

**DECISION DOCUMENTATION PACKAGE
COVER SHEET**

prepared in accordance with

**TRACK 1 SITES:
GUIDANCE FOR ASSESSING
LOW PROBABILITY HAZARD SITES
AT THE INEEL**

Site description: Acid Transfer Line from TRA-631 to TRA-645

Site ID: TRA-56

Operable Unit: 2-14

Waste Area Group: 2

I. SUMMARY - Physical description of the site:

The TRA sulfuric acid transfer line connected TRA-631, which was the operations acid and caustic tank pump house, to the TRA-645 Cooling Tower Pump House, located approximately 490 meters (1,608 ft) to the south. It was installed in 1955-56, and has not been used since 1981.

In 1997, decontamination and dismantlement (D&D) of TRA-645 was completed. As part of this project, the 7.62 cm (3-in.), carbon steel, sulfuric acid transfer line was removed from the building, and subsequently cut off and capped approximately 2.4 to 3 meters (8 to 10 ft) underground and approximately 3 meters (10 ft) east of the southwest corner of the building. At TRA-631, the line was disconnected and capped with a hot tap connection.

When the line was cut as part of the D&D process, approximately 0.9 to 1.8 meters (3 to 6 ft) of the 7.62 cm (3-in.) carbon steel line was found to be plugged with solidified sulfuric acid. When this same line was cut below the ground surface, where it penetrated the concrete foundation to exit the building, liquid concentrated sulfuric acid was discovered within the line. Analysis of the solid sulfuric acid showed that mercury was present at levels of 134 ppm, making it a hazardous waste due to the toxicity characteristic (D009). Both the liquid and the solid phase sulfuric acid in the portions of the pipe that were cut during the D&D project were collected, managed, and disposed of in accordance with applicable requirements. During the D&D project, an inspection of the carbon-steel pipe was conducted, which demonstrated that the pipe was in very good condition, and structurally sound, with a wall thickness of 3/8". No excessive local corrosion was evident.

I. SUMMARY - Physical description of the site (cont'd)

No feasible method was found for removing the solidified pipe contents. Therefore, the remaining pipe was capped and abandoned in place. The remaining line, approximately 487 meters (1,598 ft) of 7.62 cm (3-in.) carbon steel pipe between the previous location of TRA-645 and the current location of TRA-631, is still in place and is potentially contaminated with liquid or solidified sulfuric acid and mercury. The full length of buried pipe would be difficult to remove because numerous active systems overlap it, and its buried depth ranges from 8 to 16 feet. The pipeline passes under the Materials Test Reactor (MTR) canal, where spent fuel is presently stored. Any actions taken to remove the pipe or its contents must be performed after the MTR canal has undergone successful D&D, which is currently scheduled for completion in fiscal year 2004. Currently, the sulfuric acid transfer line is capped in TRA-631, and no other buildings are fed from it.

Based on the information available, it has been determined that the mercury-contaminated sulfuric acid contained in this line is hazardous waste. The suspected source of mercury is the commercial grade sulfuric acid used in the demineralization plant.

DECISION RECOMMENDATION

II. SUMMARY - Qualitative Assessment of Risk:

The level of reliability of the information collected is high, and the qualitative assessment of risk is low. The data were collected and confirmed following documented procedures and no conflicting information is apparent. Therefore, when this information is plotted on the Qualitative Risk and Reliability Evaluation Table, an intersection in the "no action" portion of the chart is reached.

This site will be included in the future D&D of the area when safety measures are in place to handle the removal of the materials and the surrounding obstacles. If the pipeline and contents were excavated and removed now, the risk of exposure potential would be increased. The risk would be greater compared to leaving the pipeline in the ground.

III. SUMMARY - Consequences of Error:

False Negative Error. The false negative decision error would be to conclude that the line contents do contain hazardous constituents at concentrations that would pose an unacceptable risk to human health and/or the environment given a release of sufficient size when in fact they do not. Further investigation of a clean site would result in low return in environmental benefit from a high investment in both time and effort.

False Positive Error. The false positive error would be to conclude that the contents of the line do not contain hazardous constituents at concentrations that would pose an unacceptable risk to human health and/or the environment given a release of sufficient size when in fact they do. If no further action is taken and undetected hazardous constituents exist at the site, there may be the potential for migration via the groundwater pathway resulting in higher risk than anticipated. In the worst case, if the pipe was full of concentrated sulfuric acid, then the maximum quantity of sulfuric acid that could be released to the environment is 2221 L (586.6 gallons). However, data collected demonstrates that some of the sulfuric acid within the pipe is solid, reducing the total volume of sulfuric acid that could potentially leak from the pipe. In addition, an inspection of the carbon-steel pipe was conducted, which demonstrated that the pipe was structurally sound. No excessive local corrosion was evident. In addition, there is no documented release from this line.

IV. SUMMARY - Other Decision Drivers:

No other decision drivers are apparent for this site.

Recommended action:

Site TRA-56 should be reclassified to no action status. The sulfuric acid is contained within the pipeline. In addition, there is no evidence of migration, and no documentation of a release, so there is no risk from leaving the pipeline in the ground. Although the former sulfuric acid transfer line is still located beneath the ground surface at this site, this line has not been used since 1981. The line has been capped near the former TRA-645 facility and capped with a hot tap connection at TRA-631, eliminating the original source. This site will be included in the future D&D of the area when safety measures are in place to handle the removal of the materials and the surrounding obstacles. If the pipeline and contents were excavated and removed now, the risk of exposure potential would be increased. The risk would be greater compared to leaving the pipeline in the ground. Further action on this site would require expenditure of funds that could be dedicated to remediation elsewhere with a higher return in environmental benefits.

Signatures	# PAGES:	DATE:
Prepared By:	DOE WAG Manager:	
Approved By:	Independent Review:	

**DECISION STATEMENT
(by DOE RPM)**

Date recd: February 24, 2003

Disposition: TRA-56 is an abandoned 3-inch carbon steel line approximately 1,598 feet long and buried 10 feet below grade. The line was not flushed at the time it was cut and capped in 1997. The line is assumed to contain sulfuric acid contaminated with mercury. The line can not be addressed at this time because it runs under active units including the Materials Test Reactor canal. The MTR canal should be emptied in 2004 but the schedule for D&D of the total area above the line is not established.

The evaluation of TRA-56 should be moved into DU 10-08 RI/RS process. Institutional controls should be maintained until the line can be accessed.

DATE: February 26, 2003

PAGES (decision statement): 1

NAME: Kathleen Hain

SIGNATURE: Kathleen E Hain

DECISION STATEMENT
(by EPA RPM)

TRA-56

Date recd: 9/17/02

Disposition:

Abandoned pipe of ~ 1,600 ft from 8 to 16th bgs. Pipe removal is dependent upon the operational status of the MTR Canal. Line is capped. Line not used since 1981. The apparent risk would be to future site uses as the line does not pose a groundwater risk. Recommend that line be moved into the OU 10-08 RI/FS process and that the information be reviewed after D+D of the MTR Canal. Unclear as to HWMMA status of the line as a storage unit.

DATE: 9/25/02

PAGES: 1

NAME: Wayne Perrin

SIGNATURE: 

**DECISION STATEMENT
(by STATE RPM)**

Date recd: 10/01/02

Disposition:

TRA-56 is an abandoned 3 inch carbon steel line approximately 1,598 feet in length at 8-10 feet bgs.. The line was installed in the mid 1950s, and has not been used since 1981. A 1997 D&D action cut and capped the line (between TRA-631 and TRA-645), and at that time it was determined that an unknown amount of mercury contaminated sulfuric acid remained in the line. A conservative estimate of sulfuric acid and mercury remaining in the line is 587 gallons and 548 grams, respectively.

The pipeline underlies numerous site features, including the Materials Test Reactor (MTR) canal, where spent fuel is stored. Removal of the line cannot occur until the MTR canal has undergone D&D, scheduled for FY 2004. The pipeline contents do not represent a threat to groundwater (GWSCREEN results, 3/02).

Recommend that line be moved into the OU 10-08 RI/FS process, and that the line contents be considered for removal since direct exposure to the contents is the major risk associated with this site. Institutional Controls should be maintained until contents and/or line removal is completed.

DATE: November 19, 2002

PAGES: 1

NAME: Daryl L. Koch

SIGNATURE: Daryl L. Koch

PROCESS/WASTE WORKSHEET
SITE ID TRA-56

Col 1 Processes Associated with this Site	Col 2 Waste Description & Handling Procedures	Col 3 Description & Location of any Artifacts/Structures/Disposal Areas Associated with this Waste or Process
<p>Historical processes associated with this site were the routing of sulfuric acid from TRA-641 to the former TRA-645. One abandoned sulfuric acid transfer line is still located beneath the ground surface.</p>	<p>The pipeline currently contains liquid and solid concentrated sulfuric acid contaminated with mercury at levels of 134 ppm. During the operation of the sulfuric acid transfer line, the sulfuric acid was pumped from TRA-631, the operations acid and caustic tank pump house, through the transfer line [approximately 487 meters (1598 ft)], to the TRA-645 Cooling Tower Pump House.</p>	<p>Artifact: Pipeline Location: Extends from TRA-631 to the former TRA-645 Description: The pipeline is a 7.62 cm (3-in.) carbon steel sulfuric acid transfer line, and is currently approximately 487 meters (1,598 ft) in length.</p>

CONTAMINANT WORKSHEET

SITE ID Sulfuric Acid Transfer line (TRA-56)

PROCESS (Col 1) The routing of sulfuric acid from TRA-641 to the former TRA-645

WASTE (Col 2) Liquid and Solid Concentrated Sulfuric Acid Contaminated with Mercury

Col 4 What Known/Potential Hazardous Substances/ Constituents are Associated with this Waste or Process?	Col 5 Potential Sources Associated with this Hazardous Material	Col 6 Known/Estimated Concentration of Hazardous Substances/ Constituents ^a	Col 7 Risk-based Concentration (mg/kg)	Col 8 Qualitative Risk Assessment (hi/med/lo)	Col 9 Overall Reliability (hi/med/lo)
Sulfuric Acid	Contents remaining in pipe	~98% (Reagent-Grade)	1 mg/m ³	Low	High
Mercury	Contents remaining in pipe	134 ppm	3.0 x 10 ⁻⁴	Low	High
Ferrous Sulfate (solid)	Contents remaining in pipe	Unknown	N/A	Low	Low
Ferrous Sulfide (solid)	Contents remaining in pipe	Unknown	N/A	Low	Low

QUALITATIVE RISK AND RELIABILITY EVALUATION TABLE

		QUALITATIVE RISK		
		Low	Medium	High
reliability	highly unreliable	TRACK 2		
	highly reliable	No Action Required	R/FS	Interim Action
	LOW	MEDIUM	HIGH	
	concentration resulting in risk < 10 ⁻⁶		concentration resulting in risk > 10 ⁻⁴	
		qualitative risk		

■ Risk from Sulfuric Acid Transfer Line.

PROCESS Abandoned Pipeline

Question 1. What are the waste generation process locations and dates of operation associated with this site?

Block 1 Answer:

There are currently no waste generation processes associated with this site. However, the former sulfuric acid transfer line is still located beneath the ground surface at this site. The sulfuric acid transfer line was installed in 1955-56, but has not been used since 1981. In 1997, during D&D of TRA-645, the line was removed from the building, cut off, and capped approximately 2.4 to 3 meters (8 to 10 feet) underground. At TRA-631, the line was disconnected and capped with a hot tap connection. The remaining line, approximately 487 meters (1,598 ft) of 7.62 cm (3-in.) carbon steel pipe between the previous location of TRA-645 and the current location of TRA-631, remains, underground. The full length of buried pipe would have been difficult to remove because numerous active systems overlap it, and its buried depth ranges from 8 to 16 feet. The pipeline passes under the Materials Test Reactor (MTR) canal, where spent fuel is presently stored. Any actions taken to remove the pipe or its contents must be performed after the MTR canal has undergone successful D&D, which is currently scheduled for completion in fiscal year 2004.

Block 2 How reliable are the information sources? High Med Low (check one)

Explain the reasoning behind this evaluation.

The information regarding the sulfuric acid transfer line is well documented, and is considered highly reliable. The New Site Identification Form (NSID) identifies the time frame that the sulfuric acid transfer line was in service, and summarizes the actions taken regarding the sulfuric acid transfer line. In addition, the 1997 D&D Report was obtained, and confirms the information given in the NSID. During the 1997 D&D Project, pictures of the sulfuric acid transfer line (in TRA-631 and near the former TRA-645) were taken showing that the ends have been capped.

Block 3 Has this INFORMATION been confirmed? Yes No (check one)

If so, describe the confirmation.

The information regarding the sulfuric acid transfer line is well documented, and is considered highly reliable.

Block 4 **Sources of Information** [check appropriate box(es) & source number from reference list]

No available information	<input type="checkbox"/> _____	Analytical data	<input type="checkbox"/> _____
Anecdotal	<input type="checkbox"/> _____	Documentation about data	<input type="checkbox"/> _____
Historical process data	<input type="checkbox"/> _____	Disposal data	<input type="checkbox"/> _____
Current process data	<input type="checkbox"/> _____	QA data	<input type="checkbox"/> _____
Areal photographs	<input type="checkbox"/> _____	Safety analysis report	<input type="checkbox"/> _____
Engineering/site drawings	<input checked="" type="checkbox"/> <u>5</u>	D&D report	<input checked="" type="checkbox"/> <u>6</u>
Unusual Occurrence Report	<input type="checkbox"/> _____	Initial assessment	<input checked="" type="checkbox"/> <u>7</u>
Summary documents	<input type="checkbox"/> _____	Well data	<input type="checkbox"/> _____
Facility SOPs	<input type="checkbox"/> _____	Construction data	<input type="checkbox"/> _____
OTHER	<input checked="" type="checkbox"/> <u>1,2,4</u>		

PROCESS Abandoned Pipeline

Question 2. What are the disposal process locations and dates of operation associated with this site?

Block 1 Answer:

There are no disposal processes associated with this site. Although the former sulfuric acid transfer line is still located beneath the ground surface at this site, it has not been used since 1981, and was never used for disposal. In addition, the line has been capped near the former TRA-645 facility and capped with a hot tap connection at TRA-631. There are currently no processes of any kind associated with this pipe.

Block 2 How reliable are the information sources? XHigh Med Low (check one)

Explain the reasoning behind this evaluation.

The information regarding the sulfuric acid transfer line is well documented, and is considered highly reliable. The New Site Identification Form (NSID) identifies the time frame that the sulfuric acid transfer line was in service, and summarizes the actions taken regarding the sulfuric acid transfer line. In addition, the 1997 D&D Report was obtained, and confirms the information given in the NSID. During the 1997 D&D Project, pictures of the sulfuric acid transfer line (in TRA-631 and near the former TRA-645) were taken showing that the ends have been capped.

Block 3 Has this INFORMATION been confirmed? XYes No (check one)

If so, describe the confirmation.

The information regarding the sulfuric acid transfer line is well documented, and is considered highly reliable.

Block 4 **Sources of Information** [check appropriate box(es) & source number from reference list]

No available information	<input type="checkbox"/> _____	Analytical data	<input type="checkbox"/> _____
Anecdotal	<input type="checkbox"/> _____	Documentation about data	<input type="checkbox"/> _____
Historical process data	<input type="checkbox"/> _____	Disposal data	<input type="checkbox"/> _____
Current process data	<input type="checkbox"/> _____	QA data	<input type="checkbox"/> _____
Areal photographs	<input type="checkbox"/> _____	Safety analysis report	<input type="checkbox"/> _____
Engineering/site drawings	<input type="checkbox"/> _____	D&D report	<input checked="" type="checkbox"/> <u>6</u>
Unusual Occurrence Report	<input type="checkbox"/> _____	Initial assessment	<input checked="" type="checkbox"/> <u>7</u>
Summary documents	<input type="checkbox"/> _____	Well data	<input type="checkbox"/> _____
Facility SOPs	<input type="checkbox"/> _____	Construction data	<input type="checkbox"/> _____
OTHER	<input checked="" type="checkbox"/> <u>1,2,4</u>		

PROCESS Abandoned Pipeline

Question 3. Is there empirical, circumstantial, or other evidence of migration? If so, what is it?

Block 1 Answer:

There is no evidence of migration. During the D&D project, an inspection of the carbon-steel pipe was conducted, which demonstrated that the pipe was in very good condition, and structurally sound, with a wall thickness of 3/8". No excessive local corrosion was evident. In addition, there is no documented release from this line.

Block 2 How reliable are the information sources? High Med Low (check one)

Explain the reasoning behind this evaluation.

The information regarding the sulfuric acid transfer line is well documented, and is considered highly reliable. The New Site Identification Form (NSID) summarizes the actions taken regarding the sulfuric acid transfer line. In addition, the 1997 D&D Report was obtained, confirms the information given in the NSID, and confirms that no excessive local corrosion was evident. Finally, during a discussion with Mr. George Swaney, he indicated that there have been no documented releases from this line.

Block 3 Has this INFORMATION been confirmed? Yes No (check one)

If so, describe the confirmation.

The information regarding the sulfuric acid transfer line is well documented, and is considered highly reliable.

Block 4 **Sources of Information** [check appropriate box(es) & source number from reference list]

No available information	<input type="checkbox"/> _____	Analytical data	<input type="checkbox"/> _____
Anecdotal	<input type="checkbox"/> _____	Documentation about data	<input type="checkbox"/> _____
Historical process data	<input type="checkbox"/> _____	Disposal data	<input type="checkbox"/> _____
Current process data	<input type="checkbox"/> _____	QA data	<input type="checkbox"/> _____
Areal photographs	<input type="checkbox"/> _____	Safety analysis report	<input type="checkbox"/> _____
Engineering/site drawings	<input type="checkbox"/> _____	D&D report	<input checked="" type="checkbox"/> <u>6</u>
Unusual Occurrence Report	<input type="checkbox"/> _____	Initial assessment	<input checked="" type="checkbox"/> <u>7</u>
Summary documents	<input type="checkbox"/> _____	Well data	<input type="checkbox"/> _____
Facility SOPs	<input type="checkbox"/> _____	Construction data	<input type="checkbox"/> _____
OTHER	<input checked="" type="checkbox"/> <u>3, 4</u>		

PROCESS Abandoned Pipeline

Question 4. Is there evidence that a source exists at this site? If so, list the sources and describe the evidence.

Block 1 Answer:

There is no evidence that a source exists at this site. The former sulfuric acid transfer line is still located beneath the ground surface at this site, but has not been used since 1981. In 1997, during D&D of TRA-645, the line was removed from the building, cut off, and capped approximately 2.4 to 3 meters (8 to 10 feet) underground. At TRA-631, the line was disconnected and capped with a hot tap connection. No feasible method was found for removing the solidified pipe contents. Therefore, the remaining pipe was capped and abandoned in place. The remaining line, approximately 487 meters (1,598 ft) of 7.62 cm (3-in.) carbon steel pipe between the previous location of TRA-645 and the current location of TRA-631, remains, underground.

During the D&D project, an inspection of the carbon-steel pipe was conducted, which demonstrated that the pipe was in very good condition, and structurally sound, with a wall thickness of 3/8". No excessive local corrosion was evident. In addition, there is no documented release from this line.

The full length of buried pipe would have been difficult to remove because numerous active systems overlap it, and its buried depth ranges from 8 to 16 feet. This pipe is capped in TRA-631, and no other buildings are fed from it. The pipeline passes under the Materials Test Reactor (MTR) canal, where spent fuel is presently stored. Any actions taken to remove the pipe or its contents must be performed after the MTR canal has undergone successful D&D, which is currently scheduled for completion in fiscal year 2004.

Block 2 How reliable are the information sources? High Med Low (check one)

Explain the reasoning behind this evaluation.

The information regarding the sulfuric acid transfer line is well documented, and is considered highly reliable. The New Site Identification Form (NSID) identifies the time frame that the sulfuric acid transfer line was in service, and summarizes the actions taken regarding the sulfuric acid transfer line. In addition, the 1997 D&D Report was obtained, and confirms the information given in the NSID. During the 1997 D&D Project, pictures of the sulfuric acid transfer line (in TRA-631 and near the former TRA-645) were taken showing that the ends have been capped. Therefore, the source no longer exists.

Block 3 Has this INFORMATION been confirmed? Yes No (check one)

If so, describe the confirmation.

The information regarding the sulfuric acid transfer line is well documented, and is considered highly reliable.

Block 4 **Sources of Information** [check appropriate box(es) & source number from reference list]

No available information

Analytical data

Anecdotal	<input type="checkbox"/> _____	Documentation about data	<input type="checkbox"/> _____
Historical process data	<input type="checkbox"/> _____	Disposal data	<input type="checkbox"/> _____
Current process data	<input type="checkbox"/> _____	QA data	<input type="checkbox"/> _____
Areal photographs	<input type="checkbox"/> _____	Safety analysis report	<input type="checkbox"/> _____
Engineering/site drawings	<input checked="" type="checkbox"/> <u>5</u>	D&D report	<input checked="" type="checkbox"/> <u>6</u>
Unusual Occurrence Report	<input type="checkbox"/> _____	Initial assessment	<input checked="" type="checkbox"/> <u>7</u>
Summary documents	<input type="checkbox"/> _____	Well data	<input type="checkbox"/> _____
Facility SOPs	<input type="checkbox"/> _____	Construction data	<input type="checkbox"/> _____
OTHER	<input checked="" type="checkbox"/> <u>1,2,4</u>		

PROCESS Abandoned Pipeline

Question 5. Does site operating or disposal historical information allow estimation of the pattern of potential contamination? If the pattern is expected to be a scattering of hot spots, what is the expected minimum size of a significant hot spot?

Block 1 Answer:

There is no documented release from the sulfuric acid transfer line. During the 1997 D&D project, an inspection of the carbon-steel pipe was conducted, which demonstrated that the pipe was in very good condition, and structurally sound, with a wall thickness of 3/8". No excessive local corrosion was evident.

Block 2 How reliable are the information sources? High Med Low (check one)

Explain the reasoning behind this evaluation.

The information regarding the sulfuric acid transfer line is well documented, and is considered highly reliable. The New Site Identification Form (NSID) summarizes the actions taken regarding the sulfuric acid transfer line. In addition, the 1997 D&D Report was obtained, and confirms the information given in the NSID, and confirms that no excessive local corrosion was evident. Finally, during a discussion with Mr. George Swaney, he indicated that there have been no documented releases from this line.

Block 3 Has this INFORMATION been confirmed? Yes No (check one)

If so, describe the confirmation.

The information regarding the sulfuric acid transfer line is well documented, and is considered highly reliable.

Block 4 **Sources of Information** [check appropriate box(es) & source number from reference list]

No available information	<input type="checkbox"/> _____	Analytical data	<input type="checkbox"/> _____
Anecdotal	<input type="checkbox"/> _____	Documentation about data	<input type="checkbox"/> _____
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Current process data	<input type="checkbox"/> _____	QA data	<input type="checkbox"/> _____
Areal photographs	<input type="checkbox"/> _____	Safety analysis report	<input type="checkbox"/> _____
Engineering/site drawings	<input type="checkbox"/> _____	D&D report	<input checked="" type="checkbox"/> <u>6</u>
Unusual Occurrence Report	<input type="checkbox"/> _____	Initial assessment	<input checked="" type="checkbox"/> <u>7</u>
Summary documents	<input type="checkbox"/> _____	Well data	<input type="checkbox"/> _____
Facility SOPs	<input type="checkbox"/> _____	Construction data	<input type="checkbox"/> _____
OTHER	<input checked="" type="checkbox"/> <u>3,4</u>		

PROCESS Abandoned Pipeline

Question 6. Estimate the length, width, and depth of the contaminated region. What is the known or estimated volume of the source? If this is an estimated volume, explain carefully how the estimate was derived.

Block 1 Answer:

There is no documented release from the sulfuric acid transfer line. During the D&D project, an inspection of the carbon-steel pipe was conducted, which demonstrated that the pipe was in very good condition, and structurally sound, with a wall thickness of 3/8". No excessive local corrosion was evident. Therefore, it is not suspected that a contaminated region exists.

Block 2 How reliable are the information sources? High Med Low (check one)

Explain the reasoning behind this evaluation.

The information regarding the sulfuric acid transfer line is well documented, and is considered highly reliable. The New Site Identification Form (NSID) summarizes the actions taken regarding the sulfuric acid transfer line. In addition, the 1997 D&D Report was obtained, and confirms the information given in the NSID, and confirms that no excessive local corrosion was evident. Finally, during a discussion with Mr. George Swaney, he indicated that there have been no documented releases from this line.

Block 3 Has this INFORMATION been confirmed? Yes No (check one)

If so, describe the confirmation.

The information regarding the sulfuric acid transfer line is well documented, and is considered highly reliable.

Block 4 **Sources of Information** [check appropriate box(es) & source number from reference list]

No available information	<input type="checkbox"/> _____	Analytical data	<input type="checkbox"/> _____
Anecdotal	<input type="checkbox"/> _____	Documentation about data	<input type="checkbox"/> _____
Historical process data	<input type="checkbox"/> _____	Disposal data	<input type="checkbox"/> _____
Current process data	<input type="checkbox"/> _____	QA data	<input type="checkbox"/> _____
Areal photographs	<input type="checkbox"/> _____	Safety analysis report	<input type="checkbox"/> _____
Engineering/site drawings	<input type="checkbox"/> _____	D&D report	<input checked="" type="checkbox"/> <u>6</u>
Unusual Occurrence Report	<input type="checkbox"/> _____	Initial assessment	<input checked="" type="checkbox"/> <u>7</u>
Summary documents	<input type="checkbox"/> _____	Well data	<input type="checkbox"/> _____
Facility SOPs	<input type="checkbox"/> _____	Construction data	<input type="checkbox"/> _____
OTHER	<input checked="" type="checkbox"/> <u>3, 4</u>		

PROCESS Abandoned Pipeline

Question 7. What is the known or estimated quantity of hazardous substance/constituent at this source? If the quantity is an estimate, explain carefully how the estimate was derived.

Block 1 Answer:

The estimated quantity of hazardous substance/constituent at this site is contained within the sulfuric acid transfer line. The line currently contains liquid and solid concentrated sulfuric acid contaminated with mercury at levels of 134 ppm. The line is approximately 487 meters (1,598 ft) of 7.62 cm (3-in.) carbon steel pipe between the previous location of TRA-645 and the current location of TRA-631.

The maximum amount of hazardous substance/constituent was estimated by $V = \pi r^2 L$, where:

$$\text{Pi } (\pi) = 3.14,$$

r = the radius of the pipe, and

L = the length of the pipe.

Therefore, the maximum volume of liquid that can be contained within the pipe is 2.221 m³ (78.44 ft³). Converting this to liters and gallons (where 1 L = 1.0 x 10⁻³ m³ and 1 gallon = 3.786 L), then the volume of the pipe is estimated to be 2221 L (586.6 gallons). This means that the maximum quantity of concentrated sulfuric acid solution is 2221 L (586.6 gallons). Given that the sulfuric acid is reagent-grade (98%), then the maximum amount of sulfuric acid within the pipe is 2176.6 L. The detected concentration of mercury in the sulfuric acid is 134 ppm or 134 mg Hg/Kg of H₂SO₄(aq). The density of concentrated sulfuric acid is 1.84 Kg of H₂SO₄/L. Therefore, if the mercury is homogeneous throughout the sulfuric acid, then the estimated quantity of mercury in the pipe is 547,609 mg Hg or 547.6 g Hg. The suspected source of mercury is the commercial grade sulfuric acid used in the demineralization plant.

Block 2 How reliable are the information sources? High Med Low (check one)

Explain the reasoning behind this evaluation.

The information regarding the sulfuric acid transfer line is well documented, and is considered highly reliable. The New Site Identification Form (NSID) specifies the content of the sulfuric acid transfer line, including the concentration of the sulfuric acid and the presence of mercury, and defines the length of the acid line. The 1997 D&D Report was obtained, and confirms the information given in the NSID, including providing a summary table with the mercury results. The D&D Report also references the location of the mercury analytical data.

Block 3 Has this INFORMATION been confirmed? Yes No (check one)

If so, describe the confirmation.

The information regarding the sulfuric acid transfer line is well documented, and is considered highly reliable.

Block 4 **Sources of Information** [check appropriate box(es) & source number from reference list]

No available information

Analytical data

Anecdotal	<input type="checkbox"/> _____	Documentation about data	<input type="checkbox"/> _____
Historical process data	<input type="checkbox"/> _____	Disposal data	<input type="checkbox"/> _____
Current process data	<input type="checkbox"/> _____	QA data	<input type="checkbox"/> _____
Areal photographs	<input type="checkbox"/> _____	Safety analysis report	<input type="checkbox"/> _____
Engineering/site drawings	<input checked="" type="checkbox"/> <u>5</u>	D&D report	<input checked="" type="checkbox"/> <u>6</u>
Unusual Occurrence Report	<input type="checkbox"/> _____	Initial assessment	<input checked="" type="checkbox"/> <u>7</u>
Summary documents	<input type="checkbox"/> _____	Well data	<input type="checkbox"/> _____
Facility SOPs	<input type="checkbox"/> _____	Construction data	<input type="checkbox"/> _____
OTHER	<input checked="" type="checkbox"/> <u>3</u>		

PROCESS Abandoned Pipeline

Question 8. Is there evidence that this hazardous substance/constituent is present at the source as it exists today? If so, describe the evidence.

Block 1 Answer:

No evidence exists that this hazardous substance/constituent is present at levels that require action at the source as it exists today. TRA-645 was removed, and the sulfuric acid transfer line was removed from the building, cut off, and capped approximately 2.4 to 3 meters (8 to 10 feet) underground. At TRA-631, the line was disconnected and capped with a hot tap connection. No feasible method was found for removing the solidified pipe contents. Therefore, the remaining pipe was capped and abandoned in place. There is no documented release from this line. In addition, during the 1997 D&D project, an inspection of the carbon-steel pipe was conducted, which demonstrated that the pipe was in very good condition, and structurally sound, with a wall thickness of 3/8". No excessive local corrosion was evident.

The full length of buried pipe would have been difficult to remove because numerous active systems overlap it, and its buried depth ranges from 8 to 16 feet. The pipeline passes under the Materials Test Reactor (MTR) canal, where spent fuel is presently stored. Any actions taken to remove the pipe or its contents must be performed after the MTR canal has undergone successful D&D, which is currently scheduled for completion in fiscal year 2004.

Block 2 How reliable are the information sources? High Med Low (check one)

Explain the reasoning behind this evaluation.

The information regarding the sulfuric acid transfer line is well documented, and is considered highly reliable. The New Site Identification Form (NSID) identifies the time frame that the sulfuric acid transfer line was in service, and summarizes the actions taken regarding the sulfuric acid transfer line. In addition, the 1997 D&D Report was obtained, and confirms the information given in the NSID, including the condition of the pipe. During the 1997 D&D Project, pictures of the sulfuric acid transfer line (in TRA-631 and near the former TRA-645) were taken showing that the ends have been capped. Therefore, the source no longer exists.

Block 3 Has this INFORMATION been confirmed? Yes No (check one)

If so, describe the confirmation.

The information regarding the sulfuric acid transfer line is well documented, and is considered highly reliable.

Block 4 **Sources of Information** [check appropriate box(es) & source number from reference list]

No available information

Analytical data

Anecdotal	<input type="checkbox"/> _____	Documentation about data	<input type="checkbox"/> _____
Historical process data	<input type="checkbox"/> _____	Disposal data	<input type="checkbox"/> _____
Current process data	<input type="checkbox"/> _____	QA data	<input type="checkbox"/> _____
Areal photographs	<input type="checkbox"/> _____	Safety analysis report	<input type="checkbox"/> _____
Engineering/site drawings	<input type="checkbox"/> _____	D&D report	<input checked="" type="checkbox"/> <u>6</u>
Unusual Occurrence Report	<input type="checkbox"/> _____	Initial assessment	<input checked="" type="checkbox"/> <u>7</u>
Summary documents	<input type="checkbox"/> _____	Well data	<input type="checkbox"/> _____
Facility SOPs	<input type="checkbox"/> _____	Construction data	<input type="checkbox"/> _____
OTHER	<input checked="" type="checkbox"/> <u>1.2.4</u>		

References for Decision Documentation Package

1. G. Keating, Picture of Disconnected Acid Lines in TRA-631 (TRA-59), C:\Windows\Acidlines.jpg.
2. G. Keating, Picture of Disconnected Acid Lines in TRA-631 (TRA-56 and TRA-59), C:\Windows\631 pit.jpg.
3. Idaho National Engineering Laboratory, "Track 1 Sites: Guidance for Assessing Low Probability Hazard Sites at the INEL," DOE/ID-10340, Revision 1, July 1992.
4. Personal Communication with George Swaney, TRA, September 21, 2000.
5. R.A. Friesz, "TRA Underground Piping Project: Miscellaneous Fuel, Acids, and Air Lines," Drawing No. 448549, September 1993 (origination date).
6. S.A. LaBuy, "Engineering Test Reactor Secondary Coolant Pumphouse (TRA-645) and Cooling Tower Basin (TRA-751) Decommissioning Final Report," INEEL/EXT-97-01026, Revision 0, October 1997.
7. W.D. Mikesell, New Site Identification Form for TRA Acid Transfer Line from TRA-631 to TRA-645 (TRA-56), March 1999.