WELL	1		NEOSHO	MISSOURI					11/29/94	10:07	/ /	:
003		W	PAUL MORRISON WELL	1		NEOSHO	MISSOURI					11/29/94	10:20	/ /	:
004		W	GERTRUDE NAYBOR WELL	1		NEOSHO	MISSOURI					11/29/94	10:45	/ /	:
005		W	HONEY HOUSE-JOHNSON	1		NEOSHO	MISSOURI					11/29/94	11:06	/ /	:
006		W	HONEY HOUSE-JOHNSON	1		NEOSHO	MISSOURI					11/29/94	11:20	/ /	:
007		W	JACKSON WELL	1		NEOSHO	MISSOURI					11/29/94	11:30	/ /	:
008		W	REBECCA HERRIN WELL	1		NEOSHO	MISSOURI					11/29/94	11:45	/ /	:
009		W	HAMON SPRING-NAT'L GUARD AREA	1		NEOSHO	MISSOURI					11/29/94	15:15	/ /	:
010		W	SPRING C ON CROWDER' NAT'L GUARD AREA	1		NEOSHO	MISSOURI					11/29/94	15:15	/ /	:
011		W	DOWNSTREAM OF SPRING D NATL GUARD AREA	1		NEOSHO	MISSOURI					11/29/94	15:50	/ /	:
012		W	TEXACO/SOUTHGATE TRUCK STOP	1		NEOSHO	MISSOURI					11/29/94	10:45	/ /	:
013		W	NORA RHODES WELL	1		NEOSHO	MISSOURI					11/29/94	17:00	/ /	:
013	D	W	DUPLICATE/SAMPLE 013	1		NEOSHO	MISSOURI					11/29/94	17:00	/ /	:
014		W	NORA RHODES WELL	1		NEOSHO	MISSOURI					11/29/94	17:15	/ /	:
015		W	LOY MAHAN WELL	1		NEOSHO	MISSOURI					11/29/94	17:40	/ /	:
016		W	MILTON FLINT WELL	1		NEOSHO	MISSOURI					11/29/94	17:55	/ /	:
017		W	J.P. WILLIAMS KITCHEN SINK	1		NEOSHO	MISSOURI					11/29/94	12:15	/ /	:
018		W	HARRY SPRINKLE, SR. KITCHEN FAUCET	1		NEOSHO	MISSOURI					11/29/94	18:35	/ /	:
019		W	SHERRY SPRINKLE W SIDE FAUCET	1		NEOSHO	MISSOURI					11/30/94	08:30	/ /	:
020		W	GARY SMITH OUTSIDE FAUCET	1		NEOSHO	MISSOURI					11/30/94	08:40	/ /	:
020	D	W	DUPLICATE/SAMPLE 020	1		NEOSHO	MISSOURI					11/30/94	08:40	/ /	:
021	F	W	FIELD BLANK	1		NEOSHO	MISSOURI					11/30/94	08:45	/ /	:

VALIDATED DATA

SAMP. NO.	QCC	M	DESCRIPTION	SAMPLE # STATUS	CITY	STATE	AIRS/ STORET LOC NO	SECT	LAY-ER	BEG. DATE	BEG. TIME	END. DATE	END. TIME
022		W	FROM TANK ABANDONED SERVICE STATION	1	NEOSHO	MISSOURI				11/29/94	11:00	/ /	:

EXPLANATION OF CODES AND INFORMATION ON ANALYSIS REQUEST DETAIL REPORT

SAMPLE INFORMATION:

SAMP. NO. = SAMPLE IDENTIFICATION NUMBER (A 3-DIGIT NUMBER WHICH IN COMBINATION WITH THE ACTIVITY NUMBER AND QCC, PROVIDES AN UNIQUE NUMBER FOR EACH SAMPLE FOR IDENTIFICATION PURPOSES)

QCC = QUALITY CONTROL CODE (A ONE-LETTER CODE USED TO DESIGNATE SPECIFIC QC SAMPLES. THIS FIELD WILL BE BLANK FOR ALL NON-QC OR ACTUAL SAMPLES):
- B = CAL INCREASED CONCENTRATION FOR A LAB SPIKED DUP SAMPLE
- D = MEASURED VALUE FOR FIELD DUPLICATE SAMPLE
- F = MEASURED VALUE FOR FIELD BLANK
- G = MEASURED VALUE FOR METHOD STANDARD
- H = TRUE VALUE FOR METHOD STANDARD
- K = CAL INCREASED CONCENTRATION FOR FIELD SPIKED DUP SAMPLE
- L = MEASURED VALUE FOR A LAB DUPLICATE SAMPLE
- M = MEASURED VALUE FOR LAB BLANK
- N = MEASURED CONCENTRATION OF FIELD SPIKED DUPLICATE
- P = MEASURED VALUE FOR PERFORMANCE STANDARD
- R = CAL INCREASED CONCENTRATION RESULTING FROM LAB SPIKE
- S = MEASURED CONCENTRATION OF LAB SPIKED SAMPLE
- T = TRUE VALUE OF PERFORMANCE STANDARD
- W = MEASURED CONCENTRATION OF LAB SPIKED DUPLICATE
- Y = MEASURED CONCENTRATION OF FIELD SPIKED SAMPLE
- Z = CAL INCREASED CONCENTRATION RESULTING FROM FIELD SPIKE
- 1 = MEASURED VALUE OF FIRST SPIKED REPLICATE
- 2 = MEASURED VALUE OF SECOND SPIKED REPLICATE
- 3 = MEASURED VALUE OF THIRD SPIKED REPLICATE
- 4 = MEASURED VALUE OF FOURTH SPIKED REPLICATE
- 5 = MEASURED VALUE OF FIFTH SPIKED REPLICATE
- 6 = MEASURED VALUE OF SIXTH SPIKED REPLICATE
- 7 = MEASURED VALUE OF SEVENTH SPIKED REPLICATE

M = MEDIA CODE (A ONE-LETTER CODE DESIGNATING THE MEDIA OF THE SAMPLE):
- A = AIR
- H = HAZARDOUS WASTE/OTHER
- S = SOLID (SOIL, SEDIMENT, SLUDGE)
- T = TISSUE (PLANT & ANIMAL)
- W = WATER (GROUND WATER, SURFACE WATER, WASTE WATER, DRINKING WATER)

)ESCRIPTION = A SHORT DESCRIPTION OF THE LOCATION WHERE SAMPLE WAS COLLECTED

\IRS/STORET LOC. NO. = THE SPECIFIC LOCATION ID NUMBER OF EITHER OF THESE NATIONAL DATABASE SYSTEMS, AS APPROPRIATE

)ATE/TIME INFORMATION = SPECIFIC INFORMATION REGARDING WHEN THE SAMPLE WAS COLLECTED
- BEG. DATE = DATE SAMPLING WAS STARTED
- BEG. TIME = TIME SAMPLING WAS STARTED
- END DATE = DATE SAMPLING WAS COMPLETED
- END TIME = TIME SAMPLING WAS COMPLETED
- NOTE: A GRAB SAMPLE WILL CONTAIN ONLY BEG. DATE/TIME
  A TIMED COMPOSITE SAMPLE WILL CONTAIN BOTH BEG AND END DATE/TIME TO DESIGNATE DURATION OF SAMPLE COLLECTION

)THER CODES
- V = VALIDATED

ANALYTICAL RESULTS/MEASUREMENTS INFORMATION:

COMPOUND = MGP (MEDIA-GROUP-PARAMETER) CODE AND NAME OF THE MEASURED CONSTITUENT OR CHARACTERISTIC OF EACH SAMPLE

UNITS = SPECIFIC UNITS IN WHICH RESULTS ARE REPORTED:
- C = CENTIGRADE (CELSIUS) DEGREES
- CFS = CUBIC FEET PER SECOND
- GPM = GALLONS PER MINUTE
- IN = INCHES
- I.D. = SPECIES IDENTIFICATION
- KG = KILOGRAM
- L = LITER
- LB = POUNDS
- MG = MILLIGRAMS (1 X 10-3 GRAMS)
- MGD = MILLION GALLONS PER DAY
- MPH = MILES PER HOUR
- MV = MILLIVOLT
- M/F = MALE/FEMALE
- M2 = SQUARE METER
- M3 = CUBIC METER
- NA = NOT APPLICABLE
- NG = NANOGRAMS (1 X 10-9 GRAMS)
- NTU = NEPHELOMETRIC TURBIDITY UNITS
- PC/L = PICO (1 X 10-12) CURRIES PER LITER
- PG = PICOGRAMS (1 X 10-12 GRAMS)
- P/CM2 = PICOGRAMS PER SQUARE CENTIMETER
- SCM = STANDARD CUBIC METER (1 ATM, 25 C)
- SQ FT = SQUARE FEET
- SU = STANDARD UNITS (PH)
- UG = MICROGRAMS (1 X 10-6 GRAMS)
- UMHOS = MICROMHOS/CM (CONDUCTIVITY UNITS)
- U/CC2 = MICROGRAMS PER 100 SQUARE CENTIMETERS
- U/CM2 = MICROGRAMS PER SQUARE CENTIMETER
- 1000G = 1000 GALLONS
- +/- = POSITIVE/NEGATIVE
- # = NUMBER

DATA QUALIFIERS = SPECIFIC CODES USED IN CONJUNCTION WITH DATA VALUES TO PROVIDE ADDITIONAL INFORMATION ON THE REPORTED RESULTS, OR USED TO EXPLAIN THE ABSENCE OF A SPECIFIC VALUE:
- BLANK = IF FIELD IS BLANK, NO REMARKS OR QUALIFIERS ARE PERTINENT. FOR FINAL REPORTED DATA, THIS MEANS THAT THE VALUES HAVE BEEN REVIEWED AND FOUND TO BE ACCEPTABLE FOR USE.
- I = INVALID SAMPLE/DATA - VALUE NOT REPORTED
- J = DATA REPORTED BUT NOT VALID BY APPROVED QC PROCEDURES
- K = ACTUAL VALUE OF SAMPLE IS < VALUE REPORTED
- L = ACTUAL VALUE OF SAMPLE IS > VALUE REPORTED
- M = DETECTED BUT BELOW THE LEVEL OF REPORTED VALUE FOR ACCURATE QUANTIFICATION
- O = PARAMETER NOT ANALYZED
- U = ACTUAL VALUE OF SAMPLE IS < THE MEASUREMENT DETECTION LIMIT (REPORTED VALUE)

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX90 VALIDATED DATA

COMPOUND	UNITS	001		002		003		004		005	
WW40 CHLOROMETHANE, BY GC/MS LDL	UG/L	1	U	2		1	U	1	U	1	U
WW41 BROMOMETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
WW42 VINYL CHLORIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
WW43 CHLOROETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
WW44 METHYLENE CHLORIDE (DICHLOROMETHANE) LD	UG/L	1	U	1	U	1	U	1	U	1	U
WW45 DICHLOROETHYLENE, 1,1- BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
WW46 DICHLOROETHANE, 1,1- BY GC/MS LDL	UG/L	0.8	U	0.8	U	0.5	U	0.4	U	0.4	U
WW48 CHLOROFORM, BY GC/MS LDL	UG/L	1		1		0.7		0.4	U	0.4	U
WW49 DICHLOROETHANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW50 TRICHLOROETHANE, 1,1,1- BY GC/MS LDL	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
WW51 CARBON TETRACHLORIDE, BY GC/MS LDL	UG/L	4		5		4		0.2	U	0.2	U
WW52 BROMODICHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW53 DICHLOROPROPANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW54 BENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW55 TRICHLOROETHYLENE, BY GC/MS LDL	UG/L	150		150		48		0.5	U	0.5	U
WW56 DICHLOROPROPYLENE, CIS 1,3- BY GC/MS LD	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
WW57 DIBROMOCHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW58 TRICHLOROETHANE, 1,1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW59 BROMOFORM, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
WW60 TETRACHLOROETHYLENE, BY GC/MS LDL	UG/L	0.3		0.3		0.3	U	0.3	U	0.3	U
WW61 TOLUENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
WW62 TETRACHLOROETHANE, 1,1,2,2- BY GC/MS, L	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
WW63 CHLOROBENZENE, BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.3	U	0.3	U	0.3	U
WW64 ETHYLBENZENE, BY GC/MS LDL	UG/L	0.3		0.3	U	0.3	U	0.3		0.3	
WW65 ACETONE, BY GC/MS LDL	UG/L	68	U	78	U	59	U	9	U	9	U
WW66 CARBON DISULFIDE, BY GC/MS LDL	UG/L	1	U	7		5		1	U	1	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX90 VALIDATED DATA

COMPOUND	UNITS	001	002	003	004	005
WW67 METHYL ETHYL KETONE (2-BUTANONE) LDL	UG/L	3 U	3 U	3 U	3 U	3 U
WW68 HEXANONE, 2- BY GC/MS LDL	UG/L	3 U	3 U	3 U	3 U	3 U
WW69 4-METHYL-2-PENTANONE (MIBK) BY GC/MS LD	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
WW70 STYRENE, BY GC/MS LDL	UG/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
WW72 DICHLOROPROPYLENE, TRANS 1,3- BY GC/MS	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
WW73 XYLENE, M AND/OR P BY GC/MS LDL	UG/L	0.6 U	0.6 U	0.6 U	0.8 U	0.8 U
WW74 XYLENE, ORTHO BY GC/MS LDL	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
WW75 DICHLOROBENZENE, 1,4- (PARA) BY GC/MS L	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
WW76 DICHLOROBENZENE, 1,3- (META) BY GC/MS L	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
WW77 DICHLOROBENZENE, 1,2- (ORTHO) BY GC/MS	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
WW78 DICHLOROETHYLENE, 1,2- (TRANS) BY GC/MS	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
WW79 DICHLOROETHYLENE, 1,2- (CIS) BY GC/MS L	UG/L	2	1	0.7	0.5 U	0.5 U
ZZ01 SAMPLE NUMBER	NA	001	002	003	004	005
ZZ02 ACTIVITY CODE	NA	DSX90	DSX90	DSX90	DSX90	DSX90

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX90 VALIDATED DATA

COMPOUND	UNITS	006		007		008		009		010	
WW40 CHLOROMETHANE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
WW41 BROMOMETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
WW42 VINYL CHLORIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
WW43 CHLOROETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
WW44 METHYLENE CHLORIDE (DICHLOROMETHANE) LD	UG/L	1	U	1	U	1	U	1	U	1	U
WW45 DICHLOROETHYLENE, 1,1- BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
WW46 DICHLOROETHANE, 1,1- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW48 CHLOROFORM, BY GC/MS LDL	UG/L	0.4	U	0.8		0.4	U	0.4	U	0.4	U
WW49 DICHLOROETHANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW50 TRICHLOROETHANE, 1,1,1- BY GC/MS LDL	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
WW51 CARBON TETRACHLORIDE, BY GC/MS LDL	UG/L	0.2	U	3		0.2	U	0.2	U	0.2	U
WW52 BROMODICHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW53 DICHLOROPROPANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW54 BENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW55 TRICHLOROETHYLENE, BY GC/MS LDL	UG/L	0.5	U	60		0.5	U	0.5	U	0.5	U
WW56 DICHLOROPROPYLENE, CIS 1,3- BY GC/MS LD	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
WW57 DIBROMOCHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW58 TRICHLOROETHANE, 1,1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW59 BROMOFORM, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
WW60 TETRACHLOROETHYLENE, BY GC/MS LDL	UG/L	0.3	U	0.3		0.3	U	0.3	U	0.3	
WW61 TOLUENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
WW62 TETRACHLOROETHANE, 1,1,2,2- BY GC/MS, L	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
WW63 CHLOROBENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW64 ETHYLBENZENE, BY GC/MS LDL	UG/L	0.3		0.3		0.3	U	0.3	U	0.3	U
WW65 ACETONE, BY GC/MS LDL	UG/L	9	U	9	U	9	U	9	U	9	U
WW66 CARBON DISULFIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX90 VALIDATED DATA

COMPOUND	UNITS	006	007	008	009	010
WW67 METHYL ETHYL KETONE (2-BUTANONE) LDL	UG/L	3 U	3 U	3 U	3 U	3 U
WW68 HEXANONE, 2- BY GC/MS LDL	UG/L	3 U	3 U	3 U	3 U	3 U
WW69 4-METHYL-2-PENTANONE (MIBK) BY GC/MS LD	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
WW70 STYRENE, BY GC/MS LDL	UG/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
WW72 DICHLOROPROPYLENE, TRANS 1,3- BY GC/MS	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
WW73 XYLENE, M AND/OR P BY GC/MS LDL	UG/L	0.7 U	0.7 U	0.7 U	0.7 U	0.6 U
WW74 XYLENE, ORTHO BY GC/MS LDL	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
WW75 DICHLOROBENZENE, 1,4- (PARA) BY GC/MS L	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
WW76 DICHLOROBENZENE, 1,3- (META) BY GC/MS L	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
WW77 DICHLOROBENZENE, 1,2- (ORTHO) BY GC/MS	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
WW78 DICHLOROETHYLENE, 1,2- (TRANS) BY GC/MS	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
WW79 DICHLOROETHYLENE, 1,2- (CIS) BY GC/MS L	UG/L	0.5 U	0.9	0.5 U	0.5 U	0.5 U
ZZ01 SAMPLE NUMBER	NA	006	007	008	009	010
ZZ02 ACTIVITY CODE	NA	DSX90	DSX90	DSX90	DSX90	DSX90

COMPOUND	UNITS	011		012		013		013 D		014	
WW40 CHLOROMETHANE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
WW41 BROMOMETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
WW42 VINYL CHLORIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
WW43 CHLOROETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
WW44 METHYLENE CHLORIDE (DICHLOROMETHANE) LD	UG/L	1	U	1	U	1	U	1	U	1	U
WW45 DICHLOROETHYLENE, 1,1- BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
WW46 DICHLOROETHANE, 1,1- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW48 CHLOROFORM, BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.5		0.4		0.4	U
WW49 DICHLOROETHANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW50 TRICHLOROETHANE, 1,1,1- BY GC/MS LDL	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
WW51 CARBON TETRACHLORIDE, BY GC/MS LDL	UG/L	0.2	U	0.2	U	1		1		0.3	U
WW52 BROMODICHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW53 DICHLOROPROPANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW54 BENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW55 TRICHLOROETHYLENE, BY GC/MS LDL	UG/L	0.5	U	1		8		8		1	
WW56 DICHLOROPROPYLENE, CIS 1,3- BY GC/MS LD	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
WW57 DIBROMOCHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW58 TRICHLOROETHANE, 1,1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW59 BROMOFORM, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
WW60 TETRACHLOROETHYLENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW61 TOLUENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
WW62 TETRACHLOROETHANE, 1,1,2,2- BY GC/MS, L	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
WW63 CHLOROBENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW64 ETHYLBENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW65 ACETONE, BY GC/MS LDL	UG/L	9	U	9	U	9	U	9	U	9	U
WW66 CARBON DISULFIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U

COMPOUND	UNITS	011	012	013	013 D	014
WW67 METHYL ETHYL KETONE (2-BUTANONE) LDL	UG/L	3 U	3 U	3 U	3 U	3 U
WW68 HEXANONE, 2- BY GC/MS LDL	UG/L	3 U	3 U	3 U	3 U	3 U
WW69 4-METHYL-2-PENTANONE (MIBK) BY GC/MS LD	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
WW70 STYRENE, BY GC/MS LDL	UG/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
WW72 DICHLOROPROPYLENE, TRANS 1,3- BY GC/MS	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
WW73 XYLENE, M AND/OR P BY GC/MS LDL	UG/L	0.6 U	0.6 U	0.7 U	0.6 U	0.6 U
WW74 XYLENE, ORTHO BY GC/MS LDL	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
WW75 DICHLOROBENZENE, 1,4- (PARA) BY GC/MS L	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
WW76 DICHLOROBENZENE, 1,3- (META) BY GC/MS L	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4
WW77 DICHLOROBENZENE, 1,2- (ORTHO) BY GC/MS	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4
WW78 DICHLOROETHYLENE, 1,2- (TRANS) BY GC/MS	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
WW79 DICHLOROETHYLENE, 1,2- (CIS) BY GC/MS L	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ZZ01 SAMPLE NUMBER	NA	011	012	013	013	014
ZZ02 ACTIVITY CODE	NA	DSX90	DSX90	DSX90	DSX90	DSX90

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX90 VALIDATED DATA

COMPOUND	UNITS	015		016		017		018		019	
WW40 CHLOROMETHANE, BY GC/MS LDL	UG/L	1	U	2	U	1	U	1	U	2	U
WW41 BROMOMETHANE, BY GC/MS LDL	UG/L	2	U	4	U	2	U	2	U	2	U
WW42 VINYL CHLORIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
WW43 CHLOROETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
WW44 METHYLENE CHLORIDE (DICHLOROMETHANE) LD	UG/L	1	U	1	U	1	U	1	U	1	U
WW45 DICHLOROETHYLENE, 1,1- BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
WW46 DICHLOROETHANE, 1,1- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW48 CHLOROFORM, BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4		0.5	
WW49 DICHLOROETHANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW50 TRICHLOROETHANE, 1,1,1- BY GC/MS LDL	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
WW51 CARBON TETRACHLORIDE, BY GC/MS LDL	UG/L	0.3	U	0.2	U	0.2	U	0.2	U	0.7	U
WW52 BROMODICHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW53 DICHLOROPROPANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW54 BENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW55 TRICHLOROETHYLENE, BY GC/MS LDL	UG/L	2		0.5	U	0.5	U	0.5	U	12	
WW56 DICHLOROPROPYLENE, CIS 1,3- BY GC/MS LD	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
WW57 DIBROMOCHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW58 TRICHLOROETHANE, 1,1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW59 BROMOFORM, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
WW60 TETRACHLOROETHYLENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW61 TOLUENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
WW62 TETRACHLOROETHANE, 1,1,2,2- BY GC/MS, L	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
WW63 CHLOROBENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW64 ETHYLBENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW65 ACETONE, BY GC/MS LDL	UG/L	9	U	9	U	9	U	9	U	9	U
WW66 CARBON DISULFIDE, BY GC/MS LDL	UG/L	1	U	15	U	1	U	1	U	1	U

COMPOUND	UNITS	015		016		017		018		019	
WW67 METHYL ETHYL KETONE (2-BUTANONE) LDL	UG/L	3	U	3	U	3	U	3	U	3	U
WW68 HEXANONE, 2- BY GC/MS LDL	UG/L	3	U	3	U	3	U	3	U	3	U
WW69 4-METHYL-2-PENTANONE (MIBK) BY GC/MS LD	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
WW70 STYRENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW72 DICHLOROPROPYLENE, TRANS 1,3- BY GC/MS	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
WW73 XYLENE, M AND/OR P BY GC/MS LDL	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
WW74 XYLENE, ORTHO BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW75 DICHLOROBENZENE, 1,4- (PARA) BY GC/MS L	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
WW76 DICHLOROBENZENE, 1,3- (META) BY GC/MS L	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW77 DICHLOROBENZENE, 1,2- (ORTHO) BY GC/MS	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW78 DICHLOROETHYLENE, 1,2- (TRANS) BY GC/MS	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
WW79 DICHLOROETHYLENE, 1,2- (CIS) BY GC/MS L	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
ZZ01 SAMPLE NUMBER	NA	015		016		017		018		019	
ZZ02 ACTIVITY CODE	NA	DSX90		DSX90		DSX90		DSX90		DSX90	

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX90 VALIDATED DATA

COMPOUND	UNITS	020	020 D	021 F	022		
WV03 CHLOROMETHANE, BY GC/MS	UG/L				7	U	
WV04 BROMOMETHANE, BY GC/MS	UG/L				4	U	
WV05 VINYL CHLORIDE, BY GC/MS	UG/L				5	U	
WV06 CHLOROETHANE, BY GC/MS	UG/L				4	U	
WV07 METHYLENE CHLORIDE (DICHLOROMETHANE)	UG/L				4	U	
WV08 DICHLOROETHYLENE,1,1-	UG/L				4	U	
WV09 DICHLOROETHANE,1,1, BY GC/MS	UG/L				3	U	
WV11 CHLOROFORM, BY GC/MS	UG/L				4	U	
WV12 DICHLOROETHANE,1,2, BY GC/MS	UG/L				4	U	
WV13 TRICHLOROETHANE,1,1,1-, BY GC/MS	UG/L				4	U	
WV14 CARBON TETRACHLORIDE, BY GC/MS	UG/L				4	U	
WV15 BROMODICHLOROMETHANE, BY GC/MS	UG/L				4	U	
WV16 DICHLOROPROPANE,1,2, BY GC/MS	UG/L				4	U	
WV17 BENZENE, BY GC/MS	UG/L				240		
WV19 TRICHLOROETHYLENE	UG/L				4	U	
WV20 DICHLOROPROPYLENE,CIS-1,3, BY GC/MS	UG/L				5	U	
WV21 DIBROMOCHLOROMETHANE, BY GC/MS	UG/L				3	U	
WV22 TRICHLOROETHANE,1,1,2-, BY GC/MS	UG/L				4	U	
WV24 BROMOFORM, BY GC/MS	UG/L				3	U	
WV25 TETRACHLOROETHYLENE	UG/L				4	U	
WV26 TOLUENE, BY GC/MS	UG/L				10000		
WV27 TETRACHLOROETHANE,1,1,2,2, BY GC/MS	UG/L				4	U	
WV28 CHLOROBENZENE, BY GC/MS	UG/L				4	U	
WV29 ETHYL BENZENE, BY GC/MS	UG/L				4600		
WV30 ACETONE, BY GC/MS	UG/L				360		
WV31 CARBON DISULFIDE, BY GC/MS	UG/L				3	U	

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX90 VALIDATED DATA

COMPOUND	UNITS	020	020 D	021 F	022	
WV32 METHYL ETHYL KETONE (2-BUTANONE)	UG/L				320	
WV34 HEXANONE, 2-	UG/L				56	
WV35 4-METHYL-2-PENTANONE(MIBK)	UG/L				3 U	
WV36 STYRENE, BY GC/MS	UG/L				160	
WV40 DICHLOROPROPYLENE,TRANS-1,3	UG/L				2 U	
WV67 XYLENE, M AND/OR P	UG/L				14000	
WV70 XYLENE, ORTHO	UG/L				7300	
WV72 DICHLOROBENZENE,1,4-(PARA)	UG/L				5 U	
WV74 DICHLOROBENZENE,1,3-(META)	UG/L				4 U	
WV77 DICHLOROBENZENE,1,2-(ORTHO)	UG/L				4 U	
WV78 DICHLOROETHYLENE,TRANS-1,2	UG/L				3 U	
WV82 DICHLOROETHYLENE,CIS-1,2	UG/L				4 U	
WW40 CHLOROMETHANE, BY GC/MS LDL	UG/L	1 U	3 U	1 U		
WW41 BROMOMETHANE, BY GC/MS LDL	UG/L	2 U	2 U	2 U		
WW42 VINYL CHLORIDE, BY GC/MS LDL	UG/L	1 U	1 U	1 U		
WW43 CHLOROETHANE, BY GC/MS LDL	UG/L	2 U	2 U	2 U		
WW44 METHYLENE CHLORIDE (DICHLOROMETHANE) LD	UG/L	1 U	1 U	1 U		
WW45 DICHLOROETHYLENE, 1,1- BY GC/MS LDL	UG/L	2 U	2 U	2 U		
WW46 DICHLOROETHANE, 1,1- BY GC/MS LDL	UG/L	0.4 U	0.4 U	0.4 U		
WW48 CHLOROFORM, BY GC/MS LDL	UG/L	0.4 U	0.4 U	0.5		
WW49 DICHLOROETHANE, 1,2- BY GC/MS LDL	UG/L	0.4 U	0.4 U	0.4 U		
WW50 TRICHLOROETHANE, 1,1,1- BY GC/MS LDL	UG/L	0.6 U	0.6 U	0.6 U		
WW51 CARBON TETRACHLORIDE, BY GC/MS LDL	UG/L	0.3 U	0.3 U	0.2 U		
WW52 BROMODICHLOROMETHANE, BY GC/MS LDL	UG/L	0.3 U	0.3 U	0.3 U		
WW53 DICHLOROPROPANE, 1,2- BY GC/MS LDL	UG/L	0.4 U	0.4 U	0.4 U		
WW54 BENZENE, BY GC/MS LDL	UG/L	0.3 U	0.3 U	0.4 U		

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX90 VALIDATED DATA

COMPOUND	UNITS	020		020 D		021 F		022		
WW55 TRICHLOROETHYLENE, BY GC/MS LDL	UG/L	0.6		0.6		0.5	U			
WW56 DICHLOROPROPYLENE, CIS 1,3- BY GC/MS LD	UG/L	0.6	U	0.6	U	0.6	U			
WW57 DIBROMOCHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U			
WW58 TRICHLOROETHANE, 1,1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U			
WW59 BROMOFORM, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U			
WW60 TETRACHLOROETHYLENE, BY GC/MS LDL	UG/L	0.4		0.3	U	0.3				
WW61 TOLUENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.6				
WW62 TETRACHLOROETHANE, 1,1,2,2- BY GC/MS, L	UG/L	0.6	U	0.6	U	0.6	U			
WW63 CHLOROBENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.5	U			
WW64 ETHYLBENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3				
WW65 ACETONE, BY GC/MS LDL	UG/L	9	U	9	U	22				
WW66 CARBON DISULFIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U			
WW67 METHYL ETHYL KETONE (2-BUTANONE) LDL	UG/L	12		14		3	U			
WW68 HEXANONE, 2- BY GC/MS LDL	UG/L	3	U	3	U	3	U			
WW69 4-METHYL-2-PENTANONE (MIBK) BY GC/MS LD	UG/L	0.8	U	0.8	U	0.8	U			
WW70 STYRENE, BY GC/MS LDL	UG/L	0.3	U	0.4		0.3	U			
WW72 DICHLOROPROPYLENE, TRANS 1,3- BY GC/MS	UG/L	0.8	U	0.8	U	0.8	U			
WW73 XYLENE, M AND/OR P BY GC/MS LDL	UG/L	0.6	U	0.6	U	0.6	U			
WW74 XYLENE, ORTHO BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U			
WW75 DICHLOROBENZENE, 1,4- (PARA) BY GC/MS L	UG/L	0.5	U	0.5	U	0.5	U			
WW76 DICHLOROBENZENE, 1,3- (META) BY GC/MS L	UG/L	0.4	U	0.4	U	0.4	U			
WW77 DICHLOROBENZENE, 1,2- (ORTHO) BY GC/MS	UG/L	0.4	U	0.4	U	0.5				
WW78 DICHLOROETHYLENE, 1,2- (TRANS) BY GC/MS	UG/L	0.8	U	0.8	U	0.8	U			
WW79 DICHLOROETHYLENE, 1,2- (CIS) BY GC/MS L	UG/L	0.5	U	0.5	U	0.5	U			
ZZ01 SAMPLE NUMBER	NA	020		020		021		022		
ZZ02 ACTIVITY CODE	NA	DSX90		DSX90		DSX90		DSX90		

ACTIVITY DSX90 NEOSHO

THE PROJECT LEADER SHOULD CIRCLE ONE - STORET, AIRS, OR ARCHIVE.

CIRCLE ONE: STORET AIRS ARCHIVE

DATA APPROVED BY LABO FOR TRANSMISSION TO PROJECT LEADER ON 12/21/94 15:36:55 BY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

ENVIRONMENTAL SERVICES DIVISION
REGION 7
25 FUNSTON ROAD
KANSAS CITY KANSAS 66115

DATE: _____

MEMORANDUM

SUBJECT: Data Transmittal for Activity #: DSX94
Site Description: Needham Wells Site

FROM: Andrea Jirka 2 Of for AJ.
Chief, Laboratory Branch, ENSV

TO: Robert Morby
Chief, SPFD-WSTM

ATTN: Paul Doherty

Attached is the data transmittal for the above referenced site. The data contained in this transmittal have been approved by the Laboratory Branch. This should be considered a ____ Partial or X Complete data transmittal (completes transmittal of _____). The Project Leader should notify the Laboratory Branch within 14 days of any changes in the LAST analytical database. If you have any questions, comments, or data changes, please contact Dee Simmons at 551-5129.

Attachment

cc: Analytical Data File

CASE NO.: 23097
SITE: NEOSHO WELLS
EPA ACTIVITY NO.: DSX94
MATRIX: WATER

LABORATORY: ARI
METHOD NO.: CS03900
SDG NO. GM853
CONTRACT NO. 68D20024

VOA
WATER

SMO Sample No.	EPA Sample No.	SMO Sample No.	EPA Sample No.
GM853	DSX94001	GM859	DSX94007
GM854	DSX94002	GM860	DSX94008
GM855	DSX94003	GM861	DSX94009F
GM856	DSX94004		
GM857	DSX94005		
GM858	DSX94005D		

GENERAL

This data review assignment covers NINE WATER samples analyzed for VOA for case number 23097. One field duplicate sample was included with this assignment. One field blank was included. Data review was performed at level 2.

The detection limits reported by the laboratory indicate routine VOA analysis, however the field sheets and sample tags indicate LDL VOA analysis. After consultation with EPA personnel, ESAT was directed to change the MGP codes for this activity, in LAST, from special group W13 (LDL VOA) to regular group WV (Routine VOA). The quality of the data for routine analysis appears acceptable, with one sample DSX94007 containing detectable levels of target analytes. Also, the trip blank DSX94009F contained detectable levels of acetone, however no qualifications were performed per Region VII EPA directives.

1. **Holding Times and Preservation**

VOA: All preserved samples were analyzed within holding times. Sample DSX94007 was not preserved and analyzed one day after the holding time for aromatics. No qualifications were necessary according to the functional guidelines.

2. **GC/MS Tuning**

VOA: All relative ion abundances were within the established control limits. No qualifications were necessary according to the functional guidelines.

12. Summary

With the exceptions noted above the laboratory met the minimum quality control requirements described in the "Contract Laboratory Data Validation Functional Guidelines for Evaluating Organic Analytical Data" (February 18, 1993).

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
25 FUNSTON ROAD
KANSAS CITY, KANSAS 66115

MEMORANDUM

SUBJECT: Laboratory Customer Satisfaction Survey

FROM: Andrea Jirka
Chief, LABO/ENSV

TO: Project Leader

All data transmittal packages will now include a Region VII Laboratory Customer Satisfaction Survey form. We are doing this survey in an effort to improve our services to our customers.

Please take a few moments to fill out the survey form on the other side of this memorandum. The information you provide is important to us and will be used to identify our areas of strength, as well as the areas where we need improvement. The form also includes space for written comments, and we encourage you to provide any information which will assist the Laboratory in understanding what you liked or disliked about your data transmittal.

Thank you for taking the time to help us improve our service.

ANALYSIS REQUEST REPORT — VALIDATED DATA

FOR ACTIVITY: DSX94

MORBY, ROBERT SPFD — 01/31/95 15:47:22 — ALL REAL SAMPLES AND FIELD Q.C.

* FINAL REPORT

FY: 95 ACTIVITY: DSX94 DESCRIPTION: NEOSHO WELL LOCATION: NEOSHO MISSOURI

STATUS: ACTIVE TYPE: SAMPLING - IN HOUSE ANALYSIS PROJECT: L34

LABO DUE DATE IS 1/29/95. REPORT DUE DATE IS 1/28/95.

INSPECTION DATE: 12/14/94 ALL SAMPLES RECEIVED DATE: 12/15/94

ALL DATA APPROVED BY LABO DATE: 01/31/95 FINAL REPORT TRANSMITTED DATE: 01/31/95

EXPECTED LABO TURNAROUND TIME IS 45 DAYS EXPECTED REPORT TURNAROUND TIME IS 45 DAYS

ACTUAL LABO TURNAROUND TIME IS 47 DAYS ACTUAL REPORT TURNAROUND TIME IS 48 DAYS

SITE CODE: ZZ SITE: MISC

SAMP. NO.	QCC	M	DESCRIPTION	SAMPLE STATUS	#	CITY	STATE	AIRS/ STORET LOC NO	SECT	LAY-ER	BEG. DATE	BEG. TIME	END. DATE	END. TIME
001		W	LANDFILL MW #0116	1		NEOSHO	MISSOURI				00/00/00	00:00	12/13/94	14:00
002		W	LANDFILL MW #0117	1		NEOSHO	MISSOURI				00/00/00	00:00	12/13/94	15:55
003		W	LANDFILL MW #0115	1		NEOSHO	MISSOURI				00/00/00	00:00	12/13/94	16:15
004		W	LANDFILL MW #0112	1		NEOSHO	MISSOURI				00/00/00	00:00	12/13/94	16:38
005		W	LANDFILL MW #0110	1		NEOSHO	MISSOURI				00/00/00	00:00	12/13/94	17:08
005	D	W	DUPLICATE/SAMPLE 005	1		NEOSHO	MISSOURI				00/00/00	00:00	12/13/94	17:08
007		W	LANDFILL MW #0109	1		NEOSHO	MISSOURI				00/00/00	00:00	12/13/94	17:33
008		W	LANDFILL MW #0108	1		NEOSHO	MISSOURI				00/00/00	00:00	12/14/94	14:50
009	F	W	FIELD BLANK	1		NEOSHO	MISSOURI				00/00/00	00:00	12/14/94	14:55

EXPLANATION OF CODES AND INFORMATION ON ANALYSIS REQUEST DETAIL REPORT

SAMPLE INFORMATION:

SAMP. NO. = SAMPLE IDENTIFICATION NUMBER (A 3-DIGIT NUMBER WHICH IN COMBINATION WITH THE ACTIVITY NUMBER AND QCC, PROVIDES AN UNIQUE NUMBER FOR EACH SAMPLE FOR IDENTIFICATION PURPOSES)

QCC = QUALITY CONTROL CODE (A ONE-LETTER CODE USED TO DESIGNATE SPECIFIC QC SAMPLES. THIS FIELD WILL BE BLANK FOR ALL NON-QC OR ACTUAL SAMPLES):
- B = CAL INCREASED CONCENTRATION FOR A LAB SPIKED DUP SAMPLE
- D = MEASURED VALUE FOR FIELD DUPLICATE SAMPLE
- F = MEASURED VALUE FOR FIELD BLANK
- G = MEASURED VALUE FOR METHOD STANDARD
- H = TRUE VALUE FOR METHOD STANDARD
- K = CAL INCREASED CONCENTRATION FOR FIELD SPIKED DUP SAMPLE
- L = MEASURED VALUE FOR A LAB DUPLICATE SAMPLE
- M = MEASURED VALUE FOR LAB BLANK
- N = MEASURED CONCENTRATION OF FIELD SPIKED DUPLICATE
- P = MEASURED VALUE FOR PERFORMANCE STANDARD
- R = CAL INCREASED CONCENTRATION RESULTING FROM LAB SPIKE
- S = MEASURED CONCENTRATION OF LAB SPIKED SAMPLE
- T = TRUE VALUE OF PERFORMANCE STANDARD
- W = MEASURED CONCENTRATION OF LAB SPIKED DUPLICATE
- Y = MEASURED CONCENTRATION OF FIELD SPIKED SAMPLE
- Z = CAL INCREASED CONCENTRATION RESULTING FROM FIELD SPIKE
- 1 = MEASURED VALUE OF FIRST SPIKED REPLICATE
- 2 = MEASURED VALUE OF SECOND SPIKED REPLICATE
- 3 = MEASURED VALUE OF THIRD SPIKED REPLICATE
- 4 = MEASURED VALUE OF FOURTH SPIKED REPLICATE
- 5 = MEASURED VALUE OF FIFTH SPIKED REPLICATE
- 6 = MEASURED VALUE OF SIXTH SPIKED REPLICATE
- 7 = MEASURED VALUE OF SEVENTH SPIKED REPLICATE

M = MEDIA CODE (A ONE-LETTER CODE DESIGNATING THE MEDIA OF THE SAMPLE):
- A = AIR
- H = HAZARDOUS WASTE/OTHER
- S = SOLID (SOIL, SEDIMENT, SLUDGE)
- T = TISSUE (PLANT & ANIMAL)
- W = WATER (GROUND WATER, SURFACE WATER, WASTE WATER, DRINKING WATER)

DESCRIPTION = A SHORT DESCRIPTION OF THE LOCATION WHERE SAMPLE WAS COLLECTED

AIRS/STORET LOC. NO. = THE SPECIFIC LOCATION ID NUMBER OF EITHER OF THESE NATIONAL DATABASE SYSTEMS, AS APPROPRIATE

DATE/TIME INFORMATION = SPECIFIC INFORMATION REGARDING WHEN THE SAMPLE WAS COLLECTED
- BEG. DATE = DATE SAMPLING WAS STARTED
- BEG. TIME = TIME SAMPLING WAS STARTED
- END DATE = DATE SAMPLING WAS COMPLETED
- END TIME = TIME SAMPLING WAS COMPLETED
- NOTE: A GRAB SAMPLE WILL CONTAIN ONLY BEG. DATE/TIME
  A TIMED COMPOSITE SAMPLE WILL CONTAIN BOTH BEG AND END DATE/TIME TO DESIGNATE DURATION OF SAMPLE COLLECTION

OTHER CODES
- V = VALIDATED

ANALYTICAL RESULTS/MEASUREMENTS INFORMATION:

COMPOUND = MGP (MEDIA-GROUP-PARAMETER) CODE AND NAME OF THE MEASURED CONSTITUENT OR CHARACTERISTIC OF EACH SAMPLE

UNITS = SPECIFIC UNITS IN WHICH RESULTS ARE REPORTED:
- C = CENTIGRADE (CELSIUS) DEGREES
- CFS = CUBIC FEET PER SECOND
- GPM = GALLONS PER MINUTE
- IN = INCHES
- I.D. = SPECIES IDENTIFICATION
- KG = KILOGRAM
- L = LITER
- LB = POUNDS
- MG = MILLIGRAMS (1 X 10-3 GRAMS)
- MGD = MILLION GALLONS PER DAY
- MPH = MILES PER HOUR
- MV = MILLIVOLT
- M/F = MALE/FEMALE
- M2 = SQUARE METER
- M3 = CUBIC METER
- NA = NOT APPLICABLE
- NG = NANOGRAMS (1 X 10-9 GRAMS)
- NTU = NEPHELOMETRIC TURBIDITY UNITS
- PC/L = PICO (1 X 10-12) CURRIES PER LITER
- PG = PICOGRAMS (1 X 10-12 GRAMS)
- P/CM2 = PICOGRAMS PER SQUARE CENTIMETER
- SCM = STANDARD CUBIC METER (1 ATM, 25 C)
- SQ FT = SQUARE FEET
- SU = STANDARD UNITS (PH)
- UG = MICROGRAMS (1 X 10-6 GRAMS)
- UMHOS = MICROMHOS/CM (CONDUCTIVITY UNITS)
- U/CC2 = MICROGRAMS PER 100 SQUARE CENTIMETERS
- U/CM2 = MICROGRAMS PER SQUARE CENTIMETER
- 1000G = 1000 GALLONS
- +/- = POSITIVE/NEGATIVE
- # = NUMBER

DATA QUALIFIERS = SPECIFIC CODES USED IN CONJUNCTION WITH DATA VALUES TO PROVIDE ADDITIONAL INFORMATION ON THE REPORTED RESULTS, OR USED TO EXPLAIN THE ABSENCE OF A SPECIFIC VALUE:
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- I = INVALID SAMPLE/DATA - VALUE NOT REPORTED
- J = DATA REPORTED BUT NOT VALID BY APPROVED QC PROCEDURES
- K = ACTUAL VALUE OF SAMPLE IS < VALUE REPORTED
- L = ACTUAL VALUE OF SAMPLE IS > VALUE REPORTED
- M = DETECTED BUT BELOW THE LEVEL OF REPORTED VALUE FOR ACCURATE QUANTIFICATION
- O = PARAMETER NOT ANALYZED
- U = ACTUAL VALUE OF SAMPLE IS < THE MEASUREMENT DETECTION LIMIT (REPORTED VALUE)

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: S-DSX94 VALIDATED DATA

COMPOUND	UNITS	001		002		003		004		005	
WF05 PH, FIELD	SU	5.7		6.0		5.6		6.3		5.7	
WF10 CONDUCTIVITY (FIELD)	UMHOS	710		299		830		489		128	
WV03 CHLOROMETHANE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV04 BROMOMETHANE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV05 VINYL CHLORIDE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV06 CHLOROETHANE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV07 METHYLENE CHLORIDE (DICHLOROMETHANE)	UG/L	10	K	10	K	10	K	10	K	10	K
WV08 DICHLOROETHYLENE,1,1-	UG/L	10	K	10	K	10	K	10	K	10	K
WV09 DICHLOROETHANE,1,1, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV10 DICHLOROETHYLENE, 1,2, TOTAL	UG/L	10	K	10	K	10	K	10	K	10	K
WV11 CHLOROFORM, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV12 DICHLOROETHANE,1,2, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV13 TRICHLOROETHANE,1,1,1-, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV14 CARBON TETRACHLORIDE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV15 BROMODICHLOROMETHANE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV16 DICHLOROPROPANE,1,2, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV17 BENZENE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV19 TRICHLOROETHYLENE	UG/L	10	K	10	K	10	K	10	K	10	K
WV20 DICHLOROPROPYLENE,CIS-1,3, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV21 DIBROMOCHLOROMETHANE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV22 TRICHLOROETHANE,1,1,2-, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV24 BROMOFORM, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV25 TETRACHLOROETHYLENE	UG/L	10	K	10	K	10	K	10	K	10	K
WV26 TOLUENE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV27 TETRACHLOROETHANE,1,1,2,2, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV28 CHLOROBENZENE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX94 VALIDATED DATA

COMPOUND	UNITS	001		002		003		004		005	
WV29 ETHYL BENZENE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV30 ACETONE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV31 CARBON DISULFIDE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV32 METHYL ETHYL KETONE (2-BUTANONE)	UG/L	10	K	10	K	10	K	10	K	10	K
WV34 HEXANONE, 2-	UG/L	10	K	10	K	10	K	10	K	10	K
WV35 4-METHYL-2-PENTANONE(MIBK)	UG/L	10	K	10	K	10	K	10	K	10	K
WV36 STYRENE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV37 XYLENES, TOTAL, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	10	K
WV40 DICHLOROPROPYLENE,TRANS-1,3	UG/L	10	K	10	K	10	K	10	K	10	K
ZZ01 SAMPLE NUMBER	NA	001		002		003		004		005	
ZZ02 ACTIVITY CODE	NA	DSX94		DSX94		DSX94		DSX94		DSX94	

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX94 VALIDATED DATA

COMPOUND	UNITS	005 D		007		008		009 F		
WF05 PH, FIELD	SU	5.7		6.0		7.2				
WF10 CONDUCTIVITY (FIELD)	UMHOS	128		958		458				
WV03 CHLOROMETHANE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	
WV04 BROMOMETHANE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	
WV05 VINYL CHLORIDE, BY GC/MS	UG/L	10	K	26		10	K	10	K	
WV06 CHLOROETHANE, BY GC/MS	UG/L	10	K	23		10	K	10	K	
WV07 METHYLENE CHLORIDE (DICHLOROMETHANE)	UG/L	10	K	10	K	10	K	10	K	
WV08 DICHLOROETHYLENE,1,1-	UG/L	10	K	10	K	10	K	10	K	
WV09 DICHLOROETHANE,1,1, BY GC/MS	UG/L	10	K	29		10	K	10	K	
WV10 DICHLOROETHYLENE, 1,2, TOTAL	UG/L	10	K	45		10	K	10	K	
WV11 CHLOROFORM, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	
WV12 DICHLOROETHANE,1,2, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	
WV13 TRICHLOROETHANE,1,1,1-, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	
WV14 CARBON TETRACHLORIDE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	
WV15 BROMODICHLOROMETHANE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	
WV16 DICHLOROPROPANE,1,2, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	
WV17 BENZENE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	
WV19 TRICHLOROETHYLENE	UG/L	10	K	12		10	K	10	K	
WV20 DICHLOROPROPYLENE,CIS-1,3, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	
WV21 DIBROMOCHLOROMETHANE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	
WV22 TRICHLOROETHANE,1,1,2-, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	
WV24 BROMOFORM, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	
WV25 TETRACHLOROETHYLENE	UG/L	10	K	10	K	10	K	10	K	
WV26 TOLUENE, BY GC/MS	UG/L	10	K	15		10	K	10	K	
WV27 TETRACHLOROETHANE,1,1,2,2, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	
WV28 CHLOROBENZENE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX94 VALIDATED DATA

COMPOUND	UNITS	005 D		007		008		009 F		
WV29 ETHYL BENZENE, BY GC/MS	UG/L	10	K	27		10	K	10	K	
WV30 ACETONE, BY GC/MS	UG/L	10	K	10	K	10	K	83		
WV31 CARBON DISULFIDE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	
WV32 METHYL ETHYL KETONE (2-BUTANONE)	UG/L	10	K	10	K	10	K	10	K	
WV34 HEXANONE, 2-	UG/L	10	K	10	K	10	K	10	K	
WV35 4-METHYL-2-PENTANONE(MIBK)	UG/L	10	K	10	K	10	K	10	K	
WV36 STYRENE, BY GC/MS	UG/L	10	K	10	K	10	K	10	K	
WV37 XYLENES, TOTAL, BY GC/MS	UG/L	10	K	33		10	K	10	K	
WV40 DICHLOROPROPYLENE,TRANS-1,3	UG/L	10	K	10	K	10	K	10	K	
ZZ01 SAMPLE NUMBER	NA	005		007		008		009		
ZZ02 ACTIVITY CODE	NA	DSX94		DSX94		DSX94		DSX94		

ACTIVITY DSX94 NEOSHO WELL

THE PROJECT LEADER SHOULD CIRCLE ONE - STORET, AIRS, OR ARCHIVE.

CIRCLE ONE: STORET AIRS ARCHIVE

DATA APPROVED BY LABO FOR TRANSMISSION TO PROJECT LEADER ON 01/31/95 13:55:31 BY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

ENVIRONMENTAL SERVICES DIVISION
REGION 7
25 FUNSTON ROAD
KANSAS CITY, KANSAS 66115

DATE: _____

MEMORANDUM

SUBJECT: Data Transmittal for Activity #: D5X04
Site Description: [illegible]

FROM: Andrea Jirka BJ for AJ
Chief, Laboratory Branch, ENSV

TO: Robert Morby
Chief, SPFD-WSTM

ATTN: Phil Dehnke

Attached is the data transmittal for the above referenced site. The data contained in this transmittal have been approved by the Laboratory Branch. This should be considered a ____ Partial or X Complete data transmittal (completes transmittal of _____). The Project Leader should notify the Laboratory Branch within 14 days of any changes in the LAST analytical database. If you have any questions, comments, or data changes, please contact Dee Simmons at 551-5129.

Attachment

cc: Analytical Data File

RECYCLE

ANALYSIS REQUEST REPORT — VALIDATED DATA

FOR ACTIVITY: DSX04

MORBY, ROBERT | SPFD — 03/27/95 12:00:55 — ALL REAL SAMPLES AND FIELD Q.C.

* FINAL REPORT

FY: 95 ACTIVITY: DSX04 DESCRIPTION: NEOSHO WELLS LOCATION: NEOSHO MISSOURI

STATUS: ACTIVE TYPE: SAMPLING - IN HOUSE ANALYSIS PROJECT: L34

LABO DUE DATE IS 4/ 9/95. REPORT DUE DATE IS 5/ 8/95.

INSPECTION DATE: 3/ 9/95 ALL SAMPLES RECEIVED DATE: 03/10/95

ALL DATA APPROVED BY LABO DATE: 03/27/95 FINAL REPORT TRANSMITTED DATE: 03/27/95

EXPECTED LABO TURNAROUND TIME IS 30 DAYS EXPECTED REPORT TURNAROUND TIME IS 60 DAYS

ACTUAL LABO TURNAROUND TIME IS 17 DAYS ACTUAL REPORT TURNAROUND TIME IS 18 DAYS

SITE CODE: SITE:

SAMP. NO.	QCC	M	DESCRIPTION	SAMPLE STATUS	# CITY	STATE	AIRS/ STORET LOC NO	SECT	LAY-ER	BEG. DATE	BEG. TIME	END. DATE	END. TIME
001		W	MONITORING WELL #116	1	NEOSHO	MISSOURI				03/08/95	10:00	/ /	:
002		W	MONITORING WELL #109	1	NEOSHO	MISSOURI				03/08/95	12:15	/ /	:
003		W	MONITORING WELL #110	1	NEOSHO	MISSOURI				03/08/95	12:45	/ /	:
003	D	W	MONITORING WELL #110/DUPLICATE OF 003	1	NEOSHO	MISSOURI				03/08/95	12:45	/ /	:
004		W	MONITORING WELL #112	1	NEOSHO	MISSOURI				03/08/95	15:00	/ /	:
005		W	MONITORING WELL #115	1	NEOSHO	MISSOURI				03/08/95	17:00	/ /	:
006		W	MONITORING WELL #117	1	NEOSHO	MISSOURI				03/09/95	09:00	/ /	:
007		W	MONITORING WELL #108	1	NEOSHO	MISSOURI				03/09/95	09:25	/ /	:
008		W	MONITORING WELL #111	1	NEOSHO	MISSOURI				03/09/95	09:55	/ /	:
009		W	MONITORING WELL #113	1	NEOSHO	MISSOURI				03/09/95	10:25	/ /	:
010	F	W	TRIP BLANK	1	NEOSHO	MISSOURI				03/08/95	00:00	/ /	:
011	F	W	FIELD BLANK	1	NEOSHO	MISSOURI				03/08/95	19:00	/ /	:

EXPLANATION OF CODES AND INFORMATION ON ANALYSIS REQUEST DETAIL REPORT

SAMPLE INFORMATION:

SAMP. NO. = SAMPLE IDENTIFICATION NUMBER (A 3-DIGIT NUMBER WHICH IN COMBINATION WITH THE ACTIVITY NUMBER AND QCC, PROVIDES AN UNIQUE NUMBER FOR EACH SAMPLE FOR IDENTIFICATION PURPOSES)

QCC = QUALITY CONTROL CODE (A ONE-LETTER CODE USED TO DESIGNATE SPECIFIC QC SAMPLES. THIS FIELD WILL BE BLANK FOR ALL NON-QC OR ACTUAL SAMPLES):
- B = CAL INCREASED CONCENTRATION FOR A LAB SPIKED DUP SAMPLE
- D = MEASURED VALUE FOR FIELD DUPLICATE SAMPLE
- F = MEASURED VALUE FOR FIELD BLANK
- G = MEASURED VALUE FOR METHOD STANDARD
- H = TRUE VALUE FOR METHOD STANDARD
- K = CAL INCREASED CONCENTRATION FOR FIELD SPIKED DUP SAMPLE
- L = MEASURED VALUE FOR A LAB DUPLICATE SAMPLE
- M = MEASURED VALUE FOR LAB BLANK
- N = MEASURED CONCENTRATION OF FIELD SPIKED DUPLICATE
- P = MEASURED VALUE FOR PERFORMANCE STANDARD
- R = CAL INCREASED CONCENTRATION RESULTING FROM LAB SPIKE
- S = MEASURED CONCENTRATION OF LAB SPIKED SAMPLE
- T = TRUE VALUE OF PERFORMANCE STANDARD
- W = MEASURED CONCENTRATION OF LAB SPIKED DUPLICATE
- Y = MEASURED CONCENTRATION OF FIELD SPIKED SAMPLE
- Z = CAL INCREASED CONCENTRATION RESULTING FROM FIELD SPIKE
- 1 = MEASURED VALUE OF FIRST SPIKED REPLICATE
- 2 = MEASURED VALUE OF SECOND SPIKED REPLICATE
- 3 = MEASURED VALUE OF THIRD SPIKED REPLICATE
- 4 = MEASURED VALUE OF FOURTH SPIKED REPLICATE
- 5 = MEASURED VALUE OF FIFTH SPIKED REPLICATE
- 6 = MEASURED VALUE OF SIXTH SPIKED REPLICATE
- 7 = MEASURED VALUE OF SEVENTH SPIKED REPLICATE

M = MEDIA CODE (A ONE-LETTER CODE DESIGNATING THE MEDIA OF THE SAMPLE):
- A = AIR H = HAZARDOUS WASTE/OTHER
- S = SOLID (SOIL, SEDIMENT, SLUDGE)
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- SCM = STANDARD CUBIC METER (1 ATM, 25 C)
- SQ FT = SQUARE FEET
- SU = STANDARD UNITS (PH)
- UG = MICROGRAMS (1 X 10-6 GRAMS)
- UMHOS = MICROMHOS/CM (CONDUCTIVITY UNITS)
- U/CC2 = MICROGRAMS PER 100 SQUARE CENTIMETERS
- U/CM2 = MICROGRAMS PER SQUARE CENTIMETER
- 1000G = 1000 GALLONS
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DATA QUALIFIERS = SPECIFIC CODES USED IN CONJUNCTION WITH DATA VALUES TO PROVIDE ADDITIONAL INFORMATION ON THE REPORTED RESULTS, OR USED TO EXPLAIN THE ABSENCE OF A SPECIFIC VALUE:
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- M = DETECTED BUT BELOW THE LEVEL OF REPORTED VALUE FOR ACCURATE QUANTIFICATION
- O = PARAMETER NOT ANALYZED
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ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX04 VALIDATED DATA

COMPOUND	UNITS	001		002		003		003 D		004	
WF01 TEMPERATURE, WATER	'C	40.0		44.0		43.0		43.0		45.0	
WF05 PH, FIELD	SU	6.75		6.15		6.84		6.84		5.2	
WF10 CONDUCTIVITY (FIELD)	UMHOS	853		130		233		233		734	
WS01 PHENOL, BY GC/MS	UG/L	3	U	3	U	3	U	3	U	3	U
WS03 ETHER,BIS(2-CHLOROETHYL), BY GC/MS	UG/L	6	U	6	U	6	U	6	U	6	U
WS04 CHLOROPHENOL, 2-	UG/L	5	U	5	U	5	U	5	U	5	U
WS05 DICHLOROBENZENE,1,3-, BY GC/MS	UG/L	4	U	4	U	4	U	4	U	4	U
WS06 DICHLOROBENZENE,1,4-	UG/L	5	U	5	U	5	U	5	U	5	U
WS07 BENZYL ALCOHOL	UG/L	3	U	3	U	3	U	3	U	3	U
WS08 DICHLOROBENZENE,1,2-, BY GC/MS	UG/L	5	U	5	U	5	U	5	U	5	U
WS09 CRESOL, ORTHO(2-METHYLPHENOL)	UG/L	5	U	5	U	5	U	5	U	5	U
WS10 ETHER,BIS(2-CHLOROISOPROPYL), BY GC/MS	UG/L	3	U	3	U	3	U	3	U	3	U
WS11 CRESOL, PARA-(4-METHYLPHENOL)	UG/L	7	U	7	U	7	U	7	U	7	U
WS12 N-NITROSODIPROPYLAMINE	UG/L	3	U	3	U	3	U	3	U	3	U
WS13 HEXACHLOROETHANE, BY GC/MS	UG/L	5	U	5	U	5	U	5	U	5	U
WS14 NITROBENZENE, BY GC/MS	UG/L	3	U	3	U	3	U	3	U	3	U
WS15 ISOPHORONE, BY GC/MS	UG/L	22	U	10	U	10	U	14	U	22	U
WS16 NITROPHENOL,2-	UG/L	4	U	4	U	4	U	4	U	4	U
WS17 DIMETHYLPHENOL,2,4, BY GC/MS	UG/L	4	U	4	U	4	U	4	U	4	U
WS18 BENZOIC ACID, BY GC/MS	UG/L	40	U	40	U	40	U	40	U	40	U
WS19 METHANE, BIS(2-CHLOROETHYOXY), BY GC/MS	UG/L	3	U	3	U	3	U	3	U	3	U
WS20 DICHLOROPHENOL, 2,4-	UG/L	6	U	6	U	6	U	6	U	6	U
WS21 TRICHLOROBENZENE,1,2,4, BY GC/MS	UG/L	10	U	10	U	10	U	10	U	10	U
WS22 NAPHTHALENE, BY GC/MS	UG/L	4	U	4	U	4	U	4	U	4	U
WS23 CHLOROANILINE,4-	UG/L	10	U	10	U	10	U	10	U	10	U
WS24 HEXACHLOROBUTADIENE, BY GC/MS	UG/L	4	U	4	U	4	U	4	U	4	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX04 VALIDATED DATA

COMPOUND	UNITS	001		002		003		003 D		004	
WS25 PHENOL,4-CHLORO-3-METHYL	UG/L	6	U	6	U	6	U	6	U	6	U
WS26 METHYLNAPHTHALENE, 2-	UG/L	4	U	4	U	4	U	4	U	4	U
WS27 HEXACHLOROCYCLOPENTADIENE, BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS28 TRICHLOROPHENOL,2,4,6	UG/L	5	U	5	U	5	U	5	U	5	U
WS29 TRICHLOROPHENOL,2,4,5	UG/L	6	U	6	U	6	U	6	U	6	U
WS30 CHLORONAPHTHALENE, 2-	UG/L	3	U	3	U	3	U	3	U	3	U
WS31 NITROANILINE,2-(ORTHO)	UG/L	10	U	10	U	10	U	10	U	10	U
WS32 PHTHALATE, DIMETHYL, BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS33 ACENAPHTHYLENE, BY GC/MS	UG/L	3	U	3	U	3	U	3	U	3	U
WS34 NITROANILINE,3-	UG/L	20	U	20	U	20	U	20	U	20	U
WS35 ACENAPHTHENE, BY GC/MS	UG/L	2	U	2	U	2	U	2	U	2	U
WS36 DINITROPHENOL,2,4, BY GC/MS	UG/L	40	U	40	U	40	U	40	U	40	U
WS37 NITROPHENOL,4-	UG/L	27	U	27	U	27	U	27	U	27	U
WS38 DIBENZOFURAN	UG/L	2	U	2	U	2	U	2	U	2	U
WS39 DINITROTOLUENE,2,4, BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS40 DINITROTOLUENE,2,6-	UG/L	10	U	10	U	10	U	10	U	10	U
WS41 PHTHALATE, DIETHYL, BY GC/MS	UG/L	10	U	10	U	10	U	10	U	10	U
WS42 ETHER, 4-CHLOROPHENYL PHENYL	UG/L	10	U	10	U	10	U	10	U	10	U
WS43 FLUORENE, BY GC/MS	UG/L	10	U	10	U	10	U	10	U	10	U
WS44 NITROANILINE,4-	UG/L	32	U	32	U	32	U	32	U	32	U
WS45 PHENOL,4,6-DINITRO-2-METHYL	UG/L	20	U	20	U	20	U	20	U	20	U
WS46 N-NITROSODIPHENYLAMINE, BY GC/MS	UG/L	2	U	2	U	2	U	2	U	2	U
WS47 ETHER, 4-BROMOPHENYL PHENYL	UG/L	10	U	10	U	10	U	10	U	10	U
WS48 HEXACHLOROBENZENE, BY GC/MS	UG/L	10	U	10	U	10	U	10	U	10	U
WS49 PENTACHLOROPHENOL, BY GC/MS	UG/L	40	U	40	U	40	U	40	U	40	U
WS50 PHENANTHRENE, BY GC/MS	UG/L	2	U	2	U	2	U	2	U	2	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX04 VALIDATED DATA

COMPOUND	UNITS	001		002		003		003 D		004	
WS51 ANTHRACENE, BY GC/MS	UG/L	10	U	10	U	10	U	10	U	10	U
WS52 PHTHALATE, DI-N-BUTYL-, BY GC/MS	UG/L	10	U	10	U	10	U	10	U	10	U
WS53 FLUORANTHENE, BY GC/MS	UG/L	10	U	10	U	10	U	10	U	10	U
WS54 PYRENE, BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS55 PHTHALATE, BUTYL BENZYL	UG/L	20	U	20	U	20	U	20	U	20	U
WS56 DICHLOROBENZIDINE, 3,3'	UG/L	50	U	50	U	50	U	50	U	50	U
WS57 ANTHRACENE, BENZO(A), BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS58 PHTHALATE, BIS(2-ETHYLHEXYL), BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS59 CHRYSENE, BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS60 PHTHALATE, DI-N-OCTYL-, BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS61 FLUORANTHENE, BENZO(B), BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS62 FLUORANTHENE, BENZO(K), BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS63 PYRENE, BENZO(A), BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS64 PYRENE, INDENO(1,2,3-CD)	UG/L	20	U	20	U	20	U	20	U	20	U
WS65 ANTHRACENE, DIBENZO(A,H), BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS66 PERYLENE,BENZO(G,H,I), BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS67 CARBAZOLE	UG/L	20	U	20	U	20	U	20	U	20	U
WW40 CHLOROMETHANE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
WW41 BROMOMETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
WW42 VINYL CHLORIDE, BY GC/MS LDL	UG/L	1	U	57		1	U	1	U	1	U
WW43 CHLOROETHANE, BY GC/MS LDL	UG/L	2	U	14		2	U	2	U	2	U
WW44 METHYLENE CHLORIDE (DICHLOROMETHANE) LD	UG/L	3	U	5	U	2	U	3	U	2	U
WW45 DICHLOROETHYLENE, 1,1- BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
WW46 DICHLOROETHANE, 1,1- BY GC/MS LDL	UG/L	0.5		16		0.4	U	0.4	U	0.4	U
WW48 CHLOROFORM, BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW49 DICHLOROETHANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX04 VALIDATED DATA

COMPOUND	UNITS	001		002		003		003 D		004	
WW50 TRICHLOROETHANE, 1,1,1- BY GC/MS LDL	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
WW51 CARBON TETRACHLORIDE, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
WW52 BROMODICHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW53 DICHLOROPROPANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW54 BENZENE, BY GC/MS LDL	UG/L	0.3		6		0.1	U	0.1	U	0.1	U
WW55 TRICHLOROETHYLENE, BY GC/MS LDL	UG/L	0.5	U	3		0.5	U	0.5	U	0.5	U
WW56 DICHLOROPROPYLENE, CIS 1,3- BY GC/MS LD	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
WW57 DIBROMOCHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW58 TRICHLOROETHANE, 1,1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW59 BROMOFORM, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
WW60 TETRACHLOROETHYLENE, BY GC/MS LDL	UG/L	0.3	U	0.5		0.3	U	0.3	U	0.3	U
WW61 TOLUENE, BY GC/MS LDL	UG/L	0.5	U	3		0.5	U	0.5	U	0.5	U
WW62 TETRACHLOROETHANE, 1,1,2,2- BY GC/MS, L	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
WW63 CHLOROBENZENE, BY GC/MS LDL	UG/L	1		0.3		0.2	U	0.2	U	0.2	U
WW64 ETHYLBENZENE, BY GC/MS LDL	UG/L	0.3	U	12		0.3	U	0.3	U	0.3	U
WW65 ACETONE, BY GC/MS LDL	UG/L	9	U	9	U	9	U	9	U	9	U
WW66 CARBON DISULFIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
WW67 METHYL ETHYL KETONE (2-BUTANONE) LDL	UG/L	3	U	3	U	3	U	3	U	3	U
WW68 HEXANONE, 2- BY GC/MS LDL	UG/L	3	U	3	U	3	U	3	U	3	U
WW69 4-METHYL-2-PENTANONE (MIBK) BY GC/MS LD	UG/L	0.8	U	0.8	U	0.8	U	0.9		0.8	U
WW70 STYRENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW72 DICHLOROPROPYLENE, TRANS 1,3- BY GC/MS	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
WW73 XYLENE, M AND/OR P BY GC/MS LDL	UG/L	0.2	U	5		0.4	U	0.4	U	0.4	U
WW74 XYLENE, ORTHO BY GC/MS LDL	UG/L	0.4	U	3		0.4	U	0.4	U	0.4	U
WW75 DICHLOROBENZENE, 1,4- (PARA) BY GC/MS L	UG/L	0.7		2		0.5	U	0.5	U	0.5	U
WW76 DICHLOROBENZENE, 1,3- (META) BY GC/MS L	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX04 VALIDATED DATA

COMPOUND	UNITS	001	002	003	003 D	004
WW77 DICHLOROBENZENE, 1,2- (ORTHO) BY GC/MS	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
WW78 DICHLOROETHYLENE, 1,2- (TRANS) BY GC/MS	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
WW79 DICHLOROETHYLENE, 1,2- (CIS) BY GC/MS L	UG/L	0.5 U	15	0.5 U	0.5 U	0.5 U
ZZ01 SAMPLE NUMBER	NA	001	002	003	003	004
ZZ02 ACTIVITY CODE	NA	DSX04	DSX04	DSX04	DSX04	DSX04

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX04 VALIDATED DATA

COMPOUND	UNITS	005		006		007		008		009	
WF01 TEMPERATURE, WATER	'C	45.0		52.5		51.9		51.8		52.1	
WF05 PH, FIELD	SU	6.03		6.46		6.13		6.55		6.56	
WF10 CONDUCTIVITY (FIELD)	UMHOS	197		508		677		784		508	
WS01 PHENOL, BY GC/MS	UG/L	3	U	3	U	3	U	3	U	3	U
WS03 ETHER,BIS(2-CHLOROETHYL), BY GC/MS	UG/L	6	U	6	U	6	U	6	U	6	U
WS04 CHLOROPHENOL, 2-	UG/L	5	U	5	U	5	U	5	U	5	U
WS05 DICHLOROBENZENE,1,3-, BY GC/MS	UG/L	4	U	4	U	4	U	4	U	4	U
WS06 DICHLOROBENZENE,1,4-	UG/L	5	U	5	U	5	U	5	U	5	U
WS07 BENZYL ALCOHOL	UG/L	3	U	3	U	3	U	3	U	3	U
WS08 DICHLOROBENZENE,1,2-, BY GC/MS	UG/L	5	U	5	U	5	U	5	U	5	U
WS09 CRESOL, ORTHO(2-METHYLPHENOL)	UG/L	5	U	5	U	5	U	5	U	5	U
WS10 ETHER,BIS(2-CHLOROISOPROPYL), BY GC/MS	UG/L	3	U	3	U	3	U	3	U	3	U
WS11 CRESOL, PARA-(4-METHYLPHENOL)	UG/L	7	U	7	U	7	U	7	U	7	U
WS12 N-NITROSODIPROPYLAMINE	UG/L	3	U	3	U	3	U	3	U	3	U
WS13 HEXACHLOROETHANE, BY GC/MS	UG/L	5	U	5	U	5	U	5	U	5	U
WS14 NITROBENZENE, BY GC/MS	UG/L	3	U	3	U	3	U	3	U	3	U
WS15 ISOPHORONE, BY GC/MS	UG/L	27	U	15	U	10	U	10	U	10	U
WS16 NITROPHENOL,2-	UG/L	4	U	4	U	4	U	4	U	4	U
WS17 DIMETHYLPHENOL,2,4, BY GC/MS	UG/L	4	U	4	U	4	U	4	U	4	U
WS18 BENZOIC ACID, BY GC/MS	UG/L	40	U	40	U	40	U	40	U	40	U
WS19 METHANE, BIS(2-CHLOROETHYOXY), BY GC/MS	UG/L	3	U	3	U	3	U	3	U	3	U
WS20 DICHLOROPHENOL, 2,4-	UG/L	6	U	6	U	6	U	6	U	6	U
WS21 TRICHLOROBENZENE,1,2,4, BY GC/MS	UG/L	10	U	10	U	10	U	10	U	10	U
WS22 NAPHTHALENE, BY GC/MS	UG/L	4	U	4	U	4	U	4	U	4	U
WS23 CHLOROANILINE,4-	UG/L	10	U	10	U	10	U	10	U	10	U
WS24 HEXACHLOROBUTADIENE, BY GC/MS	UG/L	4	U	4	U	4	U	4	U	4	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5 DSX04 VALIDATED DATA

COMPOUND	UNITS	005		006		007		008		009	
WS25 PHENOL,4-CHLORO-3-METHYL	UG/L	6	U	6	U	6	U	6	U	6	U
WS26 METHYLNAPHTHALENE, 2-	UG/L	4	U	4	U	4	U	4	U	4	U
WS27 HEXACHLOROCYCLOPENTADIENE, BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS28 TRICHLOROPHENOL,2,4,6	UG/L	5	U	5	U	5	U	5	U	5	U
WS29 TRICHLOROPHENOL,2,4,5	UG/L	6	U	6	U	6	U	6	U	6	U
WS30 CHLORONAPHTHALENE, 2-	UG/L	3	U	3	U	3	U	3	U	3	U
WS31 NITROANILINE,2-(ORTHO)	UG/L	10	U	10	U	10	U	10	U	10	U
WS32 PHTHALATE, DIMETHYL, BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS33 ACENAPHTHYLENE, BY GC/MS	UG/L	3	U	3	U	3	U	3	U	3	U
WS34 NITROANILINE,3-	UG/L	20	U	20	U	20	U	20	U	20	U
WS35 ACENAPHTHENE, BY GC/MS	UG/L	2	U	2	U	2	U	2	U	2	U
WS36 DINITROPHENOL,2,4, BY GC/MS	UG/L	40	U	40	U	40	U	40	U	40	U
WS37 NITROPHENOL,4-	UG/L	27	U	27	U	27	U	27	U	27	U
WS38 DIBENZOFURAN	UG/L	2	U	2	U	2	U	2	U	2	U
WS39 DINITROTOLUENE,2,4, BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS40 DINITROTOLUENE,2,6-	UG/L	10	U	10	U	10	U	10	U	10	U
WS41 PHTHALATE, DIETHYL, BY GC/MS	UG/L	10	U	10	U	10	U	10	U	10	U
WS42 ETHER, 4-CHLOROPHENYL PHENYL	UG/L	10	U	10	U	10	U	10	U	10	U
WS43 FLUORENE, BY GC/MS	UG/L	10	U	10	U	10	U	10	U	10	U
WS44 NITROANILINE,4-	UG/L	32	U	32	U	32	U	32	U	32	U
WS45 PHENOL,4,6-DINITRO-2-METHYL	UG/L	20	U	20	U	20	U	20	U	20	U
WS46 N-NITROSODIPHENYLAMINE, BY GC/MS	UG/L	2	U	2	U	2	U	2	U	2	U
WS47 ETHER, 4-BROMOPHENYL PHENYL	UG/L	10	U	10	U	10	U	10	U	10	U
WS48 HEXACHLOROBENZENE, BY GC/MS	UG/L	10	U	10	U	10	U	10	U	10	U
WS49 PENTACHLOROPHENOL, BY GC/MS	UG/L	40	U	40	U	40	U	40	U	40	U
WS50 PHENANTHRENE, BY GC/MS	UG/L	2	U	2	U	2	U	2	U	2	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX04 VALIDATED DATA

COMPOUND	UNITS	005		006		007		008		009	
WS51 ANTHRACENE, BY GC/MS	UG/L	10	U	10	U	10	U	10	U	10	U
WS52 PHTHALATE, DI-N-BUTYL-, BY GC/MS	UG/L	10	U	10	U	10	U	10	U	12	
WS53 FLUORANTHENE, BY GC/MS	UG/L	10	U	10	U	10	U	10	U	10	U
WS54 PYRENE, BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS55 PHTHALATE, BUTYL BENZYL	UG/L	20	U	20	U	20	U	20	U	20	U
WS56 DICHLOROBENZIDINE, 3,3'	UG/L	50	U	50	U	50	U	50	U	50	U
WS57 ANTHRACENE, BENZO(A), BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS58 PHTHALATE, BIS(2-ETHYLHEXYL), BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS59 CHRYSENE, BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS60 PHTHALATE, DI-N-OCTYL-, BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS61 FLUORANTHENE, BENZO(B), BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS62 FLUORANTHENE, BENZO(K), BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS63 PYRENE, BENZO(A), BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS64 PYRENE, INDENO(1,2,3-CD)	UG/L	20	U	20	U	20	U	20	U	20	U
WS65 ANTHRACENE, DIBENZO(A,H), BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS66 PERYLENE,BENZO(G,H,I), BY GC/MS	UG/L	20	U	20	U	20	U	20	U	20	U
WS67 CARBAZOLE	UG/L	20	U	20	U	20	U	20	U	20	U
WW40 CHLOROMETHANE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1300	U
WW41 BROMOMETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	1700	U
WW42 VINYL CHLORIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1300	U
WW43 CHLOROETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2200	U
WW44 METHYLENE CHLORIDE (DICHLOROMETHANE) LD	UG/L	4	U	1	U	2	U	2	U	1200	U
WW45 DICHLOROETHYLENE, 1,1- BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	1600	U
WW46 DICHLOROETHANE, 1,1- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	430	U
WW48 CHLOROFORM, BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	360	U
WW49 DICHLOROETHANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	370	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX04 VALIDATED DATA

COMPOUND	UNITS	005		006		007		008		009	
WW50 TRICHLOROETHANE, 1,1,1- BY GC/MS LDL	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	580	U
WW51 CARBON TETRACHLORIDE, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	190	U
WW52 BROMODICHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	280	U
WW53 DICHLOROPROPANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	430	U
WW54 BENZENE, BY GC/MS LDL	UG/L	0.1	U	0.1	U	0.1	U	0.1	U	140	U
WW55 TRICHLOROETHYLENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	540	U
WW56 DICHLOROPROPYLENE, CIS 1,3- BY GC/MS LD	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	630	U
WW57 DIBROMOCHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	290	U
WW58 TRICHLOROETHANE, 1,1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	380	U
WW59 BROMOFORM, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	170	U
WW60 TETRACHLOROETHYLENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	310	U
WW61 TOLUENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	540	U
WW62 TETRACHLOROETHANE, 1,1,2,2- BY GC/MS, L	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	640	U
WW63 CHLOROBENZENE, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	230	U
WW64 ETHYLBENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	310	U
WW65 ACETONE, BY GC/MS LDL	UG/L	9	U	9	U	9	U	9	U	9000	U
WW66 CARBON DISULFIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1100	U
WW67 METHYL ETHYL KETONE (2-BUTANONE) LDL	UG/L	3	U	3	U	3	U	3	U	3000	U
WW68 HEXANONE, 2- BY GC/MS LDL	UG/L	3	U	3	U	3	U	3	U	3200	U
WW69 4-METHYL-2-PENTANONE (MIBK) BY GC/MS LD	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	800	U
WW70 STYRENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	340	U
WW72 DICHLOROPROPYLENE, TRANS 1,3- BY GC/MS	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	820	U
WW73 XYLENE, M AND/OR P BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	440	U
WW74 XYLENE, ORTHO BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	400	U
WW75 DICHLOROBENZENE, 1,4- (PARA) BY GC/MS L	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	460	U
WW76 DICHLOROBENZENE, 1,3- (META) BY GC/MS L	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	360	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX04 VALIDATED DATA

COMPOUND	UNITS	010 F	011 F			
WS01 PHENOL, BY GC/MS	UG/L		3	U		
WS03 ETHER,BIS(2-CHLOROETHYL), BY GC/MS	UG/L		6	U		
WS04 CHLOROPHENOL, 2-	UG/L		5	U		
WS05 DICHLOROBENZENE,1,3-, BY GC/MS	UG/L		4	U		
WS06 DICHLOROBENZENE,1,4-	UG/L		5	U		
WS07 BENZYL ALCOHOL	UG/L		3	U		
WS08 DICHLOROBENZENE,1,2-, BY GC/MS	UG/L		5	U		
WS09 CRESOL, ORTHO(2-METHYLPHENOL)	UG/L		5	U		
WS10 ETHER,BIS(2-CHLOROISOPROPYL), BY GC/MS	UG/L		3	U		
WS11 CRESOL, PARA-(4-METHYLPHENOL)	UG/L		7	U		
WS12 N-NITROSODIPROPYLAMINE	UG/L		3	U		
WS13 HEXACHLOROETHANE, BY GC/MS	UG/L		5	U		
WS14 NITROBENZENE, BY GC/MS	UG/L		3	U		
WS15 ISOPHORONE, BY GC/MS	UG/L		28	U		
WS16 NITROPHENOL,2-	UG/L		4	U		
WS17 DIMETHYLPHENOL,2,4, BY GC/MS	UG/L		4	U		
WS18 BENZOIC ACID, BY GC/MS	UG/L		40	U		
WS19 METHANE, BIS(2-CHLOROETHYOXY), BY GC/MS	UG/L		3	U		
WS20 DICHLOROPHENOL, 2,4-	UG/L		6	U		
WS21 TRICHLOROBENZENE,1,2,4, BY GC/MS	UG/L		10	U		
WS22 NAPHTHALENE, BY GC/MS	UG/L		4	U		
WS23 CHLOROANILINE,4-	UG/L		10	U		
WS24 HEXACHLOROBUTADIENE, BY GC/MS	UG/L		4	U		
WS25 PHENOL,4-CHLORO-3-METHYL	UG/L		6	U		
WS26 METHYLNAPHTHALENE, 2-	UG/L		4	U		
WS27 HEXACHLOROCYCLOPENTADIENE, BY GC/MS	UG/L		20	U		

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX04 VALIDATED DATA

COMPOUND	UNITS	005	006	007	008	009
WW77 DICHLOROBENZENE, 1,2- (ORTHO) BY GC/MS	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	350 U
WW78 DICHLOROETHYLENE, 1,2- (TRANS) BY GC/MS	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	840 U
WW79 DICHLOROETHYLENE, 1,2- (CIS) BY GC/MS L	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	520 U
ZZ01 SAMPLE NUMBER	NA	005	006	007	008	009
ZZ02 ACTIVITY CODE	NA	DSX04	DSX04	DSX04	DSX04	DSX04

COMPOUND	UNITS	010 F	011 F			
WS28 TRICHLOROPHENOL,2,4,6	UG/L		5 U			
WS29 TRICHLOROPHENOL,2,4,5	UG/L		6 U			
WS30 CHLORONAPHTHALENE, 2-	UG/L		3 U			
WS31 NITROANILINE,2-(ORTHO)	UG/L		10 U			
WS32 PHTHALATE, DIMETHYL, BY GC/MS	UG/L		20 U			
WS33 ACENAPHTHYLENE, BY GC/MS	UG/L		3 U			
WS34 NITROANILINE,3-	UG/L		20 U			
WS35 ACENAPHTHENE, BY GC/MS	UG/L		2 U			
WS36 DINITROPHENOL,2,4, BY GC/MS	UG/L		40 U			
WS37 NITROPHENOL,4-	UG/L		27 U			
WS38 DIBENZOFURAN	UG/L		2 U			
WS39 DINITROTOLUENE,2,4, BY GC/MS	UG/L		20 U			
WS40 DINITROTOLUENE,2,6-	UG/L		10 U			
WS41 PHTHALATE, DIETHYL, BY GC/MS	UG/L		10 U			
WS42 ETHER, 4-CHLOROPHENYL PHENYL	UG/L		10 U			
WS43 FLUORENE, BY GC/MS	UG/L		10 U			
WS44 NITROANILINE,4-	UG/L		32 U			
WS45 PHENOL,4,6-DINITRO-2-METHYL	UG/L		20 U			
WS46 N-NITROSODIPHENYLAMINE, BY GC/MS	UG/L		2 U			
WS47 ETHER, 4-BROMOPHENYL PHENYL	UG/L		10 U			
WS48 HEXACHLOROBENZENE, BY GC/MS	UG/L		10 U			
WS49 PENTACHLOROPHENOL, BY GC/MS	UG/L		40 U			
WS50 PHENANTHRENE, BY GC/MS	UG/L		2 U			
WS51 ANTHRACENE, BY GC/MS	UG/L		10 U			
WS52 PHTHALATE, DI-N-BUTYL-, BY GC/MS	UG/L		10 U			
WS53 FLUORANTHENE, BY GC/MS	UG/L		10 U			

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX04 VALIDATED DATA

COMPOUND	UNITS	010 F		011 F				
WS54 PYRENE, BY GC/MS	UG/L			20	U			
WS55 PHTHALATE, BUTYL BENZYL	UG/L			20	U			
WS56 DICHLOROBENZIDINE, 3,3'	UG/L			50	U			
WS57 ANTHRACENE, BENZO(A), BY GC/MS	UG/L			20	U			
WS58 PHTHALATE, BIS(2-ETHYLHEXYL), BY GC/MS	UG/L			20	U			
WS59 CHRYSENE, BY GC/MS	UG/L			20	U			
WS60 PHTHALATE, DI-N-OCTYL-, BY GC/MS	UG/L			20	U			
WS61 FLUORANTHENE, BENZO(B), BY GC/MS	UG/L			20	U			
WS62 FLUORANTHENE, BENZO(K), BY GC/MS	UG/L			20	U			
WS63 PYRENE, BENZO(A), BY GC/MS	UG/L			20	U			
WS64 PYRENE, INDENO(1,2,3-CD)	UG/L			20	U			
WS65 ANTHRACENE, DIBENZO(A,H), BY GC/MS	UG/L			20	U			
WS66 PERYLENE,BENZO(G,H,I), BY GC/MS	UG/L			20	U			
WS67 CARBAZOLE	UG/L			20	U			
WW40 CHLOROMETHANE, BY GC/MS LDL	UG/L	1	U	1	U			
WW41 BROMOMETHANE, BY GC/MS LDL	UG/L	2	U	2	U			
WW42 VINYL CHLORIDE, BY GC/MS LDL	UG/L	1	U	1	U			
WW43 CHLOROETHANE, BY GC/MS LDL	UG/L	2	U	2	U			
WW44 METHYLENE CHLORIDE (DICHLOROMETHANE) LD	UG/L	4	U	4	U			
WW45 DICHLOROETHYLENE, 1,1- BY GC/MS LDL	UG/L	2	U	2	U			
WW46 DICHLOROETHANE, 1,1- BY GC/MS LDL	UG/L	0.4	U	0.4	U			
WW48 CHLOROFORM, BY GC/MS LDL	UG/L	0.4	U	0.4	U			
WW49 DICHLOROETHANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U			
WW50 TRICHLOROETHANE, 1,1,1- BY GC/MS LDL	UG/L	0.6	U	0.6	U			
WW51 CARBON TETRACHLORIDE, BY GC/MS LDL	UG/L	0.2	U	0.2	U			
WW52 BROMODICHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U			

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX04 VALIDATED DATA

COMPOUND	UNITS	010	F	011	F			
WW53 DICHLOROPROPANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U			
WW54 BENZENE, BY GC/MS LDL	UG/L	0.1	U	0.3				
WW55 TRICHLOROETHYLENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U			
WW56 DICHLOROPROPYLENE, CIS 1,3- BY GC/MS LD	UG/L	0.6	U	0.6	U			
WW57 DIBROMOCHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U			
WW58 TRICHLOROETHANE, 1,1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U			
WW59 BROMOFORM, BY GC/MS LDL	UG/L	0.2	U	0.2	U			
WW60 TETRACHLOROETHYLENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U			
WW61 TOLUENE, BY GC/MS LDL	UG/L	0.5	U	0.8				
WW62 TETRACHLOROETHANE, 1,1,2,2- BY GC/MS, L	UG/L	0.6	U	0.6	U			
WW63 CHLOROBENZENE, BY GC/MS LDL	UG/L	0.2	U	0.4				
WW64 ETHYLBENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U			
WW65 ACETONE, BY GC/MS LDL	UG/L	16		16				
WW66 CARBON DISULFIDE, BY GC/MS LDL	UG/L	1	U	1	U			
WW67 METHYL ETHYL KETONE (2-BUTANONE) LDL	UG/L	3	U	3	U			
WW68 HEXANONE, 2- BY GC/MS LDL	UG/L	3	U	3	U			
WW69 4-METHYL-2-PENTANONE (MIBK) BY GC/MS LD	UG/L	0.8	U	0.8	U			
WW70 STYRENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U			
WW72 DICHLOROPROPYLENE, TRANS 1,3- BY GC/MS	UG/L	0.8	U	0.8	U			
WW73 XYLENE, M AND/OR P BY GC/MS LDL	UG/L	0.4	U	0.2	U			
WW74 XYLENE, ORTHO BY GC/MS LDL	UG/L	0.4	U	0.4	U			
WW75 DICHLOROBENZENE, 1,4- (PARA) BY GC/MS L	UG/L	0.5	U	0.5	U			
WW76 DICHLOROBENZENE, 1,3- (META) BY GC/MS L	UG/L	0.4	U	0.4	U			
WW77 DICHLOROBENZENE, 1,2- (ORTHO) BY GC/MS	UG/L	0.4	U	0.4	U			
WW78 DICHLOROETHYLENE, 1,2- (TRANS) BY GC/MS	UG/L	0.8	U	0.8	U			
WW79 DICHLOROETHYLENE, 1,2- (CIS) BY GC/MS L	UG/L	0.5	U	0.5	U			

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX04 VALIDATED DATA

COMPOUND	UNITS	010 F	011 F			
ZZ01 SAMPLE NUMBER	NA	010	011			
ZZ02 ACTIVITY CODE	NA	DSX04	DSX04			

ACTIVITY DSX04 | NEOSHO WELLS

THE PROJECT LEADER SHOULD CIRCLE ONE - STORET, AIRS, OR ARCHIVE.

CIRCLE ONE: STORET AIRS ARCHIVE

DATA APPROVED BY LABO FOR TRANSMISSION TO PROJECT LEADER ON 03/27/95 10:46:04 BY Daust Brenall for DJ.

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03 VALIDATED DATA

COMPOUND	UNITS	053 F	054 F	056	061	062
W69 4-METHYL-2-PENTANONE (MIBK) BY GC/MS LD	UG/L	0.8 U	0.8 U		0.8 U	0.8 U
W70 STYRENE, BY GC/MS LDL	UG/L	0.3 U	0.3 U		0.3 U	0.3 U
W72 DICHLOROPROPYLENE, TRANS 1,3- BY GC/MS	UG/L	0.8 U	0.8 U		0.8 U	0.8 U
W73 XYLENE, M AND/OR P BY GC/MS LDL	UG/L	0.2 U	0.2 U		0.2 U	0.2 U
W74 XYLENE, ORTHO BY GC/MS LDL	UG/L	0.4 U	0.4 U		0.4 U	0.4 U
W75 DICHLOROBENZENE, 1,4- (PARA) BY GC/MS L	UG/L	0.5 U	0.5 U		0.5 U	0.5 U
W76 DICHLOROBENZENE, 1,3- (META) BY GC/MS L	UG/L	0.4 U	0.4 U		0.4 U	0.4 U
W77 DICHLOROBENZENE, 1,2- (ORTHO) BY GC/MS	UG/L	0.4 U	0.4 U		0.4 U	0.4 U
W78 DICHLOROETHYLENE, 1,2- (TRANS) BY GC/MS	UG/L	0.8 U	0.8 U		0.8 U	0.8 U
W79 DICHLOROETHYLENE, 1,2- (CIS) BY GC/MS L	UG/L	0.5 U	0.5 U		0.5 U	0.5 U
Z01 SAMPLE NUMBER	NA	053	054	056	061	062
Z02 ACTIVITY CODE	NA	DSX03	DSX03	DSX03	DSX03	DSX03

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03 VALIDATED DATA

	COMPOUND	UNITS	063		064		065		065 D		066	
W40	CHLOROMETHANE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
W41	BROMOMETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
W42	VINYL CHLORIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
W43	CHLOROETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
W44	METHYLENE CHLORIDE (DICHLOROMETHANE) LD	UG/L	1	U	2	U	1	U	1	U	1	U
W45	DICHLOROETHYLENE, 1,1- BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
W46	DICHLOROETHANE, 1,1- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
W48	CHLOROFORM, BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.7		0.6		0.5	
W49	DICHLOROETHANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
W50	TRICHLOROETHANE, 1,1,1- BY GC/MS LDL	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
W51	CARBON TETRACHLORIDE, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	5	
W52	BROMODICHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
W53	DICHLOROPROPANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
W54	BENZENE, BY GC/MS LDL	UG/L	0.1	U	0.1	U	0.2	U	0.2	U	0.4	U
W55	TRICHLOROETHYLENE, BY GC/MS LDL	UG/L	0.5	U	2		3		2		40	
W56	DICHLOROPROPYLENE, CIS 1,3- BY GC/MS LD	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
W57	DIBROMOCHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
W58	TRICHLOROETHANE, 1,1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
W59	BROMOFORM, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
W60	TETRACHLOROETHYLENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
W61	TOLUENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
W62	TETRACHLOROETHANE, 1,1,2,2- BY GC/MS, L	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
W63	CHLOROBENZENE, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
W64	ETHYLBENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
W65	ACETONE, BY GC/MS LDL	UG/L	9	U	9	U	9	U	9	U	9	U
W66	CARBON DISULFIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03 VALIDATED DATA

COMPOUND	UNITS	063	064	065	065 D	066
W67 METHYL ETHYL KETONE (2-BUTANONE) LDL	UG/L	3 U	3 U	3 U	3 U	3 U
W68 HEXANONE, 2- BY GC/MS LDL	UG/L	3 U	3 U	3 U	3 U	3 U
W69 4-METHYL-2-PENTANONE (MIBK) BY GC/MS LD	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
W70 STYRENE, BY GC/MS LDL	UG/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
W72 DICHLOROPROPYLENE, TRANS 1,3- BY GC/MS	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
W73 XYLENE, M AND/OR P BY GC/MS LDL	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
W74 XYLENE, ORTHO BY GC/MS LDL	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
W75 DICHLOROBENZENE, 1,4- (PARA) BY GC/MS L	UG/L	0.5 U	8	0.5 U	0.5 U	0.5 U
W76 DICHLOROBENZENE, 1,3- (META) BY GC/MS L	UG/L	0.4 U	0.8	0.4 U	0.4 U	0.4 U
W77 DICHLOROBENZENE, 1,2- (ORTHO) BY GC/MS	UG/L	0.4 U	20	0.4 U	0.4 U	0.4 U
W78 DICHLOROETHYLENE, 1,2- (TRANS) BY GC/MS	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
W79 DICHLOROETHYLENE, 1,2- (CIS) BY GC/MS L	UG/L	0.5 U	2	0.5 U	0.5 U	0.5 U
Z01 SAMPLE NUMBER	NA	063	064	065	065	066
Z02 ACTIVITY CODE	NA	DSX03	DSX03	DSX03	DSX03	DSX03

COMPOUND	UNITS	067		068		069			
W40 CHLOROMETHANE, BY GC/MS LDL	UG/L	1	U	1	U	1	U		
W41 BROMOMETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U		
W42 VINYL CHLORIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U		
W43 CHLOROETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U		
W44 METHYLENE CHLORIDE (DICHLOROMETHANE) LD	UG/L	1	U	1	U	1	U		
W45 DICHLOROETHYLENE, 1,1- BY GC/MS LDL	UG/L	2	U	2	U	2	U		
W46 DICHLOROETHANE, 1,1- BY GC/MS LDL	UG/L	0.4	U	0.6		0.4	U		
W48 CHLOROFORM, BY GC/MS LDL	UG/L	0.5		1		12			
W49 DICHLOROETHANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U		
W50 TRICHLOROETHANE, 1,1,1- BY GC/MS LDL	UG/L	0.6	U	0.6	U	0.6	U		
W51 CARBON TETRACHLORIDE, BY GC/MS LDL	UG/L	4		5		0.2	U		
W52 BROMODICHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U		
W53 DICHLOROPROPANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U		
W54 BENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.2	U		
W55 TRICHLOROETHYLENE, BY GC/MS LDL	UG/L	38		130		0.5	U		
W56 DICHLOROPROPYLENE, CIS 1,3- BY GC/MS LD	UG/L	0.6	U	0.6	U	0.6	U		
W57 DIBROMOCHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U		
W58 TRICHLOROETHANE, 1,1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U		
W59 BROMOFORM, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U		
W60 TETRACHLOROETHYLENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U		
W61 TOLUENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U		
W62 TETRACHLOROETHANE, 1,1,2,2- BY GC/MS, L	UG/L	0.6	U	0.6	U	0.6	U		
W63 CHLOROBENZENE, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U		
W64 ETHYLBENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U		
W65 ACETONE, BY GC/MS LDL	UG/L	9	U	9	U	9	U		
W66 CARBON DISULFIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U		

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03 VALIDATED DATA

COMPOUND	UNITS	067		068		069			
W67 METHYL ETHYL KETONE (2-BUTANONE) LDL	UG/L	3	U	3	U	3	U		
W68 HEXANONE, 2- BY GC/MS LDL	UG/L	3	U	3	U	3	U		
W69 4-METHYL-2-PENTANONE (MIBK) BY GC/MS LD	UG/L	0.8	U	0.8	U	0.8	U		
W70 STYRENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U		
W72 DICHLOROPROPYLENE, TRANS 1,3- BY GC/MS	UG/L	0.8	U	0.8	U	0.8	U		
W73 XYLENE, M AND/OR P BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U		
W74 XYLENE, ORTHO BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U		
W75 DICHLOROBENZENE, 1,4- (PARA) BY GC/MS L	UG/L	0.5	U	0.5	U	0.5	U		
W76 DICHLOROBENZENE, 1,3- (META) BY GC/MS L	UG/L	0.4	U	0.4	U	0.4	U		
W77 DICHLOROBENZENE, 1,2- (ORTHO) BY GC/MS	UG/L	0.4	U	0.4	U	0.4	U		
W78 DICHLOROETHYLENE, 1,2- (TRANS) BY GC/MS	UG/L	0.8	U	0.8	U	0.8	U		
W79 DICHLOROETHYLENE, 1,2- (CIS) BY GC/MS L	UG/L	0.5	U	2		0.5	U		
01 SAMPLE NUMBER	NA	067		068		069			
02 ACTIVITY CODE	NA	DSX03		DSX03		DSX03			

ACTIVITY DSX03 NEOSHO WELLS

HE PROJECT LEADER SHOULD CIRCLE ONE - STORET, AIRS, OR ARCHIVE.

CIRCLE ONE: STORET AIRS ARCHIVE

DATA APPROVED BY LABO FOR TRANSMISSION TO PROJECT LEADER ON 05/19/95 15:03:10 BY _____

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

ENVIRONMENTAL SERVICES DIVISION
REGION 7
[illegible] FUNSTON ROAD
KANSAS CITY KANSAS 66115

DATE: MAY [illegible]

MEMORANDUM

SUBJECT: Data Transmittal for Activity #: [illegible]
Site Description: [illegible]

FROM: Andrea Jirka
Chief, Laboratory Branch, ENSV

TO: Robert Morby
CHIEF, SUPR

ATTN: [illegible]

Attached is the data transmittal for the above referenced site. The data contained in this transmittal have been approved by the Laboratory Branch. This should be considered a ____ Partial or X Complete data transmittal (completes transmittal of _____). The Project Leader should notify the Laboratory Branch within 14 days of any changes in the LAST analytical database. If you have any questions, comments, or data changes, please contact Dee Simmons at 551-5129.

Attachment

cc: Analytical Data File

ANALYSIS REQUEST REPORT

VALIDATED DATA

FOR ACTIVITY: DSX03

MORBY, ROBERT SWFD

05/23/95 12:25:02

ALL REAL SAMPLES AND FIELD Q.C.

FINAL REPORT

FY: 95 ACTIVITY: DSX03 DESCRIPTION: NEOSHO WELLS LOCATION: NEOSHO MISSOURI

STATUS: ACTIVE TYPE: SAMPLING - IN HOUSE ANALYSIS PROJECT: L34

ABO DUE DATE IS 5/10/95. REPORT DUE DATE IS 6/ 6/94.

INSPECTION DATE: 4/ 7/94 ALL SAMPLES RECEIVED DATE: 04/10/95

ALL DATA APPROVED BY LABO DATE: 05/19/95 FINAL REPORT TRANSMITTED DATE: 05/23/95

EXPECTED LABO TURNAROUND TIME IS 30 DAYS EXPECTED REPORT TURNAROUND TIME IS 60 DAYS

ACTUAL LABO TURNAROUND TIME IS 39 DAYS ACTUAL REPORT TURNAROUND TIME IS 411 DAYS

SITE CODE: SITE:

MP. NO.	QCC	M	DESCRIPTION	SAMPLE STATUS	#	CITY	STATE	AIRS/ STORET LOC NO	SECT	LAY-ER	BEG. DATE	BEG. TIME	END. DATE	END. TIME
01		S	SABRELINER OWNER-900 BUILDING (#2)	1		NEOSHO	MISSOURI				00/00/00	00:00	04/04/95	17:30
02		S	SABRELINER OWNER-900 BUILDING (#3)	1		NEOSHO	MISSOURI				00/00/00	00:00	04/04/95	16:35
03		S	SABRELINER OWNER-900 BUILDING (#4)	1		NEOSHO	MISSOURI				00/00/00	00:00	04/05/95	17:20
04		S	SABRELINER OWNER-900 BUILDING (SAB-3)	1		NEOSHO	MISSOURI				00/00/00	00:00	04/06/95	09:20
05		S	HWY 71 MEDIAN 100'S OF HONEY HOUSE	1		NEOSHO	MISSOURI				00/00/00	00:00	04/06/95	12:20
06		S	BEHIND OLD SERVICE STATION (SG-02)	1		NEOSHO	MISSOURI				00/00/00	00:00	04/06/95	15:05
07		S	LF-01	1		NEOSHO	MISSOURI				00/00/00	00:00	04/07/95	10:35
11	F	S	TRIP BLANK	1		NEOSHO	MISSOURI				00/00/00	00:00	04/07/95	09:00
13		W	URANGAS RESIDENCE-ROUTE 6, BOX 108	1		NEOSHO	MISSOURI				00/00/00	00:00	04/03/95	17:30
13	D	W	URANGAS RESIDENCE/DUPLICATE 013	1		NEOSHO	MISSOURI				00/00/00	00:00	04/03/95	17:30
14		W	CLEMENTS RESIDENCE-ROUTE 6 BOX 106	1		NEOSHO	MISSOURI				00/00/00	00:00	04/03/95	18:00
15		W	BRADBURY RESIDENCE-ROUTE 6 BOX 107	1		NEOSHO	MISSOURI				00/00/00	00:00	04/03/95	18:10
16		W	PACE RESIDENCE-ROUTE 6 BOX 105	1		NEOSHO	MISSOURI				00/00/00	00:00	04/03/95	18:25
17		W	STURGEON-LAZY'S TRAILER PARK	1		NEOSHO	MISSOURI				00/00/00	00:00	04/03/95	18:30
18		W	HOPPER RESIDENCE-ROUTE 6 BOX 104	1		NEOSHO	MISSOURI				00/00/00	00:00	04/04/95	09:00
19		W	RAY RESIDENCE-ROUTE 6 BOX 87	1		NEOSHO	MISSOURI				00/00/00	00:00	04/04/95	09:35
20		W	REYNOLDS RESIDENCE-ROUTE 6 BOX 64	1		NEOSHO	MISSOURI				00/00/00	00:00	04/04/95	10:10
21		W	CAMP RESIDENCE-ROUTE 6 BOX 63	1		NEOSHO	MISSOURI				00/00/00	00:00	04/04/95	10:30
22		W	ODLAND RESIDENCE-ROUTE 6 BOX 608	1		NEOSHO	MISSOURI				00/00/00	00:00	04/04/95	10:50
22	D	W	ODLAND RESIDENCE/DUPLICATE OF 022	1		NEOSHO	MISSOURI				00/00/00	00:00	04/04/95	10:50
23		W	LAWSON RESIDENCE-ROUTE 6 BOX 60A	1		NEOSHO	MISSOURI				00/00/00	00:00	04/04/95	11:15
24		W	WILLET RESIDENCE-ROUTE 6 BOX 59	1		NEOSHO	MISSOURI				00/00/00	00:00	04/04/95	11:28
25		W	NAYLOR RESIDENCE-ROUTE 6 BOX 58	1		NEOSHO	MISSOURI				00/00/00	00:00	04/04/95	13:55

MP. NO.	QCC	M	DESCRIPTION	SAMPLE STATUS	#	CITY	STATE	AIRS/ STORET LOC NO	SECT	LAY-ER	BEG. DATE	BEG. TIME	END. DATE	END. TIME
26		W	BECHDOLDT RESIDENCE-ROUTE 3 BOX 131	1	NEOSHO		MISSOURI				00/00/00	00:00	04/04/95	14:15
27		W	POWELL RESIDENCE-ROUTE 3 BOX 131A	1	NEOSHO		MISSOURI				00/00/00	00:00	04/04/95	14:30
28		W	LINK RESIDENCE-ROUTE 3 BOX 132	1	NEOSHO		MISSOURI				00/00/00	00:00	04/04/95	14:50
29		W	BRADFORD RESIDENCE-ROUTE 6 BOX 52	1	NEOSHO		MISSOURI				00/00/00	00:00	04/04/95	15:10
30		W	ROY-L-RANCH TRAILER PARK #2	1	NEOSHO		MISSOURI				00/00/00	00:00	04/04/95	15:20
31		W	RED OAK TRAILER PARK	1	NEOSHO		MISSOURI				00/00/00	00:00	04/04/95	15:45
32		W	NEAL RESIDENCE-ROUTE 6 BOX 89	1	NEOSHO		MISSOURI				00/00/00	00:00	04/04/95	16:10
33		W	MEARS RESIDENCE-ROUTE 6 BOX 84	1	NEOSHO		MISSOURI				00/00/00	00:00	04/04/95	16:25
34		W	HOUSTON RESIDENCE-ROUTE 3 BOX 132A	1	NEOSHO		MISSOURI				00/00/00	00:00	04/04/95	16:55
35		W	JAMISON RESIDENCE-ROUTE 3 BOX 206	1	NEOSHO		MISSOURI				00/00/00	00:00	04/04/95	17:30
36		W	SPRENKLER RESIDENCE-ROUTE 6 BOX 53	1	NEOSHO		MISSOURI				00/00/00	00:00	04/04/95	17:55
37		W	MCDANIELS RESIDENCE-ROUTE 6 BOX 88	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	08:30
38		W	STURGEON RESIDENCE-ROUTE 6 BOX 88A	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	08:50
39		W	HUTCHINGS RESIDENCE-ROUTE 6 BOX 86	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	09:30
40		W	GAMEZ RESIDENCE-ROUTE 6 BOX 85	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	09:40
41		W	SONNABEND RESIDENCE-ROUTE 6 BOX 67	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	10:00
42		W	AMBROSE RESIDENCE-ROUTE 6 BOX 51	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	10:25
43		W	KIMBLE RESIDENCE-ROUTE 6 BOX 143	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	10:40
44		W	TAYLOR RESIDENCE-ROUTE 6 BOX 142C	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	10:55
45		W	HOLLOWAY RESIDENCE-ROUTE 3 BOX 133	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	13:20
46		W	GRIGGS RESIDENCE-ROUTE 1 BOX 93B	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	13:45
47		W	NOVAK RESIDENCE-ROUTE 6 BOX 140A	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	14:00
48		W	SPRENKLER RESIDENCE-ROUTE 6 BOX 58	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	14:40
49		W	JACKSON RESIDENCE-ROUTE 6 BOX 114	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	15:00
50		W	HAWKINS RESIDENCE-ROUTE 7 BOX 310D	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	16:55
51		W	CAMPBELL RESIDENCE-ROUTE 4 BOX 133A	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	17:25
52		W	HERRIN RESIDENCE-ROUTE 6 BOX 111	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	17:50
53	F	W	FIELD BLANK	1	NEOSHO		MISSOURI				04/05/95	00:00	04/05/95	14:15
54	F	W	TRIP BLANK	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	00:00
56		A	PERFORMANCE EVALUATION SAMPLE	1	NEOSHO		MISSOURI				00/00/00	00:00	03/30/95	00:00
1		W	HERRIN RESIDENCE-ROUTE 6 BOX 111	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	17:55
2		W	ELM SPRING SECTION SW QTR. SAMPLE	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	14:15
3		W	SECTION LINE BETWEEN 1&2 NEOSHO EAST	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	14:45
4		W	900 BUILDING	1	NEOSHO		MISSOURI				00/00/00	00:00	04/05/95	15:45
5		W	JOHNSON HONEY HOUSE-ROUTE 6 BOX 112	1	NEOSHO		MISSOURI				00/00/00	00:00	04/06/95	13:16
5	D	W	JOHNSON HONEY HOUSE/DUPLICATE OF 065	1	NEOSHO		MISSOURI				00/00/00	00:00	04/06/95	13:16
6		W	ROSEY RESIDENCE-ROUTE 6 BOX 43	1	NEOSHO		MISSOURI				00/00/00	00:00	04/06/95	13:30
7		W	ROSEY RESIDENCE-ROUTE 6 BOX 43	1	NEOSHO		MISSOURI				00/00/00	00:00	04/06/95	13:40
8		W	SHOCKLEY RESIDENCE--ROUTE 6 BOX 43	1	NEOSHO		MISSOURI				00/00/00	00:00	04/06/95	14:15
9		W	MOTHER GOOSE DAYCARE (HURST)	1	NEOSHO		MISSOURI				00/00/00	00:00	04/06/95	15:05

EXPLANATION OF CODES AND INFORMATION ON ANALYSIS REQUEST DETAIL REPORT

MPLE INFORMATION:

MP. NO. = SAMPLE IDENTIFICATION NUMBER (A 3-DIGIT NUMBER WHICH IN COMBINATION WITH THE ACTIVITY NUMBER AND QCC, PROVIDES AN UNIQUE NUMBER FOR EACH SAMPLE FOR IDENTIFICATION PURPOSES)

C = QUALITY CONTROL CODE (A ONE-LETTER CODE USED TO DESIGNATE SPECIFIC QC SAMPLES. THIS FIELD WILL BE BLANK FOR ALL NON-QC OR ACTUAL SAMPLES):
- B = CAL INCREASED CONCENTRATION FOR A LAB SPIKED DUP SAMPLE
- D = MEASURED VALUE FOR FIELD DUPLICATE SAMPLE
- F = MEASURED VALUE FOR FIELD BLANK
- G = MEASURED VALUE FOR METHOD STANDARD
- H = TRUE VALUE FOR METHOD STANDARD
- K = CAL INCREASED CONCENTRATION FOR FIELD SPIKED DUP SAMPLE
- L = MEASURED VALUE FOR A LAB DUPLICATE SAMPLE
- M = MEASURED VALUE FOR LAB BLANK
- N = MEASURED CONCENTRATION OF FIELD SPIKED DUPLICATE
- P = MEASURED VALUE FOR PERFORMANCE STANDARD
- R = CAL INCREASED CONCENTRATION RESULTING FROM LAB SPIKE
- S = MEASURED CONCENTRATION OF LAB SPIKED SAMPLE
- T = TRUE VALUE OF PERFORMANCE STANDARD
- W = MEASURED CONCENTRATION OF LAB SPIKED DUPLICATE
- Y = MEASURED CONCENTRATION OF FIELD SPIKED SAMPLE
- Z = CAL INCREASED CONCENTRATION RESULTING FROM FIELD SPIKE
- 1 = MEASURED VALUE OF FIRST SPIKED REPLICATE
- 2 = MEASURED VALUE OF SECOND SPIKED REPLICATE
- 3 = MEASURED VALUE OF THIRD SPIKED REPLICATE
- 4 = MEASURED VALUE OF FOURTH SPIKED REPLICATE
- 5 = MEASURED VALUE OF FIFTH SPIKED REPLICATE
- 6 = MEASURED VALUE OF SIXTH SPIKED REPLICATE
- 7 = MEASURED VALUE OF SEVENTH SPIKED REPLICATE

= MEDIA CODE (A ONE-LETTER CODE DESIGNATING THE MEDIA OF THE SAMPLE):
- A = AIR
- H = HAZARDOUS WASTE/OTHER
- S = SOLID (SOIL, SEDIMENT, SLUDGE)
- T = TISSUE (PLANT & ANIMAL)
- W = WATER (GROUND WATER, SURFACE WATER, WASTE WATER, DRINKING WATER)

CRIPTION = A SHORT DESCRIPTION OF THE LOCATION WHERE SAMPLE WAS COLLECTED

S/STORET LOC. NO. = THE SPECIFIC LOCATION ID NUMBER OF EITHER OF THESE NATIONAL DATABASE SYSTEMS, AS APPROPRIATE

E/TIME INFORMATION = SPECIFIC INFORMATION REGARDING WHEN THE SAMPLE WAS COLLECTED
- BEG. DATE = DATE SAMPLING WAS STARTED
- BEG. TIME = TIME SAMPLING WAS STARTED
- END DATE = DATE SAMPLING WAS COMPLETED
- END TIME = TIME SAMPLING WAS COMPLETED
- NOTE: A GRAB SAMPLE WILL CONTAIN ONLY BEG. DATE/TIME
  A TIMED COMPOSITE SAMPLE WILL CONTAIN BOTH BEG AND END DATE/TIME TO DESIGNATE DURATION OF SAMPLE COLLECTION

ER CODES
- V = VALIDATED

ANALYTICAL RESULTS/MEASUREMENTS INFORMATION.

COMPOUND = MGP (MEDIA-GROUP-PARAMETER) CODE AND NAME OF THE MEASURED CONSTITUENT OR CHARACTERISTIC OF EACH SAMPLE

UNITS = SPECIFIC UNITS IN WHICH RESULTS ARE REPORTED:
- C = CENTIGRADE (CELSIUS) DEGREES
- CFS = CUBIC FEET PER SECOND
- GPM = GALLONS PER MINUTE
- IN = INCHES
- I.D. = SPECIES IDENTIFICATION
- KG = KILOGRAM
- L = LITER
- LB = POUNDS
- MG = MILLIGRAMS (1 X 10-3 GRAMS)
- MGD = MILLION GALLONS PER DAY
- MPH = MILES PER HOUR
- MV = MILLIVOLT
- M/F = MALE/FEMALE
- M2 = SQUARE METER
- M3 = CUBIC METER
- NA = NOT APPLICABLE
- NG = NANOGRAMS (1 X 10-9 GRAMS)
- NTU = NEPHELOMETRIC TURBIDITY UNITS
- PC/L = PICO (1 X 10-12) CURRIES PER LITER
- PG = PICOGRAMS (1 X 10-12 GRAMS)
- P/CM2 = PICOGRAMS PER SQUARE CENTIMETER
- SCM = STANDARD CUBIC METER (1 ATM, 25 C)
- SQ FT = SQUARE FEET
- SU = STANDARD UNITS (PH)
- UG = MICROGRAMS (1 X 10-6 GRAMS)
- UMHOS = MICROMHOS/CM (CONDUCTIVITY UNITS)
- U/CC2 = MICROGRAMS PER 100 SQUARE CENTIMETERS
- U/CM2 = MICROGRAMS PER SQUARE CENTIMETER
- 1000G = 1000 GALLONS
- +/- = POSITIVE/NEGATIVE
- # = NUMBER

DATA QUALIFIERS = SPECIFIC CODES USED IN CONJUNCTION WITH DATA VALUES TO PROVIDE ADDITIONAL INFORMATION ON THE REPORTED RESULTS, OR USED TO EXPLAIN THE ABSENCE OF A SPECIFIC VALUE:
- BLANK = IF FIELD IS BLANK, NO REMARKS OR QUALIFIERS ARE PERTINENT. FOR FINAL REPORTED DATA, THIS MEANS THAT THE VALUES HAVE BEEN REVIEWED AND FOUND TO BE ACCEPTABLE FOR USE.
- I = INVALID SAMPLE/DATA - VALUE NOT REPORTED
- J = DATA REPORTED BUT NOT VALID BY APPROVED QC PROCEDURES
- K = ACTUAL VALUE OF SAMPLE IS < VALUE REPORTED
- L = ACTUAL VALUE OF SAMPLE IS > VALUE REPORTED
- M = DETECTED BUT BELOW THE LEVEL OF REPORTED VALUE FOR ACCURATE QUANTIFICATION
- O = PARAMETER NOT ANALYZED
- U = ACTUAL VALUE OF SAMPLE IS < THE MEASUREMENT DETECTION LIMIT (REPORTED VALUE)

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: S-DSX03 VALIDATED DATA

COMPOUND	UNITS	001		002		003		004		005	
07 SOLIDS, PERCENT	%	70.6		74.6		74.2		71.8		76.8	
01 CHLOROMETHANE, BY GC/MS	UG/KG	1500	U	1500	U	1400	U	1200	U	1400	U
02 BROMOMETHANE, BY GC/MS	UG/KG	3000	U	3100	U	2700	U	2500	U	2800	U
03 VINYL CHLORIDE, BY GC/MS	UG/KG	2300	U	2300	U	2000	U	1800	U	2100	U
04 CHLOROETHANE, BY GC/MS	UG/KG	2300	U	2300	U	2000	U	1800	U	2100	U
05 METHYLENE CHLORIDE, BY GC/MS	UG/KG	1500	U	1500	U	1400	U	1200	U	1400	U
06 DICHLOROETHYLENE,1,1-,BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
07 DICHLOROETHANE,1,1-,BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
08 DICHLOROETHYLENE,TRANS,1,2- BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
09 CHLOROFORM, BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
10 DICHLOROETHANE,1,2-,BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
11 TRICHLOROETHANE,1,1,1-,BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
12 CARBON TETRACHLORIDE	UG/KG	760	U	770	U	680	U	620	U	700	U
13 BROMODICHLOROMETHANE, BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
14 DICHLOROPROPANE,1,2-,BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
15 DICHLOROPROPYLENE, TRANS 1,3-,BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
16 TRICHLOROETHYLENE, BY GC/MS	UG/KG	760	U	770	U	4600		620	U	700	U
17 DICHLOROPROPYLENE,CIS 1,3-,BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
18 DIBROMOCHLOROMETHANE, BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
19 TRICHLOROETHANE,1,1,2-, BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
20 BENZENE, BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
21 BROMOFORM, BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
22 TETRACHLOROETHYLENE, BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
23 TETRACHLOROETHANE,1,1,2,2-,BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
24 CHLOROBENZENE, BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
25 ACETONE, BY GC/MS	UG/KG	2400	U	3000	U	2900	U	2000	U	2500	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: S-DSX03 VALIDATED DATA

	COMPOUND	UNITS	001		002		003		004		005	
26	CARBON DISULFIDE, BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
27	METHYL ETHYL KETONE, BY GC/MS	UG/KG	5800	U	4800	U	4800	U	3900	U	4700	U
28	HEXANONE,2-, BY GC/MS	UG/KG	1500	U	1500	U	1400	U	1200	U	1400	U
29	TOLUENE, BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
30	PENTANONE,4-METHYL,2-(MIBK), BY GC/MS	UG/KG	1500	U	1500	U	1400	U	1200	U	1400	U
31	ETHYL BENZENE, BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
32	STYRENE, BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
33	DICHLOROETHYLENE,1,2-(TOTAL), BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
34	DICHLOROBENZENE,1,4-, BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
36	XYLENE, ORTHO-, BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
37	XYLENE,META AND/OR PARA-,BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
38	DICHLOROBENZENE,1,3-, BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
39	DICHLOROBENZENE,1,2-, BY GC/MS	UG/KG	760	U	770	U	680	U	620	U	700	U
01	SAMPLE NUMBER	NA	001		002		003		004		005	
02	ACTIVITY CODE	NA	DSX03		DSX03		DSX03		DSX03		DSX03	

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: S-DSX03 VALIDATED DATA

COMPOUND	UNITS	006		007		011 F		013	013 D
07 SOLIDS, PERCENT	%	79.2		73.9		98.6			
01 CHLOROMETHANE, BY GC/MS	UG/KG	1300	U	1300	U	850	U		
02 BROMOMETHANE, BY GC/MS	UG/KG	2600	U	2500	U	1700	U		
03 VINYL CHLORIDE, BY GC/MS	UG/KG	2000	U	1900	U	1300	U		
04 CHLOROETHANE, BY GC/MS	UG/KG	2000	U	1900	U	1300	U		
05 METHYLENE CHLORIDE, BY GC/MS	UG/KG	1300	U	1300	U	850	U		
06 DICHLOROETHYLENE,1,1-,BY GC/MS	UG/KG	650	U	630	U	420	U		
07 DICHLOROETHANE,1,1-,BY GC/MS	UG/KG	650	U	630	U	420	U		
08 DICHLOROETHYLENE,TRANS,1,2- BY GC/MS	UG/KG	650	U	630	U	420	U		
09 CHLOROFORM, BY GC/MS	UG/KG	650	U	630	U	420	U		
10 DICHLOROETHANE,1,2-,BY GC/MS	UG/KG	650	U	630	U	420	U		
11 TRICHLOROETHANE,1,1,1-,BY GC/MS	UG/KG	650	U	630	U	420	U		
12 CARBON TETRACHLORIDE	UG/KG	650	U	630	U	420	U		
13 BROMODICHLOROMETHANE, BY GC/MS	UG/KG	650	U	630	U	420	U		
14 DICHLOROPROPANE,1,2-,BY GC/MS	UG/KG	650	U	630	U	420	U		
15 DICHLOROPROPYLENE, TRANS 1,3-,BY GC/MS	UG/KG	650	U	630	U	420	U		
16 TRICHLOROETHYLENE, BY GC/MS	UG/KG	650	U	630	U	420	U		
17 DICHLOROPROPYLENE,CIS 1,3-,BY GC/MS	UG/KG	650	U	630	U	420	U		
18 DIBROMOCHLOROMETHANE, BY GC/MS	UG/KG	650	U	630	U	420	U		
19 TRICHLOROETHANE,1,1,2-, BY GC/MS	UG/KG	650	U	630	U	420	U		
20 BENZENE, BY GC/MS	UG/KG	650	U	630	U	420	U		
21 BROMOFORM, BY GC/MS	UG/KG	650	U	630	U	420	U		
22 TETRACHLOROETHYLENE, BY GC/MS	UG/KG	650	U	630	U	420	U		
23 TETRACHLOROETHANE,1,1,2,2-,BY GC/MS	UG/KG	650	U	630	U	420	U		
24 CHLOROBENZENE, BY GC/MS	UG/KG	650	U	630	U	420	U		
25 ACETONE, BY GC/MS	UG/KG	2300	U	1300	U	2000	U		

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: S-DSX03

COMPOUND	UNITS	006	007	011 F	013		VALIDATED DATA 013 D	
54 BENZENE, BY GC/MS LDL	UG/L				0.1	U	0.1	U
55 TRICHLOROETHYLENE, BY GC/MS LDL	UG/L				0.5	U	0.5	U
56 DICHLOROPROPYLENE, CIS 1,3- BY GC/MS LD	UG/L				0.6	U	0.6	U
57 DIBROMOCHLOROMETHANE, BY GC/MS LDL	UG/L				0.3	U	0.3	U
58 TRICHLOROETHANE, 1,1,2- BY GC/MS LDL	UG/L				0.4	U	0.4	U
59 BROMOFORM, BY GC/MS LDL	UG/L				0.2	U	0.2	U
60 TETRACHLOROETHYLENE, BY GC/MS LDL	UG/L				0.3	U	0.3	U
61 TOLUENE, BY GC/MS LDL	UG/L				0.5	U	0.5	U
62 TETRACHLOROETHANE, 1,1,2,2- BY GC/MS, L	UG/L				0.6	U	0.6	U
63 CHLOROBENZENE, BY GC/MS LDL	UG/L				0.2	U	0.2	U
64 ETHYLBENZENE, BY GC/MS LDL	UG/L				0.3	U	0.3	U
65 ACETONE, BY GC/MS LDL	UG/L				9	U	9	U
66 CARBON DISULFIDE, BY GC/MS LDL	UG/L				1	U	1	U
67 METHYL ETHYL KETONE (2-BUTANONE) LDL	UG/L				3	U	3	U
68 HEXANONE, 2- BY GC/MS LDL	UG/L				3	U	3	U
69 4-METHYL-2-PENTANONE (MIBK) BY GC/MS LD	UG/L				0.8	U	0.8	U
70 STYRENE, BY GC/MS LDL	UG/L				0.3	U	0.3	U
72 DICHLOROPROPYLENE, TRANS 1,3- BY GC/MS	UG/L				0.8	U	0.8	U
73 XYLENE, M AND/OR P BY GC/MS LDL	UG/L				0.2	U	0.2	U
74 XYLENE, ORTHO BY GC/MS LDL	UG/L				0.4	U	0.4	U
75 DICHLOROBENZENE, 1,4- (PARA) BY GC/MS L	UG/L				0.5	U	0.5	U
76 DICHLOROBENZENE, 1,3- (META) BY GC/MS L	UG/L				0.4	U	0.4	U
77 DICHLOROBENZENE, 1,2- (ORTHO) BY GC/MS	UG/L				0.4	U	0.4	U
78 DICHLOROETHYLENE, 1,2- (TRANS) BY GC/MS	UG/L				0.8	U	0.8	U
79 DICHLOROETHYLENE, 1,2- (CIS) BY GC/MS L	UG/L				0.5	U	0.5	U
01 SAMPLE NUMBER	NA	006	007	011	013		013	

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03

COMPOUND	UNITS	006	007	011 F	013	VALIDATED DATA 013 D
W26 CARBON DISULFIDE, BY GC/MS	UG/KG	650 U	630 U	420 U		
W27 METHYL ETHYL KETONE, BY GC/MS	UG/KG	4400 U	3600 U	3800 U		
W28 HEXANONE,2-, BY GC/MS	UG/KG	1300 U	1300 U	850 U		
W29 TOLUENE, BY GC/MS	UG/KG	650 U	630 U	420 U		
W30 PENTANONE,4-METHYL,2-(M1BK), BY GC/MS	UG/KG	1300 U	1300 U	850 U		
W31 ETHYL BENZENE, BY GC/MS	UG/KG	650 U	630 U	420 U		
W32 STYRENE, BY GC/MS	UG/KG	650 U	630 U	420 U		
W33 DICHLOROETHYLENE,1,2-(TOTAL), BY GC/MS	UG/KG	650 U	630 U	420 U		
W34 DICHLOROBENZENE,1,4-, BY GC/MS	UG/KG	650 U	630 U	420 U		
W36 XYLENE, ORTHO-, BY GC/MS	UG/KG	650 U	630 U	420 U		
W37 XYLENE,META AND/OR PARA-,BY GC/MS	UG/KG	650 U	630 U	420 U		
W38 DICHLOROBENZENE,1,3-, BY GC/MS	UG/KG	650 U	630 U	420 U		
W39 DICHLOROBENZENE,1,2-, BY GC/MS	UG/KG	650 U	630 U	420 U		
W40 CHLOROMETHANE, BY GC/MS LDL	UG/L				2	3
W41 BROMOMETHANE, BY GC/MS LDL	UG/L				2 U	2 U
W42 VINYL CHLORIDE, BY GC/MS LDL	UG/L				1 U	1 U
W43 CHLOROETHANE, BY GC/MS LDL	UG/L				2 U	2 U
W44 METHYLENE CHLORIDE (DICHLOROMETHANE) LD	UG/L				1 U	3 U
W45 DICHLOROETHYLENE, 1,1- BY GC/MS LDL	UG/L				2 U	2 U
W46 DICHLOROETHANE, 1,1- BY GC/MS LDL	UG/L				0.4 U	0.4 U
W48 CHLOROFORM, BY GC/MS LDL	UG/L				0.4 U	0.4 U
W49 DICHLOROETHANE, 1,2- BY GC/MS LDL	UG/L				0.4 U	0.4 U
W50 TRICHLOROETHANE, 1,1,1- BY GC/MS LDL	UG/L				0.6 U	0.6 U
W51 CARBON TETRACHLORIDE, BY GC/MS LDL	UG/L				0.2 U	0.2 U
W52 BROMODICHLOROMETHANE, BY GC/MS LDL	UG/L				0.3 U	0.3 U
W53 DICHLOROPROPANE, 1,2- BY GC/MS LDL	UG/L				0.4 U	0.4 U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03 VALIDATED DATA

COMPOUND	UNITS	006	007	011 F	013	013 D
Z02 ACTIVITY CODE	NA	DSX03	DSX03	DSX03	DSX03	DSX03

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03

VALIDATED DATA

COMPOUND	UNITS	014		015		016		017		018	
140 CHLOROMETHANE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	2	
141 BROMOMETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
142 VINYL CHLORIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
143 CHLOROETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
144 METHYLENE CHLORIDE (DICHLOROMETHANE) LD	UG/L	1	U	1	U	1	U	1	U	1	U
145 DICHLOROETHYLENE, 1,1- BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
146 DICHLOROETHANE, 1,1- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
148 CHLOROFORM, BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
149 DICHLOROETHANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
150 TRICHLOROETHANE, 1,1,1- BY GC/MS LDL	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
151 CARBON TETRACHLORIDE, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
152 BROMODICHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
153 DICHLOROPROPANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
154 BENZENE, BY GC/MS LDL	UG/L	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
155 TRICHLOROETHYLENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
156 DICHLOROPROPYLENE, CIS 1,3- BY GC/MS LD	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
157 DIBROMOCHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
158 TRICHLOROETHANE, 1,1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
159 BROMOFORM, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
160 TETRACHLOROETHYLENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
161 TOLUENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
162 TETRACHLOROETHANE, 1,1,2,2- BY GC/MS, L	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
163 CHLOROBENZENE, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
164 ETHYLBENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
165 ACETONE, BY GC/MS LDL	UG/L	9	U	9	U	9	U	9	U	9	U
166 CARBON DISULFIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: S-DSX03 VALIDATED DATA

COMPOUND	UNITS	014	015	016	017	018
W67 METHYL ETHYL KETONE (2-BUTANONE) LDL	UG/L	3 U	3 U	3 U	3 U	3 U
W68 HEXANONE, 2- BY GC/MS LDL	UG/L	3 U	3 U	3 U	3 U	3 U
W69 4-METHYL-2-PENTANONE (MIBK) BY GC/MS LD	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
W70 STYRENE, BY GC/MS LDL	UG/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
W72 DICHLOROPROPYLENE, TRANS 1,3- BY GC/MS	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
W73 XYLENE, M AND/OR P BY GC/MS LDL	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
W74 XYLENE, ORTHO BY GC/MS LDL	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
W75 DICHLOROBENZENE, 1,4- (PARA) BY GC/MS L	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
W76 DICHLOROBENZENE, 1,3- (META) BY GC/MS L	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
W77 DICHLOROBENZENE, 1,2- (ORTHO) BY GC/MS	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
W78 DICHLOROETHYLENE, 1,2- (TRANS) BY GC/MS	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
W79 DICHLOROETHYLENE, 1,2- (CIS) BY GC/MS L	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
01 SAMPLE NUMBER	NA	014	015	016	017	018
02 ACTIVITY CODE	NA	DSX03	DSX03	DSX03	DSX03	DSX03

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03

VALIDATED DATA

COMPOUND	UNITS	019		020		021		022		022 D	
040 CHLOROMETHANE, BY GC/MS LDL	UG/L	1	U	2		1	U	1	U	1	U
041 BROMOMETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
042 VINYL CHLORIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
043 CHLOROETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
044 METHYLENE CHLORIDE (DICHLOROMETHANE) LD	UG/L	4	U	1	U	1	U	1	U	1	U
045 DICHLOROETHYLENE, 1,1- BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
046 DICHLOROETHANE, 1,1- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
048 CHLOROFORM, BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
049 DICHLOROETHANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
050 TRICHLOROETHANE, 1,1,1- BY GC/MS LDL	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
051 CARBON TETRACHLORIDE, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
052 BROMODICHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
053 DICHLOROPROPANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
054 BENZENE, BY GC/MS LDL	UG/L	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
055 TRICHLOROETHYLENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
056 DICHLOROPROPYLENE, CIS 1,3- BY GC/MS LD	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
057 DIBROMOCHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
058 TRICHLOROETHANE, 1,1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
059 BROMOFORM, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
060 TETRACHLOROETHYLENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
061 TOLUENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
062 TETRACHLOROETHANE, 1,1,2,2- BY GC/MS, L	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
063 CHLOROBENZENE, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
064 ETHYLBENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
065 ACETONE, BY GC/MS LDL	UG/L	9	U	9	U	9	U	9	U	9	U
066 CARBON DISULFIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03 VALIDATED DATA

COMPOUND	UNITS	019	020	021	022	022 D
067 METHYL ETHYL KETONE (2-BUTANONE) LDL	UG/L	3 U	3 U	3 U	3 U	3 U
068 HEXANONE, 2- BY GC/MS LDL	UG/L	3 U	3 U	3 U	3 U	3 U
069 4-METHYL-2-PENTANONE (MIBK) BY GC/MS LD	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
070 STYRENE, BY GC/MS LDL	UG/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
072 DICHLOROPROPYLENE, TRANS 1,3- BY GC/MS	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
073 XYLENE, M AND/OR P BY GC/MS LDL	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
074 XYLENE, ORTHO BY GC/MS LDL	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
075 DICHLOROBENZENE, 1,4- (PARA) BY GC/MS L	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
076 DICHLOROBENZENE, 1,3- (META) BY GC/MS L	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
077 DICHLOROBENZENE, 1,2- (ORTHO) BY GC/MS	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
078 DICHLOROETHYLENE, 1,2- (TRANS) BY GC/MS	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
079 DICHLOROETHYLENE, 1,2- (CIS) BY GC/MS L	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
01 SAMPLE NUMBER	NA	019	020	021	022	022
02 ACTIVITY CODE	NA	DSX03	DSX03	DSX03	DSX03	DSX03

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03 VALIDATED DATA

COMPOUND	UNITS	023		024		025		026		027	
040 CHLOROMETHANE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
041 BROMOMETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
042 VINYL CHLORIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
043 CHLOROETHANE, BY GC/MS LDL	UG/L	2	U	2.	U	2	U	2	U	2	U
044 METHYLENE CHLORIDE (DICHLOROMETHANE) LD	UG/L	2	U	1	U	1	U	1	U	1	U
045 DICHLOROETHYLENE, 1,1- BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
046 DICHLOROETHANE, 1,1- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
048 CHLOROFORM, BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
049 DICHLOROETHANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
050 TRICHLOROETHANE, 1,1,1- BY GC/MS LDL	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
051 CARBON TETRACHLORIDE, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
052 BROMODICHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
053 DICHLOROPROPANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
054 BENZENE, BY GC/MS LDL	UG/L	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
055 TRICHLOROETHYLENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
056 DICHLOROPROPYLENE, CIS 1,3- BY GC/MS LD	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
057 DIBROMOCHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
058 TRICHLOROETHANE, 1,1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
059 BROMOFORM, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
060 TETRACHLOROETHYLENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
061 TOLUENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
062 TETRACHLOROETHANE, 1,1,2,2- BY GC/MS, L	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
063 CHLOROBENZENE, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
064 ETHYLBENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
065 ACETONE, BY GC/MS LDL	UG/L	9	U	9	U	9	U	9	U	9	U
066 CARBON DISULFIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03 VALIDATED DATA

COMPOUND	UNITS	023		024		025		026		027	
067 METHYL ETHYL KETONE (2-BUTANONE) LDL	UG/L	3	U	3	U	3	U	3	U	3	U
068 HEXANONE, 2- BY GC/MS LDL	UG/L	3	U	3	U	3	U	3	U	3	U
069 4-METHYL-2-PENTANONE (MIBK) BY GC/MS LD	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
070 STYRENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
172 DICHLOROPROPYLENE, TRANS 1,3- BY GC/MS	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
173 XYLENE, M AND/OR P BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
174 XYLENE, ORTHO BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
175 DICHLOROBENZENE, 1,4- (PARA) BY GC/MS L	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
176 DICHLOROBENZENE, 1,3- (META) BY GC/MS L	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
177 DICHLOROBENZENE, 1,2- (ORTHO) BY GC/MS	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
178 DICHLOROETHYLENE, 1,2- (TRANS) BY GC/MS	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
179 DICHLOROETHYLENE, 1,2- (CIS) BY GC/MS L	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
01 SAMPLE NUMBER	NA	023		024		025		026		027	
02 ACTIVITY CODE	NA	DSX03		DSX03		DSX03		DSX03		DSX03	

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03

VALIDATED DATA

COMPOUND	UNITS	028		029		030		031		032	
040 CHLOROMETHANE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
041 BROMOMETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
042 VINYL CHLORIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
043 CHLOROETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
044 METHYLENE CHLORIDE (DICHLOROMETHANE) LD	UG/L	1	U	1	U	1	U	1	U	1	U
045 DICHLOROETHYLENE, 1,1- BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
046 DICHLOROETHANE, 1,1- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
048 CHLOROFORM, BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
049 DICHLOROETHANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
050 TRICHLOROETHANE, 1,1,1- BY GC/MS LDL	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
051 CARBON TETRACHLORIDE, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
052 BROMODICHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
053 DICHLOROPROPANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
054 BENZENE, BY GC/MS LDL	UG/L	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
055 TRICHLOROETHYLENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
056 DICHLOROPROPYLENE, CIS 1,3- BY GC/MS LD	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
057 DIBROMOCHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
058 TRICHLOROETHANE, 1,1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
059 BROMOFORM, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
060 TETRACHLOROETHYLENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
061 TOLUENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
062 TETRACHLOROETHANE, 1,1,2,2- BY GC/MS, L	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
063 CHLOROBENZENE, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
064 ETHYLBENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
065 ACETONE, BY GC/MS LDL	UG/L	9	U	9	U	9	U	9	U	9	U
066 CARBON DISULFIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: S-DSX03 VALIDATED DATA

COMPOUND	UNITS	028		029		030		031		032	
WW67 METHYL ETHYL KETONE (2-BUTANONE) LDL	UG/L	3	U	3	U	3	U	3	U	3	U
WW68 HEXANONE, 2- BY GC/MS LDL	UG/L	3	U	3	U	3	U	3	U	3	U
WW69 4-METHYL-2-PENTANONE (MIBK) BY GC/MS LD	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
WW70 STYRENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
WW72 DICHLOROPROPYLENE, TRANS 1,3- BY GC/MS	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
WW73 XYLENE, M AND/OR P BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
WW74 XYLENE, ORTHO BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW75 DICHLOROBENZENE, 1,4- (PARA) BY GC/MS L	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
WW76 DICHLOROBENZENE, 1,3- (META) BY GC/MS L	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW77 DICHLOROBENZENE, 1,2- (ORTHO) BY GC/MS	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
WW78 DICHLOROETHYLENE, 1,2- (TRANS) BY GC/MS	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
WW79 DICHLOROETHYLENE, 1,2- (CIS) BY GC/MS L	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Z01 SAMPLE NUMBER	NA	028		029		030		031		032	
Z02 ACTIVITY CODE	NA	DSX03		DSX03		DSX03		DSX03		DSX03	

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03 VALIDATED DATA

COMPOUND	UNITS	033	034	035	036	037
W40 CHLOROMETHANE, BY GC/MS LDL	UG/L	1 U	1 U	2	1 U	1 U
W41 BROMOMETHANE, BY GC/MS LDL	UG/L	2 U	2 U	2 U	2 U	2 U
W42 VINYL CHLORIDE, BY GC/MS LDL	UG/L	1 U	1 U	1 U	1 U	1 U
W43 CHLOROETHANE, BY GC/MS LDL	UG/L	2 U	2 U	2 U	2 U	2 U
W44 METHYLENE CHLORIDE (DICHLOROMETHANE) LD	UG/L	1 U	2 U	2 U	1 U	2 U
W45 DICHLOROETHYLENE, 1,1- BY GC/MS LDL	UG/L	2 U	2 U	2 U	2 U	2 U
W46 DICHLOROETHANE, 1,1- BY GC/MS LDL	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
W48 CHLOROFORM, BY GC/MS LDL	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
W49 DICHLOROETHANE, 1,2- BY GC/MS LDL	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
W50 TRICHLOROETHANE, 1,1,1- BY GC/MS LDL	UG/L	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
W51 CARBON TETRACHLORIDE, BY GC/MS LDL	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
W52 BROMODICHLOROMETHANE, BY GC/MS LDL	UG/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
W53 DICHLOROPROPANE, 1,2- BY GC/MS LDL	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
W54 BENZENE, BY GC/MS LDL	UG/L	0.1 U	0.1 U	0.1 U	1 U	0.1 U
W55 TRICHLOROETHYLENE, BY GC/MS LDL	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
W56 DICHLOROPROPYLENE, CIS 1,3- BY GC/MS LD	UG/L	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
W57 DIBROMOCHLOROMETHANE, BY GC/MS LDL	UG/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
W58 TRICHLOROETHANE, 1,1,2- BY GC/MS LDL	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
W59 BROMOFORM, BY GC/MS LDL	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
W60 TETRACHLOROETHYLENE, BY GC/MS LDL	UG/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
W61 TOLUENE, BY GC/MS LDL	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
W62 TETRACHLOROETHANE, 1,1,2,2- BY GC/MS, L	UG/L	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
W63 CHLOROBENZENE, BY GC/MS LDL	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
W64 ETHYLBENZENE, BY GC/MS LDL	UG/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
W65 ACETONE, BY GC/MS LDL	UG/L	9 U	9 U	9 U	9 U	9 U
W66 CARBON DISULFIDE, BY GC/MS LDL	UG/L	1 U	1 U	1 U	1 U	1 U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03 VALIDATED DATA

COMPOUND	UNITS	033		034		035		036		037	
W67 METHYL ETHYL KETONE (2-BUTANONE) LDL	UG/L	3	U	3	U	3	U	3	U	3	U
W68 HEXANONE, 2- BY GC/MS LDL	UG/L	3	U	3	U	3	U	3	U	3	U
W69 4-METHYL-2-PENTANONE (MIBK) BY GC/MS LD	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
W70 STYRENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
W72 DICHLOROPROPYLENE, TRANS 1,3- BY GC/MS	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
W73 XYLENE, M AND/OR P BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
W74 XYLENE, ORTHO BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
W75 DICHLOROBENZENE, 1,4- (PARA) BY GC/MS L	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
W76 DICHLOROBENZENE, 1,3- (META) BY GC/MS L	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
W77 DICHLOROBENZENE, 1,2- (ORTHO) BY GC/MS	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
W78 DICHLOROETHYLENE, 1,2- (TRANS) BY GC/MS	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
W79 DICHLOROETHYLENE, 1,2- (CIS) BY GC/MS L	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Z01 SAMPLE NUMBER	NA	033		034		035		036		037	
Z02 ACTIVITY CODE	NA	DSX03		DSX03		DSX03		DSX03		DSX03	

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03 VALIDATED DATA

COMPOUND	UNITS	038		039		040		041		042	
W40 CHLOROMETHANE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
W41 BROMOMETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
W42 VINYL CHLORIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
W43 CHLOROETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
W44 METHYLENE CHLORIDE (DICHLOROMETHANE) LD	UG/L	1	U	1	U	2	U	2	U	1	U
W45 DICHLOROETHYLENE, 1,1- BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
W46 DICHLOROETHANE, 1,1- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
W48 CHLOROFORM, BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
W49 DICHLOROETHANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
W50 TRICHLOROETHANE, 1,1,1- BY GC/MS LDL	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
W51 CARBON TETRACHLORIDE, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
W52 BROMODICHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
W53 DICHLOROPROPANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
W54 BENZENE, BY GC/MS LDL	UG/L	0.1	U	0.1	U	0.1	U	0.1	U	0.3	U
W55 TRICHLOROETHYLENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
W56 DICHLOROPROPYLENE, CIS 1,3- BY GC/MS LD	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
W57 DIBROMOCHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
W58 TRICHLOROETHANE, 1,1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
W59 BROMOFORM, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
W60 TETRACHLOROETHYLENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
W61 TOLUENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
W62 TETRACHLOROETHANE, 1,1,2,2- BY GC/MS, L	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
W63 CHLOROBENZENE, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
W64 ETHYLBENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
W65 ACETONE, BY GC/MS LDL	UG/L	9	U	9	U	9	U	9	U	9	U
W66 CARBON DISULFIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U

COMPOUND	UNITS	038	039	040	041	042
WW67 METHYL ETHYL KETONE (2-BUTANONE) LDL	UG/L	3 U	3 U	3 U	3 U	3 U
WW68 HEXANONE, 2- BY GC/MS LDL	UG/L	3 U	3 U	3 U	3 U	3 U
WW69 4-METHYL-2-PENTANONE (MIBK) BY GC/MS LD	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
WW70 STYRENE, BY GC/MS LDL	UG/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
WW72 DICHLOROPROPYLENE, TRANS 1,3- BY GC/MS	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
WW73 XYLENE, M AND/OR P BY GC/MS LDL	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
WW74 XYLENE, ORTHO BY GC/MS LDL	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
WW75 DICHLOROBENZENE, 1,4- (PARA) BY GC/MS L	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
WW76 DICHLOROBENZENE, 1,3- (META) BY GC/MS L	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
WW77 DICHLOROBENZENE, 1,2- (ORTHO) BY GC/MS	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
WW78 DICHLOROETHYLENE, 1,2- (TRANS) BY GC/MS	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
WW79 DICHLOROETHYLENE, 1,2- (CIS) BY GC/MS L	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Z01 SAMPLE NUMBER	NA	038	039	040	041	042
Z02 ACTIVITY CODE	NA	DSX03	DSX03	DSX03	DSX03	DSX03

COMPOUND	UNITS	043		044		045		046		047	
W40 CHLOROMETHANE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
W41 BROMOMETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
W42 VINYL CHLORIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
W43 CHLOROETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
W44 METHYLENE CHLORIDE (DICHLOROMETHANE) LD	UG/L	1	U	1	U	1	U	1	U	1	U
W45 DICHLOROETHYLENE, 1,1- BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
W46 DICHLOROETHANE, 1,1- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
W48 CHLOROFORM, BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
W49 DICHLOROETHANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
W50 TRICHLOROETHANE, 1,1,1- BY GC/MS LDL	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
W51 CARBON TETRACHLORIDE, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
W52 BROMODICHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
W53 DICHLOROPROPANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
W54 BENZENE, BY GC/MS LDL	UG/L	0.1	U	0.1	U	0.6	U	0.1	U	0.1	U
W55 TRICHLOROETHYLENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
W56 DICHLOROPROPYLENE, CIS 1,3- BY GC/MS LD	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
W57 DIBROMOCHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
W58 TRICHLOROETHANE, 1,1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
W59 BROMOFORM, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
W60 TETRACHLOROETHYLENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
W61 TOLUENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
W62 TETRACHLOROETHANE, 1,1,2,2- BY GC/MS, L	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
W63 CHLOROBENZENE, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
W64 ETHYLBENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
W65 ACETONE, BY GC/MS LDL	UG/L	9	U	9	U	9	U	9	U	9	U
W66 CARBON DISULFIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03 VALIDATED DATA

	COMPOUND	UNITS	043		044		045		046		047	
67	METHYL ETHYL KETONE (2-BUTANONE) LDL	UG/L	3	U	3	U	3	U	3	U	3	U
68	HEXANONE, 2- BY GC/MS LDL	UG/L	3	U	3	U	3	U	3	U	3	U
69	4-METHYL-2-PENTANONE (MIBK) BY GC/MS LD	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
70	STYRENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
72	DICHLOROPROPYLENE, TRANS 1,3- BY GC/MS	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
73	XYLENE, M AND/OR P BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
74	XYLENE, ORTHO BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
75	DICHLOROBENZENE, 1,4- (PARA) BY GC/MS L	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
76	DICHLOROBENZENE, 1,3- (META) BY GC/MS L	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
77	DICHLOROBENZENE, 1,2- (ORTHO) BY GC/MS	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
78	DICHLOROETHYLENE, 1,2- (TRANS) BY GC/MS	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
79	DICHLOROETHYLENE, 1,2- (CIS) BY GC/MS L	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
01	SAMPLE NUMBER	NA	043		044		045		046		047	
02	ACTIVITY CODE	NA	DSX03		DSX03		DSX03		DSX03		DSX03	

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03 VALIDATED DATA

COMPOUND	UNITS	048		049		050		051		052	
040 CHLOROMETHANE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
041 BROMOMETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
042 VINYL CHLORIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U
043 CHLOROETHANE, BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
044 METHYLENE CHLORIDE (DICHLOROMETHANE) LD	UG/L	1	U	1	U	2	U	1	U	1	U
045 DICHLOROETHYLENE, 1,1- BY GC/MS LDL	UG/L	2	U	2	U	2	U	2	U	2	U
046 DICHLOROETHANE, 1,1- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
048 CHLOROFORM, BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
049 DICHLOROETHANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
050 TRICHLOROETHANE, 1,1,1- BY GC/MS LDL	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
051 CARBON TETRACHLORIDE, BY GC/MS LDL	UG/L	0.7		0.8		0.2	U	0.2	U	0.2	U
052 BROMODICHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
053 DICHLOROPROPANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
054 BENZENE, BY GC/MS LDL	UG/L	0.4	U	0.3	U	0.1	U	0.1	U	0.1	U
055 TRICHLOROETHYLENE, BY GC/MS LDL	UG/L	10		15		0.5	U	0.5	U	1	
056 DICHLOROPROPYLENE, CIS 1,3- BY GC/MS LD	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
057 DIBROMOCHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
058 TRICHLOROETHANE, 1,1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
059 BROMOFORM, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
060 TETRACHLOROETHYLENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
061 TOLUENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
062 TETRACHLOROETHANE, 1,1,2,2- BY GC/MS, L	UG/L	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
063 CHLOROBENZENE, BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
064 ETHYLBENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
065 ACETONE, BY GC/MS LDL	UG/L	9	U	9	U	9	U	9	U	9	U
066 CARBON DISULFIDE, BY GC/MS LDL	UG/L	1	U	1	U	1	U	1	U	1	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03 VALIDATED DATA

COMPOUND	UNITS	048		049		050		051		052	
67 METHYL ETHYL KETONE (2-BUTANONE) LDL	UG/L	3	U	3	U	3	U	3	U	3	U
68 HEXANONE, 2- BY GC/MS LDL	UG/L	3	U	3	U	3	U	3	U	3	U
69 4-METHYL-2-PENTANONE (MIBK) BY GC/MS LD	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
70 STYRENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
72 DICHLOROPROPYLENE, TRANS 1,3- BY GC/MS	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
73 XYLENE, M AND/OR P BY GC/MS LDL	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
74 XYLENE, ORTHO BY GC/MS LDL	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
75 DICHLOROBENZENE, 1,4- (PARA) BY GC/MS L	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
76 DICHLOROBENZENE, 1,3- (META) BY GC/MS L	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
77 DICHLOROBENZENE, 1,2- (ORTHO) BY GC/MS	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
78 DICHLOROETHYLENE, 1,2- (TRANS) BY GC/MS	UG/L	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
79 DICHLOROETHYLENE, 1,2- (CIS) BY GC/MS L	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
01 SAMPLE NUMBER	NA	048		049		050		051		052	
02 ACTIVITY CODE	NA	DSX03		DSX03		DSX03		DSX03		DSX03	

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03 VALIDATED DATA

	COMPOUND	UNITS	053 F	054 F	056		061	062
01	PENTANE, BY GC/MSD	UG/M3			NA	0		
02	1,1,2-TRICHLOROTRIFLUOROETHANE, BY GC/M	UG/M3			NA	0		
03	HEXANE, BY GC/MSD	UG/M3			NA	0		
04	HEPTANE, BY GC/MSD	UG/M3			NA	0		
05	OCTANE, BY GC/MSD	UG/M3			NA	0		
06	NONANE(NONYL HYDRIDE), BY GC/MS	UG/M3			NA	0		
07	ISOPROPYLBENZENE, BY GC/MSD	UG/M3			NA	0		
08	1,3,5-TRIMETHYLBENZENE, BY GC/MSD	UG/M3			NA	0		
09	TRIMETHYLBENZENE, 1,2,4-, BY GC/MSD	UG/M3			NA	0		
10	DICHLOROBENZENE,1,3-, BY GC/MSD	UG/M3			NA	0		
11	DECANE BY GC/MSD	UG/M3			NA	0		
12	DICHLOROBENZENE,1,2-, BY GC/MSD	UG/M3			NA	0		
13	TRICHLOROBENZENE, 1,2,4- BY GC/MSD	UG/M3			NA	0		
14	HEXACHLOROBUTADIENE, BY GC/MSD	UG/M3			NA	0		
20	DICHLOROPROPYLENE,CIS-1,3	UG/M3			NA	0		
51	CARBON DISULFIDE	UG/M3			NA	0		
58	DIBROMOETHANE, 1,2-(EDB), BY GC/MS	UG/M3			NA	0		
60	CHLOROMETHANE, BY GC/MSD	UG/M3			NA	0		
61	VINYL CHLORIDE, BY GC/MSD	UG/M3			NA	0		
62	BROMOMETHANE, BY GC/MSD	UG/M3			NA	0		
63	CHLOROETHANE, BY GC/MSD	UG/M3			NA	0		
67	ACRYLONITRILE, BY GC/MSD	UG/M3			NA	0		
68	BROMOETHANE, BY GC/MSD	UG/M3			NA	0		
69	DICHLOROETHYLENE,1,1, BY GC/MSD	UG/M3			NA	0		
70	METHYLENE CHLORIDE, BY GC/MSD	UG/M3			NA	0		
71	ALLYL CHLORIDE, BY GC/MSD	UG/M3			NA	0		

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03 VALIDATED DATA

COMPOUND	UNITS	053 F	054 F	056	061	062
V52 DICHLOROETHYLENE,TRANS-1,2, BY GC/MSD	UG/M3			NA 0		
V53 DICHLOROETHANE,1,1, BY GC/MSD	UG/M3			NA 0		
V55 DICHLOROETHYLENE,CIS-1,2, BY GC/MSD	UG/M3			NA 0		
V56 CHLOROFORM, BY GC/MSD	UG/M3			NA 0		
V57 DICHLOROETHANE,1,2, BY GC/MSD	UG/M3			NA 0		
V58 TRICHLOROETHANE,1,1,1-, BY GC/MSD	UG/M3			NA 0		
V59 BENZENE, BY GC/MSD	UG/M3			NA 0		
V60 CARBON TETRACHLORIDE, BY GC/MSD	UG/M3			NA 0		
V61 DICHLOROPROPANE,1,2, BY GC/MSD	UG/M3			NA 0		
V62 BROMODICHLOROMETHANE, BY GC/MSD	UG/M3			NA 0		
V63 TRICHLOROETHYLENE, BY GC/MSD	UG/M3			NA 0		
V66 DICHLOROPROPYLENE,TRANS-1,3, BY GC/MSD	UG/M3			NA 0		
V67 TRICHLOROETHANE,1,1,2-, BY GC/MSD	UG/M3			NA 0		
V68 TOLUENE, BY GC/MSD	UG/M3			NA 0		
69 DIBROMOCHLOROMETHANE, BY GC/MSD	UG/M3			NA 0		
72 TETRACHLOROETHYLENE, BY GC/MSD	UG/M3			NA 0		
73 TETRACHLOROETHANE,1,1,1,2, BY GC/MSD	UG/M3			NA 0		
74 CHLOROBENZENE, BY GC/MSD	UG/M3			NA 0		
75 ETHYL BENZENE, BY GC/MSD	UG/M3			NA 0		
76 BROMOFORM, BY GC/MSD	UG/M3			NA 0		
79 STYRENE, BY GC/MSD	UG/M3			NA 0		
80 XYLENE, ORTHO, BY GC/MSD	UG/M3			NA 0		
81 TETRACHLOROETHANE,1,1,2,2, BY GC/MSD	UG/M3			NA 0		
83 XYLENE, M AND/OR P	UG/M3			NA 0		
40 CHLOROMETHANE, BY GC/MS LDL	UG/L	1 U	1 U		1 U	1 U
41 BROMOMETHANE, BY GC/MS LDL	UG/L	2 U	2 U		2 U	2 U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 5-DSX03 VALIDATED DATA

COMPOUND	UNITS	053 F		054 F		056	061		062	
W42 VINYL CHLORIDE, BY GC/MS LDL	UG/L	1	U	1	U		1	U	1	U
W43 CHLOROETHANE, BY GC/MS LDL	UG/L	2	U	2	U		2	U	2	U
W44 METHYLENE CHLORIDE (DICHLOROMETHANE) LD	UG/L	1	U	4	U		1	U	1	U
W45 DICHLOROETHYLENE, 1,1- BY GC/MS LDL	UG/L	2	U	2	U		2	U	2	U
W46 DICHLOROETHANE, 1,1- BY GC/MS LDL	UG/L	0.4	U	0.4	U		0.4	U	0.4	U
W48 CHLOROFORM, BY GC/MS LDL	UG/L	0.4	U	0.4	U		0.4	U	0.4	U
W49 DICHLOROETHANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U		0.4	U	0.4	U
W50 TRICHLOROETHANE, 1,1,1- BY GC/MS LDL	UG/L	0.6	U	0.6	U		0.6	U	0.6	U
W51 CARBON TETRACHLORIDE, BY GC/MS LDL	UG/L	0.2	U	0.2	U		0.2	U	0.2	U
W52 BROMODICHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U		0.3	U	0.3	U
W53 DICHLOROPROPANE, 1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U		0.4	U	0.4	U
W54 BENZENE, BY GC/MS LDL	UG/L	0.1	U	0.1	U		0.1	U	0.1	U
W55 TRICHLOROETHYLENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U		0.5	U	0.5	U
W56 DICHLOROPROPYLENE, CIS 1,3- BY GC/MS LD	UG/L	0.6	U	0.6	U		0.6	U	0.6	U
W57 DIBROMOCHLOROMETHANE, BY GC/MS LDL	UG/L	0.3	U	0.3	U		0.3	U	0.3	U
W58 TRICHLOROETHANE, 1,1,2- BY GC/MS LDL	UG/L	0.4	U	0.4	U		0.4	U	0.4	U
W59 BROMOFORM, BY GC/MS LDL	UG/L	0.2	U	0.2	U		0.2	U	0.2	U
W60 TETRACHLOROETHYLENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U		0.3	U	0.3	U
W61 TOLUENE, BY GC/MS LDL	UG/L	0.5	U	0.5	U		0.5	U	0.5	U
W62 TETRACHLOROETHANE, 1,1,2,2- BY GC/MS, L	UG/L	0.6	U	0.6	U		0.6	U	0.6	U
W63 CHLOROBENZENE, BY GC/MS LDL	UG/L	0.2	U	0.2	U		0.2	U	0.2	U
W64 ETHYLBENZENE, BY GC/MS LDL	UG/L	0.3	U	0.3	U		0.3	U	0.3	U
W65 ACETONE, BY GC/MS LDL	UG/L	9	U	9	U		9	U	9	U
W66 CARBON DISULFIDE, BY GC/MS LDL	UG/L	1	U	1	U		1	U	1	U
W67 METHYL ETHYL KETONE (2-BUTANONE) LDL	UG/L	3	U	3	U		3	U	3	U
W68 HEXANONE, 2- BY GC/MS LDL	UG/L	3	U	3	U		3	U	3	U

APPENDIX F

WASTE CHARACTERISTICS FOR TRICHLOROETHYLENE AND CARBON TETRACHLORIDE

WASTE CHARACTERISTICS

Trichloroethene

Trichloroethene (TCE) is also referred to as trichloroethylene and ethylene trichloride. It is a volatile liquid with an odor similar to that of chloroform. In the past, TCE has been used as an anesthesia; in food, spice, and leather processing; in coffee decaffeination; and as a dry cleaning solvent. It is now used primarily as a solvent for metal, plastic, and glass; and as an extractant for wax, fat, oil, and grease. Minor quantities of TCE are used in fungicides, cleaning fluids, and adhesives; and as a chain terminator in polyvinyl chloride production. The use of TCE is decreasing. Information concerning its toxicity has resulted in use restrictions for this compound. The solvents tetrachloroethene and 1,1,1-trichloroethane are being used as alternatives (ITII 1979; Little, Inc. 1981).

TCE has a vapor pressure of 57.9 Torr and a water solubility of 1,100 micrograms per liter (µg/L) at 20°C. Its log octanol/water partition coefficient (Log P) is 2.29 (EPA 1979). TCE is produced mainly through the chlorination or oxychlorination of 1,2-dichloroethane or other chlorinated hydrocarbons. Tetrachloroethene is generated as a coproduct. TCE is generated indirectly during the production of carbon tetrachloride and tetrachloroethene. TCE is often a contaminant in tetrachloroethene, and is also produced as tetrachloroethene is anaerobically biodegraded (Little, Inc. 1981).

The primary environmental transport mechanism of TCE is volatilization. Volatilized TCE passes through the atmosphere and into the troposphere where it is photooxidized by free radical oxidation. Hydroxyl radicals attacking the double bond produce carbon dioxide, carbon monoxide, hydrogen chloride, phosgene, trichloroacetyl chloride, formyl chloride, chloral, formic acid, nitric acid, and ozone. Hydrolysis is not significant in surface water, where volatilization can occur, but it maybe important in the ground water environment. Based on its measured Log P, TCE is expected to adsorb onto organic-rich sediments. Its water solubility indicates that TCE should migrate fairly readily in ground

water. Bioaccumulation in aquatic life is possible, but biomagnification does not occur. Properly acclimatized microorganisms, such as those in activated wastewater treatment sludge, should biodegrade TCE (EPA 1979). Several experiments have shown that under anaerobic conditions, TCE is biotransformed to 1,2-dichloroethene and finally to vinyl chloride (Demarco 1983; Parsons et. al. 1984; Kleopfer et. al. 1985).

The freshwater chronic lowest observed effect level (LOEL) for TCE is 21,900 µg/L, which indicates that TCE is not very toxic to aquatic life (EPA 1986). The drinking water maximum contaminant level (MCL) for TCE is 5 µg/L (EPA 1991). Inhalation is the most important route of exposure to TCE; humans retain 50 to 76 percent of inhaled TCE and the remainder is exhaled unchanged. Inhalation exposure symptoms include nose and throat irritation; increased respiratory rate, bronchitis, and pulmonary edema; lack of appetite, nausea, vomiting, and abdominal pain; headache, dizziness, and incoordination; circulatory collapse; convulsions, tremors, and partial paralysis; and unconsciousness. Ingesting TCE produces symptoms similar to inhalation, as well as a burning sensation in the mouth and throat. TCE is readily absorbed into the gastrointestinal tract and is excreted in the urine as trichloroethanol and trichloroacetic acid (Little, Inc. 1981). Dermal contact with TCE causes skin inflammation (ITII 1979). Evidence of the carcinogenic and mutagenic potential of TCE is conflicting, though TCE is not considered to be a teratogen (Little, Inc. 1981).

Arthur D. Little, March 1981, An Exposure and Risk Assessment for Trichloroethene, Final Draft Report, prepared for the U.S. Environmental Protection Agency Office of Water and Wastewater, Washington, D.C.

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The International Technical Information Institute, 1979, Toxic and Hazardous Industrial Chemicals Safety Manual, Tokyo, Japan.

Kleopfer, Robert D, Diane M. Easley, Bernard B. Haas Jr., and Trudy G. Diehl, 1985, "Anaerobic Degradation of Trichloroethylene in Soil," Environmental Science and Technology: 19(3), pp. 277-280.

Parsons, Francis, Paul R. Wood, Jack Demarco, 1984, "Transformations of Tetrachloroethene and Trichloroethene in Microcosms and Groundwater," Journal of the American Water Works Association: 76(3), pp. 56-59.

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WASTE CHARACTERISTICS

Carbon Tetrachloride

Carbon tetrachloride is a volatile halogenated hydrocarbon used mainly in the production of chlorofluorocarbon gases. In 1978, 55 percent of the carbon tetrachloride produced in the United States was used in the manufacture of trichlorofluoromethane (Freon-11) and 34 percent was used to produce dichlorofluoromethane (Freon-12). Eight percent of the carbon tetrachloride produced is used as a component in miscellaneous materials such as shoe and furniture polish, and floor wax; in paint, stain, lacquer, and printing ink; in rubber cement; in degreasing products; and in fat, wax, and oil extraction. Carbon tetrachloride once was widely used as a grain fumigant carrier: In 1981, it accounted for 99.8 percent of all carriers used in grain fumigants. The use of carbon tetrachloride in this application was banned in 1985 (ITII 1979; JRB Assoc. 1982; DHHS 1985).

At room temperature carbon tetrachloride is a clear, heavy liquid with a sweet odor. It has a vapor pressure of 90 Torr, a water solubility of 785 milligrams per liter (mg/L), and its log-octanol/water partition coefficient (Log P) is 2.64 (EPA 1979). Carbon tetrachloride is produced directly from the chlorination of carbon disulfide, methane, and methylene chloride; or from the chlorinolysis of mixed hydrocarbons. Carbon tetrachloride is produced indirectly during the production of liquid chlorine, methyl chloride, 1,1-dichloroethene, chloroform, methylene chloride, trichloroethene, and tetrachloroethene. Photodegradation of tetrachloroethene and thermal degradation of trichloroethene also are indirect sources of carbon tetrachloride (JRB Assoc. 1982).

Carbon tetrachloride is quite volatile and is likely to be an airborne contaminant. Carbon tetrachloride does not photodissociate in the atmosphere or troposphere. In the stratosphere it is degraded by higher energy, shorter wavelength light. It is believed that carbon tetrachloride degradation products are partially responsible for the destruction of the ozone layer. Some of the carbon tetrachloride that volatilizes into the atmosphere is washed out during precipitation events back into the lithosphere and hydrosphere (EPA 1979).

The freshwater chronic lowest observed effect level (LOEL) is 1,760 micrograms per liter (µg/L) (EPA 1986); the maximum contaminant level (MCL) is 5 µg/L (EPA 1991). Carbon tetrachloride is not expected to be very toxic to aquatic life. The major aquatic fate of carbon tetrachloride is volatilization, and its rate of volatilization depends on the concentration and mixing rate in water. Both hydrolysis and biodegradation occur slowly, if at all. Carbon tetrachloride has been shown to degrade under anaerobic conditions to chloroform and then to methylene chloride (Demarco 1983). Bioaccumulation is possible based on the log-octanol/water partition coefficient, but is not expected to be significant (EPA 1979).

Human exposure to carbon tetrachloride occurs through inhalation, skin absorption, residual contamination in grain, and through drinking water contamination (DHHS 1985). It is estimated that 45 percent of all surface water and 25 percent of all ground water potable water supplies are contaminated with carbon tetrachloride. Acute exposure symptoms include irritation of eyes, nose and throat; headache and dizziness; nausea, vomiting, abdominal cramps, and diarrhea; nervousness; unconsciousness and coma; and ventricular fibrillation. Chronic exposure symptoms include dermatitis; anorexia and weight loss; nausea and vomiting; mental confusion, apathy, and fatigue; headache and dizziness; restriction of visual fields and diminished visual acuity; and jaundice and renal damage (ITII 1979). Carbon tetrachloride has also been found to cause malignancies in mice, rats, trout, and hamsters. However, human evidence of carcinogenicity is inadequate (DHHS 1985).

Demarco, Jack, 1983, "History of Treatment of Volatile Organic Chemicals in Water," Occurrence and Removal of Volatile Organic Chemicals from Drinking Water, AWWA Research Foundation, Denver, Colorado.

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