

Health Consultation

ST. JOE TOTAL

CITY OF ST. JOE, SEARCY COUNTY, ARKANSAS

EPA FACILITY ID: AR0000605432

MARCH 22, 2005

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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HEALTH CONSULTATION

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Prepared by:

Arkansas Department of Health
Under Cooperative Agreement with the
U.S. Department of Health and Human Services
Agency for Toxic Substances and Disease Registry

HEALTH CONSULTATION

ST. JOE TOTAL

**ST. JOE, SEARCY COUNTY, ARKANSAS
CERCLIS No. AR0000605432**

Prepared by:

Arkansas Department of Health
Little Rock, Arkansas

Under a Cooperative Agreement with the
U.S. Department of Health and Human Services
Agency for Toxic Substances and Disease Registry
Atlanta, Georgia

SUMMARY AND STATEMENT OF ISSUES

This health consultation has been prepared in response to a request made by the Arkansas Department of Environmental Quality (ADEQ) for assistance in determining the potential health risks associated with a suspected former wood treatment area located at the St. Joe Total site in St. Joe, Arkansas. Specifically, this document reviews the soil sample data that were collected to evaluate the potential exposure of the community to contaminants associated with wood treatment operations. This health consultation has been prepared by the Arkansas Department of Health (ADH) under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR).

In September 2001, ADEQ's Hazardous Waste Division collected 5 on-site surface/subsurface soil samples (taken at depths of 0-12 inches). One of the samples – taken at a depth of 12 inches near the suspected pit area – indicated elevated levels of hazardous substances consistent with those used in a wood treating operation. Some of the detection limits on ADEQ's lab data were well above the established environmental screening levels. Since the concentrations were below the detection limit and above the screening levels, doses were estimated based on the detection limits. Estimated exposure doses were then compared to ATSDR's health comparison values to determine if health risks were expected. Health comparison values are media specific contaminant concentrations that are used to screen contaminants for further evaluation.

The limited available data do not indicate that humans are being or have been exposed to levels of contamination that would be expected to cause adverse health effects. However, data or information are not available for all environmental media to which humans may be exposed; and there are insufficient or no community-specific health outcome data to indicate that the site has had an adverse impact on human health. Based on the review of the limited sample information, the exposure to chemicals from the site is characterized as an *Indeterminate Public Health Hazard*.

BACKGROUND

Site History

On August 20, 2001, ADEQ received a complaint from a concerned citizen of St. Joe, Arkansas, regarding possible pollution to Mill Creek, a tributary of the Buffalo River. The complaint alleged an old, abandoned wood treating operation located at the corner of Highways 65 and 374 in St. Joe, was polluting Mill Creek, which is located approximately 1 mile up-gradient from the northwestern side of the former St. Joe Total site. (See Appendix A, Figure 1 for site map.) The concerned citizen also reported that two residents from the St. Joe area had reported developing a skin rash after swimming in Mill Creek.

The St. Joe Total site is located on what is now the Woods One Stop Property. (However, the site will be referred to as the St. Joe Total site throughout this document.) The site is approximately 2-3 acres in size and is located on Highway 65 North. Highway 65 is the major transportation access that goes through the middle of St. Joe, Arkansas.

The site is used as a gasoline station and feed store and is accessible to the public. The potential source areas on-site are not fenced to control access. The St. Joe Total site is located within a multi-use area in a small community. A residential home is located on the property, but is unoccupied at this time. The nearby population includes those persons who live, attend school, work, or play within a 1-mile radius of the potential soil contamination area attributable to the site. Currently there is one school (grades 1-12), several churches, businesses, and sparsely located single-family homes located within the 1-mile radius. It is estimated that 12 residences are located within 1 mile of the site. The population within a 1-mile radius is approximately 89. Approximately 1 mile from the site there is also access to Mill Creek. The Buffalo River – a major recreation area – is located approximately 2 miles up gradient from the site.

ADEQ's Water Division investigated Mill Creek on August 23, 2001. The creek was clear, exhibiting no discoloration or odor, with aquatic life present. The alleged pit area was previously filled in with soil. Anecdotal evidence, however, identified several instances to support the possibility of contamination being present near the alleged former wood-treating pit. They are as follows: during utility water line installation along Highway 374, oil or creosote seeped into the excavated area; one eyewitness while inebriated claims to have actually fallen into the pit; and an elderly gentleman previously owned the property for 30 to 40 years and confirmed that wood treatment did in fact occur at the location, however he disputed the use of a pit [1].

Based on this information, ADEQ's Hazardous Waste Division investigated the site on September 11, 2001. Surface soil sample results from sample # SB02 taken during the investigation indicated that further investigation of the site was warranted and the site was referred to the Environmental Protection Agency (EPA) Region 6 in Dallas, Texas [2].

EPA commissioned the Superfund Technical Assessment and Response Team-2 (START-2) to perform a Preliminary Assessment (PA) of the St. Joe Total site. The PA included a permit and title records' search, a review of historical aerial photography, a review of historical assessments and data, and a site visit conducted on May 1, 2002. The purpose of the PA was to identify potential sources of hazardous substances and to identify potential migration and exposure pathways at the site.

The findings of the START-2 site visit were as follows:

- A commercial building was observed. The building, measuring approximately 100 by 300 feet, houses the gas station and fertilizer/feed store.
- Five yellow plastic storage tanks used to hold feed were observed.
- Five aboveground storage tanks and one oil/water separator, all placed on a concrete pad and located within a concrete secondary containment were observed.
- The alleged pit area that had been reported to EPA by ADEQ was observed. The alleged pit area was located on the northeastern portion of the site. The alleged pit area was covered with vegetation; an outline could not be determined. The alleged pit is approximately 15 by 6 feet.
- An area of asphalt-like material on the ground coupled with distressed vegetation was observed. The asphalt-like material covered approximately 18 by 64 feet. The area was southwest of the alleged pit area.

- An area of overturned and displaced soil located west of the alleged pit was observed. The overturned soil was located within a trench that ran northeast to southeast. The local gas company had reportedly excavated the soil while working on underground lines. The soil had a distinct odor of petroleum and solid pieces of an oil-like material were found within the soil.
- A soil pile northwest of the alleged pit area was observed. The soil had been removed from the alleged pit area and placed at its current location under the previous direction of an employee of the Regulated Storage Tank Division of the ADEQ.

The PA identified at least four potential sources of hazardous substances including: the alleged wood treatment pit, asphalt-like substance, alleged underground storage tank, and aboveground storage tanks.

Sampling was not conducted as part of the PA, however the PA concluded that releases from the sources of hazardous substances to migration and exposure pathways might have occurred based on the existing ADEQ soil data (5 on-site samples). The following are summaries of the conclusions of each pathway from the PA:

- Based on the presence of potential subsurface sources (the alleged wood treatment pit), it is possible that a release to shallow groundwater has occurred. In addition, no groundwater analytical data are available to evaluate whether a release to groundwater has occurred on-site. Eight domestic groundwater wells have been found within a 4-mile radius of the St. Joe Total site. It is not known if these wells have been impacted by historical activities at the St. Joe Total site.
- The historical potential sources of hazardous constituents at the St. Joe Total site are not contained to prevent a release to surface water. An observable release to the surface water has not been documented. Based on available background information detailing the traditional practices of most historical wood treatment facilities, a release may have occurred to surface water. It was reported that two residents from Searcy County received a rash after swimming in Mill Creek.
- No containment features around the possibly contaminated soil were observed. Releases to soil from historical potential sources of hazardous substances at the site may have occurred because there is no evidence that those sources were well contained. The analytical results from the 5 samples collected by ADEQ indicated that polycyclic aromatic hydrocarbon (PAH)-affected soils are present in several locations. The St. Joe Total site is located within a multi-use area in a small community. The site is used as a gasoline station and feed store and is accessible to the public. The potential source areas on-site are not fenced to control access.
- A release of hazardous substances to the air pathway has not been documented. A significant release to the air pathway is currently not suspected, because no odors were detected during the site visit, however, if subsurface wood treating wastes are present, a release to air could be a concern if the surface or subsurface soil is disturbed [3].

Site Visits

Following the receipt and review of the PA, ADH made an initial site visit on November 14, 2002. Investigators found the site much as described in the PA with the following exceptions:

- A new entrance to the property had been constructed at the approximate location of the “distressed vegetation by the fence and road” (Highway 374) as described in the PA.
- The petroleum contaminated soil pile northwest of the alleged pit was not present.
- The vacant on-site residence was being remodeled. Four capped PVC pipes, approximately 6 inches in diameter were exiting the ground near the residence.
- A soil pile was northwest of the gas station.
- A large area of recently disturbed earth was located between the new entrance and the residence.
- There were ponds located adjacent to the site likely used for recreation.
- An abandoned private well was noticed about ½ mile from the site on Highway 374. It appears to serve an abandoned house and two Recreational Vehicle campsites, which were also abandoned.

(See Appendix A, Figure 1 for site map and site photos in Appendix B, Photo Log.)

ADH conducted a follow-up site visit on February 13, 2004. The site was primarily the same as during the initial site visit with the following exceptions:

- The property owner stated that the 4 capped PVC pipes – that are approximately 6 inches in diameter and exit the ground near the residence – were septic tank vents.
- The soil pile northwest of the gas station had been removed.
- The former large area of disturbed earth was now covered with grass.

(See Appendix B, Photo Log.)

May 27, 2004, ADH received data from ADEQ regarding the groundwater and hydrogeologic conditions of the St. Joe, Searcy County area. The Arkansas State Soil and Water Conservation District had compiled the data on the groundwater wells and water tables of Searcy County. The data indicated that a well survey conducted by the Arkansas State Soil and Water Conservation District had identified 8 domestic groundwater wells in a 4-mile radius of the St. Joe area, with the closest being approximately 2 miles away from the site. (These are the same 8 domestic wells discussed in the PA.) No potable water wells are located on-site. No well samples were collected, as the purpose of the well survey was for identification only.

The data identified that the regional groundwater movement within the St. Joe Total site is southward. The depth of the first water-bearing unit suitable for water supply is approximately 200 feet below ground surface. The general water quality of the groundwater is highly variable, but meets most secondary drinking water standards and is considered to be suitable for domestic and livestock use. Only one of the 8 domestic wells is located down gradient of the St. Joe Total site. The well is approximately 2.6 miles south of the site. The potential for a release to this well is greater than the others due to its location [4].

DISCUSSION

Potential exposure pathways to contaminants at the St. Joe Total site have been evaluated to determine if persons could be exposed to potentially unsafe contaminants. Exposure pathways consist of five elements: (1) a source of contamination, (2) transport through an environmental medium, such as soil or groundwater, (3) human exposure to the contaminant(s), (4) a route for the contaminant to enter the body, and (5) a receptor population.

For a person to be exposed to a contaminant, the exposure pathway must contain all of the elements listed above, resulting in a completed exposure pathway. In some cases, a potential exposure pathway might exist in which at least one of the elements of the exposure pathway is missing, but could exist. Potential pathways indicate that exposure to a contaminant could have occurred, could be occurring, or could occur in the future. Potential exposure pathways refer to those pathways where (1) exposure is documented, but there is not enough information available to determine whether the environmental medium is contaminated, or (2) an environmental medium has been documented as contaminated, but it is unknown whether people have been, or may be, exposed to the medium, or may be exposed in the future.

Although START-2's PA described the possibility of contamination of groundwater, surface water, and air. No data are available to document exposure or actual contamination of the media. Due to limited data, only potential pathways could be determined. Although the possibility of exposures does exist, the existence of completed pathways for those media cannot be determined.

To assess the potential health risks associated with contaminants at this site, we compared estimated contaminant concentrations to health comparison values. Health comparison values are media specific contaminant concentrations that are used to screen contaminants for further evaluation. Non-cancer health comparison values are called environmental media evaluation guides (EMEGs) or reference dose media evaluation guides (RMEGs), and are respectively based on ATSDR's minimal risk levels (MRLs) or EPA's reference doses (RfDs). MRLs and RfDs are estimates of a daily human exposure to a contaminant that is unlikely to cause adverse non-cancer health effects. Cancer risk evaluation guides (CREGs) are based on EPA's chemical specific cancer slope factors and an estimated excess lifetime of cancer risk of one-in-one-million persons exposed for a lifetime. Standard assumptions were used to calculate appropriate health comparison values.

A potential exposure pathway exists for the incidental soil ingestion exposure pathway at the St. Joe Total site since it has unrestricted access. Therefore, surface/subsurface soil sample results were evaluated to determine if adverse health effects might result from exposure to soil at the site. Soil analytical results were compared to the ATSDR soil specific Intermediate EMEGs, Chronic EMEGs, the EPA RfDs, and/or the EPA Region 6 Human Health Medium-Specific Screening Levels.

Five on-site surface/subsurface soil samples (taken at depths of 0-12 inches) were taken by ADEQ on September 11, 2001. One of the samples (taken at a depth of 12 inches) was located near the suspected pit area. That sample's results showed elevated levels of hazardous substances consistent with a wood treating operation (i.e., PAHs and pentachlorophenol or PCP). Some of the detection limits on ADEQ's lab data were well above the established screening levels, i.e. PCP's detection limit was 100 milligrams per kilograms (mg/kg) in one sample when the

screening level is 3 mg/kg. Since the PCP concentrations were below the detection limit and above the screening levels, exposure doses were estimated based on the detection limits (See Appendix C, Table 1).

Soil ingestion doses were estimated for 70 kilogram (kg) adults, 10 kg and 16 kg children, and pica children (children that eat soil). Using the detection limit as the PCP concentration of 100 milligrams per kilogram (mg/kg), estimated doses for concentrations for a 10 kg child who ingests 200 milligram (mg) of soil exceed ATSDR's intermediate oral MRL of 0.001 milligrams per kilogram per day (mg/kg/day) for PCP. The highest estimated dose (a pica child trespassing on the site five times a week for a year) was 0.0356 mg/kg/day. The MRL was derived from an animal study where a lowest observed adverse effect level (LOAEL) of increases in the serum enzyme alanine aminotransferase (ALT) was observed in male rats that were fed diets containing 1.4 mg/kg/day of technical grade PCP for 6 weeks. The no observed adverse effect level (NOAEL) for oral exposure to PCP is 1 mg/kg/day [5]. Because the highest estimated dose is below the NOAEL and the actual LOAEL reference dose, based on the extremely limited estimated data, no adverse health effects would be expected.

Although PCP is well absorbed following percutaneous application in soil, there are insufficient studies describing significant levels of dermal exposure to PCP to adequately evaluate the dermal pathway [5]. Additionally, potential exposure to PCP in the soil via the dermal pathway is considered to be unlikely due to the use of the site as a gasoline station and feed store; site use by residents would likely be infrequent and limited to short amounts of time. Likewise, the on-site residential home is vacant.

Based on the detection limit of 10 mg/kg for hexachlorobutadiene, the estimated exposure doses for a 10 kg child who ingests 200 mg of soil were equal to ATSDR's MRL of 0.0002 mg/kg/day and exceeded the MRL for the same child exhibiting pica behavior. The MRL is an estimate of the daily human exposure to a hazardous substance that is likely to be without appreciable risk of adverse non-cancer health effects. The assumptions used to estimate exposure doses for a child exhibiting pica behavior were an over estimate to indicate the worst-case scenario. Therefore, adverse health effects are not expected, but additional surface/subsurface soil sampling data is needed to adequately assess potential exposure.

PAHs were detected in the soil sample taken at a depth of 12 inches near the suspected pit area. Reliable health-based and environmental information exists on few PAHs. Benzo(a)pyrene is the most studied PAH. A relative potency estimate has been established. The Toxicity equivalent factor (TEF) assigns other PAHs a factor based on their relative toxicity to benzo(a)pyrene (BAP). The TEFs were used and a total BAP equivalent dose was calculated to be 140 mg/kg using both actual results and estimates based on detection limits that were above the screening level. (See Appendix C, Table 2.)

Animal studies have indicated that BAP is carcinogenic to rodents following oral exposure at high doses. The cancer effect levels observed in rodent studies were significantly higher than the estimated doses for the St. Joe Total site. The lowest cancer effect level (LOAEL) was 2.6 mg/kg/day based on daily exposure to BAP. The same study showed no cancer effects (NOAEL) at 1.3 mg/kg/day. Daily exposure based on the soil sample by the suspected pit area for a 10 kg child had an estimated dose of 0.003 mg/kg/day or approximately 500 times less than the NOAEL. Based on this one sample, it does not appear there would be any significant increased risk of adverse effects as a result of exposure to the detected concentration of BAP in

surface/subsurface soil near the suspected pit area [6]. However, shallower surface soil samples (0-2 inches) taken from the suspected pit area are needed to better estimate the surface soil where exposure is more likely.

CHILD HEALTH CONSIDERATIONS

ATSDR recognizes that the unique vulnerabilities of infants and children demand special emphasis in communities faced with contamination of soil, water, air and food. Children are at a greater risk than adults from certain kinds of exposures to hazardous substances. They are more likely to be exposed because they play outdoors and they often bring food into contaminated areas. They are more likely to come into contact with dust, soil, and heavy vapors close to the ground. Also, they receive higher doses of chemical exposure due to lower body weights. The developing body systems of children can sustain permanent damage if toxic exposures occur during critical growth stages.

The unique vulnerability of children to contaminants in soil was considered in conducting this health consultation and estimated exposure doses were calculated for children that may play on-site; although on-site play is believed to be rare. Also unlikely would be on-site children exhibiting pica behavior, but exposures were calculated for pica children to indicate the worst-case scenario. Adverse health effects have not been documented at the levels of contaminants found in the limited surface soil samples.

SITE UPDATE

Site conditions remain the same as indicated in the February 2004 site visit. There are no future plans for site changes, with the exception of the property owner wanting to eventually rent the vacant on-site residential home. Future on-site residents could create potential future exposure pathway scenarios.

CONCLUSIONS

Soil samples indicated that hazardous substances are present, but the nature and extent of contamination is unknown due to limited sampling. A review of the limited data do not indicate that humans are being or have been exposed to levels of contamination that would be expected to cause adverse health effects. However, data or information are not available for all environmental media to which humans may be exposed; and there are insufficient or no community-specific health outcome data to indicate that the site has had an adverse impact on human health.

On the basis of the review of the limited sample information, the exposure to chemicals from the site is characterized as an *Indeterminate Public Health Hazard*.

This determination is based on the following site-specific conditions:

- There was very limited surface/subsurface soil sampling conducted at the site. One of the samples taken near the suspected pit area did contain elevated levels of hazardous substances that are consistent with a wood treating operation.

- The detection limits for many parameters for the one soil sample taken close to the suspected pit area were well above the screening levels and actual concentrations had to be estimated. Based on these estimations, dosages could exceed some MRLs for hazardous substances identified previously in this health consultation.
- Anecdotal evidence points to possible contamination adjacent to the property along Highway 374 based on a report of oil or creosote seeping into the ditch during utility water line installation.
- Although the PA identified the possibility of contamination of groundwater, surface water, and air. No data is available to document exposure or actual contamination of the media. Therefore the existence of completed pathways for those media cannot be determined.
- Eight domestic wells were identified in a 4-mile radius of the site. Only one well was located down gradient and would therefore be most likely to be contaminated if a release did occur.

RECOMMENDATIONS

- EPA and/or ADEQ should consider conducting additional on-site surface (0 to 2 inches) and subsurface soil sampling at the site to more accurately characterize contaminant concentrations for the soil exposure pathway near the suspected pit area.
- EPA and/or ADEQ should consider conducting additional off-site surface and subsurface soil sampling to determine what the oil or creosote material was that seeped into the ditch during utility water line installation on Highway 374.
- If additional soil sampling data indicate contamination at health risk levels, EPA and/or ADEQ should consider following-up on the possibility of contamination to the groundwater and the 8 domestic area wells by conducting well sampling.
- If additional soil sampling data indicate contamination at health risk levels, EPA and/or ADEQ should consider following-up on the possibility of contamination to surface water by sampling the surface water where the adjacent ditch meets Mill Creek. Although Mill Creek is up gradient from the site, residents did report two cases of skin rash following swimming in the creek.
- If additional soil sampling data indicate contamination at health risks levels, EPA and/or ADEQ should consider following-up on the possibility of contamination to air as described in the PA to determine if this is a potential exposure pathway.
- The site owner should enhance the physical barriers around the site to mitigate or eliminate trespassing near the suspected pit location.

Public Health Action Plan

The purpose of the Public Health Action Plan is to ensure that this health consultation not only identifies any current or potential exposure pathways or related health hazards, but also provides a plan of action to mitigate and prevent adverse human health effects resulting from exposure to hazardous substances in the environment. The first section of the Public Health Action Plan contains a description of past and ongoing actions to mitigate exposures to environmental contamination. In the second section, there is a list of additional public health actions that ADH recommends be implemented in the future.

Past Actions

- In November 2002, ADH received and reviewed the Preliminary Assessment (PA) that EPA Region 6 commissioned the START-2 to perform.
- ADH conducted an initial site visit in November 2002.
- An initial community health needs assessment was completed for this site in November 2002 to identify community concerns and site issues.
- The concerned citizen was contacted and sent fact sheets on potential site-related contaminants (associated with wood treating facilities) in November 2002.
- ADH conducted a follow-up site visit in February 2004.
- The initial community health needs assessment was updated in February 2004.
- In May 2004, ADH received and reviewed the groundwater & hydrogeologic data produced by the Arkansas State Soil and Water Conservation District.

Ongoing Actions

- Recent attempts to contact the concerned citizen have been unsuccessful, as the resident has moved since last contact.
- EPA and ADEQ are working together to conduct the recommendations in this document.

Future Actions

- If located, the concerned citizen will be sent a copy of this completed health consultation.
- If future sampling data more fully delineates the nature and extent of site contamination, ADH and ATSDR will review these data to determine if a potential health hazard exists and issue a follow-up to this health consultation, if needed.
- Health education activities will be conducted in the future as needed, based upon additional sampling data.

References

1. ADEQ Internal Memorandum from Jamie Huens, Water Division to Mike Bates, Hazardous Waste Division. August 30, 2001.
2. ADEQ Laboratory Report: St. Joe Complaint September 11, 2001. Unpublished data.
3. EPA Preliminary Assessment Report for St. Joe Total Section 17, Township 16 North, Range 17 West, St. Joe, Searcy County, Arkansas. Contract No. 68-W-01-005. Technical Direction Document No. 06-02-02-0001. WESTON Work Order No. 12632.001.120.1751. Weston Solutions, Inc. July 2002.
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5. ATSDR, 1999. Agency for Toxic Substances and Disease Registry. Toxicological Profile for Pentachlorophenol. Atlanta: U S Department of Health and Human Services. August 1999.
6. ATSDR, 1995. Agency for Toxic Substances and Disease Registry. Toxicological Profile for Polycyclic Aromatic Hydrocarbons (PAHs). Atlanta: U S Department of Health and Human Services. August 1995.

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CERTIFICATION

This Health Consultation for the St. Joe Total site in St. Joe, Arkansas was prepared by the Arkansas Department of Health under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It was completed in accordance with approved methodology and procedures existing at the time the health consultation was initiated. Editorial review was completed by the Cooperative Agreement partner.

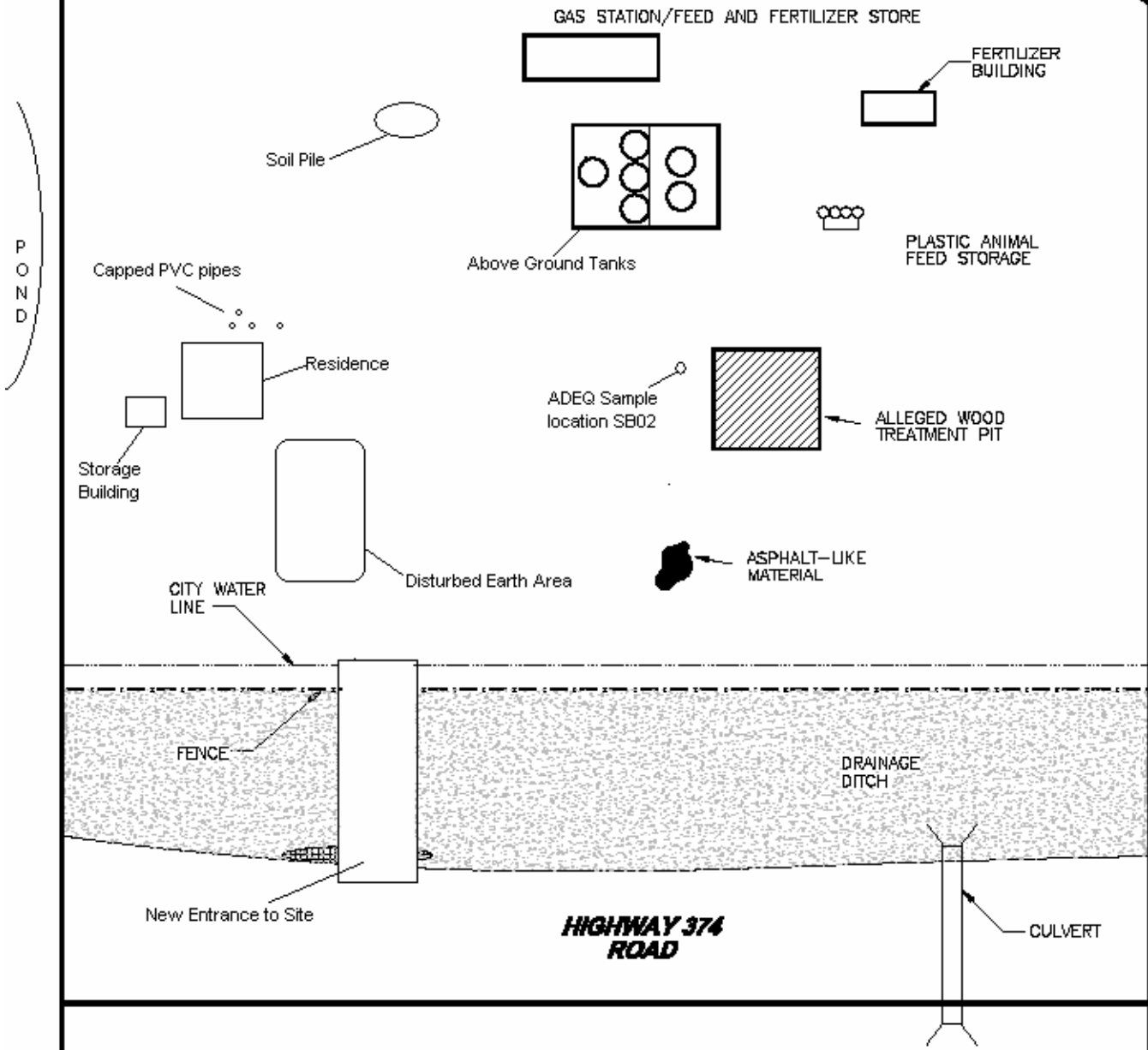
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The Division of Health Assessment and Consultation, ATSDR, has reviewed this Health Consultation and concurs with its findings.

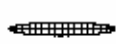
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Appendix A: Figure

U.S. HIGHWAY 65 NORTH



LEGEND



AREA OF DISTRESSED VEGETATION



**St. Joe Site Map 11/14/2002
Figure 1**

11/14/02

CCH

Appendix B: Photo Log

St. Joe Photo Log: February 13, 2004



Alleged wood treating pit area and building where chemical fertilizer is stored – in stalls.



Tanks storing feed adjacent to store.



Another view of the alleged pit area, looking towards Highway 374.

St. Joe Photo Log: February 13, 2004



Vacant residence and capped PVC pipes located on the site.



Side view of vacant house and adjacent small building. Photo taken from paved drive and culvert, where Highway 374 and site property join.

Appendix C: Tables

Table 1
Analytical Results from ADEQ Soil Sample (#SB02)
Minimal Risk Level Exceedances
(St. Joe Total site; 09/11/01; St. Joe, Arkansas)

Analyte	Reported Concentration
Pentachlorophenol	< 100 mg/kg
Hexachlorobenzene	<10 mg/kg

Table 2
Polycyclic Aromatic Hydrocarbon
Analytical Results from ADEQ Soil Sample (SB02)
Including Toxicity Equivalent Factors (TEFs)
and Benzo(a)pyrene (BAP) Equivalents
(St. Joe Total site; 9/11/01; St. Joe, Arkansas)

PAH Analyte	Reported Concentration	TEF	BAP Equivalents (mg/kg)
Acenaphthene	< 10 mg/kg*	0.001	0.01
Acenaphthylene	< 10 mg/kg	0.001	0.01
Anthracene	< 10 mg/kg	0.01	0.1
Benzo(a)anthracene	< 10 mg/kg	0.1	1
Benzo(a)pyrene	35 mg/kg	1	35
Benzo(b)fluoranthene	17.3 mg/kg	0.1	1.73
Benzo(k)fluoranthene	16 mg/kg	0.1	1.6
Chrysene	34 mg/kg	0.01	0.34
Dibenz(a-h)perylene	< 20 mg/kg	5	100
Fluoranthene	20.4 mg/kg	0.001	0.02
Flourene	< 10 mg/kg	0.001	0.01
Indeno(1-2-3-cd)pyrene	< 20 mg/kg	0.1	2
Phenanthrene	< 10 mg/kg	0.001	0.01
Pyrene	39.8 mg/kg	0.001	0.04