Unit Number: 34

Unit Name: Sludge Filter System (Photograph 1-33)

Unit Location: The unit is located in the southeast portion of the control building at the Industrial Treatment Plant.

Unit Description: This non-RCRA regulated unit consists of four components: a mixing tank, a holding tank, a pressure filter and belt conveyor. The mixing tank is a cylindrical, steel tank with a capacity of approximately 4,000 to 5,000 gallons. This unit receives thickened sludge from the Sludge Thickener (SWMU 29), and cement kiln dust is added in this tank to help solidify the sludge. The mixture then flows to a 12,000 gallon, cylindrical, steel holding tank and eventually to the plate-and-frame pressure filter where it is further dewatered. The dewatered sludge is passed to the outside of the building via the belt conveyor and is deposited into the Sludge Bin (SWMU 35). The extracted water is pumped back to the Primary Settling Tanks (SWMU 25) for further treatment (Refs. 40, 41).

Period of Operation: This sludge filter system began operation on January 28, 1974. The unit remains in service with no anticipated closure date (Refs. 40, 43).

Wastes Managed: The unit manages non-hazardous treatment plant effluent and sludge. These wastes contain hazardous constitutents as shown in Attachment A. Approximately 150 cubic yards of dewatered sludge are produced each week at this unit (Refs. 40, 45).

Release Controls: The unit is located inside an enclosed building and above a concrete floor slab. Floor drains are present in the slab which drain to the Industrial Sewer System (SWMU 20) (Ref. 40).

History of Releases: There was no history of releases documented in the file materials reviewed or observed during the VSI.

Conclusions:

Soil/Groundwater: The past and ongoing potential for releases to soil and groundwater is low because the unit is located inside an enclosed building and above a concrete floor slab.

Surface Water: The past and ongoing potential for a release to surface water is low because the unit is located in an enclosed building and because of the relative distance to surface waters.

Air: The past and ongoing potential for releases to air is low because the unit is predominantly a closed system that is located in an enclosed building.

Subsurface Gas: The past and ongoing potential for subsurface gas generation is low because the unit is located above a concrete floor slab and there is no history or evidence of releases.

Unit Number: 35

Unit Name: Sludge Bin (Photograph 1-29)

Unit Location: The unit is located outside of the east wall of the control building at the Industrial Treatment Plant.

Unit Description: The sludge bin is a non-RCRA regulated unit approximately 20 feet square by 15 feet high. The bin has a concrete base slab, reinforced concrete knee walls approximately 3 feet high and steel walls extending above the knee walls. The unit is enclosed on three sides and open on the east. The bin is surrounded by asphalt pavement. This unit receives dewatered sludge from the belt conveyor of the Sludge Filter System (SWMU 34). The dewatered sludge was formerly dropped into the bin and subsequently removed by the Sludge Front End Loader (SWMU 38) for loading onto Sludge Dump Trucks (SWMU 37). A Sludge Roll-Off (SWMU 36) is currently used in the bin to collect sludge from the belt conveyor (Ref. 40).

Period of Operation: The unit began operating on January 28, 1974. The Sludge Bin is currently in service with no proposed closure date (Refs. 40, 43).

Wastes Managed: The Sludge Bin manages non-hazardous, dewatered sludge from the Industrial Treatment Plant. The sludge contains various hazardous constituents as shown in Attachment A. Approximately 150 cubic yards of sludge pass through this unit each week (Refs. 40, 45).

Release Controls: The unit is surround by asphalt pavement. No other release controls were documented in the file materials reviewed or observed during the VSI (Ref. 40).

History of Releases: There was no history of releases documented in the file materials reviewed. However, a build-up of sludge approximately 1/2 inch thick was observed on the pavement immediately east of the sludge bin. These deposits became thinner away from the bin (Ref. 40).

Conclusions:

Soil/Groundwater: The past and ongoing potential for releases to soil and groundwater is low to moderate based upon the sludge deposited on the asphalt pavement around the unit.

Surface Water: The past and ongoing potential for releases to surface water is low due to the relative distance to surface water bodies.

Air: The past and ongoing potential for releases to air is low to moderate because particulates could be carried from the bin and surrounding deposits by wind.

Subsurface Gas: The past and ongoing potential for subsurface gas generation is low based upon the nature of the wastes and the presence of concrete and asphalt pavements.

Unit Number: 36

Unit Name: Sludge Roll-Off/Hauler (Photograph 1-29)

Unit Location: The Roll-Off Container is stored in the Sludge Bin (SWMU 35). The Hauler Truck periodically visits the site to transfer the Roll-Off Container to and from the Sludge Landfill (SWMU 48).

Unit Description: The Sludge Roll-Off Container is an uncovered steel bin approximately 20 feet long by 8 feet wide by 4 feet high. This unit is normally stationed in the Sludge Bin (SWMU 35) to accumulate dewatered sludge from the Sludge Filter System (SWMU 34). When full, this unit is hauled to the Sludge Landfill (SWMU 48) where it is emptied and returned to the Sludge Bin. The Hauler Truck is a tandem axle, flat bed truck normally used to haul roll-off containers. The sludge Roll-Off Container and Hauler Truck are owned by Wozniak Sanitation Company. The Roll-Off Container remains at the facility full time, while the Hauler Truck leaves the site as required by Wozniak Sanitation (Refs. 40, 48).

Period of Operation: The Sludge Roll-Off/Hauler unit began operating on August 8, 1989 on an experimental basis to determine if it is more efficient than loading the sludge from the Sludge Bin (SWMU 35) onto Sludge Dump Trucks (SWMU 37). This unit is currently in service, but the future length of operation is unclear due to the experimental nature of this program (Ref. 40).

Wastes Managed: This unit manages non-hazardous sludge from the Industrial Treatment Plant. The sludge contains hazardous constituents as shown in Attachment A. The unit manages approximately 150 cubic yards of sludge per week and is emptied several times during that period (Refs. 40,48).

Release Controls: The unit is located in the Sludge Bin (SWMU 35) which has a concrete slab and concrete and metal walls on three sides. The area around the sludge bin is paved with asphalt (Ref. 40).

History of Releases: There is no history or evidence of releases from this unit (Ref. 40).

Conclusions:

Soil/Groundwater: The past and ongoing potential for releases to soil and groundwater is low based on the construction and operation of the unit.

Surface Water: The past and ongoing potential for releases to surface water is low based upon the construction and operation of the unit and relative distance to surface waters.

Air: The past and ongoing potential for releases to air is low to moderate because the unit is uncovered and some escape of particulates could occur during transport.

Subsurface Gas: The past and ongoing potential for subsurface gas generation is low due to the construction and operation of the unit and the secondary containment provided below it.

Unit Number: 37

Unit Name: Sludge Dump Trucks (No Photograph)

Unit Location: These units were operated in the vicinity of the Sludge Bin (SWMU 35) and the Sludge Landfill (SWMU 48), as well as on the public and plant roads between these locations.

Unit Description: These units consisted of standard dump trucks with a capacity of 10 to 12 cubic yards. The units were owned and operated by Zelmer Trucking Company and were used to haul treatment plant sludge from the Sludge Bin (SWMU 35) to the Sludge Landfill (SWMU 48). Several different trucks were used for this purpose, but one truck was typically used per day (Refs. 40, 44).

Period of Operation: The units began operating in early 1974 and were taken out of service on August 8, 1989. These units may be reactivated if the experimental Sludge Roll-Off/Hauler System (SWMU 36) is taken out of operation in the future (Ref. 40).

Wastes Managed: The Sludge Dump Trucks hauled approximately 150 cubic yards of dewatered sludge per week. This sludge is a non-hazardous waste from the Industrial Treatment Plant, but the sludge contains hazardous constituents as shown in Attachment A (Ref. 40).

Release Controls: There are no documented release controls for these units.

History of Releases: There were no releases documented from these units in the file materials reviewed. The units were not available for inspection during the VSI.

Conclusions:

Soil/Groundwater: The past and ongoing potential for releases to soil and groundwater from these units is low based on their construction and operation.

Surface Water: The past and ongoing potential for releases to surface water is low based on the construction and operation of the units, the relative distance to surface waters and the fact that the units are no longer in service.

Air: The past potential for releases to air is low to moderate because particulates may have escaped the uncovered truck beds during transfer of wastes to the landfill. The ongoing potential is low because the units are no longer in operation.

Subsurface Gas: The past and ongoing potential for subsurface gas generation is low based upon the units' construction and operation and the fact that the units are no longer in service.

Unit Number: 38

Unit Name: Sludge Front-End Loader (Photograph 1-30)

Unit Location: The unit is parked and operated to the east of the control building at the Industrial Treatment Plant.

Unit Description: The unit consists of a rubber-tired, front-end loader with a bucket capacity of approximately 3 cubic yards. The unit was used to transfer dewatered sludge from the Sludge Bin (SWMU 35) to the Sludge Dump Trucks (SWMU 37). This transfer occurred on the asphalt pavement immediately east of the Sludge Bin (Ref. 40).

Period of Operation: The front-end loader was utilized from early 1974 until August 8, 1989. The unit is not active, but is parked on a gravel surfaced area to the southeast of the Sludge Bin. There is a possibility that this unit will be reactivated if the Sludge Roll-Off/Hauler System (SWMU 36) is taken out of operation (Refs. 40, 43).

Wastes Managed: The unit managed approximately 150 cubic yards of non-hazardous dewatered sludge per week from the Industrial Treatment Plant. However, the sludge contains hazardous constituents as shown in Attachment A (Ref. 40).

Release Controls: The unit was typically operated over an asphalt pavement. No other release controls have been documented for this unit (Ref. 40).

History of Releases: There were no releases documented from this unit in the file materials reviewed. However, a layer of sludge was observed on the asphalt pavement to the east of the Sludge Bin where this unit operated. Discoloration was also observed on the gravel surface where the unit is parked (Ref. 40).

Conclusions:

Soil/Groundwater: The past and ongoing potential for releases to soil and groundwater is low to moderate based upon the sludge deposits and stains observed.

Surface Water: The past and ongoing potential for releases to surface water is low based upon the relative distance to surface water bodies.

Air: The past potential for releases to air is low to moderate because particulates could be carried by wind during loading operations and from the sludge deposits observed on the asphalt pavement. The ongoing potential is low because the unit is inactive.

Subsurface Gas: The past and ongoing potential for subsurface gas generation is low based upon the inorganic nature of the waste.

Unit Number: 39

Unit Name: Waste Pickle Liquor Sump and Pipes (Photographs 1-37, 1-38, and 2-1)

Unit Location: The sump is located immediately south of the southwest corner of the control building at the Industrial Treatment Plant. The pipes extend from the pickle and galvanizing lines to the Sump and then to the Waste Pickle Liquor Tanks (SWMUs 40 and 41).

Unit Description: This unit is currently non-RCRA regulated, although it manages a listed hazardous waste (K062). The unit consists of the underground pipes extending from the Waste Pickle Liquor Holding Tank (SWMU 8) and the galvanizing line sewer to the Waste Pickle Liquor Sump, the Sump itself, and the pipes extending from the Sump to the Waste Pickle Liquor Tanks (SWMUs 40 and 41). The Sump acts as a receiving chamber for the liquid wastes and pumps them to the Waste Pickle Liquor Tanks (SWMUs 40 and 41) via a float-activated pump. The underground pipes are made of a combination of polypropylene-lined steel and fiberglass. The entire length of pipe is located in concrete trenches and tunnels. The Waste Pickle Liquor Sump has a 20,000 gallon capacity and is constructed of outside concrete walls, an acid-resistant coating on the interior of the concrete walls, and an acid-resistant brick lining. A rubber-coated steel tank was installed inside the sump in late 1987. An air space exists between the steel tank and original sump so that the original sump provides secondary containment. The Sump was covered by steel plates at the time of the VSI. Rust-colored stains and some deterioration of concrete were observed on the outside of the sump. Pipe trenches and tunnels were covered by steel plates and soil, and were not accessible during the VSI (Refs. 40, 44, 48).

Period of Operation: This unit began operation when the plant started production in 1967. The interior steel tank was added in late 1987. The unit is currently in service with no anticipated closure date (Refs. 40, 44).

Wastes Managed: Waste pickle liquor, a listed hazardous waste (K062), comprises approximately 99% of the wastes managed by this unit. The waste pickle liquor consists of approximately 2 to 3 percent hydrochloric acid and 20 percent ferric chloride. Trace amounts of other metals may also be present in this waste stream. The remaining 1 percent of wastes managed by this unit originate from the galvanizing line. This waste stream can contain nickel, zinc, and chromium. The quantity of wastes managed by this unit ranges from approximately 300,000 to one-million gallons per month with values typically in the range of 500,000 to 800,000 gallons per month; the yearly average is approximately 7 million gallons. The results from typical analyses performed on this waste stream are included in Attachment A (Refs. 40, 41, 49, 50, 51).

Release Controls: Inside the main Steel Plant and adjacent to the Sump, the Waste Pickle Liquor Pipes are located in fiberglass-lined concrete trenches. The remainder of the piping is located in a 96-inch diameter reinforced concrete pipe with a fiberglass coating adjacent to the pipes and a trough of acid-resistant bricks below the pipes. The trenches and tunnel are periodically inspected for leaks. The Waste Pickle Liquor Sump was provided with an interior steel tank in late 1987. The original sump structure (the coated concrete walls and acid-resistant brick) now act as the secondary containment system for this portion of the unit. The air space between the acid-resistant bricks and steel inner tank are periodically inspected for leaks (Refs. 40, 48).

History of Releases: There was no evidence of releases documented in the file materials reviewed; however, facility representatives indicated that four to five leaks in the pipes have occurred. The leaked materials flowed through the containment to the Industrial Treatment Plant for treatment. During the VSI, rusty stains and deterioration of concrete were observed on the exterior walls of the Waste Pickle Liquor Sump. In addition, rust-colored stains were observed on the steel cover plates and gravel surrounding the unit (Refs. 40, 48).

Conclusions:

Soil/Groundwater: The past and ongoing potential for releases to soil is high based on the stains observed around the Waste Pickle Liquor Sump. This potential could not be evaluated for the Waste Pickle Liquor Pipes because they were inaccessible at the time of the VSI. The past and ongoing potential for releases to groundwater could not be fully evaluated because the pipe trenches and sump interior could not be observed during the VSI. However, it is anticipated that relatively minor releases would be neutralized by the limestone gravel at the surface and calcareous nature of the natural soils at this site before the releases reach the groundwater table.

Surface Water: The past and ongoing potential for releases to surface water is low based on the secondary containment provided and relative distance to surface waters.

Air: The past and ongoing potential for releases to air is low because the pipe trenches and sump are covered.

Subsurface Gas: The past and ongoing potential for generation of subsurface gas is low based on the inorganic nature of the waste and relatively small releases observed.

Unit Numbers: 40-41

Unit Name: Waste Pickle Liquor Tanks (Photograph 1-36)

Unit Location: These units are located to the south of the control building at the Industrial Treatment Plant.

Unit Description: These RCRA-regulated storage tanks are made of rubber-lined carbon steel and have a capacity of 150,000 gallons each. The units receive wastes from the Waste Pickle Liquor Sump and Pipes (SWMU 39) for temporary storage. One tank is filled at a given time, while the second tank remains essentially empty for back-up storage in the event of an operational problem. Each tank takes approximately one week to fill. The tank is then emptied through the Deep Well Injection System (SWMU 42) and then disposed of in the Underground Injection Well (SWMU 43). The other tank is then filled while the first tank is being emptied (Ref. 40).

Period of Operation: These units began operation in 1967 when the LTV facility began production. The units are currently in operation with no anticipated closure date (Refs. 40, 48).

Wastes Managed: Waste pickle liquor, a listed hazardous waste (K062), comprises approximately 99% of the wastes managed by this unit. The waste pickle liquor consists of approximately 2 to 3 percent hydrochloric acid and 20 percent ferric chloride. Trace amounts of other metals may also be present in this waste stream. The remaining 1 percent of wastes managed by this unit originate from the galvanizing line. This waste stream can contain nickel, zinc, and chromium. The quantity of wastes managed by this unit ranges from approximately 300,000 to one-million gallons per month with values typically in the range of 500,000 to 800,000 gallons per month; the yearly average is approximately 7 million gallons. The results from typical analyses performed on this waste stream are included in Attachment A (Refs. 40, 41, 49, 50, 51).

Release Controls: The units are surrounded by concrete containment walls approximately 7 to 8 feet high and a concrete bottom slab. The interior of the concrete containment area is currently covered with a neoprene coating. The neoprene replaced a fiberglass coating in 1982. The tanks are equipped with high level alarms and a leak detection alarm in the containment area. Facility representatives have indicated that the containment area is inspected once each shift for leaks (Ref. 40). During the VSI, it was observed that portions of the neoprene coating were absent from the inside of the containment area. Some spalling of the concrete containment slab was also observed, as well as relatively minor cracks in the containment walls. There was no evidence of leakage through these cracks. Hairline cracks were also present in the containment walls during a 1982 site inspection (Refs. 14, 40, 56).

History of Releases: One of the units was overfilled on May 13, 1987 due to an operational error and malfunction of an overflow alarm. A total spillage of approximately 7,000 gallons occurred. Approximately 2,000 gallons of inadequately treated waste passed through the Industrial Treatment Plant; this waste was eventually released to the Illinois River. On July 14, 1982, a contractor damaged a fiberglass drain pipe from the South Tank (SWMU 41) which allowed a release of approximately 50,000 gallons of waste pickle liquor. Approximately 10,000 to 15,000 gallons of this leakage was pumped into the other storage tank (SWMU 40). The remainder was pumped into one of the Wastewater Flocculator Clarifiers (SWMU 27 or SWMU 28) where it was neutralized with lime slurry. The neutralized waste was then treated in the Industrial Treatment Plant, prior to discharge to the Illinois River. A portion of the old fiberglass coating on the interior of the containment walls was removed, and was being replaced with a neoprene lining, at the time of this release. The inspection report

indicated that little, if any, of the waste pickle liquor was expected to have escaped through the cracks in the concrete to the underlying soil. During the VSI, rust-colored stains were observed on the interior of the containment area and on the exterior of the containment walls. Similar stains were also observed on the gravel to the north, northeast and east of the containment area (Refs. 14, 17, 40, 41, 56).

Conclusions:

Soil/Groundwater: The past and ongoing potential for releases to soil is high based upon the cracks in the containment slab, documented releases, and stains observed on the surrounding gravel. The past and ongoing potential for releases to groundwater is low because it appears that relatively small quantities of waste have been released to the soil and would likely be neutralized by the natural calcareous soils and limestone gravel at the ground surface.

Surface Water: The past and ongoing potential for direct releases to surface water is low due to the relative distance to them. However, releases from the units have been routed through the Industrial Treatment Plant (SWMUs 24-31) and Effluent Lagoon (SWMU 45) to the Illinois River.

Air: The past and ongoing potential for releases to air is low to moderate based upon the tanks venting to the air and history of past releases.

Subsurface Gas: The past and ongoing potential for generation of subsurface gas is low based upon the relatively small quantities of wastes that are believed to have been released to the soils, and the inorganic nature of the wastes.

Unit Number: 42

Unit Name: Deep Well Injection System (Photograph 1-34)

Unit Location: This unit is located in the southwest corner of the Control Building at the Industrial Treatment Plant.

Unit Description: This unit consists of the pumps, filters, filter material mixers, and other appurtenances used to filter and regulate the flow of waste pickle liquor prior to disposal in the Underground Injection Well (SWMU 43). The unit receives waste pickle liquor directly from the Waste Pickle Liquor Tanks (SWMUs 40, 41). This system is currently regulated under the Underground Injection Control Permit for the injection well. The main components of the system are two filters having a capacity of 2,000 gallons each. These pressure leaf filters utilize diatomaceous earth as the main filtering material. The filters are cleaned after each use and the residue is transferred to the Sludge Thickener (SWMU 29) for processing (Refs. 4, 40).

Period of Operation: The unit began operating in 1967 when the LTV facility started operation. The unit is currently in service with no anticipated closure date (Ref. 40).

Wastes Managed: This unit handles approximately seven million gallons of waste pickle liquor (K062) per year. The waste pickle liquor is pumped through the system at a rate of approximately 130 to 260 gallons per minute. Spent diatomaceous earth filter medium and collected filtrate are also generated at this unit (Refs. 4, 47)

Release Controls: The unit is located in an enclosed building with a concrete floor slab. The unit also has extensive monitoring equipment and malfunction alarms (Refs. 4, 40).

History of Releases: No history of releases was documented in the file materials reviewed or observed during the VSI.

Conclusions:

Soil/Groundwater: The past and ongoing potential for releases specific to soil and groundwater is low due to the construction and operation of its location in an enclosed building and the absence of evidence of releases from the unit.

Surface Water: The past and ongoing potential for releases to surface water is low due to the construction and operation of the unit, its location in an enclosed building, the absence of evidence of releases from the unit, and relative distance to surface water bodies.

Air: The past and ongoing potential for releases to air is low due to the construction and operation of the unit, its location in an enclosed building and the absence of evidence of releases from the unit.

Subsurface Gas: The past and ongoing potential for subsurface gas generation is low due to the construction and operation of the unit, its location in an enclosed building and the absence of evidence of releases from the unit, and inorganic nature of the waste.

Unit Number: 43

Unit Name: Underground Injection Well (Photograph 1-35)

Unit Location: This unit is located west of the Control Building at the Industrial Treatment Plant.

Unit Description: This deep disposal well is currently regulated by an Underground Injection Control Permit (Permit No. UIC-004-WI-JL). The well was drilled to a total depth of 4,868 feet using hole diameters ranging from 7-1/2 inches to 6-1/4 inches. Three strings of steel casing were grouted into place at depths of approximately 300 feet, 2,700 feet, and 3,100 feet. The outside casing diameters range from 13-3/8 inches to 7 inches. A 3-1/2 inch diameter fiberglass injection tubing was centered inside the 7 inch diameter casing and set near a depth of 3,700 feet. The waste disposal occurs in the Elmhurst-Mt. Simon sandstone units which are located at depths ranging from approximately 2,900 to 4,843 feet below the existing ground surface. The confining layer above the disposal unit is the Eau Claire formation which contains shales, dolomites, and sandstones, and is approximately 195 feet thick. These units contain brine with total dissolved solids in excess of 10,000 mg/l. As originally installed, the well was operated by pumping filtered waste pickle liquor from the Deep Well Injection System (SWMU 42) through the center fiberglass tube. Clean water was simultaneously flushed down the annulus around this tube to prevent back flushing of the waste pickle liquor. This is followed by approximately 2,000 to 3,000 gallons of clean water containing a biocide to prevent biological growth. The well has been periodically tested and reworked as part of the permit condition. In January of 1976, the hanger for the fiberglass injection tubing failed and permitted the injection pipe to fall into the open hole. This required subsequent repair. In 1986, IEPA required that a packer be installed in this well to prevent back flush in lieu of the injection of clean water through the annular space. The well was tested, relined and the packer

installed in November, 1986. The packer is located near the bottom of the new 2-7/8 inch diameter fiberglass tubing and the annular space around the tubing, is maintained under the positive gas pressure during injection. A biocide solution is still injected after each disposal cycle. Construction diagrams for the injection well, both before and after packer installation, are presented in Attachment A (Refs. 28, 34, 40, 57, 58).

Period of Operation: The unit began operating in 1967 when the LTV facility started operation. The unit is currently in service with no anticipated closure date (Ref. 40).

Wastes Managed: The unit disposes of waste pickle liquor (K062) which is a listed waste based on the presence of chromium. Disposal occurs on an as-needed basis and may take place several times per month. Approximately 50,000 to 150,000 gallons of waste are injected per cycle at a rate of approximately 130 to 260 gallons per minute. An average of approximately seven million gallons of waste pickle liquor are injected annually.

Release Controls: The well currently has five strings of steel casing grouted in place along the sides of the well, plus a packer and pressurized annular space to prevent release of wastes above the injection zone. The well head and piping are located in concrete trenches (Refs. 40, 58).

History of Releases: There was no history of releases outside of the injection zone documented in the file materials reviewed. The unit was not accessible at the time of the VSI.

Conclusions:

Soil/Groundwater: The unit is regulated to discharge waste pickle liquor to the Elmhurst-Mt. Simon sandstones below depths of 2,900 feet. The past and ongoing potential for releases to soil/groundwater above the injection zone is low based on the construction and operation of the unit, and the results of integrity tests performed on the well string.

Surface Water: The past and ongoing potential for releases to surface water is low due to the underground construction of the well, secondary containment provided for the near-surface of components and the relative distance to surface waters.

Air: The past and ongoing potential for releases to air is low because the unit is a closed system.

Subsurface Gas: The past and ongoing potential for subsurface gas generation is low based on the inorganic nature of the wastes.

Unit Number: 44

Unit Name: Waste Pickle Liquor Loading Pad (Photograph 2-4)

Unit Location: This unit is located immediately west of the southwest corner of the control building at the Industrial Treatment Plant.

Unit Description: This non-RCRA regulated unit is used as a tank truck loading area. The unit consists of a pipe extending through the side of the control building that is used to pump the waste pickle liquor into tanker trucks. The unit previously had an asphalt pavement at the loading area. This was replaced in November, 1988 with a concrete pad and a floor drain connected to the Waste Pickle Liquor Sump (SWMU 39) to collect spills. The dimensions and integrity of the previous asphalt pavement are unknown, and the new concrete pad covers an area of approximately 15 feet by 15 feet. The waste pickle liquor is pumped into tank trucks on an irregular, relatively infrequent basis (Refs. 40, 41, 44).

Period of Operation:

Wastes Managed: The unit manages waste pickle liquor which is a listed hazardous waste (K062). The volume of waste managed is variable and makes up a relatively small percentage of the waste pickle liquor generated at the facility. The waste is sold to various steel and chemical companies throughout the Midwest who use it in steel making, the manufacture of pigments, and other uses. This facility is utilized when there is a demand for the waste pickle liquor and when the Underground Injection Well (SWMU 43) is out of service (Refs. 40, 41, 52).

Release Controls: The release controls consist of the existing building wall, concrete pad, and floor drain. Prior to November of 1988, the asphalt pavement provided secondary containment at the ground surface (Refs. 40, 44).

History of Releases: The file materials indicate that the waste pickle liquor had a tendency to foam-over during loading of the tank trucks. Minor releases were observed on the asphalt pavement and surrounding ground surface during previous inspections (Refs. 41, 52). During the VSI, rust-colored stains were observed on the building wall and concrete pad and appeared to flow to the existing floor drain. Rust colored stains were also evident on the gravel surrounding this unit (Ref. 40).

Conclusions:

Soil/Groundwater: The past potential for releases to soil is high based upon past documented releases. The ongoing potential for releases to soils is low because it appears that the minor spillage is directed to the new floor drain. The past and ongoing potential for releases to groundwater is low based upon the relatively small amount of released materials, the depth to groundwater and the neutralizing effect of the limestone gravel and calcareous natural soils.

Surface Water: The past and ongoing potential for releases to surface water is low based upon the small quantities released, secondary containment and relative distance to surface waters.

Air: The past and ongoing potential for releases to air is moderate based upon the type of waste and foaming that occurs during loading.

Subsurface Gas: The past and ongoing potential for generation of subsurface gas is low based upon the relatively small quantities for inorganic wastes that have been released.

Unit Number: 45

Unit Name: Effluent Lagoon (Photographs 1-26 and 1-27)

Unit Location: The Effluent Lagoon is located approximately 50 feet east of the Illinois River and west of the Industrial Treatment Plant.

Unit Description: This non-RCRA regulated unit has earthen sides and base, plan dimensions of about 100 by 300 feet and a maximum depth of approximately 10 feet. The unit receives treated effluent from the Industrial Treatment Plant via a combination of a 96-inch diameter reinforced concrete pipe and an open channel. Final aeration takes place in the channel as the water cascades over six or seven waterfalls approximately 3 to 5 feet high each. The lagoon has a submerged outlet pipe in the Illinois River. This unit floods seasonally when the river floods and debris and silt must be periodically removed from the unit (Ref. 40).

Period of Operation: The unit began operation in 1967, is currently in service, and has no anticipated closure date (Ref. 40).

Wastes Managed: The unit receives treated effluent from the Industrial Treatment Plant, untreated storm water from the storm sewer system at the facility, and non-contact cooling water from the Air Products operation at the site. The unit receives approximately 2,500 gallons of the treated and untreated water per minute. All wastes managed are reportedly non-hazardous. However, chemical analyses indicate that low levels of hazardous constituents are present in the effluent (see Attachment A) (Refs. 40, 49).

Release Controls: There are no release controls documented or observed for this facility.

History of Releases: The unit continually releases NPDES-regulated effluent to the Illinois River by the nature of its operation. Periodic excursions from the NPDES permit limits have been recorded for the effluent. One documented release of inadequately treated pickle liquor occurred on May 13, 1977 due to an overflow of this material at the Industrial Treatment Plant (Refs. 40, 41).

Conclusions:

Soil/Groundwater: The past and ongoing potential for releases to soil and groundwater is moderate to high because the effluent contains hazardous constituents, the lagoon is unlined and a high groundwater table is expected to exist in this area.

Surface Water: The unit releases treated effluent to the Illinois River via a NPDES-regulated outfall. The past and ongoing potential for unregulated releases is high because seasonal flooding causes releases which bypass the outfall pipe.

Air: The past potential for releases to air is low based upon the non-volatile wastes managed at this unit.

Subsurface Gas: The past and ongoing potential for subsurface gas generation is low based upon the inorganic nature of wastes managed.

Unit Number: 46

Unit Name: Former Sludge Lagoon (Photograph 1-25)

Unit Location: The unit is located in the southwest portion of the LTV property between the Effluent Lagoon (SWMU 45) and Industrial Treatment Plant.

Unit Description: This non-RCRA regulated unit has dimensions of approximately 150 by 300 feet and a maximum depth of 15 feet. The unit is lined with a plastic membrane that is placed over a sand base. The thickened sludge was pumped to this unit from the Sludge Thickener (SWMU 29) at the Industrial Treatment Plant for final settling; the decanted water was pumped back to the Sludge Thickener (SWMU 29) for additional treatment. Periodic removal of some sludge occurred from the late 1960s to 1974 to maintain adequate capacity in the lagoon. The sludge was disposed of in the Sludge Landfill (SWMU 48). Some of the sludge was pumped to the Former Sludge Drying Beds (SWMU 47), approximately during 1972 through 1974. The facility began final removal of the relatively drier sludge from this unit in 1974; approximately one-third of the sludge volume has been removed from the unit to date. Currently, the dry surface crust is transported from this unit to the Sludge Landfill (SWMU 48). Wetter sludges are periodically returned to the Sludge Thickener (Refs. 40, 48).

Period of Operation: The unit began operation in 1967 when the facility began producing steel. This lagoon was taken out of service in 1974 when the Sludge Filter System (SWMU 34) began operation. The unit can still receive thickened sludge from the Sludge Thickener if the Sludge Filter System must be taken out of service. This has happened on an infrequent basis since 1974. The facility is removing sludge using a backhoe on a periodic basis from this unit, but a final closure date has not been determined (Refs. 40, 48).

Wastes Managed: This unit manages non-hazardous sludge from the Industrial Treatment Plant, but the sludge does contain hazardous constituents (see Attachment A). During operation, the unit received approximately 150 cubic yards of sludge per week (Refs. 40, 45).

Release Controls: The unit is lined with a plastic membrane (Ref. 40). No other release controls have been documented for this unit.

History of Releases: There were no documented releases from this unit in the file materials reviewed or observed during the VSI.

Conclusions:

Soil/Groundwater: The past and ongoing potential for releases to soil and groundwater is low provided that the integrity of the plastic membrane liner has been maintained. A moderate to high potential exists if the liner has been damaged. The actual potential could not be fully evaluated because sludge covered the entire liner at the time of the VSI.

Surface Water: The past and ongoing potential for releases to surface water is low due to the absence of evidence of releases.

Air: The past and ongoing potential for releases to air is moderate to high because decanted liquids can evaporate and particles can be blown from the uncovered lagoon.

Subsurface Gas: The past and ongoing potential for generation of subsurface gas is low based upon the inorganic wastes managed.

Unit Number: 47

Unit Name: Former Sludge Drying Beds (Photograph 1-24)

Unit Location: This unit is located a short distance to the north of the Former Sludge Lagoon (SWMU 46) in the southwest portion of the LTV property.

Unit Description: This non-RCRA regulated unit consists of two separate areas: the drying beds and a small disposal area. The former drying beds were unlined and covered an area approximately 50 by 50 feet. This portion had a sand base layer which contained underdrain pipes that routed back to the Former Sludge Lagoon (SWMU 46). Sludge was pumped from the Former Sludge Lagoon to the beds via underground pipes. A layer of sludge, approximately 6 inches deep, was placed in the beds for drying.

The dried sludge was periodically removed from the beds and placed in the second portion of this unit which consisted of a land disposal area. This disposal area is trapezoidal in shape, is located immediately northeast of the drying beds and covers approximately 9 to 10 acres. This area is also unlined. As an experiment, some sludge was chemically solidified by an outside contractor prior to disposal in this area. All sludge was removed from the drying beds, while up to 10 feet of dried sludge were left in place in the disposal area when the unit was abandoned. The entire area is currently covered by grass and trees (Refs. 40, 48).

Period of Operation: This unit was used for approximately one to two years on an experimental basis during 1972 through 1974. The unit was abandoned after the Sludge Filter System (SWMU 34) began operation (Refs. 40, 48).

Wastes Managed: This unit managed an unknown quantity of non-hazardous sludge from the Industrial Treatment Plant at the facility. However, as shown in Attachment A, the sludge contains hazardous constituents. A layer of dried sludge up to 10 feet thick was left in place in the disposal area when the unit was abandoned (Refs. 40, 48).

Release Controls: A system of underdrain pipes was installed below the drying beds portion of this unit which drained to the Former Sludge Lagoon (Ref. 40). No other release controls have been documented for this unit.

History of Releases: There was no evidence of releases documented in the file materials reviewed or observed during the VSI.

Conclusions:

Soil/Groundwater: The past and ongoing potential for releases to soil and groundwater is moderate to high based on the unlined nature of the units and the presence of abandoned sludge within the unit.

Surface Water: The past and ongoing potential for releases to surface water is low due to the relative distance to the Illinois River.

Air: The past potential for releases to air was high because the wastes were uncovered which allowed evaporation and possible particulate removal by the wind. The ongoing potential is low because the area is predominantly covered by vegetation.

Subsurface Gas: The past and ongoing potential for generation of subsurface gas is low based upon the inorganic wastes managed.

Unit Number: 48

Unit Name: Sludge Landfill (Photographs 1-20 through 1-22)

Unit Location: The unit is located in the northeast portion of the LTV Steel Company property.

Unit Description: This non-RCRA regulated, solid waste landfill receives non-hazardous sludge from the LTV Industrial Treatment Plant. The facility was issued an operating permit for this landfill by the IEPA Division of Land Pollution Control in November, 1973. The unit consists of a former gravel pit that was reportedly used to supply fill material to construct the nearby Illinois Power Company electric generating plant. The landfill covers 5.14 acres and is approximately 75 to 80 feet deep in its deepest portion. The unit is unlined, and sand, gravel, brush, and tree growth cover the surface of the unfilled area (Refs. 36, 40). A sketch of this landfill, made during an IEPA inspection, is included in Attachment B (Ref. 41).

The dewatered sludge is brought to the landfill from the treatment plant via county and plant roads using Dump Trucks or Roll-Off Containers (SWMUs 36 and 37). The sludge is dumped near the working face of the landfill and spread daily using the Sludge Dozer (SWMU 49). The Sludge Dozer moves the material to lower terraces in front of the filled area. A layer of gravel is placed over the sludge after it is brought to final grade to provide a stable surface for the hauling trucks and dozer. Filling began in the southwest portion of the landfill and is progressing to the north and northeast. Sludge has been placed to the approximate east limit of the landfill near its southeast corner. Sludge will form the landfill perimeter in this area and will be approximately 30 to 40 feet above the surrounding land to the east. The remaining portions of the landfill will be brought to the approximate surrounding grades. Two feet of final cover material is to be placed over the entire landfill surface after it is completely filled (Refs. 36, 37, 40).

Period of Operation: The landfill began receiving sludge in the late 1960s and is currently active. It is estimated that 50 years of active life remain at the current filling rate (Refs. 40, 48).

Wastes Managed: The wastes managed at this unit consist of dewatered sludge from the Industrial Treatment Plant at LTV Steel. The sludge is non-hazardous based on its contents and characteristics. Laboratory analysis results for the sludge are included in Attachment A. The sludge contains several of the RCRA heavy metals, but does not exhibit EP toxicity characteristics. However, several hazardous constituents including chromium, lead and mercury are present in the sludge. The analysis also indicates that the sludge contains less than 1 ppm of some chlorinated solvents and phthalates and approximately 3 ppm of phenols. Sludge from the Former Sludge Lagoon (SWMU 46) was periodically deposited in this unit from the late 1960's until 1974. Since 1974, dewatered sludge has been placed in the landfill at a rate of approximately 150 cubic yards per week (Refs. 40, 48).

Release Controls: There are no release controls known or documented in the file materials for this unit.

History of Releases: There were no releases from this unit documented in the file materials reviewed. There was no evidence of releases during the VSI.

Conclusions:

Soil/Groundwater: The potential for past and ongoing releases to soil and groundwater is moderate to high because the sludge contains hazardous constituents, the unit is unlined, the underlying soils consist primarily of sand and gravel, the moisture content of the sludge is high, and the unit lacks impervious cover materials.

Surface Water: The potential for past and ongoing releases to surface water is moderate because the exposed sludge could be carried by heavy run-off from the southeast portion of the landfill to nearby Allforks Creek or one of its tributaries.

Air: The potential for past and ongoing releases to air is moderate because the sludge is exposed and relatively fine grained, which could result in particulates being carried from the unit by wind.

Subsurface Gas: The past and ongoing potential for subsurface gas generation is low due to the relatively inert nature and low organic content of the sludge.

Unit Number: 49

Unit Name: Sludge Dozer (Photograph 1-23)

Unit Location: The unit is parked along the south side of the Sludge Landfill (SWMU 48).

Unit Description: The non-RCRA regulated unit consists of a medium-sized, track-mounted bulldozer. The dozer is used to spread sludge that is delivered to the landfill by the Sludge Roll-Off/Hauler (SWMU 36) or Sludge Dump Trucks (SWMU 37). The dozer distributes the deposited sludge over the working face and in lower terraces below the main working face of the landfill (Ref. 40).

Period of Operation: The unit began operation in early 1974, is currently in service and has no anticipated closure date (Ref. 40).

Wastes Managed: The unit manages approximately 150 cubic yards per week of non-hazardous sludge from the Industrial Treatment Plant (Ref. 40).

Release Controls: There are no known or documented release controls for this unit.

History of Releases: There were no releases documented in the file materials reviewed or observed during the VSI.

Conclusions:

Soil/Groundwater: The past and ongoing potential for releases to soil and groundwater is low to moderate for this unit because it operates primarily within the confines of the Sludge Landfill (SWMU 48), and only small amounts of waste are tracked out of the landfill by the dozer.

Surface Water: The past and ongoing potential for releases to surface water is low due to the relative distance to surface waters and small quantity of waste tracked out of the landfill.

Air: The past and ongoing potential for releases to air is low to moderate because the unit can generate dust as it travels over the sludge.

Subsurface Gas: The past and ongoing potential for subsurface gas generation is low due to the small quantity of inorganic wastes removed from the landfill area by this unit.

Unit Number: 50

Unit Name: Former Sludge Spreading Area (No Photograph)

Unit Location: The unit is located in the northeast portion of the LTV property and southwest of the Sludge Landfill (SWMU 48) (Refs. 40, 41).

Unit Description: This non-RCRA regulated unit consisted of approximately 2 acres of farmland in the northeast portion of the site. Sludge was spread on a one-time basis in this area to determine its effect on the crops. The experiment was monitored by faculty from the University of Illinois, and it was determined that the sludge was not beneficial for agricultural uses based on stunted crop growth (Refs. 40, 41).

Period of Operation: The site was utilized during the growing season of 1972 only. The unit is currently out of operation and will not be reopened.

Wastes Managed: An unknown quantity of non-hazardous sludge from the Industrial Treatment Plant was spread in this area on a one-time basis. The sludge contains hazardous constituents as shown in Attachment A (Ref. 40).

Release Controls: There are no known or documented release controls for this unit.

History of Releases: There was no history of releases documented in the file materials reviewed.

Conclusions:

Soil/Groundwater: The past potential for releases to soil is high because sludge was directly applied to the land. The past and ongoing potential for releases to groundwater is low to moderate because the small amount of residual sludge could possibly migrate to the groundwater table.

Surface Water: The past and ongoing potential for releases to surface water is low due to the types of wastes managed and relative distance to surface waters.

Air: The past and ongoing potential for releases to air is moderate because winds could carry the land-applied sludge or residuals.

Subsurface Gas: The past and ongoing potential for subsurface gas generation is low due to the inorganic nature of the sludge and the one-time use of this unit.

Unit Number: 51

Unit Name: Kaplan Waste Oil Drum Area (Photograph 1-18)

Unit Location: The M.S. Kaplan Company leases a parcel of land on the south side of the rail spur in the east-central portion of the LTV property. The Drum Storage Area is located immediately south of the western building at this facility (Ref. 40).

Unit Description: This non-RCRA regulated unit consists of an outdoor drum storage area located immediately south of the western building at the M.S. Kaplan Company facility. Waste crankcase oil from diesel engines is stored in two 30-gallon drums. The drums originally stored gear lube used on the equipment at this facility. Several empty gear lube drums are also stored in this area. The empty drums are first rinsed with an unknown solvent manufactured by Amoco Oil Company prior to storage here. The spent solvent is then placed into the two waste oil drums. The drums are stored directly on the ground surface (Ref. 40).

Period of Operation: M.S. Kaplan Company began operations here in 1967. This unit is currently in service with no anticipated closure date (Refs. 40, 48).

Wastes Managed: This unit manages waste crankcase oils from diesel engines and an unknown, non-flammable solvent manufactured by Amoco Oil Company. Relatively small quantities of wastes are stored in this unit. An employee takes the waste oil and spent solvent mixture to his residence on an as-needed basis, apparently for burning in an oil stove. The empty, rinsed drums are taken home by various employees for use as trash cans and for other household purposes (Ref. 40).

Release Controls: There were no release controls documented in the file materials reviewed or observed during the VSI.

History of Releases: There were no documented releases from this unit in the file materials reviewed. Some oily stains were observed on the ground surface in this area during the VSI (Ref. 40).

Conclusions:

Soil/Groundwater: The past and ongoing potential for releases to soil and groundwater is moderate to high based upon the observed soil stains at this unit.

Surface Water: The past and ongoing potential for releases to surface water is low due to the relative distance to surface waters.

Air: The past and ongoing potential for releases to air is moderate based upon the observed soil stains and potential for vapor emissions during filling of the drums.

Subsurface Gas: The past and ongoing potential for generation of subsurface gas is moderate to high based upon the observed soil stains and nature of the wastes.

Unit Number: 52

Unit Name: Kaplan Burn Area (Photograph 1-19)

Unit Location: The M.S. Kaplan Company facility is in the east-central portion of the LTV property. The Burn Area is located between the rail spur tracks to the northeast of the western building at the Kaplan facility (Ref. 40).

Unit Description: This non-RCRA regulated unit consists of an open burning area between the railroad tracks at the M.S. Kaplan Company facility. Burning has occurred on the ground surface and in steel drums in this area. One steel drum was present in this unit at the time of the VSI. The unit was irregular in shape and covered approximately 15 by 25 feet in overall plan dimensions. Ash, glass, metal and oily stains were observed on the ground surface in this area. Used tires were also temporarily stored in this unit (Ref. 40).

Period of Operation: The start-up date of this unit was unknown by facility representatives. However, M.S. Kaplan Company began operations at this facility in 1967. The unit is currently in operation with no anticipated closure date (Refs. 40, 48).

Wastes Managed: Paper and wood refuse are typically burned on the ground surface or in steel drums in this area. The burning occurs on a periodic, as-needed basis. Several used tires were also stored in this unit. A Kaplan representative indicated that the tires are sent for retreading or are disposed of in a municipal landfill, and are not burned at this unit (Ref. 40).

Release Controls: There are no release controls documented in the file materials reviewed or observed during the VSI.

History of Releases: There were no documented releases from this unit in the file materials reviewed. Oily stains and trash were observed on the ground surface in this unit during the VSI (Ref. 40).

Conclusions:

Soil/Groundwater: The past and ongoing potential for releases to soil and groundwater is moderate to high based upon the ash, debris, and oily stains observed in this unit.

Surface Water: The past and ongoing potential for releases to surface water is low based upon the and relative distance to surface waters.

Air: The past and ongoing potential for releases to air is high due to the open burning that occurs.

Subsurface Gas: The past and ongoing potential for generation of subsurface gas is moderate to high based upon the oily stains observed.

Unit Number: 53

Unit Name: Storm Sewer System (No Photograph)

Unit Description: This non-RCRA regulated unit serves the vicinity of main Steel Plant. It collects roof runoff through a series of downspouts and outdoor pavement and runoff through a system of catch basins. Non-contact cooling water is also discharged directly to this system from the Air Products facility on the LTV property. The downspout pipes and laterals are made of steel, while the other pipes, catch basins, and manholes are constructed of reinforced concrete. Pipe sizes range from 6 inch diameter downspouts to 96 inch diameter interceptor pipes. The Storm Sewer System's untreated discharge combines with the Industrial Treatment Plant's treated effluent prior to entering the Effluent Lagoon (SWMU 45) (Ref. 40).

Period of Operation: The unit began operation in 1976, is currently inservice, and has no anticipated closure date (Ref. 40).

Wastes Managed: The unit receives storm runoff from building roofs and paved areas. Non-contact cooling water from the Air Products facility also discharges to the system. The storm runoff may contain petroleum hydrocarbons due to minor spills and leaks from vehicles at the plant (Ref. 40).

Release Controls: There are no release controls known or documented in the file materials for this unit.

History of Releases: In April, 1977, an estimated 100 gallons of animal or vegetable-based rolling oil entered this system. The oil was subsequently released to the Effluent Lagoon (SWMU 45) and eventually discharged into the Illinois River. Relatively small amounts of petroleum hydrocarbons are expected to enter this system as a result of releases from vehicles at the plant. These wastes are also discharged to the Effluent Lagoon and Illinois River (Refs. 13, 40).

Conclusions:

Soil/Groundwater: The past and ongoing potential for releases to soil and groundwater is low due to concrete and steel pipe construction and the relatively small quantity of wastes managed.

Surface Water: The past and ongoing potential for direct releases to surface water is low due to the relative distance from surface waters. However, the untreated water discharges to the Effluent Lagoon (SWMU 45) and eventually into the Illinois River.

Air: The past and ongoing potential for releases to air is low because the majority of the unit is located below grade and relatively small quantities of volatile wastes are managed.

Subsurface Gas: The past and ongoing potential for subsurface gas generation is low based on the steel and concrete construction and relatively small quantity of organic wastes managed.

4.0 CONCLUSIONS

Unit No.	Unit Name	Facility Operational Dates	Suggested Further Actions
1	Wood and Packaging Wastes Trench	1980-1982	No further action is suggested at this time.
2	Metal Waste Trench	1980-1982	Conduct soil sampling in stained areas to determine if hazardous constituents have been released. If detected, further investigation may be warranted to determine vertical and horizontal extent of contamination.
3 and 4	Railroad Container Storage Areas	1967 to Present	Conduct soil sampling in stained areas to determine if hazardous constituents have been released. If detected, further investigation may be warranted to determine vertical and horizontal extent of contamination.
5	Steel Coil Yard	1967 to Present	Conduct soil sampling throughout the yard to verify that hazardous constituents have been released. If detected, further investigation is warranted to determine horizontal and vertical extent of contamination.
6	Bulk Oil Sump	1967 to Present	Provide chemical analysis results for the oils managed at this unit. If hazardous constituents are present, conduct periodic inspections of the unit to verify its integrity. Soil sampling may be warranted if the unit's integrity is breached.
7	Product Drum Storage Area	1967 to Present	Consider improvement of operating and housekeeping techniques to prevent future releases in this area.

Unit No.	Unit Name	Facility Operational Dates	Suggested Further Actions
8	Waste Pickle Liquor Holding Tank	1967 to Present	No further action is suggested at this time.
9	Pickle Line Fume Scrubber	1967 to Present	No further action is suggested at this time.
10	Oil Mist Eliminator	1967 to Present	No further action is suggested at this time.
11	Hydrochloric Acid Product Tanks	1967 to Present	Consider improvement of operating techniques and provide secondary containment to prevent future releases from this unit.
12	Empty Drum Storage Area	1967 to Present	Consider improvement of operating and housekeeping techniques to avoid future releases at this unit.
13	Empty Drum Storage Area	1967 to Present	No further action is suggested at this time.
14	Empty Drum Storage Area	1967 to Present	No further action is suggested at this time.
15	Shot Blaster Drum Storage Area	1967 to Present	No further action is suggested at this time.
16	Bag House Drum Storage Area	1967 to Present	Consider improvement of operating and housekeeping techniques to prevent future releases at this unit.
17	Shot Blaster Bag House	1967 to Present	No further action is suggested at this time.
18	Dross Tank	1967 to Present	No further action is suggested at this time.

Unit No.	Unit Name	Facility Operational Dates	Suggested Further Actions
19	Car Wash Grease Traps	1967 to Present	Conduct periodic inspections of the unit to verify its integrity. Soil sampling may be warranted if the unit's integrity is breached.
20	Industrial Sewer System	1967 to Present	Conduct periodic inspections of the unit to verify its integrity. Soil sampling may be warranted if the unit's integrity is breached.
21	Municipal Waste Containers	1967 to Present	No further action is suggested at this time.
22-23	River Water Clarifiers Nos. 1 and 2	1967 to Present	No further action is suggested at this time.
24-31	Industrial Wastewater Treatment Units	1967 to Present	Conduct periodic inspections of the units to verify their integrity. Soil sampling may be warranted if the units are breached.
32	Waste Oil Tank	1967 to Present	Conduct soil sampling in stained areas to determine if hazardous constituents have been released. If detected, further investigation may be warranted to determine the horizontal and vertical extent of contamination.
33	Former Waste Oil Incinerator	1972 to 1974 (Unit removed in 1982)	Conduct soil sampling in stained areas to determine if hazardous constituents have been released. If detected, further investigation may be warranted to determine the horizontal and vertical extent of contamination.

Unit No.	Unit Name	Facility Operational Dates	Suggested Further Actions
34	Sludge Filter System	1974 to Present	No further action is suggested at this time.
35	Sludge Bin	1974 to Present	Consider improvement of operating and housekeeping techniques to prevent future releases at this unit.
36	Sludge Roll-Off/Hauler	August, 89 to Present	No further action is suggested at this time.
37	Sludge Dump Trucks	1974 to August 89	No further action is suggested at this time.
38	Sludge Front-End Loader	1974 to August 89	Consider improvement of operating and housekeeping techniques to prevent future releases from this unit.
39	Waste Pickle Liquor Sump and Pipes	1967 to Present	Conduct soil sampling in stained areas to determine if hazardous constituents have been released. If detected, further investigation may be warranted to determine the horizontal and vertical extent of contamination.
40-41	Waste Pickle Liquor Tanks	1967 to Present	Conduct soil sampling in stained areas to determine if hazardous constituents have been released. If detected, further investigation may be warranted to determine the horizontal and vertical extent of contamination. Continue operating the units under RCRA permitting authorities.
42	Deep Well Injection System	1967 to Present	Continue operating the units under UIC permitting authorities.

Unit No.	Unit Name	Facility Operational Dates	Suggested Further Actions
43	Underground Injection Well	1967 to Present	Continue operating the units under UIC permitting authorities.
44	Waste Pickle Liquor Loading Pad	1967 to Present	Conduct periodic inspections of the unit to verify its integrity. Soil sampling may be warranted if the unit's integrity is breached. Consider improvement of operating procedures to prevent future releases (foaming) at this unit.
45	Effluent Lagoon	1967 to Present	Conduct a subsurface investigation to determine if hazardous constituents have been released. If detected, further investigation is warranted to determine vertical and horizontal extent of contamination.
46	Former Sludge Lagoon	1967 to 1974	Conduct an inspection of the unit's plastic liner to verify its integrity. Soil sampling will be warranted if the liner's integrity is breached. If an inspection of the liner is not feasible, conduct subsurface investigation to determine if hazardous constituents have been released. If detected, further investigation is warranted to determine horizontal and vertical extent of contamination.
47	Former Sludge Drying Beds	1972 to 1974	Conduct a subsurface investigation to verify if hazardous constituents have been released. If detected, further investigation is warranted to determine vertical and horizontal extent of contamination.

Unit No.	Unit Name	Facility Operational Dates	Suggested Further Actions
48	Sludge Landfill	1974 to Present	Conduct a subsurface investigation to determine if hazardous constituents have been released. If detected, further investigation is warranted to determine vertical and horizontal extent of contamination.
49	Sludge Dozer	1974 to Present	No further action is suggested at this time.
50	Former Sludge Spreading Area	Summer of 1972	Conduct soil sampling to determine if hazardous constituents have been released. If detected, further investigation is warranted to determine horizontal and vertical extent of contamination.
51	Kaplan Waste Oil Drum Area	1967 to Present	Conduct soil sampling in stained areas to determine if hazardous constitutents have been released. If detected, further investigation may be warranted to determine the horizontal and vertical extent of contamination.
52	Kaplan Burn Area	Unknown to Present	Conduct soil sampling in stained areas to determine if hazardous constitutents have been released. If detected, further investigation may be warranted to determine the horizontal and vertical extent of contamination.
53	Storm Sewer System	1967 to Present	No further action is suggested at this time.

Unit No.	Unit Name	Facility Operational Dates	Suggested Further Actions
AOC A	Underground Storage Tanks (USTs) at Maintenance Garage	Two from 1967 to 1988 One from 1988 to Present	Continue operating units in accordance with current UST regulations. Provide documentation that former tanks were closed in accordance with UST regulations.
AOC B	Diesel Fuel UST	1988 to Present	Continue operating unit in accordance with current UST regulations.
AOC C	Electrical Transformer Area	1988 to Present	Conduct periodic inspections of the unit to verify its integrity. Soil sampling may be warranted if the unit's integrity is breached.
AOC D	Aboveground Farm Fuel Tanks	Unknown to Present	Conduct periodic inspections of the units to verify their integrity and operating status. Soil sampling may be warranted. if a unit's integrity is breached. Proper closure will be required for any abandoned tanks.
AOC E	Kaplan Gasoline UST	Approx. 1980 to Present	Continue operating or permanently close this inactive unit in accordance with current UST regulations.
AOC F	Kaplan Diesel Fuel UST	Approx. 1969 to Present	Continue operating units in accordance with current UST regulations.
AOC G	Kaplan Facility Yard	1967 to Present	Conducting soil sampling of baler pond and stained areas to determine if hazardous constitutents have been released. If detected, further investigation may be warranted to determine the horizontal and vertical extent of contamination.

5.0 REFERENCES

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22. Letter from LTV Steel Company to IEPA, regarding RCRA Part A Application, September 18, 1984.

23. Letter to LTV Steel Company from IEPA, regarding Underground Injection Well, December 31, 1985.

24. Operating permit, issued by IEPA to LTV Steel Company to operate emission source(s) and/or air pollution equipment for the anneal furnace, January 13, 1986.

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50. LTV Steel to IEPA, July 1984, Discharge Monitoring Report, August, 14, 1984.

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52. IEPA to Jones and Laughlin Steel Corporation, regarding Inspection of Deep Well, May 29, 1984.

53. Geology along the Illinois Waterway - A Basis for Environmental Planning, H.B. Willman, Illinois State Geological Survey, circular 478, 1973.

54. USGS Map, 7.5 Minute Series, Depue, Illinois, 1966, Photo-revised 1979.

55. FIRM - Flood Insurance Rate Map, Putnam County, Illinois, by Federal Emergency Management Agency, Nov. 15, 1984.

56. IEPA Observation Report of Jones and Laughlin Steel Corporation, Hennepin Works, July 15, 1985.

57. American Industrial Disposal Systems Inc. to Jones and Laughlin Steel Corporation, Completion of Acid Waste Disposal Well Report, August 18, 1967.

58. Ken E. Davis Associates to LTV Steel Co., Workover Report for Liner and Packer Installation, Hennepin Works, January 23, 1987.

59. Telephone conversation between Illinois Fire Marshall's office and G. Terdich (ATK), August 28, 1989.

60. Telephone conversation between Putnam County Clerk and L. Axe (ATK), August 29, 1989.

61. Telephone conversation between Bureau County Clerk and L. Axe (ATK), August 29, 1989.

62. Soil Boring Logs 25 through 30, Hennepin Works, 1965, received August 18, 1989.

ATTACHMENT A

LTV ANALYTICAL RESULTS
AND
WELL CONSTRUCTION DIAGRAMS

DESCRIPTION OF INFORMATION IN ATTACHMENT A

Page	Description
A-2	Analysis of Waste Oil from Industrial Treatment Plant
A-3 through A-8	Analysis of Sludge from Industrial Treatment Plant
A-9 through A-12	Analyses of Effluent from Industrial Treatment Plant
A-13 through A-15	Analyses of Deep Well Injection Fluid
A-16	Underground Injection Well Construction Diagram - Before Workover
A-17	Underground Injection Well Construction Diagram - After Workover

ARRO Laboratory, Inc.
Est. 1965
P.O. Box 686 Caton Farm Road
Joliet, Illinois 60434

Phone: (815) 727-5436
TWX-910-633-0599
FAX 815-740-3238

Attention of: MR. P. N. SCHLINGMAN
Company LTV STEEL COMPANY
Address PO BOX 325
City/State/Zip HENNEPIN, IL 61327

P.O.Number
Date Received 12/28/88
Date Completed 01/24/89

cc: Mr. Jack Ciucci

ARRO NO.	SAMPLE DESCRIPTION	DATE
124113	WASTE OIL	12/23/88

EPA SOLID WASTE REQUIREMENTS

ANALYSIS	AS RECEIVED ug/gm	EXTRACTION PROCEDURE EXTRACT, mg/l
ARSENIC	26	
CADMIUM	<2	
CHROMIUM, TOTAL	50	
LEAD	12	
FLASH POINT (CLOSED CUP)	>100C >212F	
TOTAL ORGANIC HALIDES	144	
PCB	<5.	

RESULTS IN mg/l UNLESS OTHERWISE INDICATED

* SEE ATTACHMENT FOR COMMENTS

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE, COMPLETE AND ACCURATE.

APPROVED BY..... DATE ...02/07/89.....

Charles Mackey, Supervisor
Environmental Services

Terese M. Laciak
Laboratory Manager

TESTING IS IN ACCORDANCE WITH PROCEDURES OUTLINED IN THE NEWEST EDITIONS OF:
STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER
ASTM STANDARDS, PART 31, 'WATER, ATMOSPHERIC ANALYSIS'
METHODS FOR CHEMICAL ANALYSIS OF WATER WASTES, EPA WATER QUALITY OFFICE

(Ref. 40)

ARRO Laboratory, Inc.
Est. 1965
P.O. Box 686 Caton Farm Road
Joliet, Illinois 60434
Phone: (815) 727-5436
TWX-910-633-0599
FAX 815-740-3238

Attention of: MR. P. N. SCHLINGMAN
Company LTV STEEL COMPANY
Address PO BOX 325
City/State/Zip HENNEPIN, IL 61327

P.O.Number
Date Received 12/28/88
Date Completed 02/01/89

cc: MR. JACK CIUCCI

ARRO NO.	SAMPLE DESCRIPTION	DATE
124112	WATER TREATMENT PLANT SLUDGE	12/23/88

EPA SOLID WASTE REQUIREMENTS

ANALYSIS	AS RECEIVED ug/gm	EXTRACTION PROCEDURE EXTRACT, mg/l
ARSENIC	13	<0.1
CADMIUM	1	<1
CHROMIUM, TOTAL	180	<1
CYANIDE, TOTAL	2.191	
LEAD	16	<1
MERCURY, ppb	50	2
pH	7.2	
PHENOLS	103.27	
SOLIDS, TOTAL	65.71%	
ZINC	0.11%	<0.05
BARIUM	20	<1
CYANIDE REACTIVE	0.126	
SELENIUM	<0.7	<0.1
SILVER	4	4
SULFIDE (AS S)	123.81	
FLASH POINT (CLOSED CUP)	>100 C >212 F	
PAINT FILTER %FREE LIQUID	PASS	
SPECIFIC WEIGHT, g/ml	1.26	
THALLIUM	22.	
SULFIDE REACTIVE	119.33	
THALLIUM		<1
CHROMIUM HEX		<0.01

RESULTS IN mg/l UNLESS OTHERWISE INDICATED

* SEE ATTACHMENT FOR COMMENTS

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE, COMPLETE AND ACCURATE.

APPROVED BY..... DATE ...02/09/89.....

Charles Mackey, Supervisor
Environmental Services

Terese M. Laciak
Laboratory Manager

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(Ref. 40)

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FAX 815-740-3238

WASTE INFORMATION

SAMPLE NUMBER: 124112

COLLECTION PROCEDURE:

DATE OF COLLECTION:

TEMPERATURE CHANGES:

SOLIDS CONTENT:

GENERAL PHYSICAL DESCRIPTION:

COLOR: BLACK

ODOR: OIL, SLUDGE

CONSISTENCY: DAMP SLUDGE, CLAY

SAMPLE TREATMENT BEFORE EXTRACTION: CONED & QUARTERED

EXTRACTION DATA AND COMMENTS:

INITIAL pH: 8.6

FINAL pH: 7.6

AMOUNT OF EXTRACTION FLUID #1 ADDED TO ADJUST SOLUTION TO pH 5: 100

TOTAL EXTRACTION FLUID #1 ADDED DURING THE

24 HOURS EXTRACTION PERIOD: 200, 100

COLOR: COLORLESS

CONDUCTIVITY:

REMARKS: 100g OF SAMPLE LEACHED WITH 1600mls DISTILLED WATER & 4 00mls OF EXTRACTION FLUID #1. FINAL VOLUME 2000mls.

GLASS CONTAINERS: YES

OTHER:

MIXING AND QUARTERING:

(Ref. 40)

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LTV STEEL COMPANY
HENNEPIN, ILLINOIS
WATER TREATMENT PLANT SLUDGE
ARRO NO. 124112

TCLP VOLATILES

PARAMETER	PPM
BENZENE	<0.001
TOLUENE	<0.001
ETHYL BENZENE	<0.001
CARBONTETRACHLORIDE	<0.001
CHLOROBENZENE	<0.001
1,2 DICHLOROETHANE	<0.001
1,1,1 TRICHLOROETHANE	0.115
1,1 DICHLOROETHANE	<0.001
1,1 DICHLOROETHYLENE	<0.001
1,1,2 TRICHLOROETHANE	<0.001
1,1,2,2 TETRACHLOROETHANE	<0.001
CHLOROETHANE	<0.001
2 CHLOROETHYL VINYL ETHER	<0.001
CHLOROFORM	<0.001
1,2 DICHLOROPROPANE	<0.001
1,3 DICHLOROPROPENE	<0.001
METHYLENE CHLORIDE	<0.001
METHYL CHLORIDE	<0.001
METHYL BROMIDE	<0.001
BROMOFORM	<0.001
DICHLOROBROMOMETHANE	<0.001
TRICHLOROFLUOROMETHANE	<0.001
CHLORODIBROMOMETHANE	<0.001
DICHLORODIFLUOROMETHANE	<0.001
TETRACHLOROETHYLENE	<0.001
TRICHLOROETHYLENE	0.150
VINYL CHLORIDE	<0.001
1,2 t DICHLOROETHYLENE	0.043
bis(CHLOROMETHYL)ETHER	<0.001

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LTV STEEL COMPANY
HENNEPIN, ILLINOIS
WATER TREATMENT PLANT SLUDGE
ARRO NO. 124112

ACID EXTRACTABLES

PARAMETER	PPM
PHENOL	2.91
2 NITROPHENOL	<0.02
4 NITROPHENOL	<0.02
2,4 DINITROPHENOL	<0.02
4,6 DINITRO O CRESOL	<0.02
PENTACHLOROPHENOL	<0.02
p-CHLORO-m-CRESOL	<0.02
2 CHLOROPHENOL	<0.02
2,4 DICHLOROPHENOL	<0.02
2,4,6 TRICHLOROPHENOL	<0.02
2,4 DIMETHYL PHENOL	<0.02

(Ref. 40)

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LTV STEEL COMPANY
HENNEPIN, ILLINOIS
WATER TREATMENT PLANT SLUDGE
ARRO NO. 124112

BASE NEUTRALS

PARAMETER	PPM
1,2 DICHLOROBENZENE	<0.02
1,3 DICHLOROBENZENE	<0.02
1,4 DICHLOROBENZENE	<0.02
HEXACHLOROETHANE	<0.02
HEXACHLOROBUTADIENE	<0.02
HEXACHLOROBENZENE	<0.02
1,2,4 TRICHLOROBENZENE	<0.02
bis(2-CHLOROETHOXY)METHANE	<0.02
NAPHTHALENE	<0.02
2 CHLORONAPHTHALENE	<0.02
ISOPHORONE	<0.02
NITROBENZENE	<0.02
2,4 DINITROTOLUENE	<0.02
2,6 DINITROTOLUENE	<0.02
4 BROMOPHENYL PHENYL ETHER	<0.02
bis(2-ETHYLHEXYL)PHTHALATE	<0.02
DI n OCTYL PHTHALATE	<0.02
DIMETHYLPHTHALATE	<0.02
DIETHYLPHTHALATE	0.02
DI n BUTYL PHTHALATE	0.43
FLUORENE	<0.02
FLUORANTHENE	<0.02
CHRYSENE	<0.02
PYRENE	<0.02
PHENANTHRENE	<0.02
ANTHRACENE	<0.02
BENZO(a)ANTHRACENE	<0.02
BENZO(b)FLUORANTHENE	<0.02
BENZO(k)FLUORANTHENE	<0.02
BENZO(a)PYRENE	<0.02
INDENO(1,2,3-c,d)PYRENE	<0.02
DIBENZO(a,h)ANTHRACENE	<0.02
BENZO(g,h,i)PERYLENE	<0.02

(Ref. 40)

TABLE CONTINUED ON NEXT PAGE

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TABLE CONTINUED

4 CHLOROPHENYL PHENYL ETHER	<0.02
3,3' DICHLOROBENZIDINE	<0.02
BENZIDINE	<0.02
bis(2-CHLOROETHYL)ETHER	<0.02
HEXACHLOROCYCLOPENTADIENE	<0.02
N-NITROSODIPHENYLAMINE	<0.02
ACENAPHTHYLENE	<0.02
ACENAPHTHENE	<0.02
BUTYL BENZYL PHTHALATE	<0.02
N-NITROSODIMETHYL AMINE	<0.02
N-NITROSODI-N-PROPYL AMINE	<0.02
bis(2 CHLOROISOPROPYL)ETHER	<0.02

(Ref. 40)

USEPA-V
S&AD, ILDO
11-26,27-74
APPENDIX 1

DATA TABULATION
JONES AND LAUGHLIN STEEL
HENNEPIN, ILLINOIS
SURVEY DATE: NOVEMBER 26-27, 1974
LABORATORY ANALYSES
(Results in mg/l Unless Otherwise Indicated)

ILDO Sample Number	75-0682	75-0669	75-0665	75-0676	75-0661		
Parameter	River Inlet	002 Outfall	Outlet Water Treatment	Outlet WWTP	001 Lagoon Inlet	NPDES Permit Limits	Ill. Effluent Standard
Flow MGD	5.9	0.012	5.9	4.8	5.5EST		
Temperature (C°)	6.5	6.0	6.0	21	17	32.2	
pH (pH Units)Min/Max	8.2	7.4	6.8/7.0	7.6/8.4	7.6/8.4	6/9.5	5/10
pH(Lab)(pH Units)	7.8	7.8	6.8	8.8	7.6		
Ammonia as N			1.37	0.94	0.96	No Incr.	NS
Nitrate+Nitrite as N			4.15	3.66	3.86		NS
Phosphorus as P			0.884	0.057	0.32	No Incr.	NS
Oil & Grease ***			5;<5	9;8;6	8;6;8	11.0	15
Oil & Grease Kg/day			116	139	148	155	NS
Total Iron			0.34	2.4	1.3	2.1	2
Total Iron Kg/day			7.6	43.	27*	25	NS
Diss. Iron			0.130	0.062	<0.003	--	.5
Susp. Solids	420	880**	16	7	15	106	25
Susp. Solids Kg/day	7,950	40	333	128	313	346	NS
Diss. Solids			510	800	670	--750+Backgd	
Chloride			54	220	169	--	NS
Total Fluoride			0.52	0.50	0.50	--	2.5
" Magnesium			29	22	25	--	NS
Phenol			<0.002	0.011	0.003	--	.3
Cyanide			0.006	0.007	0.011	--	0.025
Total Aluminum (ug/l)			1,100	130	390	--	NS
" Cadmium "			<10	<10	<10	--	150
" Chromium "			<15	<15	<15	--	1,000
" Copper "			<10	22	18	--	1,000
" Lead "			<30	35	34	--	100
" Manganese "			53	37	42	--	1,000
" Mercury "			<0.2	<0.2	<0.2	--	0.5
" Nickel "			30	60	40	--	1,000
" Tin "			<500	<500	<500	--	NS
" Zinc "			170	40	89	--	1,000

* Exceed NPDES Permit
** Exceed State Standards
*** Grab Samples taken once per shift

(Ref. 49)

DISCHARGE MONITORING REPORT

(Ref. 50)

Jones & Laughlin Steel Corp.
Box 325, Hennepin, IL 61327
815-925-2133

COMMENTS

Region 1

RECEIVED
AUG 16 1984
IEPA-DLPC

IL (ST) | 0002631 (PERMIT NUMBER) | 001 (DIS) | 3312 (SIC) | 41-16-05 (LATITUDE) | 89-20-32 (LONGITUDE)

REPORTING PERIOD FROM 84 07 01 (YEAR MO DAY) TO 84 07 31 (YEAR MO DAY)

PARAMETER		QUANTITY MINIMUM	QUANTITY AVERAGE	QUANTITY MAXIMUM	UNITS	NO EX	CONCENTRATION MINIMUM	CONCENTRATION AVERAGE	CONCENTRATION MAXIMUM	UNITS	NO EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
FLOW	REPORTED		3.0	4.14	MGD							3/wk	cont.
	PERMIT CONDITION		-	-								3/WK	Cont.
00530 TOTAL SUSPENDED SOLIDS	REPORTED		79.59	157.2	Kg/d	0		7	12	Mg/l	0	3/wk	24 hr. comp.
	PERMIT CONDITION		259.6	600.8				15	30			3/WK	24 Hr. Comp.
00550 OIL & GREASE	REPORTED		44.8	76.9	Kg/d	0		3.94	6.33	Mg/l	0	3/wk	24 hr Math comp.
	PERMIT CONDITION		86.6	257.0				15	30			3/WK	24 Hr. Math Comp.
01051 TOTAL LEAD	REPORTED		1.02	1.26	Kg/d	0		0.09	<0.10	Mg/l	0	3/wk.	24 hr. comp.
	PERMIT CONDITION		1.3	3.9				0.2	0.4			3/WK	24 Hr. Comp.
01092 TOTAL ZINC	REPORTED		0.68	0.89	Kg/d	0		0.06	0.08	Mg/l	0	3/wk.	24 hr. comp.
	PERMIT CONDITION		1.68	5.20				1.0	2.0			3/WK	24 Hr. Comp.
01045 TOTAL IRON	REPORTED		4.54	7.64	Kg/d	0		0.40	0.62	Mg/l	0	3/wk.	24 hr. comp.
	PERMIT CONDITION		37.87	143.1				2.0	4.0			3/WK	24 Hr. Comp.
01032 CHROMIUM, HEX	REPORTED							<0.02	<0.02	Mg/l	0	1/mo.	24 hr. comp.
	PERMIT CONDITION							0.1	0.3			1/MO	24 Hr. Comp.
00403 pH	REPORTED	7.1		7.5		0						3/wk.	Grab
	PERMIT CONDITION	6.0		9.0								3/WK	Grab

NAME OF PRINCIPAL EXECUTIVE OFFICER: Hoag, D. H. (LAST FIRST MI)

TITLE OF THE OFFICER: President (TITLE)

DATE: 08 14 84 (YEAR MO DAY)

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

SIGNATURE OF PRINCIPLE EXECUTIVE OFFICER OR AUTHORIZED AGENT

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1042. Disclosure of this information is required. Failure to do so may result in a civil penalty up to $10,000.00 per day of violation or a fine up to $25,000.00 per day of violation and imprison-

IL 532-0092
WPC-242 11/79

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS

DISCHARGE MONITORING REPORT

(Ref. 50)

Jones & Laughlin Steel Corp.
Box 325, Hennepin, IL 61327
815-925-2133

Region 1

COMMENTS

RECEIVED
AUG 16 1984
IEPA-DLPC

ST	PERMIT NUMBER	DIS	SIC	LATITUDE	LONGITUDE
IL	0002631	001A	3312	41-16-05	89-20-32

REPORTING PERIOD FROM 84 07 01 (YEAR MO DAY) TO 84 07 31 (YEAR MO DAY)

PARAMETER		QUANTITY MINIMUM	QUANTITY AVERAGE	QUANTITY MAXIMUM	UNITS	NO EX	CONCENTRATION MINIMUM	CONCENTRATION AVERAGE	CONCENTRATION MAXIMUM	UNITS	NO EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
FLOW	REPORTED		4.13		MGD							1/wk.	Cont.
	PERMIT CONDITION		–									1/WK	Cont.
00010 TEMPERATURE	REPORTED			90	°F.	0						1/wk.	Grab
	PERMIT CONDITION			*								1/WK	Grab
00403 pH	REPORTED	7.5		8.4		0						1/wk.	Grab
	PERMIT CONDITION	6		9								1/WK	Grab
	REPORTED												
	PERMIT CONDITION												
	REPORTED	* – 60°F. Dec. thru Mar.											
	PERMIT CONDITION	– 90°F. Apr. thru Nov.											
	REPORTED												
	PERMIT CONDITION												
	REPORTED												
	PERMIT CONDITION												
	REPORTED												
	PERMIT CONDITION												

NAME OF PRINCIPAL EXECUTIVE OFFICER	TITLE OF PRINCIPAL EXECUTIVE OFFICER	DATE
Hoag, D. H.	President	84 08 14 (YEAR MO DAY)

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

SIGNATURE OF PRINCIPLE EXECUTIVE OFFICER OR AUTHORIZED AGENT

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1042. Disclosure of this information

IL 532-0092

A-11

DISCHARGE MONITORING REPORT

(Ref. 50)

Jones & Laughlin Steel Corp.
Box 325, Hennepin, IL 61327
815-925-2133

Region 1

COMMENTS

RECEIVED
AUG 16 1984
IEPA-DLPC

IL	0002631	002	3312	41-16-05	89-20-32
	PERMIT NUMBER	DIS	SIC	LATITUDE	LONGITUDE

REPORTING PERIOD FROM 84 07 01 (YEAR MO DAY) TO 84 07 31 (YEAR MO DAY)

PARAMETER		QUANTITY MINIMUM	QUANTITY AVERAGE	QUANTITY MAXIMUM	UNITS	NO EX	CONCENTRATION MINIMUM	CONCENTRATION AVERAGE	CONCENTRATION MAXIMUM	UNITS	NO EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
FLOW	REPORTED		.0093		MGD							1/wk.	Single Reading
	PERMIT CONDITION		-									1/WK	Single Reading
	REPORTED												
	PERMIT CONDITION												
	REPORTED												
	PERMIT CONDITION												
	REPORTED												
	PERMIT CONDITION												
	REPORTED												
	PERMIT CONDITION												
	REPORTED												
	PERMIT CONDITION												

NAME OF PRINCIPAL EXECUTIVE OFFICER	TITLE OF THE OFFICER	DATE (YEAR MO DAY)
Hoag, D. H.	President	84 08 14

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

SIGNATURE OF PRINCIPLE EXECUTIVE OFFICER OR AUTHORIZED AGENT

PAGE 3 OF 3

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1042. Disclosure of this information [illegible] Failure to do so may result in a civil penalty up to $10,000.00 per

IL 532-0092
IPC-242

A-12

TABLE 2.0-1
TYPICAL ANALYSES OF COMBINED WPL AND WASTE CHROMIC ACID
HENNEPIN WORKS, ILLINOIS

	mg/L
Chromium (Cr)	13.7
Copper (Cu)	24.9
Lead (Pb)	0.4
Nickel (Ni)	19.6
Zinc (Zn)	2.8
Iron (Fe)	150,000
Chlorides (Cl)	250,000
Hydrochloric Acid, %	2.5
Specific Gravity	1.23

(Ref. 41)

JONES AND LAUGHLIN STEEL CORPORATION

HENNEPIN, ILLINOIS 61327

DEEP WELL INJECTION ANALYSES

Permit No.: 0002631

Discharge: 003

Reporting Period 07/01/84 - 07/31/84

WEEK	07/01 - 07/07	07/08 - 07/14	07/15 - 07/21	07/22 - 07/28
Dissolved Solids (mg/l)	357,068	375,920	408,308	380,968
Total Iron (mg/l)	148,561	150,795	155,263	153,029
Hex Chrome(mg/l)	0.05	0.04	0.04	0.10
% Acid	1.68	1.83	1.97	2.19
pH (units)	0	0	0	0
Chloride (mg/l)	235,126	240,698	250,704	248,261
Spec. Gravity	1.2664	1.2695	1.2785	1.2686
Viscosity (SSU)	114	140	141	138
Sample Temperature	84	77	77	77
Collect Temperature	96	98	104	94

REMARKS:

SIGNED

(Ref. 50)

RECEIVED
AUG 16 1984
IEPA-DLPC

LTV STEEL COMPANY
HENNEPIN, ILLINOIS 61327
DEEP WELL INJECTION ANALYSES

Permit Nos.: UIC-004-W1-JL
IEPA #1558010006 Putnam County
USEPA #ILD000781591

Reporting Period: 04/01/89 - 04/30/89

WEEK		3/26 - 4/1	4/2 - 4/8	4/9 - 4/15	4/16 - 4/22	4/23 - 4/29
	Dissolved Solids (mg/l)	286,424	269,876	271,120	233,980	307,280
	Total Iron (mg/l)	117,285	112,817	101,647	104,998	121,753
W	Hex Chrome (mg/l)	0.01	<0.01	0.02	0.02	0.01
E	% Acid	1.53	1.75	1.70	3.29	2.77
E	pH (units)	0	0	0	0	0
K	Chloride (mg/l)	179,193	177,586	157,614	181,988	203,795
L	Specific Gravity	1.21	1.22	1.19	1.20	1.23
Y	Viscosity (SSU)	185	170	175	163	193
	Sample Temperature (degree F.)	73	74	72	77	74
	Collect Temperature (degree F.)	91	87	87	95	97
	Sulfate (mg/l)	9	17	16	8	1
	Nickel (mg/l)	11	11	7	7	8.5
	Zinc (mg/l)	6.5	8	7	7	7.6

M	Arsenic (mg/l)	<0.1
O	Cadmium (mg/l)	<0.6
N	Silver (mg/l)	0.9
T	Selenium (mg/l)	<0.1
H	Phenols (mg/l)	<0.002
L	Total Organic Content (TOC)	116.5
Y	Total Organic Halogen (TOX)%	*14.14%

Organic Scan: W/E 4/22/89 Due 7/15/89

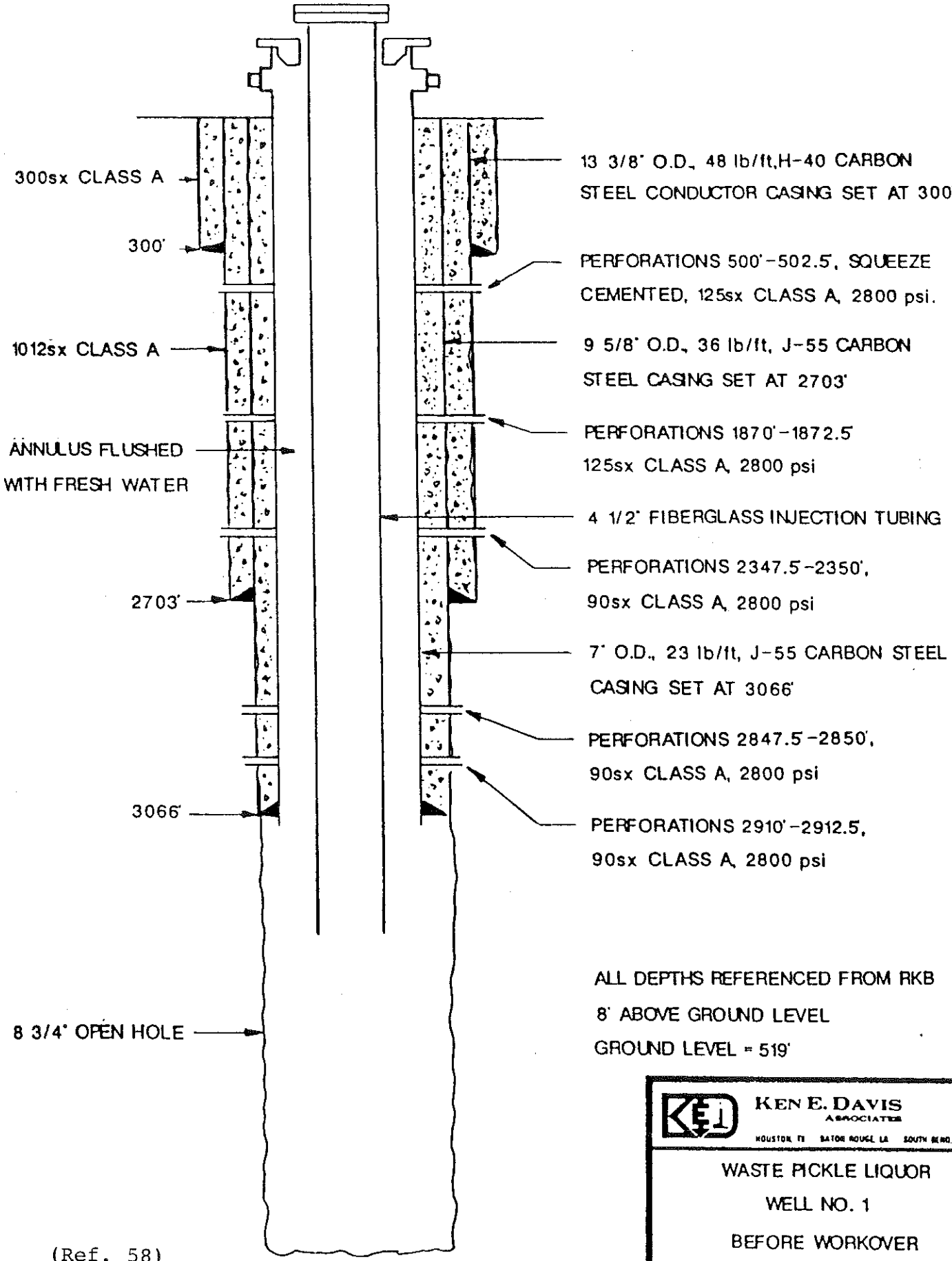
Q	1. Volatiles (Organic) PPM	
R	2. Acid Extractbles PPM	
T	3. Base & Neutrals PPM	
L	4. PCB's & Pesticides PPM	
Y	5. Herbicides PPM	

*Appears All Inorganic (TOX%) Only

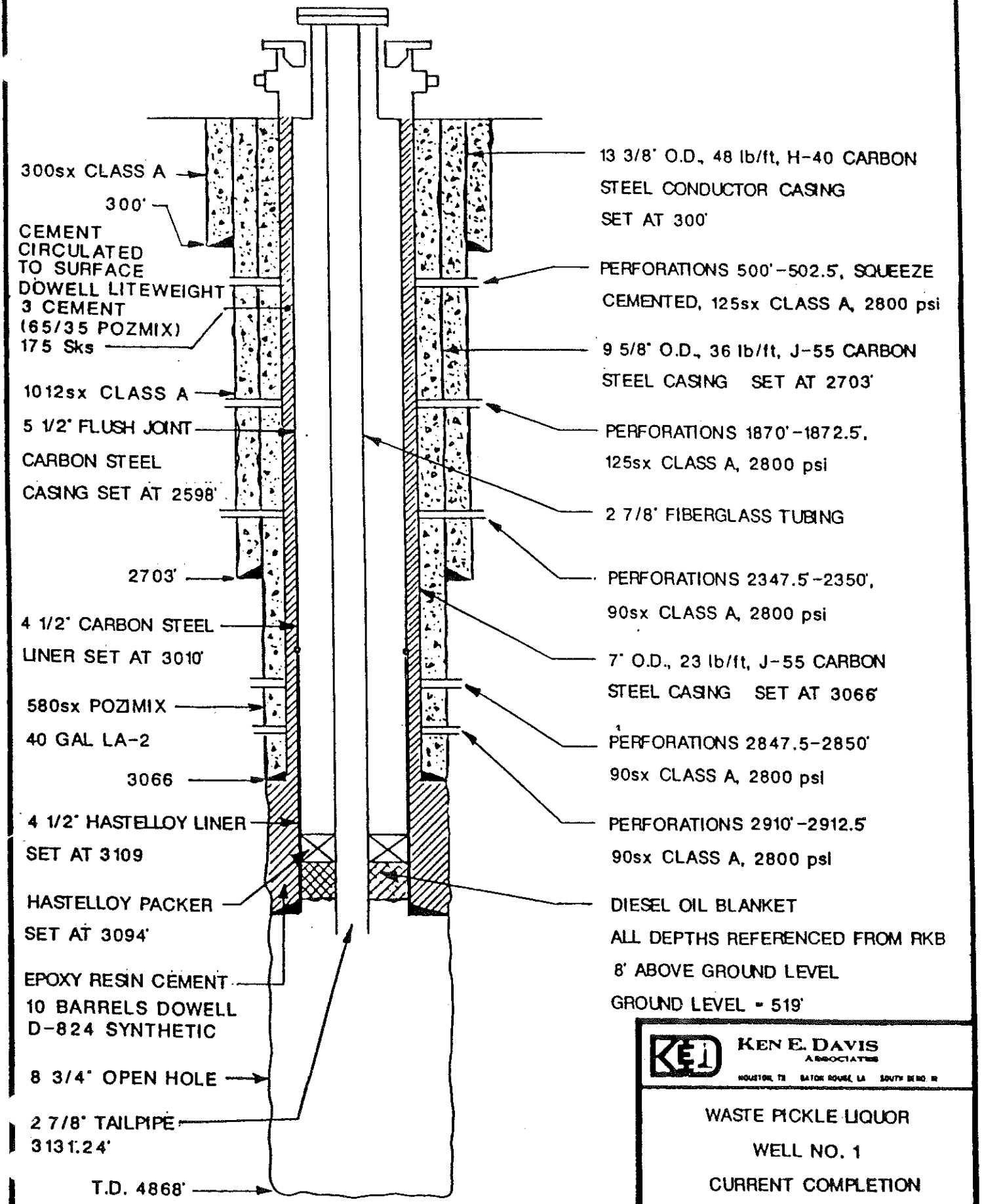
Signed R. Schlingman

REMARKS:

(Ref. 51)


300sx CLASS A
300'
1012sx CLASS A
ANNULUS FLUSHED
WITH FRESH WATER
2703'
3066'
8 3/4" OPEN HOLE
T.D. 4868'
13 3/8" O.D., 48 lb/ft, H-40 CARBON
STEEL CONDUCTOR CASING SET AT 300'
PERFORATIONS 500'-502.5', SQUEEZE
CEMENTED, 125sx CLASS A, 2800 psi.
9 5/8" O.D., 36 lb/ft, J-55 CARBON
STEEL CASING SET AT 2703'
PERFORATIONS 1870'-1872.5'
125sx CLASS A, 2800 psi
4 1/2" FIBERGLASS INJECTION TUBING
PERFORATIONS 2347.5'-2350',
90sx CLASS A, 2800 psi
7" O.D., 23 lb/ft, J-55 CARBON STEEL
CASING SET AT 3066'
PERFORATIONS 2847.5'-2850',
90sx CLASS A, 2800 psi
PERFORATIONS 2910'-2912.5',
90sx CLASS A, 2800 psi
ALL DEPTHS REFERENCED FROM RKB
8' ABOVE GROUND LEVEL
GROUND LEVEL = 519'
KEN E. DAVIS
ASSOCIATES
HOUSTON, TX BATON ROUGE, LA SOUTH BEND, IN
WASTE PICKLE LIQUOR
WELL NO. 1
BEFORE WORKOVER
DATE 12-30-86
CHECKED BY
JOB NO 30-814
DRAWN BY GL
APPROVED BY
DWG NO SK-2

(Ref. 58)


300sx CLASS A
300'
CEMENT CIRCULATED TO SURFACE
DOWELL LITEWEIGHT 3 CEMENT (65/35 POZMIX) 175 Sks
1012sx CLASS A
5 1/2" FLUSH JOINT CARBON STEEL CASING SET AT 2598'
2703'
4 1/2" CARBON STEEL LINER SET AT 3010'
580sx POZMIX
40 GAL LA-2
3066
4 1/2" HASTELLOY LINER SET AT 3109
HASTELLOY PACKER SET AT 3094'
EPOXY RESIN CEMENT
10 BARRELS DOWELL D-824 SYNTHETIC
8 3/4" OPEN HOLE
2 7/8" TAILPIPE 3131.24'
T.D. 4868'
13 3/8" O.D., 48 lb/ft, H-40 CARBON STEEL CONDUCTOR CASING SET AT 300'
PERFORATIONS 500'-502.5', SQUEEZE CEMENTED, 125sx CLASS A, 2800 psi
9 5/8" O.D., 36 lb/ft, J-55 CARBON STEEL CASING SET AT 2703'
PERFORATIONS 1870'-1872.5', 125sx CLASS A, 2800 psi
2 7/8" FIBERGLASS TUBING
PERFORATIONS 2347.5'-2350', 90sx CLASS A, 2800 psi
7" O.D., 23 lb/ft, J-55 CARBON STEEL CASING SET AT 3066'
PERFORATIONS 2847.5-2850' 90sx CLASS A, 2800 psi
PERFORATIONS 2910'-2912.5' 90sx CLASS A, 2800 psi
DIESEL OIL BLANKET
ALL DEPTHS REFERENCED FROM RKB
8' ABOVE GROUND LEVEL
GROUND LEVEL = 519'
KEDA
KEN E. DAVIS ASSOCIATES
HOUSTON, TX BATON ROUGE, LA SOUTH BEND, IN
WASTE PICKLE LIQUOR
WELL NO. 1
CURRENT COMPLETION
DATE 12-30-84
CHECKED BY
JOB NO 30-814
DRAWN BY GL
APPROVED BY
DWG NO SK-3

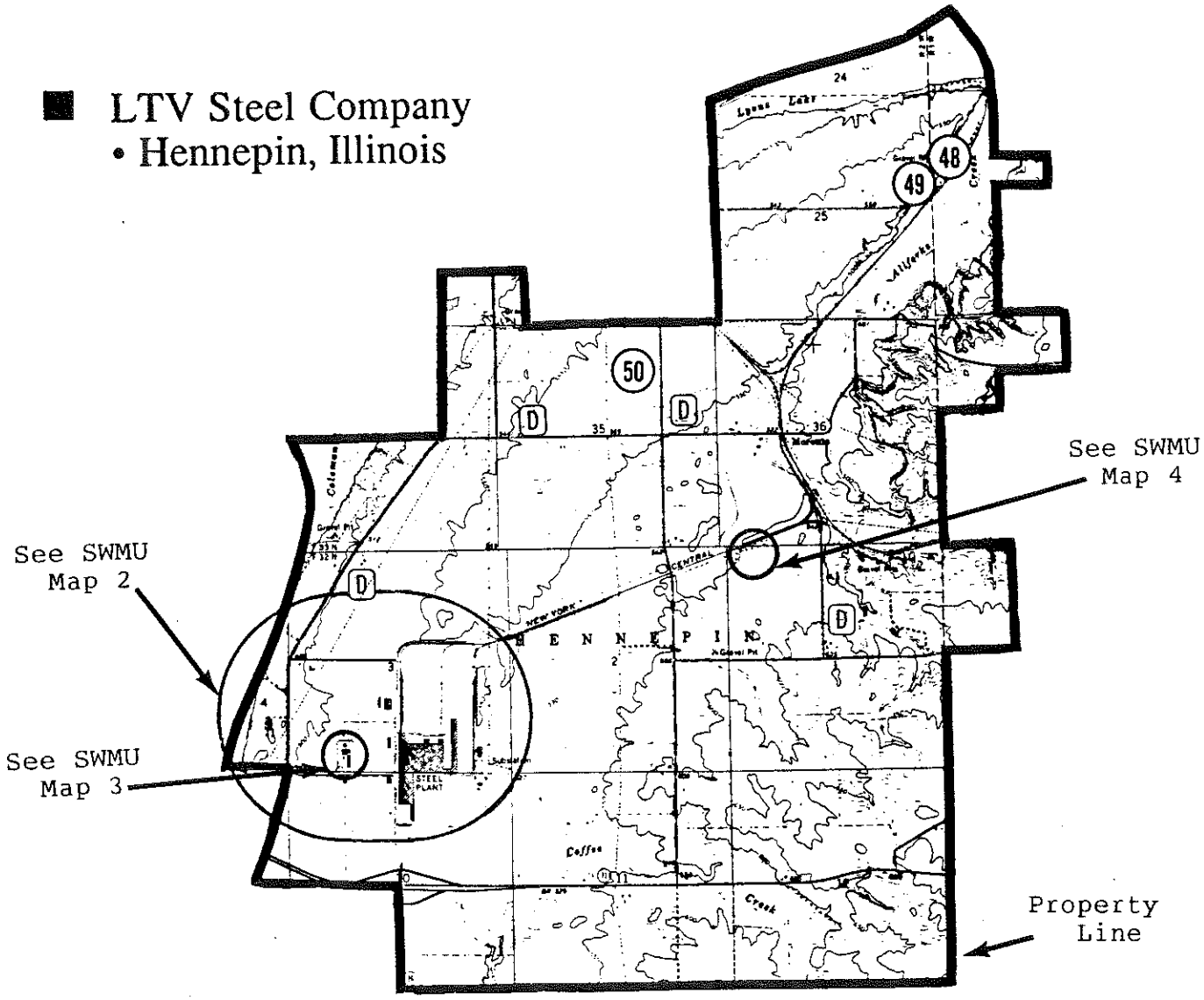
(Ref. 58)

ATTACHMENT B

SWMU LOCATION MAPS

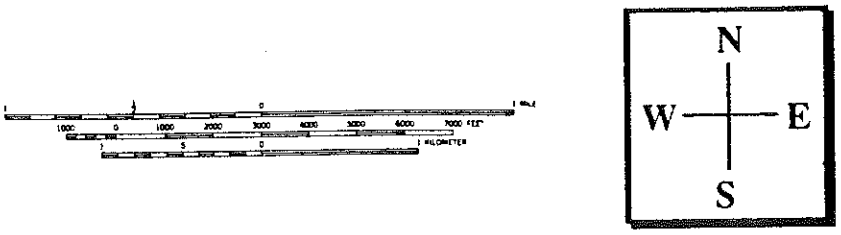
SWMU Location Map 1

- LTV Steel Company
  - Hennepin, Illinois



○ SWMUs

▢ Areas of concern

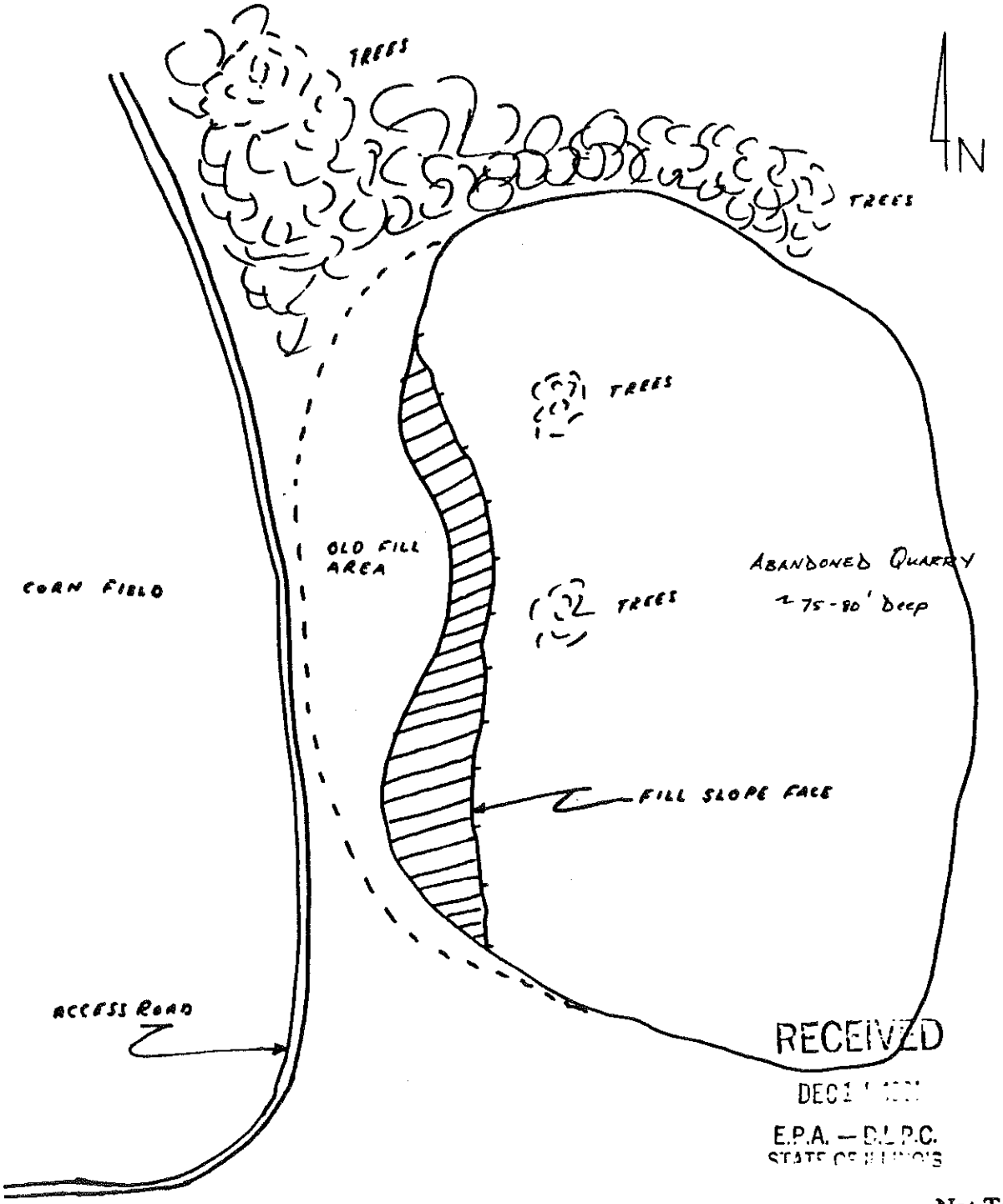


Reference 54

3073/04 mm

Sludge Landfill Sketch (SWMU 48)

- LTV Steel Company • Hennepin, Illinois



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STATE OF ILLINOIS

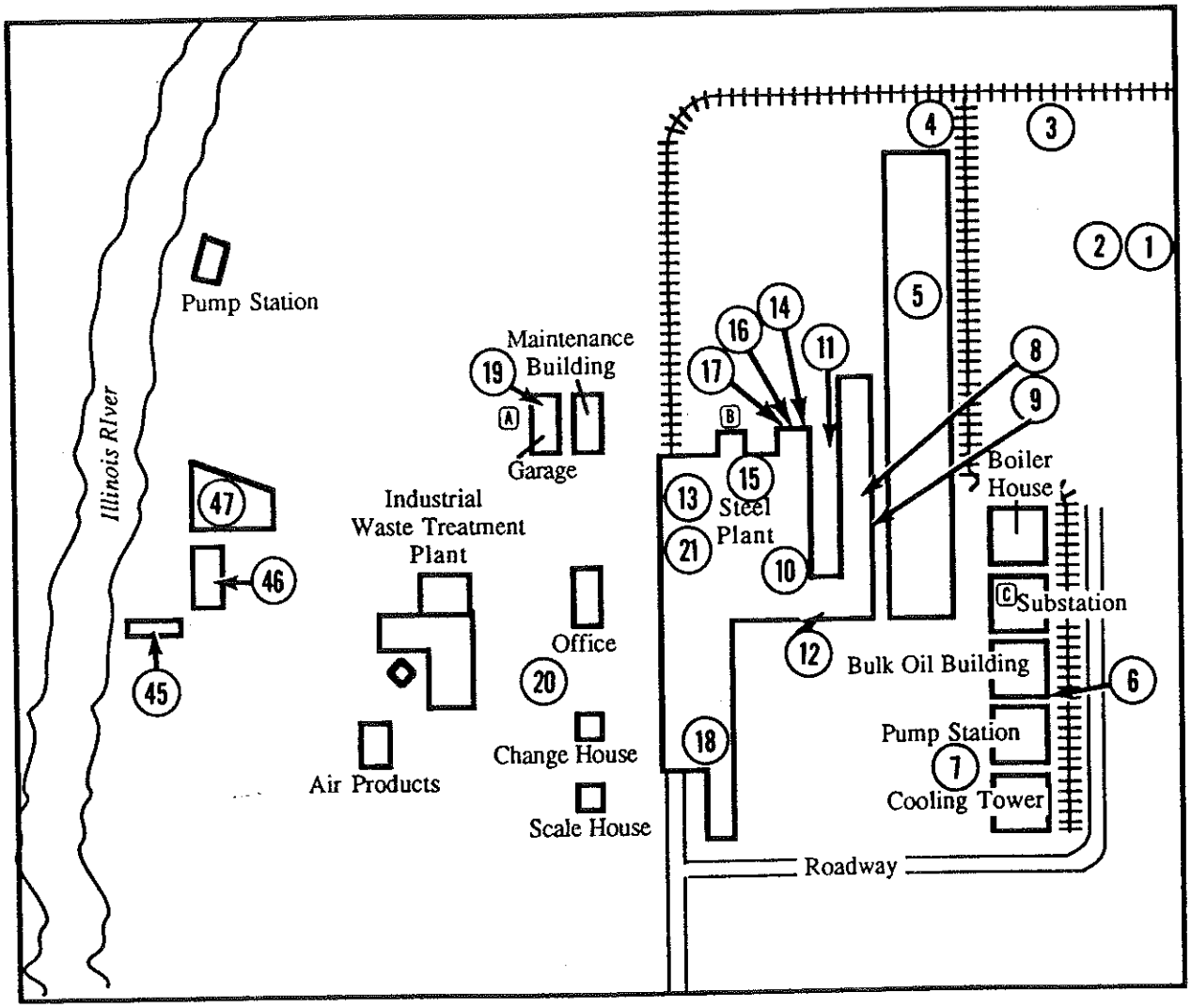
Not To Scale

(Reference 41)

ATK7/3134/04 mkt

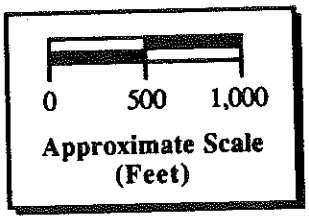
SWMU Location Map 2

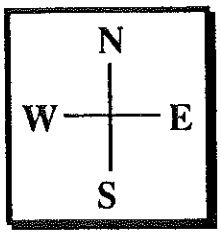
■ LTV Steel Company
– Hennepin, Illinois



○ SWMUs

▢ Areas of concern

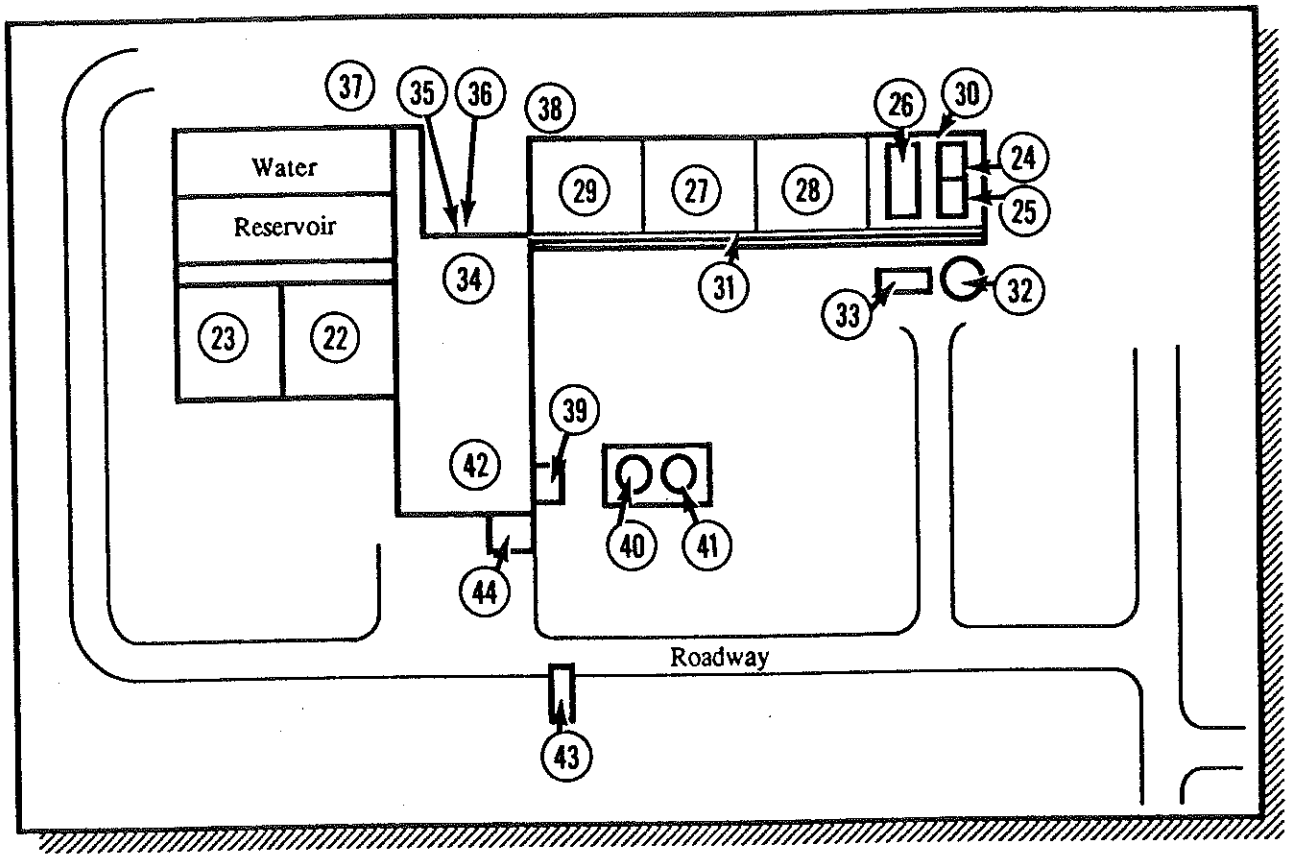




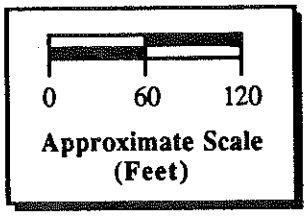
3073/05 ck

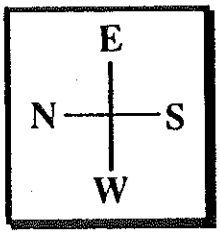
SWMU Location Map 3

- LTV Steel Company
  - Industrial Waste Treatment Plant
    - Hennepin, Illinois



○ SWMUs

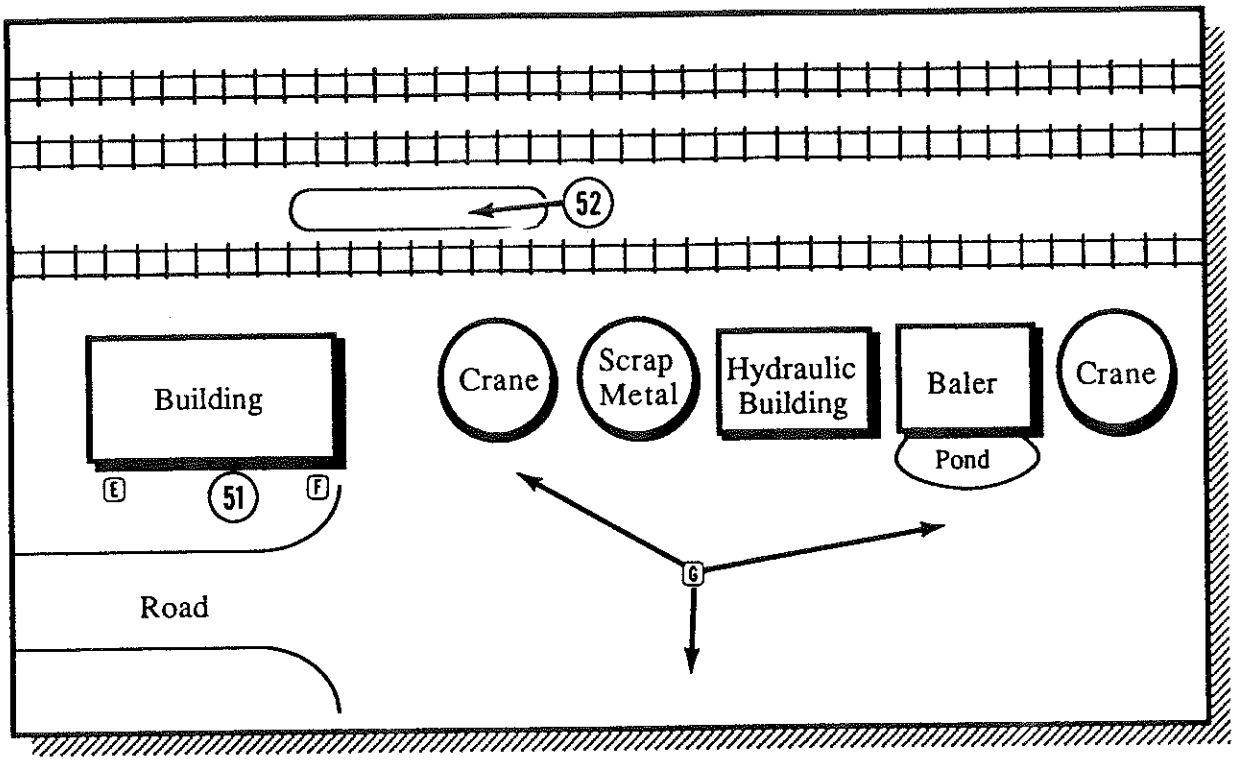




Reference 49

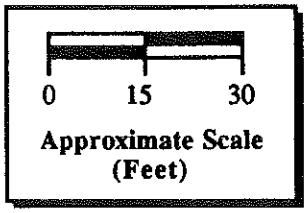
SWMU Location Map 4

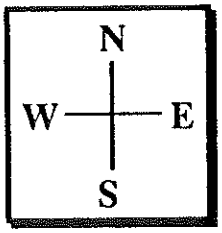
- M.S. Kaplan Company
  - LTV Steel Company Property
    - Hennepin, Illinois



○ SWMUs

▢ Areas of concern





Reference 40

3073/07mm

ATTACHMENT C

AREAS OF CONCERN

Area of Concern A

Unit Name: Underground Storage Tanks (USTs) at Maintenance Garage (No Photograph)

Unit Description: Two 10,000 gallon capacity steel USTs were formerly located to the west of the Maintenance Garage. These units were installed in 1967 and were removed in December of 1988. One of the tanks stored gasoline, while the other stored diesel fuel. Facility representatives indicated that the tanks were leak tested after removal and that no leakage was observed in the tank excavation. Formal documentation of these observations and tests was not available from the facility. After removal of the steel tanks, a 10,000 gallon, double walled fiberglass tank was installed in this area for gasoline storage. This unit has spill and overfill protection and leak detection devices (Refs. 10, 31, 40, 45).

Area of Concern B

Unit Name: Diesel Fuel UST (No Photograph)

Unit Description: This unit is located a short distance north of the Batch Anneal Building and was installed in 1986 for the storage of diesel fuel. This unit is a 10,000 gallon, doubled walled fiberglass tank with spill and overfill protection and leak detection capabilities (Refs. 25, 40).

Area of Concern C

Unit Name: Electrical Transformer Area (No Photograph)

Unit Description: This unit is located south of the Boiler House in the east portion of the Main Plant area. Several transformers are located above a concrete slab and surrounded by a chain link fence. Some of the units contain PCBs at unknown concentrations in the cooling oils. No stains were observed on the slab beneath the transformers (Ref. 40).

Area of Concern D

Unit Name: Above-Ground Farm Fuel Tanks (No Photograph)

Unit Description: Several above-ground fuel tanks are scattered throughout the LTV Steel Company property. These are typically located near existing farm buildings. The units have capacities of approximately 100 gallons and are used to store diesel fuel and gasoline. All units are currently in service, but there is a potential for future abandonment of some tanks (Refs. 40, 45).

Area of Concern E

Unit Name: Kaplan Gasoline UST (No Photograph)

Unit Description: This unit is located to the south of the southwest corner of the Shop Building at the M.S. Kaplan Company facility. This unit is a 500 gallon steel tank with an asphaltic exterior coating. The unit is estimated to be nine years old and was taken out of service approximately in 1986. The unit is not believed to have spill or overfill protection, cathodic protection or leak detection devices (Refs. 40, 59).

Area of Concern F

Unit Name: Kaplan Diesel Fuel UST (Photo 1-18)

Unit Description: This unit is located to the south of the southeast corner of the Shop Building. This diesel fuel storage tank has a 1,000 gallon capacity, is made of steel, and has an asphaltic exterior coating. The tank's age is estimated at 20 years and is currently in service. The unit is not believed to have spill or overfill protection, cathodic protection or leak detection devices. Oily stains were observed on the ground surface around the fill pipe of this unit (See Photo 1-18) (Refs. 40, 59).

Area of Concern G

Unit Name: Kaplan Facility Yard (No Photograph)

Unit Description: This unit covers the main working area around the M.S. Kaplan Company facility. This yard was observed to have several oil stains ranging from approximately 2 to 5 feet in diameter, abandoned dumpsters and trucks, scrap metal piles, and a pit of standing water. One of the scrap piles contained what were reported to be empty drums from gear lube. The pit of standing water was located immediately south of the baler, was unlined and had dimensions of approximately 8 feet by 12 feet by 3 feet deep. Approximately 1 to 1-1/2 feet of standing water was present in the pit at the time of the VSI, along with a few pieces of scrap metal. The water was reported to be a combination of cooling water from the baler and rain water. The water was discolored, apparently from suspended soil particles. There was no evidence of an oily sheen on the water or odors emanating from this area (Ref. 40). The "spillage" noted between the railroad tracks on Figure 16 of Reference 35 was not evident at the time of the VSI.